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From a Painting]

[By H. NORMAN.

THE WILD CANARY AND ITS DOMESTICATED DESCENDANTS.

CENTRE PANEL: THE ORIGINAL WILD CANARY.

UPPER ROW: THE YORKSHIRE, THE LANCASHIRE, THE SCOTCH FANCY, THE BELGIAN AND THE FRILL.

LOWER ROW: THE ROLLER, THE NORWICH, THE LONDON FANCY, THE CINNAMON, THE BORDER FANCY, THE CREST AND THE LIZARD.

OUR CANARIES

A Thoroughly Practical and Comprehensive Guide to the successful
keeping, breeding and exhibiting of every known
variety of the domesticated Canary

By
CLAUDE ST. JOHN

Written in conjunction with C. A. HOUSE and G. E. WESTON and many
leading present-day authorities on the various breeds

THIRTY-TWO COLOURED PLATES

also a large number of Illustrations in wash and line

By H. NORMAN

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PREFACE.

THE immense growth of the hobby of cultivating fancy Canaries for pleasure, song and exhibition in recent years has made a reliable and up-to-date standard work on the subject a long-felt want among breeders and fanciers generally.

Hitherto no such work dealing solely with Canaries has been available, and the Canary fancier had perforce to consult when the need arose, antiquated works, large portions of which were given over to a study of Mules and Hybrids, British and Foreign birds in which he probably had little, or no, interest.

It is to supply the need for a thoroughly comprehensive and up-to-date work dealing exhaustively with Canaries that the present work has been designed. In writing the text I have avoided obtruding my own personal opinions to the exclusion of those of others whose position in the Fancy entitles them to speak with authority, but have endeavoured to make it a compendium of the best thought of the day, and to give in a condensed form the experiences of the most successful and best known breeders of our day in each separate variety—a task which has been rendered easy and pleasant by the numerous breeders of high standing who have ungrudgingly placed their services and experiences at my disposal.

The sumptuous array of illustrations from the skilled and facile brush and pencil of Mr. H. Norman aids considerably in elucidating the letterpress, and the coloured and half-tone plates of birds may well be taken as models of present-day types, and ideals of perfection of their respective varieties which the breeder may safely strive to evolve in real life.

My acknowledgments and sincere thanks are due, and are here tendered, to the host of fanciers whose names will be found scattered throughout the work for their kindly and invaluable assistance in my task.

It only remains to hope that the enterprise of the publisher in placing an exclusive and standard work within reach of every Canary fancier may be amply rewarded.

CLAUDE ST. JOHN.

UPPER GORNAL,
DUDLEY, WORCS.,
August, 1911.

ERRATA.

We regret to note that a few slight errors have inadvertently crept into our pages, and beg the kind indulgence of our readers in making the following emendations :

Page 107.—Underneath illustration of Vapour Cabinet the references “Fig. II” and “Fig. III.” should be transposed.

Page 115.—Underneath illustration the words “Egg due in *three* hours” should be “Egg due in *eight* hours.”

Page 135.—“Emphysem” should be “Emphysema.”

Page 137.—“Vein in *toe*” should be “Vein in *claw*.”

Page 140.—Underneath illustration read : “Fig. 2. Crooked outer fore toe tied to middle toe with wool or silk.”

Page 141.—Underneath illustration read : “Fig. 3. Crooked middle toe bound in position on strip of quill.”

Page 312, line 1.—“Erect” should be “Semi-erect.”

Page 331, line 17.—“At an exhibition” should be “as an exhibitor.”

In title of plate facing page 126 “*Marked*” should be “*Marked*.”

CHAPTER I.

INTRODUCTORY AND HISTORICAL.

OUR Canaries ! The simple title by which we choose to distinguish our efforts to do at least some measure of justice to a vast and universal pastime which has captured the hearts of tens of thousands of people of every class and rank in every civilised nation in the world is to-day a term full of meaning and importance. Our Army and Navy ; our " Long-Toms " and Dreadnoughts each in their respective spheres have a meaning big with Fate, and may continue to excite the enthusiastic admiration and support of every loyal Briton, but in the narrower limits of home and social life Our Canaries, in their own way, are not a whit less powerful. Whilst they command the whole-hearted admiration, and sway the thoughts of multitudes, their influence is ever peaceful and up-lifting, tending to lead one higher and higher, step by step, onward and upward, above mundane affairs, until, as it has been so beautifully said, the mind is unconsciously brought

" Through Nature, up to Nature's God."

One notable leader of present day thought has gone so far as to declare that no single life of the individual is worth living which has no hobby or recreation to which to devote the hours of respite from the daily task, the common toil.

THE VALUE OF A HOBBY.

Such a sweeping assertion may, doubtless, not meet with unanimous approval, yet it is, nevertheless, a generally accepted and incontrovertible fact that the man, or woman either for that matter, whose hours of leisure are devoted to the legitimate pursuit of an interesting and pleasurable hobby, is doubly blest in the possession of an entertaining pastime which is well calculated to brush away the mental cobwebs, and replace the worries and carking cares of business life with bright and hopeful thoughts and aspirations. There is no such thing as pessimism in the creed of the hobbyist, be the chosen hobby whatever it may. Narrow-mindedness and bigotry are the proverbial square pegs which will never be made to fit in the round and true centres of optimism which permeate the fancier's whole mind. Neither can he ever lie and rust. He must be a perennially busy person, for the spare hours that would in other circumstances probably be frittered away in some purposeless project must be well occupied in the pursuit or development of the object which is at one and the same time a means of recreation and a safeguard against the machinations of the Evil One, whom, we are assured,

" findeth some mischief still, for idle hands to do."

So much in favour of a hobby of some kind—And surely no hobby is so plastic, or so peculiarly adapted to the needs of every class and grade of society, from the humblest country labourer in his lonely cottage to the stately mansions

of the Princes and Peers of the realm. Its commencement does not necessarily demand any more extensive outlay, to begin at the bottom of the ladder, than may reasonably come within the scope of the labourer, and its upkeep in a small way is almost a matter of pence. Moreover, after the first season it may become at least self-supporting where circumstances render it advisable to make an effort to cover the cost of outlay upon the hobby.

THE FINANCIAL ASPECT.

Profit for its own sake, will never enter into the mind of the true fancier. A sordid view of the pastime should not be tolerated for a moment. The pleasure and entertainment, combined with the growth of intellect and knowledge which must follow as a natural consequence, is of far greater value to a right-minded person than any mercenary consideration.

Let it not be understood, however, that the hobby is, of necessity, a losing concern. That this may be, and frequently is, the case we will not endeavour to gainsay. But this we do assert with the fullest confidence; that no other hobby exists which demands so little outlay for its support and up-keep, assuming the stock is well and regularly provided with every necessity for its health and well-being; no other, we repeat, which costs less in proportion to the value of the stock. And, at the same time, given a stock of good typical pure bred canaries, which it is within the power of the working-man fancier to gradually build up himself at very little actual out-of-pocket expense, there probably exists no other hobby within reach of the limited means of the poorer class in which the stock is of so high monetary value.

When we say that prices of £20 or £30 for single high class canaries are not of very rare occurrence, and that the nett cost of rearing the birds would work out at a few shillings each, it will be readily seen that there exists the possibility of making the pastime remunerative in certain circumstances. This of course, is allowing nothing for the value of the parents, which are assumed to be already in the breeder's possession. Neither must it be taken for granted that birds will be reared in every nest, or in every year, which would command anything like these figures. Betwixt such abnormal profits, and a dead loss upon a year's working, and loss of the stock to render the disaster complete, there is a vast gulf, bridged over by an infinite number of degrees of profit and loss. But given proper management and careful attention, especially to the small details, actual loss should rarely occur.

ORIGIN OF THE CULT.

Before proceeding to deal with the Canary Fancy as we find it to-day we may turn aside for a brief space to glance at its historical associations as far as they are yet known. When, or by what means, the practice of bird-keeping was first adopted will never be known. The origin of the cult is buried deeply in

antiquity, and we can only now suppose that the very frequent allusions to birds, which abound in all ancient lore and prehistoric tradition, afford us ample circumstantial evidence that in one form or other bird-keeping as a hobby for mankind is practically co-eval with man's first step towards civilisation.

These quaint beliefs are not peculiar to any one country, or time, but are world-wide, and bear such a strong resemblance to one another that there can be very little room to doubt that one and all owe their origin to a common

THE TECHNICAL POINTS OF A BIRD.

1. Upper Mandible.	11. Rump.	21. Tail.
2. Lower Mandible.	12. Back.	22. Primaries. } These are
3. Chin.	13. Back of Neck.	23. Secondaries. } termed the
4. Throat.	14. Back of Head.	24. Greater Wing Coverts.
5. Front of Neck.	15. Crown of Head.	25. Leg.
6. Breast.	16. Lores.	26. Thigh.
7. Lower Breast or Belly.	17. Forehead.	27. Toes } a. Inner toe.
8. Vent.	18. Wing Butts.	} b. Middle toe.
9. Under Tail Coverts.	19. Shoulder.	} c. Outer toe.
10. Upper Tail Coverts.	20. Flank.	28. Hind Toe.
		29. Hind Claw.
		30. Ear Coverts.

stock which had been lost to sight ages before our earliest records of an authentic description were inscribed on history's page. Diligent students of Holy Writ will find from the frequent references therein that bird-keeping was a recognised institution at the dawn of Christianity, which is certainly going backward far enough to show that our hobby possesses an ancient lineage surpassed by none nor probably equalled by any other pastime of a like nature which has ever claimed the attention of civilised nations.

AN IDEAL OUTDOOR AVIARY.

This outside aviary is constructed of wood and wire. Inner portion, and part of the outer, covered with a wooden roof and roofing felt. Window to open on hinges for purposes of ventilation. Small opening in the wire at front, with a rustic bracket inside to hold the food and water vessels. Full size door for entrance into covered portion; small door for entrance into outer aviary.

In old folk-lore a few of the most notable species of birds have, with almost unvarying consent, been the accepted symbols of certain characteristic traits. The dove, for example, is from time immemorable the recognised symbol of peace and fidelity; to the Raven, a kind of model of the opposite vices, being ascribed a compendium of uncanny, malicious and evil qualities. Yet on one occasion, if the Hebrew translator is to be trusted in the matter, even this sable outlaw was used as a messenger of mercy when it fed the starving prophet in the wilderness. The lordly Eagle, monarch of the air and mountain wilds, has ever been the emblem of wisdom and strength. In the former rôle we may find it figuring in "Hinduism," one of the authorised books of the

OLD-TIME PRIZE-WINNING NORWICH PLAINHEADS.

Head and Tail marked Yellow Cock; 1887.
Clear Yellow Cock; 1890.
Clear Yellow Cock; 1895.

teaching of Kabir, wherein it is styled Garur Bodh—"Wisdom of the Eagle." The Eagle is believed to be the vehicle of Ram Chandra, who, like all others with whom Kabir conversed, accepted the truth of his message, and was accepted as a Chela.

IN ANCIENT TIMES.

But apart from these inferences, leading to the belief that bird-keeping was a hobby of the early ages, the methods and purposes for which they were kept, save in the case of birds of prey kept for sport and hunting, are shrouded in mystery, and reliable records are almost entirely absent until the close of the sixteenth century, when Gesner, closely followed by Aldrovandus and Francis Willughby, although the work of the latter was not published for many years afterwards, all make some mention of the canary as a domestic pet bird kept for the sake of its song by Nobles and rich people.

A still earlier record exists of its introduction into Europe by one John Bithincourt, apparently a Spanish Admiral or Navigator, who is said to have brought the first canaries to Cadiz, a Spanish sea-port, in the year 1405. As Bithincourt is said to have taken possession of Lancirola, the largest of the group of Canary Islands, with his fleet a few years prior to this time, the inference would appear to be that the birds were brought into Spain from this group of Islands. The Spaniards, it is said, quickly discovered the good qualities and adaptability of the bird for domesticity, and found it nested and reared its young readily in captivity. Thenceforth the breeding of the birds became a lucrative pastime, and ere long a market for the birds was found beyond the shores of the Peninsula. But for a long time the Spaniards are said to have monopolised the market by refusing to export any but male birds, so that it is quite a century later before we find the bird established in southern France, and thence it is traced along the Mediterranean coast to Northern Italy.

EARLY CONTINENTAL RECORDS.

From Italy the bird spread to Switzerland, and became established among the Tyrolese peasantry who bred it largely for song, and exported great numbers to all parts of Europe. Spreading in all directions as a very desirable pet, and highly valued for its domesticity, and unique powers of song, its cultivation and education was early taken in hand by the people of the Hartz Mountains in Germany and Nuremberg. The latter place was apparently the first wherein the systematic breeding and rearing of the birds on an extensive scale was carried out. Here, as early as the year 1645, we find definite records concerning the trade, and that men following the avocations of shoemakers, haberdashers, tailors, and various other business pursuits, were the class who added this lucrative hobby to their means of income.

At this time Nuremberg alone is said to have produced for sale no fewer than 8000 birds per annum. But this trade was practically destroyed by the wars at the beginning of the eighteenth century, and does not appear to have been resuscitated until the middle of the nineteenth century, and during this interval the people of the Hartz Mountains captured the trade, gave the name of the locality to the bright and cheerful little songster, and Nuremberg and its pioneer efforts was almost entirely forgotten, whilst the Hartz Mountains were, until quite recent times, made famous all over the world by the association of the name of the district with the Hartz Mountain Roller canary—a name by which for many years the bird was universally known until stress of modern trade competition gradually, but surely, brought into vogue a multiplicity of popular titles for our musical little parlour pet.

GREY AND GREEN.

But to bring the ancient history down so far as we can trace records of it from the time of Bithincourt's introduction, we next find an early writer, one Turner, in 1544 speaking of birds "which the English call 'canaries,'" and remarking that, "what some call 'grey' others call 'green;' besides which there are difficulties of interpretation from one language to another, besides distinctions in tone of colour appertaining to sex, for what might be bright and green in a cock might be dull and grey in his sister."

Next Gesner in 1585; Aldrovandus in 1610; and Willughby in his posthumous work on the "History of Birds," published in 1667; all give a more or less detailed account of the bird, and the last-named author besides giving a detailed and critical description of the canary, connects it distinctly with the place of its supposed origin, and also recounts the story of their chance introduction into the Isle of Elba from a vessel which was wrecked off the coast of that island on its passage from the Canary Islands to Leghorn. Although some doubt has been cast upon the truth of this narrative in recent times, it is clear from Willughby's record that the story was a generally accepted and popular one more than two-and-a-half centuries ago even as it is to-day.

Coming down to the eighteenth century we now begin to find tracings of the domestic canary from its original wild stock (real or fabulous will probably never be known) of the Canary Isles, together with descriptions of its variations in a state of domesticity. The writings of Albin, Brisson, Buffon, and Adanson, all contain such accounts of the birds, and the latter author tells us that "the Canary Serin, which becomes quite white in France, is, in Teneriffe, almost as deep a grey as the Linnet." From this record it would appear that the "White Canary" which made a stir at the Crystal Palace Show of 1909 is, after all, by no means the first of its kind.

“THE FULL CANARY.”

Hervieux, probably the best and most reliable authority of his day, writing at the opening of the eighteenth century, gives descriptions of no fewer than 29 varieties which were known to the fanciers of that time, and he also speaks of the white canary, which he further says, had red eyes. His mention of “blonde,” “agate,” and “isabelle,” canaries, all with red eyes, and of the “canary variegated with blonde, and with red eyes,” would all seem to point to the fact that the cinnamon and cinnamon-marked canary existed in those early days of the canary fancy. The crested canary was also in existence, and is mentioned as one of the most beautiful of the tribe. It is interesting to note that in this record of Hervieux when he mentions one variety as “the full canary, which is the rarest,” he adds an explanatory note to make it clearly understood that by this term is meant one that is “fully and entirely yellow jonquille.”

A TRIO OF IMPORTANT FACTS.

Here we have at once by induction three important facts made clear; firstly that the term canary was from the earliest days of the fancy intimately associated with the yellow colour; secondly, that clear bodied birds as we now term them were produced as early as the dawn of the eighteenth century; and from this distinct reference to the rarity of this variety in those days we get the third interesting discovery that the birds had been bred in a domestic state for a considerable number of generations before there was any common breaking away from the dark plumage of the original stock. Incidentally, we may note that this reference to a clear bodied bird as a “full canary” may possibly throw some light upon the curious persistence with which, in our own days many people, unversed in Fancy matters, adhere to the belief that a variegated canary is in reality a mule, and that only clear bodied birds are pure canaries. What more likely than that this popular belief is but a relic of an ancient tradition which has descended as an unwritten law from the earliest pioneers of the Fancy.

NOT A MODERN INSTITUTION.

It is therefore seen that, contrary to the general opinion, canary breeding as a hobby is not a modern institution, but can boast a very ancient lineage with an unbroken record through several centuries down to the present day. We may truly say unbroken even though we stop at Hervieux’s record, as this work overlaps the records already given of the cultivation of the song canary, and brings us well within sight of the definite records of the cultivation of fancy varieties as we know them to-day. Such breeds as the London Fancy (now, unfortunately, verging on extinction, as it were), the Lancashire, Lizard, and Belgian, all possess a history, as will be shown in the proper place, which goes back as far as the time of this author, or within a sufficiently reasonable

distance to warrant the supposition that these varieties were all bred in a more or less primitive type when his work was written.

But the growth and development of the hobby within the past fifty years has been the most phenomenal in all its history, and its progress from year to year has gone forward and upward by leaps and bounds so that there was never a time in the history of the bird when its adherents formed such a considerable proportion of the populace as is the case at the present day; or when such a galaxy of charming and beautiful varieties were produced to gratify the taste and please the eye of its multitudinous admirers. Neither is the Fancy now of the same localised character as was to a certain extent the case only a quarter of a century ago.

THE WORKERS AS CANARY FANCIERS.

At that time the overflow of interest in it had already begun to spread from its strongholds, but the mainstay was undoubtedly still invested in such hot-beds as the city of Norwich, with its reputed 4,000 breeders, and similar centres where the hobby of canary breeding did much to cheer and enliven the sedentary occupations of a large portion of the inhabitants. For it is undoubtedly a fact that the principal centres which nurtured the canary hobby in its early days were also associated with manufactures or occupations of this description. Such places were the cities and towns of Coventry, Derby, Northampton, and Nottingham, and many towns in Yorkshire and Lancashire, each of which fostered their own particular breed, and in at least three instances gave the name of their birthplace to the breed of their choice. Thus we have now the Lancashire, the Yorkshire, and the Norwich, as living monuments to immortalise the taste and skill of the fanciers of the places whence they originated.

CHAPTER II.

CAGES, APPLIANCES, AND INDOOR MANAGEMENT.

IN commencing the hobby it naturally follows that the question of suitable cages or aviaries of a type which are best adapted to meet the requirements of the particular branch into which one is launching must be settled as a first step towards success. It is, too, a question of some moment, as the infinite variety of cages which will meet the gaze of the prospective buyer will doubtless prove somewhat bewildering to the novice, whose practical experience has probably hitherto been limited to a tiny contrivance of wood and wire; or, on the other hand, a rather larger concern composed of an elaborate arrangement of wire, glass, and tin, designed to please the eye and appeal to the æsthetic taste rather than ensure the comfort and well-being of the feathered occupant which is destined to pass its life within its narrow limits, which are, in their respective spheres, accorded the courtesy titles of cages—singing cages, and parlour cages.

NECESSITY OF SPACE.

Let it not be supposed from the remark that we set out to condemn any type or style of cage which gives even a tolerable measure of comfort to the bird, and is not, when kept under the conditions for which it is most suited, positively harmful to the occupant's health or welfare. As a matter of fact provided only that a sufficient amount of inside space is allowed to permit of a certain freedom of movement on the part of the bird which will enable it to take some degree of exercise, instead of the spirit-cramping contrivances which give barely enough space inside for the bird to turn itself round, without causing friction between some part of its prison and its wings or tail, there will be found but few cages which in certain conditions and with strict attention to cleanliness and hygiene may not be made tolerable and useful servants. Indeed, among all the great variety of cages and cage aviaries, if we may use such a term as a convenient description of the so-called aviaries which occupy a spare corner indoors, and which are in reality neither more or less than large roomy cages; among all the array, we repeat, which afford an almost unlimited choice, and run through all degrees of good, bad, and undesirable qualities, practically all of them, having the necessary qualification of inside space, may be rendered quite tolerable in special circumstances.

The greatest amount of harm may be done by ignoring the original purpose for which any particular kind of cage is obviously intended, and utilising it in circumstances it was never meant to occupy. A parlour singing cage of an approved pattern, as an example, which in most cases will be constructed of wire alone in the portion above the immediate base, may serve its purpose passing well in a room which is of a fairly equable temperature at all times and is quite

immune to cold draughts, but such a cage, which, by its very nature and design, is calculated to expose the occupant to every chill wind that blows, as well as every heated blast in an intensified form, is little better than a death-trap when it comes to be kept in a kitchen, where these adverse conditions are usually at their worst, and the daily avocations are giving rise to extreme and unnatural fluctuations almost hour by hour.

THE CARDINAL POINTS.

By adhering to a few cardinal points in this matter of cages a vast amount of unnecessary suffering would be spared the birds, and much disappointment and discouragement avoided by the owner. As a general rule all open wire should be wholly avoided for every purpose, save in a limited number of cases where the dictates of custom and policy demand their use. Such cases are to be found in the exhibition realm, where the orthodox show cage for the Scotch Fancy, Belgian, Lancashire, and Yorkshire varieties are of this description and, consequently, both customary usage and good policy demand that the new exhibitor must fall into the ranks and adhere to the generally accepted and prevailing conditions.

It is not for us to criticise the method in this place, although, to avoid any wrong impression, it is best to point out that when one wishes to take a place in the exhibition arena it is absolutely essential, if one is to avoid unpleasant consequences, and to ensure success, to recognise the rules and regulations governing such exhibitions which are accepted and generally observed by everyone who takes up their section of the Fancy with a right spirit, and singleness of purpose to win fairly or to lose in a sportsmanlike spirit.

That being so it naturally becomes a matter of necessity to adopt the open wire cage for the breeds in question when exhibiting them. Whether this method appeals to the owner or not is out of question, he must do it. But even in this case it is not needful to keep the birds in their show cages continually. As the term implies, the only object and purpose of these cages is for showing the bird in, so that the bird's lodgment in them is only intended to be of quite a temporary nature, and in the vast majority of cases it will not exceed sixty hours consecutively, including the time of transit to and from the show, whilst little more than half this time would cover the interval required in most cases, and during that portion of this time which is occupied by the journey to and fro, the cages are well packed and the occupants secure from exposure.

Therefore, this class of cage scarcely comes within the scope of cages as we were considering them. Whenever an open wire cage from any cause or reason at all, is adopted for general use it should only be in rooms where, as already pointed out, the temperature is most unvarying, and there is not the least possibility of cold draughts of air blowing through them. Cages of the box

"OUR CANARIES."

UNFLIGHTED YELLOW YORKSHIRE.

pattern, that is, with wire only in front, and the top, back, sides, and bottom of wood, are quite the ideal for all general purposes, whether it be in the small way of keeping a bird or two for song, or in the larger way when the owner breeds a number of birds for pleasure, profit, or for exhibition purposes.

THE ORTHODOX BREEDING CAGE.

For breeding purposes this principle has already been very generally adopted, so that we now find the orthodox breeding cages on the market are, in nearly every case, those of the box type, with more or less trivial variations. One of the most notable exceptions to be met with, which is not saying it is really in much use, is a cage which is a kind of improvement upon the real old-fashioned London breeding cage which has descended to us from the good old days when the London Fancy and the Lizards were the most popular favourites among the old Spitalfields weavers, or even, may be, from an earlier date. The chief improvements lie in the fact that, whereas the London cage which has a body of the modern box type fitted inside with enclosed boxes for the hens to nest in, to which the birds gain admission by circular holes cut out of one side of each compartment leading into the cage, this design is made as an open wire cage, with a plain wooden platform occupying a position corresponding to the floor space of the nesting compartments of the older type upon which either ordinary nest boxes minus the hanging back, or earthenware nest pans may be placed.

MODERN v. ANCIENT.

The advantage such a cage has over the old London cage is very considerable in preventing the infestation of the cages with insect pests, and in dealing with and eradicating such pests should they by any means become established. Their sole disadvantage is that they are unsuited to any position save a fairly quiet one, and a cosy and comfortable room where piercing draughts are unknown. The size of this cage for a single pair of birds is 22 in. long, 12 in. wide, and 16½ in. high. The wooden platform is movable, and at the end of the breeding season it may be taken out and the cage used as a single compartment flight cage for stock birds during the winter months, or again, two wire slides may be inserted across the centre one above the other (the cross-bar running round the centre of the cage to hold the wires in position prevents a single slide being pushed in) and the cage thereby made into two compartments, each with a floor space of 12 inches long and 10½ inches wide, in each of which, given strict attention to cleanliness, two birds may be moulted.

The London breeding cage, whatever good service it may have rendered in the past, is now so badly out of date that it should be avoided altogether, and allowed to become an obsolete relic of past ages. But it still commands sufficient sale to induce manufacturers to keep it on the market. Doubtless its nicely furnished appearance, and the "tricky" internal arrangements, are what

commend it to inexperienced fanciers and young beginners, who, it must be admitted, are almost its sole buyers, but, even when put together by the best workmen, it affords such abundant harbour for red mites, not to mention microscopic disease germs if any infectious disease should ever attack the birds, and are withal so un-get-at-able for thorough cleansing and disinfection that there is nothing to lose and all to gain in the way of sanitation and appearance by discarding it altogether.

A FAVOURITE GERMAN CAGE.

As the merits of the all-wire breeding cage have been the subject of some discussion of late it may be well to mention an example of this type favoured by some German breeders. This type may well be described as an enlarged edition of the cage just mentioned, but is without the inner platform, and all nesting receptacles are composed of very small cages similar in appearance to nursery cages, which are hung on the outside of the larger cage in the same way as seed hoppers, access to them being allowed by the provision of a sufficient number of small doors in the sides of the large cage, placed at regular intervals either on two sides or all way round, as may best suit the breeder's ideas of his requirements. Racks for holding nesting material or greenstuff, fruit, or cuttlefish, are also suspended around the cage on the outside in a similar manner, thereby leaving the whole of the inner space unobstructed and at the disposal of the birds for exercise. Food and water are placed inside upon the floor in self-supplying hoppers and fountains, and the main purpose of the cage is to breed with several hens and one cock, which fly loose altogether.

Cages answering this description have long been on the German Market, and may be obtained in a collapsible form, which enables the whole concern to be taken apart and packed flat for storage in a minimum of space when the breeding season is over and the cage is no longer required for its proper use on account of the season's product being either disposed of to the merchant, or the hens relegated to one large flight, and the cocks transferred to the small singing cages to undergo tuition in the art of singing.

AN ORNAMENTAL BREEDING CAGE.

If a sufficient demand were to arise among English breeders to warrant this type of cage being placed upon our market at a reasonable price it would undoubtedly soon be readily supplied either by home or Continental makers, and if both essayed to supply the demand, then a little healthy competition must soon result in bringing the articles within the reach of the masses of breeders. But at the present time the actual nett cost of the fitted cage to our English breeders would probably prove prohibitive to all but a few.

The so-called Crystal Palace aviary must also be regarded in the light of an open wire cage, whenever it is used as a breeding cage for canaries and treated

similarly as regards its position. As a breeding cage we have not found it a success, though we have bred successfully in it.

Paradoxical as it may seem, this is nevertheless true. Our experience is that as an open wire cage it will prove a success in any place which is really suited to a cage of this description—the qualifications of such a place we have just now given—but that each cage requires to be set apart for a single pair of birds to ensure a fair chance of success. It may be argued that by keeping in the wire slides which are provided with each cage to make it into a three-compartment cage it should be possible to run three pairs of birds in it. But in this case practical experience will rarely, if ever, confirm the theory.

Endeavour to utilise the full limits of the cage in this manner and the probability is that as soon as the hens have gone to nest, assuming things run as smoothly as one desires, the cocks will devote their time to flinging challenges at each other through the partitions, and in the more excitable subjects this will

THE CRYSTAL PALACE TYPE OF INDOOR AVIARY.

be varied at more or less frequent intervals by the cocks ill-treating their own wives and dragging them off the nest to the continued danger or actual detriment of the embryo family. The continual excitement of the cocks also has an adverse effect upon their mates, and not infrequently results in inciting them to leave the nest with a new-born desire to start afresh, and begin the whole business over again.

OBVIOUS DISADVANTAGES.

If a cock is run with two hens, the cage being divided into three compartments as before, and a hen kept in each end, the centre compartment being reserved for the cock in case it should be necessary to keep him separate from both the hens at the same time, things will generally run more smoothly, but there is still a large measure of chance attached to success. Many hens are even more excitable and spiteful than cocks when nesting, and when nothing but a wire slide separates the pair after nesting she will often spend far more time in quarrelling with him through the wires or trying to get to him than she will pass in performing her proper duties, and the eggs will then most likely be chilled and spoilt. On the other hand the cock, after being mated with one hen and sending her to nest, will rarely pay the same amount of attention to a second mate whilst in such close proximity to the first spouse, seeing her frequently leave the nest, and rarely go back without hurling a challenge or a love-call at himself.

Of course all birds are not of the same temperament, and both cocks and hens vary to a wonderful degree. There are hens which, once they have laid their complement of eggs and commenced incubation, will sit on through thick and thin, oblivious of all the strife and turmoil that may go on around them; and there are likewise cocks such amorous swains that they never hesitate to court "flame" after "flame" in rapid sequence. With them it is simply a case of being "off with the old and on with the new." But these are more or less exceptional cases, and the condition of things we have just described is far more likely to prevail. Therefore, considering the amount of space which is thus utilised to accommodate a single pair of birds, it cannot very well be held up as a successful method of breeding for the average fancier.

POPULAR AND PRACTICAL.

The most popular and generally useful style of breeding cage now in use is the box type with all internal fittings made loose and separate, so that they may be passed through the door, and hung upon a nail or hook permanently fixed in the side or back of the cage for this purpose, and removed as soon as they cease to be required for their intended purpose. All useless ornamentation is properly avoided, and the whole cage and its fittings made as plain as possible. Minus the wire front such a cage is to all intents and purposes merely a plain oblong box, with a strip of wood about 3 ins. wide fixed lengthwise across one side and $\frac{3}{4}$ in. from the side of the box, leaving this amount of space underneath

it when the box is stood upon its side in the proper position of a cage, which space is to allow the wooden tray with a supply of sand to be pushed in and form the floor of the cage. The 3 in. cross piece is to support the wire front, which may be purchased of any required size, or made at home by a handy man.

As the construction of these fronts calls for but a small amount of skill any beginner may easily make them himself to suit his own particular ideas and taste. In order to do this he should first procure and read a very useful and practical work on the subject which is published at 2/3, post free, at the office of "*Cage Birds*," entitled *Aviaries, Bird-rooms and Cages*. With the help of this little book and the few simple tools which are fully described, any fancier will be able to make all his fronts, and apply to them just his own ideas of what he needs.

This type of cage may also be made with the whole of the wood and wire-work forming the front in one separate piece, which is pinned on in proper position with strong panel pins—small screws might be used for the purpose—so that it is easily levered off at any time.

THE VALUE OF MOVABLE FRONTS.

The object of these movable front cages is a most important one, and should be made an essential feature by every beginner in the Fancy. It gives the most perfect access to the inner parts of the cage for cleaning and disinfecting, and every little operation one may wish to carry out in the inner part of the cage. Remove the front, and the inside of the whole concern is as easily get-at-able as the outside, the full advantage of this being only perfectly realised by one who has tried to wash and paint the inside of a cage of the old-fashioned type by putting the hand and forearm in through the doorway.

Above a certain minimum the size of the breeding cage is of little importance. Where one is blessed with a large amount of space for the pursuit of his hobby the larger the cages, within reasonable limits, the better. The minimum size for a single compartment cage should be 20 in. long, 16 ins. high, from roof to floor, and 10½ ins. deep, from back to front.

But these measurements may be, and often are, doubled or trebled, in the length; still retaining the same dimensions in width and depth, or very nearly so and one or two partitions inserted at equal distances apart and from each end, so as to divide the cage into two or three equal divisions, as the case may be. If these partitions are made movable to slide in or out at will as is usually the case, they may be taken out after the breeding season is over, and the cage turned into one large flight cage in which the stock birds may be kept through the winter, and thereby get a much larger amount of healthy vigorous exercise than it is possible for them to obtain in the limits of an ordinary single compartment cage. They are thus made to serve the double purpose of breeding cages during the summer, and stock or flight cages during the remainder of the year, which is an advantage

where space is at a premium and one finds it necessary to make the most of all cage accommodation at each season of the year.

DIFFERENCES OF OPINION.

Opinions vary a good deal respecting the most generally useful of three types of cage just reviewed—the single, double, or treble compartment. Many of the best breeders favour the single cage, whilst each of the other sizes have their share of adherents—but when everything is taken into consideration it will be found that each type has its own special merits as well as certain limitations.

For convenience and portability the single compartment cage is far ahead of the others. Its chief disadvantage is, that, when mating the birds, it affords no real convenience for allowing them to become sociable by contact and seeing each other at close quarters prior to being actually put together in the same cage. The only method of doing this is to place the cock in a small nursery cage for a day or two, and hang him on the front of the breeding cage which is already occupied by the hen, until he is seen to feed the hen through the wires.

THE USE OF NURSERY CAGES.

Similarly, when it becomes necessary to take young ones away from the parents before they are quite able to feed themselves entirely, they must be placed in a nursery cage and suspended in the same manner on the front of the larger cage. This of itself is an eyesore to us, and seriously interferes with the symmetry and neat appearance of an otherwise trim stock of cages. True, this may be nothing more than an individual idiosyncrasy which is not felt by many. Another point is that when a cock has to be taken away from the hen whilst she

A TRIO OF DRINKING VESSELS FOR AVIARIES, Etc.

Glass, with lip to go through the wires at front of the cages, &c.

Glass, known as "Jones' Hygienic Fountain," with aperture inside the trough.

Improved out of jam jar (inverted, and with hole made at edge) and a saucer.

"Our Canaries."

A MODERN EXHIBITION NORWICH PLAINHEAD.

Drawn from a well-known prize-winning wing-marked hen.

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is sitting, he usually has to go right away from near proximity. This would be an advantage with some hens, but in other cases it would not. But as a counter-balance for these little inconveniences there is, besides the very great advantage of portability and ease with which the cage can be dealt with, a considerably greater control over any kind of disease which may break out and be suspected of being of an infectious nature, and also in dealing with insect pests.

WHERE THE SINGLE BREEDER SCORES.

We must assume that the owner has his stock of cages arranged in proper order upon a rack standing on shelves, one above another, as should be the case with every breeder of good stocks of birds. Now let us suppose that during the breeding season a nest is noticed to be badly infested by red mites. The pest may have been introduced by some unforeseen accident, or a newly acquired bird. Anyway, there it is, and in all probability not only the nest, but every joint and crevice about the cage will have become infested. If immediate steps are not adopted to stamp out the pest effectually at this point, that one compartment will become a centre of infestation for every cage in the room, and to begin dabbling and painting on fluids, or scattering insect powders, results only too often in hastening the spread of the plague to other quarters. Here it is that the portability of the single breeder scores heavily.

A spare cage of the same size and type is prepared and thoroughly cleaned, the birds quietly transferred to it after having had a good bath in which some essence of quassia was mixed, the infested cage carefully removed from its position, and taken right away out of the room without so much as being rested upon the floor. The shelf it occupied is then well cleaned, wiped over with some good disinfectant and the fresh cage containing the birds slid into position. The infested cage may then be most thoroughly dealt with, and prepared ready for a similar emergency with some other cage if one should arise. All this may appear upon the face of it, in print, a somewhat tedious and laborious proceeding, but as a matter of fact it may all be carried through in less time than it takes in describing it.

ISOLATION NEEDED.

In like manner should a bird succumb to any complaint which one has reason to believe is of an infectious nature, the removal of the cage bodily, with all its fitments and appliances, may nip in the bud what may otherwise develop rapidly in a most fatal epidemic. In this last named event it will be a very wise policy not to replace the cage that is removed until one is satisfied there is no infection attached to the disease, and in the meantime wipe the shelf over daily with a cloth wet with a strong solution of carbolic disinfectant, leaving the shelf in a well moistened condition.

Two other important points should be borne in mind in all these cases. First: that when removing a cage which is under any suspicion of this kind, it

Our Canaries

must never be taken near another one which may, in due course, find its way to the bird-room—it should be isolated from the bird-room both directly and indirectly in the strictest possible sense, until, like Cæsar's wife, it is above suspicion and beyond reproach. Secondly: if the cage in which such a death occurs happens to be occupied by more than one bird, the survivor, or survivors, should upon no account be transferred to other cages and left in the room.

In the event of the disease proving to be of an infectious and contagious character this would be a most fatal policy, and only tend to spread the infection to just as many more cages and appliances as they were allowed to come in contact with. If they were moved from the cage at all, it would be quite the best thing to place them in a temporary abode, such as an old cage which has almost, or quite, earned a place on the retired list, provided, of course, it is clean and well disinfected, and keep it, or them, in some other rooms strictly isolated from the general stock.

There is, however, no actual necessity to remove the birds from the cage until the nature of the disease has been verified, as the chances are that if it is infectious the birds will have already become infected, and in that case may just as well remain in the original cage and the whole concern be transported into isolated quarters to await developments as mentioned just now. These developments we shall deal with in the proper place hereafter, and need only remark here that when the above suggestion to transfer the birds to an old cage for isolation

A SELF-SUPPLYING SEED-HOPPER.

At side is an end section, which shows the manner in which the seed falls from the upper portion into the feeding trough.

is carried out, this cage should be broken up and burnt as soon as the birds have sufficiently recovered to be safely re-introduced into the room, or succumbed, as the case may be—and the latter termination, it must be admitted, is the one most likely to occur. To attempt to cleanse and purify an old cage after containing a septic fever patient, for example, is the merest folly.

A QUESTION OF SUPERIORITY.

But we have gone far astray from the subject of the comparative merits and disadvantages of the three commonest types of breeding cages, and must now hark back, having doubtless written sufficient to show that the portability of a single compartment cage in certain circumstances gives it a superiority over all others, which fully condones all its shortcomings. Next in order the “double,” or two compartment, breeding cage is most generally useful. It retains something of the conveniences of the single, but being twice the length is naturally not quite so portable. Still it is sufficiently of this character as to be almost as readily and easily dealt with in all respects as a single cage, the greatest of its demerits, perhaps, being that it requires more space than many novices can afford to give to their hobby, and at the same time devote a whole cage to each pair of birds.

The advantage of this double cage is the easy method of dealing with practically all the little troubles which are apt to arise during the breeding season, such as cocks interfering too much with the nesting arrangements of the hens; driving them off the nest whilst sitting; hens plucking young when about nesting the second time, and so forth. At the beginning of the season when it is purposed to adopt this method and devote a full cage to each pair of birds, the cock is placed in one compartment and the hen in the adjoining one of the same cage, the wire slide is inserted, and this enables each pair to have unlimited opportunities for forming an attachment, and hob-nobbing generally, short of actual mating.

“THE SPRING-TIME, THE PRETTY RING-TIME.”

As the season advances the birds will be observed to devote their attention to each other more and more, day by day; the cocks singing violently and going through all the ludicrous antics of love-making before the slide, whilst the hens look on from the other side, flapping and twittering their applause and approval; and, anon, popping down briskly to the wires in response to a call from the cock to take a choice morsel of food from his beak. A pretty prelude to the ceremony which is to follow when the time has reached its proper fulness to permit them to set to work and consummate their fond desires. All that there remains is to withdraw the wire slide.

Later on, when the hen has begun to sit upon her eggs, if her lord and master disapproves of this quiet, stolid inactivity, and tries to beat her off the nest, then he is once more relegated to the one compartment, and a wood slide inserted in

place of the wire one, so that the hen is able to hatch out her eggs in peace, and rear the young until she is ready to commence nesting again, when the cock may be allowed to return to her society.

THE VALUE OF THE WOODEN SLIDE.

On the other hand if the cock behaves with that sense of decorum becoming a good husband and a fond father, and the hen so far forgets her maternal duties as to exhibit a desire to purloin the plumage of her offspring as a lining for her future nest, the young ones, assuming they have left the nest, may be confined in the one compartment behind the wire slide, when the parents will continue to feed them through the wires until they are able to get along without their further attentions, whilst the hen will find her opportunities for plucking the young very considerably curtailed.

It may thus be seen that this cage, when devoted to a single pair of birds, does away with the necessity of small cages being hung on the front of the breeder for any purpose. And when the breeding season is at an end, as already pointed out, the slides may be laid aside for the winter and the two compartments made into one, which affords more exercise for the birds, and serves the same purpose as a small flight or store cage.

THE TREBLE BREEDER CONSIDERED.

The three-compartment cage is a still further elongated edition of the single breeding cage and contains two partitions instead of one, dividing the space into three equal compartments. In these multiple compartment cages, one thing is apt to occur which should always be guarded against by the purchaser, which is: to more or less curtail the length of each individual compartment, to keep the whole more proportionate in appearance, and of a more wieldy size. Thus, whilst a single breeder will generally measure 20 ins. in length (and this space is certainly quite small enough for a pair of birds to be confined in), the double-breeder will more often be found to measure not more than 38 ins., and sometimes 36 ins., and the three-compartment cage will usually measure four feet in length, thereby reducing the inner length of each space to less than 16 ins., which should be regarded as wholly inadequate for a breeding cage, and the full gross length of five feet for such a cage should be insisted upon.

ITS CHIEF ADVANTAGE.

The chief characteristics of this cage are almost identical with a two-compartment cage, and what has been written of the one will apply to both, with the exception that this type is naturally still more unwieldy, and that when the slides are withdrawn it affords a larger space for vigorous exercise as a stock or flight cage.

The three-compartment cage is often most useful to the breeder who is running one cock with two hens alternately, in which case the central space is

reserved for the cock when not engaged with either of the hens, or with young broods which are being weaned of their parents, whilst the cock can readily make the acquaintance of both hens at once when they are on either side of him. But its greater convenience is to the breeder of mules, who, besides sometimes running two hens with the same finch, is frequently obliged to resort to a variety of schemes to prevent him inflicting irremediable damage upon the eggs with his inquisitive punishing beak before the owner can forestall him and hinder his nefarious designs. With Master Goldie in charge it not infrequently happens that the salvation of the eggs depends largely upon which gets there first—Goldie or his Master. To avoid accidents of this description it is advisable to separate the finch from the hen, or hens, each evening when eggs are expected to appear, and not allow him access to the compartment next morning until the nest has been examined, and the eggs, providing one's anticipations have been realised, removed to a place of safety.

ITS VALUE AS AN ECONOMISER OF SPACE.

It is here that a three-compartment breeding cage comes in most conveniently when two hens are run with one finch and may really economise space. It affords all the advantages of devoting a double-compartment cage to one pair of birds for the equivalent of two breeding pairs. Further, in order to avoid any unnecessary handling or scaring of the birds, which is most undesirable at this time, in the daily removals of the cock, it would be necessary to set apart a double-breeder for each pair of birds. With the extra compartment of the three-division cage, another hen may be added without in the least degree reducing the advantages of the former method. By confining the cock bird in the central space, with the wire slides between him and a hen on either side, it is only necessary to withdraw the wire slide on one side in the morning after examining the nest and putting the egg, if one has been deposited in the nest, into some other place of safety. The finch may be run with the hen until midday, when he is again shut off from that hen

Earthenware
Bath.

Wood and wire cover for
bathing vessel.

Zinc bath for hanging
on cage door.

and the other wire slide withdrawn to give him access to the hen on the other side until the evening when they are about to go to roost. Then he is once more shut off from both hens and restricted to his own central compartment until the nests have been examined again the next morning. In this way it is not necessary to handle the birds at all, and there is the minimum amount of excitement and fluttering about over the changes, whilst it is scarcely a whit more trouble to run each finch with two hens simultaneously than to limit one's efforts to a single hen with each finch.

A GREAT SAVING OF TIME.

The same principle applies equally well in breeding pure Canaries when one desires to work trios of birds instead of pairs, and there is then a considerable saving of time on the method usually adopted of allowing the cock to send one hen to nest and commence incubation before he is mated at all with the second partner. It is not really essential that the pair of birds should be together continually for the clutch of eggs to be completely fertilised, and if the cock bird is run with two hens alternately for a few hours each day as suggested there is no reason whatever why both clutches of eggs should not be fully fertile.

LARGE CAGES.

Larger types of cages with more numerous separate compartments, such as four, six, or nine compartment cages, may be best described as consisting of the ordinary double or triple breeding cage as a base, built up into a two or three tier structure, as the case may be. Upon the whole there is little to be said in their favour. Their bulk and weight are serious drawbacks to thorough overhauling at any time that the necessity for so doing might arise, whilst they do not possess the merit of being convertible into any larger space for groups of birds to fly about in than their smaller prototypes. Moreover, the modern method of having a system of shelves (or rack) in tiers, to hold each cage separately, and at the same time occupy very little more space than if the cages were all in one solid structure, possesses such unique advantages in portability as to render these unwieldy articles absolute and wholly undesirable.

ALWAYS USE SAND-TRAYS.

Whatever type of cage is adopted a point should be made of having them fitted with sand-trays to slide out from the front. The turn-rail which is often provided on the moderately priced cages is better than nothing at all, which is frequently the extent of the provision, or lack of provision, made for cleaning out the cages in the cheaper types. Of course where no provision is made either by a turn-rail or sand-tray the only method of cleaning the cage is by inserting the hand and a scraper through the open doorway, and when any number of cages has to be dealt with in this manner the occupation is only too apt to degenerate into disagreeable drudgery rather than be regarded as a labour of love.

SELF GREEN CREST-BRED CANARY.

Besides this there is so much fluttering and scaring of the birds during the cleaning out process that the work will probably be frequently omitted altogether during the breeding season in order to prevent the serious disturbances during that important period. The motive which prompts this unintentional negligence is a good and sound one, but the principle itself is thoroughly bad. The neglect comes just at a time when the birds themselves are most susceptible to infectious disorders, and when insanitary conditions are most likely to prove a source of menace and danger to health.

SINGLE BREEDING CAGE, of the "box" pattern, fitted complete with nest pan, egg drawer, seed hopper and water vessel.

The turn-rail permits of the dirt and refuse being raked out with ease and expedition, but there is still a great amount of unnecessary disturbance caused by the scraping of the cage bottom, whereas a properly made tray just small enough to slide out freely without getting jammed by grains of sand settling between the sides of the tray and the ends of the cage, can be drawn right out and cleaned thoroughly with the maximum of comfort and despatch, and without the slightest material disturbance of the birds. In practically all cases the cleaning operations may be carried out with perfect safety at all times ; even whilst the hens are sitting or feeding young chicks.

NEEDFUL APPLIANCES.

To assist in the cleaning process a few simple appliances will be found most serviceable. Even the fancier in a small way, with only a few pairs to attend to, will find the tools mentioned a great saving of time and labour, besides making the work a pleasanter task and enabling it to be carried out more efficiently. The large breeder, with a much greater array of cages to get through, will find some such aids to expedition an absolute necessity, unless he is able to devote a very considerable proportion of his time to his hobby—a state of affairs which, unfortunately, falls to the lot of a few rather than the majority. A narrow scraper which will pass easily through the opening in which the front of the sand tray, or turn-rail, as the case may be, fits, fitted with a long thin handle which will reach into the farthest corner of the cage, is useful for raking out the overflow of sand and husk from the trays, and scraping loose any droppings that adhere to the floor. A wire-handled brush of a similar description to sweep the bottom of cage clean just prior to sliding in the tray finishes the job without the necessity for so much as opening the cage door. These brushes may now be purchased from most large dealers in fanciers' requisites, and are made specially suitable for the purpose. Scrapers may also be bought for a few pence, or can easily be made by any handy man out of a nine inch strip of hoop iron, narrow enough to pass through slit in the cage front. A small scraper, similar in shape to the one used by painters for removing old loose whitewash, forms an excellent tool for removing droppings from the sand trays, and is easily constructed out of a scrap of thin sheet iron, or a worn and discarded painter's scraper would still be of good service in this sphere of action. A sash tool or large paint brush is useful to brush off dust into the dust pail, and thus avoid blowing it about in the air to carry any possible harmful germs to a fresh locality. This, by the way, is an apparently trifling detail which fanciers would do well to cultivate as a precautionary measure of hygiene, viz., never to blow the dust from cages or any appliance into the air. Always brush it into the refuse pail for removal elsewhere, or wipe it off carefully into a duster and scatter as little as possible into the air. A few small paint brushes will also be found of the greatest use in a variety of ways.

THE ESSENTIAL FITTINGS.

The essential fittings of an ordinary cage in which a bird is kept for song, show, or stock, may with advantage be limited to the seed and water vessels, thus reserving as much as possible of the inner space for the exclusive use of the bird, and reducing the possible harbouring places for insect pests to the lowest quantity. The seed vessel on small cages should be either of glass or a small wooden box with glass front. The former permits of the most scrupulous cleanliness, and at the same time possesses the same advantage as the glass front of the other type is meant to give—that it is readily seen at a

glance when the food supply is getting low, and also enables the bird to see and choose its food in greater comfort, and may thereby help to prevent some of the wasteful scattering indulged in by some birds. Covered vessels should be employed to further assist economy in this direction. For the drinking vessels, only glass or glazed pottery should be used, with the single exception of show cage drinkers, which, on account of their frequent journeyings to and from shows, and the great risk of breakage to which glass or china drinkers would be exposed, not to speak of the less obvious risk of courting suspicion, should be of zinc.

A WARNING NOTE.

The one main point to be borne in mind in connection with metal drinkers of any kind is that medicines should never, under any circumstances, be administered in them, as there is always a probability of some ingredient in the medicine acting chemically upon the metal and converting the contents of the vessel into a harmful or even poisonous solution. In small cages of this kind

A FINGER DRAWER, to go between the cage wires.

egg food or other similar dainties may just as easily be supplied in a finger drawer pushed between the wires, as in the usual type of egg drawer, and green stuff it is sufficient to just loop round a wire at the end of a perch.

In breeding and moulting cages, however, provision must be made for an egg drawer of the ordinary size to slip in the front, or the grooved front

egg drawers, which are placed beneath the door of punched bar fronts with the bottom bar of the door pressed down in the groove, must be used. It is an advantage of this latter kind of egg drawer that there is no necessity to cut holes in the front of the cages, and when the bottom of the door is pressed down in the groove across the front of the egg drawer, and the back of the drawer supported, as it will be, by the perch running lengthwise across the front of the cage to enable the birds to get easy access to the food and water holes, they fit quite securely. The small finger drawers are also most useful for giving minute quantities of special foods, or tit-bits, or medicines to birds in these larger cages or aviaries, but they must be used as an addition to, and not in place of, the ordinary full size fittings.

VARIETY IN NEST PANS.

No other fittings than these will be required for a moulting cage, but to complete the furnishing of the breeding cage when ready to commence the season's operations, a proper nesting receptacle will be the most important and

indispensable feature. Of these articles there is now a very wide choice of perfectly suitable designs, so that the fancier may, within very small limits, please his own fancy. The most popular designs are those made of white unglazed pottery. Those containing a few perforations in the bottom to admit of ventilation and a good rim around the top, which will afford a good grip for the birds' feet when they alight on the edge of the nest, are to be preferred. The majority of this type of nest pan are hung in the cage by means of wire brackets, though a few designs may be obtained in which a back-piece with hole for suspending is made in pottery on the pan during manufacture as an integral part of the structure. This is a great convenience for hanging the

EARTHENWARE NEST PAN, with back to hang it up by, all in one piece.

EARTHENWARE NEST PAN, for use with a separate hanger made of wire.

nest, and the extra weight of the pan gives it more solidity and freedom from movement when the birds are engaged in their varied nesting duties about it than is the case with a pan hung on a weak or badly-fitting bracket. For convenience and stability the old-fashioned wooden nest-box, with back-piece for hanging, is still a very good and useful servant. If they have any material fault it must be that they afford more harbour for insect pests and less facility for thorough disinfection than the pottery pans. Both, however, are trifling defects from the ease with which they may be annulled. A liberal dusting with good insect powder in the bottom of the box will go far towards preventing any serious accumulation of insects in that quarter, and boiling may be resorted to as a means of disinfection with but little more trouble than is required to deal in the same way with the earthenware appliances. But considering the ease with which these boxes may be constructed by any handy man, it is a commendable policy to disinfect them, when this is required, right out of

existence by consigning them to the flames forthwith, and burning them and all their visible and invisible concomitants together. The bottom of these boxes is sometimes made with a piece of perforated zinc instead of wood to give

WIRE RACK to hold nesting material.

better ventilation, and also to further reduce the harbour for insects. There is little, if anything, to be gained by the practice. Insect pests can be quite efficiently dealt with in the manner already described, whilst bottom ventilation of the nests is sometimes given too much importance. It is really doubtful whether its advantages are of much practical value.

WHAT THE GERMAN BREEDERS USE.

A type of nest in use among some German breeders consists of merely a wire framework in the shape of a nest, with two hooks for hanging on to the wires of the cage. This kind of nest is chiefly used in the open wire cage, which has been referred to as a type of the cage favoured by some breeders in Germany. In this country it is very rarely met with, doubtless owing to the scarcity of open wire cages for breeding in.

WIRE NEST PAN, which is lined with a cup-shaped piece of thick felt.

The old-fashioned type of rush nest woven in basket-work in the shape of a nest, with two little ears for pegging it on to wires in any position, may also still be obtained for about a penny each. But their use in these days of modern pottery appliances is strictly limited. In the first place, they are altogether too small for any save the smallest breeds, such as Rollers or Border Fancies. Given greater facilities for hanging them in other parts of the cage, away from the wires, it is a type of nesting receptacle which may well be developed in the direction of increased diameter and a more substantial rim around the top. At present, however, its utility is almost limited to aviaries or enclosed spaces where bushes or growing shrubs are provided as an imitation of natural nesting

sites. In all such situations these rush nests are admirable for securing firmly in the centre of the bushes or shrubs provided to form nesting sites and at the same time assist the birds to build a tolerably decent nest without the frightful litter and untidy appearance which characterises the efforts of the average canary at nest making in such situations.

WHERE TO FIX THE NEST PAN.

The position of the nest in the cage is the next point to consider, and it will to a certain extent depend upon the type of cage used. But the place where it should not be is close to the wire at the front of the cage. In their nesting

THE OLD-FASHIONED TYPE OF WOODEN NEST BOX.

arrangements the hens have still left in their anatomy a sufficiency of the old wild nature to desire privacy and seclusion at this time, and if given a free choice will almost invariably select a quiet nook well out of view of prying eyes and meddlesome fingers. Thus, when they are confined in small cages and compelled to carry out all their maternal duties close against the wires, where they are constantly within touch of the owner, and under the closest possible observation, it is putting an undue and altogether unnecessary strain upon their tractable qualities, and it is small wonder if the more highly-strung

and nervous specimens fail to do all that is required of them.

THE BEST POSITION FOR THE NEST.

In the ordinary box cage the middle of the back between the two perches, and an inch or so above the level of the perches is the best all-round position. It is sometimes hung on one end of the cage, but in this position it must either obliterate a good portion of the perch at the end, providing the nest box or pan is hung higher than the perch, or the nest must be lower than the perch, and the latter will overhang it. Either position is undesirable, because, apart from all other considerations, the close proximity of the perch is apt to induce the young to climb out of the nest sooner than they otherwise would, and also seems to expose the nest to more of the unwelcome attentions of the cock than is advisable.

COMBINATION CABINET AND TABLE FOR THE BIRD-ROOM.

In large open wire cages such as the so-called Crystal Palace aviaries the hens will almost invariably prefer a position high up the dome or arches, and in many cases will absolutely refuse any other. But then there will occasionally occur cranky individuals whose aspirations and sense of the eternal fitness of things do not rise above the floor, and they will persist, in spite of all hindrances, in attempting to build their nest upon the cage floor.

HUMOURING THE LADY.

There is no reasoning with such individuals. There is but one way to meet the situation, and that is to pander to the hen's idiosyncrasies and place a nest-box on the floor for her. It is just possible that when she has laid her complement of eggs and begins to sit she will allow the nest to be moved an inch or two each day, and gradually raised on to the wires. But it is not wise to attempt to move the nest any great distance from its original position. If it can be moved by easy stages to the nearest end, and raised on to the wires just high enough to clear the floor in order to permit the sand tray to be withdrawn for cleaning when required, let that suffice.

A USEFUL DEVICE.

A rack is a very useful adjunct to the breeding cage, and may be hung on the outside of the wire in the same manner as the seed boxes are suspended. An easily accessible position must be chosen, either against the end of a perch or where the birds can quite conveniently reach to pluck at the contents. Their purpose is to hold the nesting material when required, instead of hanging a nest bag in the cage, which is both a wasteful and untidy method. When not in use for this purpose they may be utilised to hold a flake of cuttlefish, which is essential to complete the outfit of every breeding cage, and the green food will also be most conveniently held in it.

FITTING THE LINING.

Linings will be necessary for the earthenware pans, and might also with every advantage be used in the rush nests in the few cases where this type of nest will be adopted. These linings will be composed of swansdown or felt, and may be purchased ready made, separately, or the pans themselves may be had with the linings fixed in them. But in the latter case the fancier will still need to know how to cut and fix a lining on his own accord, as the lining is only intended to be of a temporary nature, and should be renewed each season at least. Having procured a piece of soft felting or swansdown, as the case may be, first take a piece of pliable, soft brown paper rather larger than the inside of the pans, press it carefully into a pan, smoothing it down closely all round, and leave the surplus in three folds from near the bottom of the pan up the sides to the rim about equi-distant apart. Rub the folds down until they show a distinct crease.

Now rub a crease around the rim of the pan on to the paper, and then remove the paper, spread it out flat and cut out the pattern marked by the creases. If neatly done this will give a circular piece of paper with three pointed pieces cut out, each point reaching almost to the centre of the circle, and when pressed down inside a pan it should fit exactly all over the inside without overlapping or showing any creases. If it does not do so make the necessary corrections to secure a perfect fitting pattern, and, having done so, you may proceed to cut out your linings by laying the paper pattern upon the lining material, and cutting out the same shaped pieces.

KEEP YOUR PATTERN LINING.

When a number of pans have to be lined, provided they are all the same shape and size, or very nearly so, it will be an advantage to reproduce the original paper pattern in thin cardboard, which will afford a more substantial and better wearing pattern for repeated use. When all the linings are cut out make a strong paste of rice flour, and when cold smear a little all over the inside of a pan, neatly lay in the lining, smooth it down evenly all over, and lay it aside to dry. If the first pan is turned upside down upon a table, and each subsequent one, as the lining is placed in and smoothed down, inverted over it it will hold the linings down nicely whilst the paste is drying, and prevent cockling. It will afford much economy of labour to have all nest pans of the same size and pattern. Indeed, it cannot be too strongly impressed upon the fancier who follows the hobby with a method that a general unity of pattern and design running all through the room has immense advantages over a slipshod method, where cages and appliances of all shapes and sizes are brought into use.

Many of the advantages to be gained from this system of unity cannot be properly appreciated until some time arrives in actual practice when it is deemed essential to make some changes in the cages or appliances of a portion of the stock without any disturbance of the whole. In the matter of nest pans, for example, even in the largest stocks there is no necessity for having more than two sizes, and this can only be considered necessary when one is breeding stocks of greatly varying size and bulk. Lancashires and Crests both require a larger nest pan than Border Fancies or Lizards, and when varieties showing these extremes are run together two sizes of nest pans should be used, but beyond this there is no necessity to go.

THE NESTING MATERIAL.

For nesting materials soft short moss and cow hair is still the most generally used, and the most serviceable for all ordinary purposes. It is also the kind most easily obtained as a rule, being a regular line in the bird market, done up in little bundles containing about enough to make a nest, and sold at a penny, under the name of nest-bags. Cow hair may also be obtained in bulk by the pound, without moss, and an excellent substitute may be bought, under the name of charpie,

which is very largely used by breeders in Germany, and is supposed to have peculiar properties to prevent hens sweating their young. However this may be there can be no question but that the most rational method of preventing this disappointing feature of Canary breeding is to use only sound and healthy hens, and depend for the rest upon thoroughly healthful and hygienic treatment generally, and a sound, wholesome, and not too stimulating a diet. A kind of artificial cow-hair, which is a specially dressed and prepared tow, is also sold as a substitute for the real article under the name of fictitious cow-hair.

IN OLDEN DAYS CANDLE WICKS WERE FAVOURED.

If strict attention is paid to the general health and stamina of the birds and a few precautionary measures adopted, it is probably of very little real

A STUDY IN PERCHES.

(See page 35.)

importance what kind of nesting material is used. In the early days of the Fancy, the Lancashire weavers and pit-men are said to have used the ends of the candle wicks for nesting material. Those were the days of the "farthing dip," and an immense number would be consumed throughout the year in

these avocations, as well as around the domestic hearth, so that the half-inch or so of cotton wick cut off the end of each fresh candle before it was lit would accumulate into a considerable bulk when carefully husbanded and saved up during the year. One can readily imagine what a cosy bed these fragments of cotton would make, and many a valuable "star" in the exhibition world in those days was brought up in such a simply constructed nest. The three most

important points to consider about the nesting material are, that it is perfectly clean and free from dust and is well disinfected to guard against the possibility of it conveying any infectious or contagious disease to the

birds; that it is free from long hairs which are apt to get wound about the birds' feet or legs and not only seriously interfere with the making of the nest, but sometimes cause injuries to the feet or toes of the birds. Finally, care should be taken to see that the moss contains no hard, sharp, thorny pieces which may be responsible for punctured eggs at a later date.

A TYPE OF SAND-TRAY.

Where earthenware pans with linings are used, no moss need be supplied, but a supply of hair must be given for the birds to put in a small lining on their own account.

AVIARY APPLIANCES CONSIDERED.

In large cage aviaries or more extensive structures where the ordinary type of seed and water vessels are too insignificant, self-supplying seed hoppers and water vessels should be used. The former will be found most economical if divided into separate compartments by which each kind of seed given may be kept separate. These divisions should vary in size according to the proportions of each kind of seed found most generally suitable. Thus a four-division hopper should have rather less than one half of the whole devoted to the canary seed holder, about a quarter of the whole to the division for summer rape, and the remainder divided into two equal spaces for hemp, and a mixture of various other seeds respectively.

FIXING THE WATER VESSELS.

The "Hygienic" water fountains, of which an illustration appears on page 18, made of glass on the self-supplying system are wholly excellent appliances and exceptionally easy to manage and keep clean. A very good appliance on the same principle can be obtained in white pottery, which may appeal more to the æsthetic taste, but it lacks the advantage possessed by the glass vessel of always showing at a glance how the water supply stands. Both these appliances, wherever they are used, should be provided with a small pedestal or stand in the middle of the structure, and supported on a single leg, preferably an iron rod, which will prove an effective bar to rats or mice climbing up on to the table and stealing the seeds. If an iron rod support is not obtainable a single wooden leg should be provided and the whole rubbed down quite smoothly with sand-paper, and a band of tin about six inches wide nailed closely down to the wood midway between the floor and top of pedestal whereon the seed and water vessels are placed. These pests must be kept away at any cost, and particularly the first-named, as one might almost as well give grey grimalkin herself access to an aviary full of birds as a full-grown rat.

THE IMPORTANCE OF SUITABLE PERCHES.

Before passing on from the subject of cage and aviary fittings and appliances, a word may be said about the perches. The arrangement of perches in small cages should be carefully considered. Too many perches are worse than too few, and overcrowding of them should be avoided. They should not cross over each other so that the lower perches are constantly being fouled by the bird from the upper perches, neither should they be so placed that the bird cannot pass

from one to another with perfect freedom and without having first to hesitate and speculate over the jump.

In most cases two perches are quite sufficient in any small cage—one in the upper regions, and another so placed below that the bird can gain easy access to its seed and water vessels from it. They should vary a little in size, the one being a trifle greater in girth than the other, and in shape should show an oval section. The size may best be gauged by a little observation and will vary with the kind of bird being catered for.

Look at the bird's feet as it stands on the perch, and if the perch is the proper size for it, its toes and claws will encircle about three-fourths of its circumference. A thicker perch than this is too thick to give the bird sufficient muscular grip on it at all times, whilst on the other hand, if the toes and claws completely surround the perch or overlap underneath, it is too thin and cramps the feet until the bird must be continually miserable. They will also be a source of danger should the claws become overgrown before being noticed, and may trip up the bird and cause a broken leg or a permanently crippled toe before they can be released. The perches usually found in ready-made shop cages frequently have one or other of these faults, in being either too thin or too thick and badly shapen. In breeding cages, for instance, it is no uncommon thing to find perches consisting of strips of wood about half-an-inch square with just the sharp edge planed off each angle, leaving still, for all practical purposes, a square perch.

POSITION OF THE PERCHES.

In breeding cages three perches are sufficient. One running the whole length of the front and two inches, or a trifle less, from the front of cage, from which the birds will gain access to seed and water vessels, and also to the bath cage, nursery and egg drawers, and two more placed crossways from back to front on a level with each other and one end resting on the cross-bar over the door. All the perches in these cages should be made to fit firmly and securely, with no rocking or tossing about when birds alight on them. Swings and spring perches are quite out of place in a breeding cage.

In larger aviaries and enclosed spaces the hackneyed description of straight planed wooden perches should be dispensed with as far as possible, and natural boughs and twigs, with the bark left on, substituted for perches.

OTHER ESSENTIAL REQUIREMENTS.

The remaining essential requirements are few, but the furnishings of the room itself, where a room is entirely devoted to the birds, will necessarily differ according to tastes and ideals, as well as, to a certain extent, the finances of the owner. They should, however, always be of a simple and practical description, which will add to the general appearance and tidiness of the

whole, and be of some use in the general routine of the hobby or as receptacles and storing places for the things not in constant use. A cabinet containing small drawers and shelves, the latter forming the upper two-thirds of the article, and covered by folding doors and having a flat top to serve as a table, makes an excellent article for storing away nest-boxes, pans, surplus egg drawers, drinkers, seed boxes, cuttlefish, nest-eggs, baths, and the hundred and one insignificant trifles which, when left lying promiscuously about, are a

A MODERN GLAZED EARTHENWARE EGG-PAN, with groove into which the sliding cage-door falls.

constant eyesore and source of disorder and confusion. A special receptacle should be set apart for all seeds and foods, where there is no possibility of the contents becoming fouled or musty from any cause.

A simple medicine chest should occupy a special drawer in the cabinet, and any disinfectants and insecticides should have their own special shelf set apart for them. A place for everything and everything in its place should be the motto in practice as well as precept, and will help to prevent the possibility of unpleasant accidents arising by misadventure.

FOOD-PREPARING UTENSILS.

A perforated sieve for mincing the hard-boiled eggs must not be dispensed with unless a more up-to-date appliance is substituted in the shape of a grinding-mill designed to either chop eggs, crush biscuits, or crack seeds, as

CLEAR YELLOW NORWICH PLAINHEAD COCK.

may be required. A small German appliance, made on the cylinder and piston principle, with a perforated end, is also a very good substitute for small breeders.

A few nest eggs are useful to have at hand, and an egg cabinet or tray is essential in large stocks, and useful in all. This is simply a shallow box of wood about an inch-and-a-half deep and of any size to suit the number of pairs of birds kept. It is sub-divided into small compartments two-and-a-half or three inches square, so that a box two feet square will have about twenty-five divisions. Each division is numbered to correspond with the breeding cages, and when a little more than half filled with loose bran are used as receptacles for the eggs when removed from the nests during the period of laying. Of course the eggs from each cage must be carefully transferred to the division in the cabinet bearing the number corresponding with the number on the cage. This is a point which requires some care to avoid mistakes being made in the pedigree of the birds.

DON'T OVERLOOK THE BATH.

An adequate supply of baths and bath cages are essential. In a general way a bath cage, containing a china bath, suspended on the open doorway of the living cage is the ideal form of bathing for caged birds. It ensures the minimum of wet, and, consequently, insanitary conditions in the living cage. Some birds, however, will utterly refuse to enter a bathing cage, and if there are any obstinate individuals of this class it is well to be provided for them with a few baths small enough to pass inside the living cage and stand on the floor. This should be done just before cleaning out the sand tray, or otherwise the sand tray should be drawn out and a sheet of thick paper slid in its place whilst the bath is in the cage. Either method enables the wet dispersed during the ablutions to be quickly removed with the least amount of trouble.

THE BREEDING ROOM.

Last, but not least as an invaluable aid to intelligent pedigree breeding, a place should be found on the bird-room table or cabinet shelf for a copy of *The Stock Book*, published at 7d., by *Cage Birds*, which is of a simple and reliable character so as to be understood by the youngest novice, and brings scientific pedigree breeding within the easy grip of all. A *vade mecum* for collecting the facts is one of the same publisher's "Breeding Charts," issued at the proper season when it will be required for use. One or more of these Charts, as may be necessary for the number of pairs kept, should be hung upon the wall during the breeding season in a convenient position for the required facts to be filled in from day to day as they happen. In this work leave nothing to chance or memory, but jot down each record whilst it is fresh.

So much for the main accessories of the diverting pastime of canary breeding. The next prime consideration is the place and manner where the

hobby is to be carried on. Where a spare room, or a certain portion of a room, can be set apart exclusively for the accommodation of the birds, the fancier will be, figuratively, "in clover." But the greater majority cannot command these ideal conditions, and have to be content with any odd corner of a room used more or less generally for the requirements of the household and social requirements. Then the difficulties of catering in the best possible manner for the birds are often greatly increased. There is no question of keeping the birds in a certain temperature, or without any artificial heat, even if one wishes to do so never so badly.

AVOID GREAT EXTREMES.

The ordinary routine of the household and the comfort of its members come in for primary consideration, and not infrequently clash seriously with the best interests of the birds. But difficulties must be met in the spirit that they arise only to be overcome, and if one is reduced to that worst possible condition of having to confine his hobby to the domestic kitchen, by strictly limiting the extent of his operations he may still find some measure of success. For there are probably few such places where one or two pairs of birds could not be comfortably housed if a few main points are given proper consideration. Never, for example, think of finding in such a place a nice warm corner for the birds. The probability is that any and every corner is, if not really much too warm, at least warm enough, and the warmest corners by day will probably be the coldest by night, when the fires and lights are extinguished.

Then there will be a constant and rapid changing between extremes of heat and cold which will quickly undermine and destroy the health of the strongest bird that ever lived. Bird-flesh is not made capable of enduring changes of this description. No ; if the domestic kitchen is the local of operations, see that the position is as far as possible away from the fire and burning lights, consistent, of course, with freedom from cold draughts from doors and windows, which are the next great fatality which dog every movement of birds in these circumstances by night and day. Aim at keeping them where the fluctuations of heat are least felt whilst still perfectly free from draughts and damp. Never hang the cages high up near the ceiling. This is about the least healthful position it is possible to choose for them in any ordinary room. Never hang them in, or close to, a window ; and never hang them over, or near, gas burners or other lights that burn in the evenings. And in this connection what applies to the kitchen will apply equally to every other kind of room.

ONE PLACE TO AVOID.

If there is one room to be avoided more than all others for keeping the birds in, it is the bath-room. Truly, one may well imagine, this necessary adjunct to a well-appointed house is not requisitioned as a bird-room. Yet,

notwithstanding the fable of the bashful dame who covered her pet canary's cage with a towel that he should not behold Hebe's matutinal ablutions, this *sanctum* has been seized upon as a last resource not infrequently. But unless the room is a tolerably large one and is provided with a thoroughly efficient system of top ventilation, so that it is impossible for steam from the hot bath to hang about the room and cause dampness, the chances against any permanent success being obtained are too great to be speculated with.

**A TYPE OF CAGE USEFUL WHEN GETTING BIRDS
STEADY FOR EXHIBITION PURPOSES.**

Dampness, either in the atmosphere or the walls of the structure, is always inimical to the health and welfare of the birds, and no amount of care and attention will counteract its baneful effect. The one and only rational way to deal with it is to cut it off at its source. Free and ample ventilation to ensure a regular changing of the used-up and vitiated air within the room will do much towards counteracting any tendency to damp walls, and will quite remove atmospherical dampness and stuffiness. The latter effect may also be aided by a few growing plants about the room, among which should figure a small pot specimen of the antipodean blue gum tree or eucalyptus.

If no means of ventilating the room are provided, save by the door or open windows, great care must be taken that the current of air is diverted

out of the direct line of the cages. It is also advisable to improvise a workable ventilator by removing a pane top and bottom from the window and replacing it with a piece of finely woven wire gauze or some similar substance which gives free access to air, but will keep out all else save impalpable dust. If sufficiently fine in mesh, it will admit air in a steady stream at all times with practically no danger of draughts unless a gale should happen to be blowing direct into the window. This contingency is easily provided for by having an inclined cover over the spaces which may be closed at will, or raised to an inclined plane which will divert the inrush of air in an upward direction towards the ceiling. Perforated zinc must not be used for this purpose, unless, indeed, a sort of frame is made of the required size by fastening together two sheets of zinc with at least one-eighth of an inch of space between them, and the sheets so arranged that the perforations do not come opposite each other. This will break up the current of air passing through, and to a great extent prevent draughts, and, in combination with the afore-mentioned covers, at all times will form a very tolerable substitute for the wire gauze panes, when the latter cannot be obtained.

HEATING THE BIRD ROOM.

The necessity or otherwise of heating rooms for the proper keeping and breeding of Canaries has always been a vexed and contentious one. On the one hand there is the fancier who honestly believes high-class stock cannot thrive and do its best if allowed to feel a breath of cold. Common mongrel stock may flourish under such circumstances, but his aristocrats in feathers are not as they. Thus he reasons, and consequently the greater part of the year finds his stock under conditions somewhat analogous to the exotics of the hot-house gardener. He has his antithesis in the fancier who goes to the other extreme and decrys all forms of heat as anathema, and the bane of all would-be breeders of healthy and robust stock. And it must be admitted at once that the followers of both extremes count among their number successful breeders and exhibitors of high-class stock. There probably exists no breed to-day that, taken as a whole, is more liable to be termed delicate, by reason of its highly-strung and extremely nervous temperament, than the Belgian, yet we have in memory a good old Northern fancier of the breed, now, alas! gathered to his fathers, who attained no small amount of success with these birds in the exhibition world in former days, and who was opposed on principle to all forms of artificial heat in his bird room. During the winter months exercise of a practical kind, in which the birds had to find the use of their wings rather than heat, was his watchword, and with him the method certainly worked well.

We can further recall many interviews with some of the foremost breeders and exhibitors of our times, in which this question has cropped up. In this place

only two brief references need be made, as more evidence on both sides will be given at a later stage. Both these references come from breeders of the Yorkshire in its native county, which cannot, by any stretch of the imagination, be considered a mild or temperate climate. In the first case the room is tersely described as "an attic—top floor, lean-to roof, lighted and ventilated with a skylight. . . . the aspect to the North-East not at all inviting." Yet, the record goes on, "no artificial heat, the birds having to stand the vagaries of an English climate—vagaries never so apparent as in this particular district, where, as the American says, we get only samples of weather, and, I am obliged to admit, bad

samples too!" Another extract from an account of a visit to another prominent exhibitor runs:—"Up we go—to an attic, an attic and no mistake. Cold, rather, no protection save the roof and a paper ceiling," and here again the account points out in definite terms that in this breeder's room "no artificial heat at all is used." Yet all these birds were no common low-bred stock, but birds of the bluest blood which always held their own in the strongest competition of the day. Even more striking is the experience in this branch of Mr. E. Pretty, one of the best-known and respected of present day breeders, whose experience in keeping

A SEED-HOPPER, made of tin, with glass back, also "lipped" sides to obviate seed waste.

and breeding birds in the open air will be given presently, and who quite recently wrote us: "I have kept Canaries out of doors in cages 24 inches long, 20 inches high, 18 inches deep, for two years. I have found out the secret of keeping Canaries. They are as hard as nails. No covering but the top of the cage to shelter them from the clouds."

DISCRETION ESSENTIAL.

Let these remarks not be misconstrued. In no other branch of the hobby is there greater need for discreet and individual judgment on the part of the owner. It would be the merest folly to take birds indiscriminately and without due regard to their previous treatment and manner of breeding, and submit them all to what

we may for want of a better term call the cold treatment, simply for the thing's sake, or to try to discover what degree of severity they could stand without yielding up the cloak of mortality. The result in all such cases is practically certain to prove disastrous in a greater or less percentage of cases, according to the antecedents of the birds experimented upon.

THE VALUE OF EXERCISE.

Before embarking in Canary-keeping it is of the utmost importance that one should take the necessary steps to learn as far as possible under what influences the stock they purpose taking up has been bred and kept prior to the time of coming into their possession. If the conveniences at one's disposal, or one's own inclination, lean towards keeping stock under cold or normal treatment, care should be taken to begin only with birds whose breeding has inured them to this form of treatment. Then, and then only, is the cold treatment likely to prove a success from the beginning. On the other hand, if the birds have been kept under artificial conditions, never below a certain comfortable degree of warmth, year in, year out, their bodies have lost much of their powers of accommodating themselves to changes from heat to cold, and *vice versa*, and when they come to be subjected to all the vagaries and rapid fluctuations of an English Spring and Winter they almost invariably succumb to the strain, becoming in a few months wheezy, bronchial invalids, doomed to drag out the rest of their lives in constant misery, which is too often prolonged to a painful degree, useless for all practical purposes, and a living warning and disappointment to the owner. Such are the birds which earn for fancy Canaries generally the unenviable reputation of being delicate in constitution and difficult to manage, whereas they are, in reality, monuments to lack of discretion or misplaced zeal on the part of the owner. Given proper treatment, such birds might have become healthy and thriving specimens under normal temperatures. But the change cannot be brought about in a day. It requires time and a similar process of acclimatisation as is given to delicate exotic species when first imported. By adopting these precautions with such specimens as require it, until the whole economy of the vital machine is restored to healthy operation, it will be found that no ordinary amount of cold will affect them injuriously. Cold of itself, and provided it is accompanied by pure air and free from draughts or damp rarely, if ever, kills—that it may, and does, tend to heal and increase length of life, our modern method of fighting disease, and notably Consumption, by means of open-air treatment, and the success attending it, is an eloquent proof.

A sufficiency of space to allow the birds to take plenty of vigorous exercise is of far greater importance as a means of maintaining or increasing the heat of the animal body, than any artificial means of raising the external heat could possibly be. Activity, as must be patent to any thinking mind, may indeed be regarded as

"The hen will persist in nesting on the cage floor." (Page 31.)

A MODERN EXHIBITION CRESTED CANARY.

The size and neatness of the present-day crest, with the beautifully even manner in which it droops from the centre over the head, and finishes neatly at the edge, are well shown in this drawing.

Nature's substitute for the fires and hot-water bottles of civilisation, and the freer and more rapid the motion of the body, the greater the amount of heat evolved within. But exercise, worthy of the name, must be something more than the tame affair of hopping to and fro between two perches, at a distance of four or five inches apart, as is not infrequently the case in some of the spirit-cramping affairs which possess the courtesy title of cages.

For breeding cages the minimum size has been given in the proper place. These, however, should be converted into flights as soon as the breeding season is at an end by removal of the partitions, and these, and all store cages for winter use made as large as circumstances will allow. Do not overcrowd them with perches. Aim rather at inducing the birds to take a "flying hop," as it were, from one to another, by placing the perches at such a distance apart that the birds naturally half expand the wings to help them to pass over the space between them. If a still larger space can be given, so that a long space exists between two distinct groups of perches, so much the better.

In the case of the Northern Belgian fancier just referred to, it is fresh in our memory, that his winter flight cage had a space of six feet across the centre wholly without perches, across which the birds had to fly to pass from one group of perches at one end of the flight, to a similar group at the opposite side. This is the kind of exercise which all may at least aim to provide for the birds when not caged up for breeding, though it goes without saying, comparatively few will be able to reach this ideal standard. In all other kinds of cages for keeping the birds in permanently, the same rule should be adopted within reasonable limits.

PARASITES AND INSECTICIDE.

Our domestic canaries are by no means exempt from the universal law of forming a host of various forms of a lower order of parasitical life. On the contrary their usual close confinement often in badly lit, poorly ventilated, and close, stuffy quarters, renders them peculiarly liable to attacks of these pests, unless the most scrupulous attention is paid to cleanliness, hygiene, and condition of the birds.

Internal parasites are by no means rare in small birds, but still cannot be called common. These pests will find a more fitting place for dealing with, in the chapter on diseases, and we need only refer here to the two chief external parasites which are in themselves a real scourge to the birds—to wit, the red mite and the grey louse.

Both these parasites are extremely common among neglected stocks of birds, and are, in consequence, too well-known to need any lengthy description. But there exists, nevertheless, a good deal of confusion regarding the habits and manner of dealing with the two pests. As a description it will suffice to say that the red mite is, as its name implies, a tiny insect of a deep red or crimson colour

generally, though if looked at carefully, or examined with a low-power lens, it will be found to bear a somewhat horse-shoe-shaped white mark upon its back. In size it ranges from a very slightly larger outline than one of our periods, thus— . —for the largest specimens downwards, until they verge on the invisible, and throughout the various stages of growth the colour varies through all shades of crimson, and becomes grey or ashy-white in the most minute specimens.

These light-coloured miniature mites, however, must not be confounded with grey lice, which are much larger, and will always be found principally upon the bird, whereas these light, or greyish-coloured mites will be found inhabiting the cracks and joints about the cage, wherein the insects harbour and hide away during the day, and where they also breed. They are, in fact, nocturnal in their habits, and have to be searched for to be seen during the day. They are of a rounded shape, with flattened bodies, and comparatively small heads, and may be likened to a tiny spider—to which class of insects they are not so very distantly related—with the abdomen pressed flat.

When a cage is badly infested with these insects it can almost invariably be spotted "on sight" once one has learned to read the significance of a few external signs. Any small crack or open joint in any part of the cage, the ends of the perches, and the hinges of swing doors, will soon get blocked up with the hosts of mites that retire there for harbour, and the surface of the wood for a little distance around these hiding places will soon become thickly dotted over with the spoor of the mites in the form of minute white spots, which form a readily discernible clue to the foe that is lurking near at hand.

THE GREY BRIGADE.

On the other hand the grey louse not only preys upon the birds' bodies, but lives upon them permanently, and breeds there too. In gross bulk it is probably no larger than the largest mite, but it is narrower and more elongated in shape, and the head, which is attached to the body by a rather slender attachment, somewhat after the manner of the common house fly, is comparatively enormously large, being almost one-half the size of the body. This feature alone will always distinguish it from the mite. It is of an ashy-grey colour, with a darker streak down the back, and the head is also slightly darker than the body. When a bird is infested with these pests, if it is held in the hand for a minute or two, numbers of them will leave the plumage, among which they may be seen scurrying about, and swarm all over the hand in which the bird is held. The chief breeding places are around the neck and the base of the tail, where they deposit their eggs, or "nits," and attach them securely with a gluey secretion provided by nature to the base of the feathers, so that however much the victim may bathe and plume and shake out its feathers, there is extremely little chance of its getting quite rid of the pest without some outside help.

Although the insects live and breed, as already said, upon the birds, it must not be supposed that they cannot be spread by indirect means. As a matter of fact they are quite easily shaken out of the feathers when the bird is pluming itself, if they are at all numerous, and a badly infested bird put temporarily into a cage may leave quite sufficient "undesirable aliens" behind for some, at least, of them to find their way on to the next occupant of the cage and found a new colony. A peculiarity of this pest is the partiality it shows for attaching itself to weak and delicate birds, or even those which happen to be temporarily run down in condition. Doubtless the true explanation of this lies in the fact that these specimens are apt to neglect the bath and

SEED HOPPER, of wood, with sliding glass back.

their usual toilet operations, or perform them with less vigour and thoroughness, which gives the insects the little advantage which enables them to resist dislodgment from the plumage. With strong, healthy birds kept in clean cages and regularly attended to, and ample opportunities for frequent bathing, the grey louse has barely a living chance. Not so with the red mite—the strongest and most active birds have little chance against the attacks of these ruddy pilgrims of the night.

TO FIGHT THE FOE.

Now having purposely avoided the slightest touch of scientific or technical description in these remarks, so that he who runs may read, there should be no difficulty in discriminating between the two varieties of pest, and, in following the proper line of treatment, to thoroughly eradicate it. If a cage is badly infested with red mites during the breeding season, comparatively little can be done to clear it, unless the arrangements and cages are of such a description as to allow another cage of the same size and pattern and with similar fittings, to be inserted in its place, in which case the birds should be quietly transferred at a convenient time and the change effected. For this reason also, it is most necessary to make the Spring over-haul of the cages as complete and efficient as it is possible for it to be, in order to get through the breeding season with the least chance of this trouble assuming serious proportions.

SOME TECHNICAL POINTS OF THE NORWICH PLAINHEAD.

UPPER ROW : A TICKED BIRD (with tiny mark on the cheek) ; A FOUL GREEN (green, broken with white feathers in wing and tail and at throat) ;
A SELF GREEN (plumage entirely green).

LOWER ROW : A CLEAR (plumage without any markings on the surface) ; An UNEVENLY-MARKED (various dark patches on the plumage).

Small single cages, when practicable, should be plunged overhead in a copper of boiling water for ten minutes, which will effect a perfect clearance of the insects in all stages. This excellent method has been objected to on the plea that immersion in hot water will warp the wood, and by opening joints offer still further inducements for re-infestation. This would undoubtedly happen if one attempted to boil a cage and allowed it to float in the water only partly submerged, but if care is taken to see that it is completely submerged beneath the water from the beginning so that all parts of the wood are simultaneously exposed to the action of the water it will be found that this objection falls to the ground. In lieu of this the cages should be well scraped out, washed thoroughly with a disinfecting fluid, or insect destroyer, two or three times, at intervals of three days between each washing, and finally re-distempered, enamelled, or varnished, as the case may be.

Of insecticides there is a rather extensive choice, but as some are poisonous, others destructive, and still others too expensive for the average fancier's general use, the selection may be reduced to a few of the cheaper, and yet efficient, kinds. A solution of carbolic in the proportion of one ounce of carbolic fluid to a gallon of water is a good, and generally useful, wash. It should be carefully applied with a small brush, by which it can be worked well into the corners and joints.

FLUID DESTROYERS.

But the most speedy and deadly application, as far as either of these classes of insects are concerned, it has been our lot to discover is a solution of camphor in methylated spirit—an ounce of camphor in half a pint of spirit may be used, or, when using it extensively, as for painting all over cages, it may be diluted with another half pint of spirit. The strong solution is, however, best for localised application, such as touching the ends of perches, painting over joints, or particular spots where mites are believed to be in hiding. The sole disadvantage is that it destroys the varnish on the outside of the cages if allowed to remain in contact with it any appreciable length of time. On the other hand, its safety and effectiveness are second to none, and although it has a powerful, but not altogether unpleasant, odour, it passes away in a few moments, and may thus be used quite safely upon cages occupied by birds.

Since we first gave this remedy to the Fancy at large it has become popular in various semi-disguised forms, such as the addition of a proportion of paraffin or turpentine. Probably either form has practically the same effect, but these additions add more to the unpleasantness of the odour than they do to its effectiveness. Still, as each form possesses high merits, it is immaterial which one happens to be in favour.

For local application, fir tree oil is an excellent preparation, as also is concentrated essence of quassia, either of which may be bought in small bottles.

"OUR CANARIES."

CLEAR BUFF NORWICH PLAINHEAD.

They should be applied once or twice a week with a small camel hair pencil to the ends of the perches, joints of doors, and any likely harbour for the pests throughout the breeding and moulting season. Do not wait until there is a host of mites to apply it to, but use it regularly as a deterrent to prevent them gaining a footing. The quassia will also be most useful to add a few drops to the bathing water occasionally, though with red mite attacks treatment of the birds themselves is of trifling effect.

ERADICATING LICE.

If taken in hand in time it is a comparatively easy matter to deal with the grey louse, but in this case the attention must be chiefly devoted to the bird. If only slightly infested a few baths with quassia added given regularly every day for a week or so will have a sufficiently good eradicating effect, and no further treatment will be necessary beyond washing the cages with a carbolic disinfectant wash every few days until it is certain the pest is quite removed. If the birds refuse to bathe, in mild settled weather the solution may be sprayed over them until the plumage is well moistened all over, placing them in a small open wire spare cage for the purpose, then place them in a sunny bright position to plume and dry their feathers. At the same time the bath may be placed inside the cage, and in many cases as soon as the bird begins to shake and preen itself it will go to the bath and bathe voluntarily. In this way some of the most inveterate non-bathers may be induced to become free and voluntary bathers. But do not adopt this method with birds which are sickly and weak and sensitive to chill, nor in cold, wet, chilly weather. To prepare the quassia bath it is simply necessary to add thirty or forty drops of the concentrated essence of quassia to each half-pint of water used for the baths, or, as a substitute, boiling water may be poured over the finely broken-up quassia chips the previous night, and the water poured off into the baths next day. The proportion of chips should be about one good teaspoonful to each pint of water.

MORE DRASTIC MEASURES.

Should this treatment fail to be wholly successful, as may be the case when a bird is very badly infested, the bird should be caught and thoroughly dusted with freshly ground pyrethrum powder, blowing it liberally into the base of the plumage, especially under the wings, around the base of neck, and base of tail, by means of a bellows distributor or powder puff. Roll the bird up bodily at once in a handkerchief, leaving only just the beak free for breathing, and lay it down inside a spare cage with the door closed (this to avoid any possible accidents) and allow it to remain so for fifteen minutes. During this interval the bird's usual cage may be washed out as suggested. The bird may then be released and allowed to stay a short time in the spare cage to shake itself free of as much as possible of the powder and insects. This treatment

will not affect the eggs, or "nits," which will still hatch out. It must therefore be repeated twice or three times, allowing an interval of a week between each treatment, and continuing the quassia baths during these intervals.

Lastly, in extreme cases, when birds are not breeding, hand-washing should be resorted to, and a good insecticide used in the first and second bowls of

A STUDY IN CROSSING.

SELF CINNAMON COCK.

Bred from clear pink-eyed cock and cinnamon marked hen.

Drawn life size.

water. This is a very effectual and rapid way of exterminating the pest, but should not be adopted during the breeding season except as a last resource, and in no circumstance for hens at that season, nor without the requisite knowledge and skill in handling a bird to warrant one undertaking the operation. For this purpose one teaspoonful of Creolin, obtainable from any good chemist,

should be stirred in each pint of water used in the first bowl, and thirty drops to each pint in the second bowl. After well washing and rinsing the bird in these solutions it must be well rinsed in the third bowl of pure clean soft water,

A STUDY IN CROSSING.

GREEN HEN.

Bred from half-bred clear pink-eyed cock and pure Border Fancy hen.

Drawn life size.

and dried in the usual manner. The drying interval should, again, be utilised to wash out and clean the usual cage.

DIAGRAM OF THE TECHNICAL POINTS OF A BIRD.

Before passing on to the next chapter a word of explanation may be given of our diagram showing the technical points of a bird given on page 5. It

must not for a moment be understood that this is intended to show the correct technical points from an anatomical or scientific point of view. Writing purely for the average fancier who has a supreme disregard for that class of cabinet science we have for the nonce thrown off those classic terms and adopted the technicalities which can be better understood and appreciated by the man in the street. Therefore we have called the point shown at the number 25 the Leg, regardless of the fact that it is in reality, from a scientist's point of view, a part of the foot, and the joint immediately above this part which forms the limit of the growth of tiny downy feathers is, anatomically, the ankle. But these apparent anomalies are neither of use or interest to the ordinary fancier, to whom the point shown at 25 is the Leg, and nothing but the Leg, and the Leg we have called it. In the same manner we have named all other points on this diagram in the way which will be understood by every fancier, and coincidentally with the terms employed in the various standards of perfection and fanciers' descriptions. It will therefore be found of the greatest use for the novice to refer to in order to fully appreciate and understand such of those terms as he is not familiar with.

CHAPTER III.

AVIARIES AND OUT-DOOR MANAGEMENT.

AN AVIARY DEFINED.

TO the mind of the great majority of Canary breeders the single term aviaries suggests little beyond a large more or less ornamental cage. So far has custom and conventionality carried public opinion as to the proper, and once believed only rational method of cultivating this domestic pet, that the *compos mentis* of a fancier electing to discard the orthodox system of cages, and giving the birds liberty in a larger space where the use of the wings might be developed would until quite recently have been seriously doubted. That there was, and is, a certain amount of method in the idea will be presently seen. But, fortunately, there is in these days a perceptible, even if very slow and gradual, swing of the pendulum towards a more rational method of keeping and breeding the popular Canary, and it is quite within the range of probability that in a very few decades hence the system of keeping and breeding birds in small cages will have lost much of its present popularity. In any case it will have been amply proved that our fancy Canaries, although evolved from the original stock by the intervention of human skill and selection, is yet a sufficiently natural production to succeed, had it been properly managed during its evolution, under practically similar conditions as its original prototype, which no one considers for a moment requires any kind of special hot-house treatment to ensure its well-being. To take an analogous case: no one considers for a moment that the highly bred fancy Fantail pigeon really requires a much greater amount of artificial treatment than the common types. Why, then, should our fancy Canaries, which are no further, even if they are anything like so far, removed from the original stock, be supposed to require such vastly different conditions? The reason is not far to seek. It lies in the simple fact that during the process of evolution artificiality has been the keynote of their whole treatment and management, so that to-day the birds are lacking to a great extent in the natural power to adapt themselves wholly to normal conditions. But with the increased spread of treatment and breeding under normal conditions this power will be rapidly restored, and the practicability of breeding good-class Canaries in out-door aviaries in the future is by no means restricted to the dreamland of visionary hopes.

TYPES OF AVIARIES.

The various types of large cages which are styled aviaries have already been dealt with. A more worthy type of indoor aviary consists of partitioning off a portion of a room, where a whole room cannot be set apart for the pursuit of the hobby, by means of $\frac{1}{2}$ -in. mesh netting nailed on to a wooden

framework, made in sections for portability, which, when fitted together, will fill the frontage of the enclosed space from floor to ceiling, and adapt itself to all the angularities that may exist. A door, preferably on the porch and double-door system, large enough to enable one to pass in easily, must be provided in the wire front. Being indoors, however, it is possible, but for convenience sake not advisable, to dispense with the double door, and as the external porch, to allow standing space between the two doors, might prove somewhat of an encumbrance its position should be reversed, and the projecting portion carrying the second door placed inside the space to be occupied by the birds. Having completed the structure of the front a coat of Brunswick Black on the wire and one or two coats of wood stains, and a final coat of copal varnish will make the whole a smart affair which will not disgrace any kind of room.

THE INTERNAL ARRANGEMENTS.

In an aviary of this description the birds are intended to fly at liberty. Therefore, if a window has been taken up in the enclosed space this must be protected with a netting covered frame to prevent the escape of birds when

FOOD TABLE FOR AVIARY.

The leg covered with smooth tin to prevent mice getting access to the seed.

the window is open, as well as a variety of other accidents which may happen were the glass left unprotected. This frame should be made to work easily on hinges so that the window may be opened at any time with a minimum of trouble. The floor should be first covered with an improvised carpet in the shape of sheets of thick brown paper, and then covered to a depth of one inch with clean gritty river sand, or, if one lives near enough the coast, with sand from the shore. In far inland places where such things are ungetatable, builders' sharp sand will form a tolerable substitute.

A pedestal standing on one leg with a table-like top large enough to hold seed and water vessels should occupy the centre of the space, and no perch or bough should be allowed to overhang it. The latter precaution is a great aid in helping to preserve the food and water vessels from unsightly contamination. The vessels

A COSY CORNER IN AN IN-DOOR AVIARY.

should always be of the self-supplying type, so that any soiling of the outside which may occur from droppings will not foul the contents. A band of tin should be nailed around the centre of the pedestal to frustrate the attempts of any stray mouse which may find a way to this land of promise to climb on to the feeding board. The bath should be placed upon the floor and be of good size, but not more than one-and-a-half to two inches in depth.

FOR SAFE BATHING.

Even with this depth of bath, the water should not be more than half this depth, not only to reduce the splashing to a minimum, but to render it quite safe for young or delicate birds, which are apt to be very helpless and to behave very foolishly when saturated with wet. An excellent plan to

BATH FOR AVIARY.

Showing piece of rock to prevent accidents to young birds, and tray to catch splashed water.

avert accidents is to place two or three bits of rock in the bath, which rest firmly upon the bottom and reach the surface of the water. The number, of course may be regulated according to the area of the water—one chip being sufficient for ordinary size baths. Then again, the bath should be placed on a shallow tray three or four times the area of the bath itself, to catch the overflow and splashes, and thereby keep the floor of the aviary always dry.

Orthodox straight perches should be limited to a number of short ones projecting about a foot or so from the walls in places where they are best suited to act as sleeping perches or to give access to nesting sites. A trapeze perch or two may be suspended from the ceiling, and for the rest natural twigs and branches secured at intervals about the walls with a small bushy shrub or two growing in pots dotted here and there about the floor will supply all that is needed in the way of perches, and add considerably to the general aspect of the little bird sanctuary. For nesting sites wicker nest-baskets may be secured in the bushes; nest boxes of the usual Norwich type; German travelling cages, with the short bars removed; or cigar boxes with half the lid sawn off and the other half tacked down will form the most useful and acceptable articles. The latter type of nests should be hung well up overhead, as the majority of birds will show a very decided bent for the highest nesting sites.

SCOTCH FANCY CANARY.

This bird, technically known as a piebald (i.e., marked), was drawn from a noted winner at the Scottish shows.

A MODEL FOR OTHERS.

This type of aviary may be repeated in almost any size. If a whole room, large or small, can be set apart for the birds the same arrangements, minus the partitioning screen, may be carried out on a larger scale, whilst any odd corner of a room which has a fair amount of space and is nicely lit may be enclosed with a wire front in the same way and the arrangements inside carried out on a proportionately smaller scale.

OPEN-AIR TREATMENT.

To come to out-door aviaries pure and simple, two types will be found illustrated which may be taken as general models of what is required and adapted to any place or need. The main features are all that is required, and given good sound materials for construction, good workmanship, care to make a good dry

RANGE OF SLEEPING PERCHES IN AVIARY.

floor, impenetrable by mice or rats, and a waterproof roof, all other details concerning expense, size, and decoration may be regulated by the space at one's disposal and the condition of the bank account. One of these types is on the lean-to principle, which requires an existing wall to erect it against, and is most suitable for small spaces or densely built-over areas, where, perhaps, a backyard forms the scene of one's operations. The other type, which contains the same general features, is more suited for open spaces where it can stand out on its own, as it were, and form an ornament to a lawn or similar open space without any supporting structure.

The principal feature lies in the triple division of the structure into closed-in, semi-open, and purely open-air sections, each one communicating with the other so that the inmates always have a free choice of going out in all weathers or staying indoors if they prefer doing so. The making of a vermin-proof floor, as just suggested, is a comparatively easy matter. The soil should be well beaten down in the first instance, and the whole area of the aviary and a space extending at least a foot beyond all its limits covered with a solid layer of broken glass

chips ; beat these down flat, and cover all over with a layer of concrete an inch in thickness, and no rat or mouse will ever penetrate it.

A SERVICEABLE ROOF.

In all cases where a wooden roof is employed in an exposed position, particularly if this is of light boards, a second layer of timber super-imposed over this at a distance of about three-quarters of an inch or one inch, would make a vast improvement, and not only form a protection to the real roof, but will indirectly make a great improvement in the room itself by keeping it cooler in the hottest part of summer, and the temperature more equable at all times. By this, of course, is meant that the superstructure should be supported by strips of lath nailed down to the roof at each end, with an extra similar support at a distance of about eighteen inches across the full width of the roof. Thus there will exist an air-space of the thickness of the supports used between the two roofs, and the existence of this space, providing an egress is left at the top, as there should be, will cause a current of cool air to be always circulating between the two layers of wood when a hot sun beats fiercely upon the top, and the atmosphere in the house itself escapes being overheated.

Where this is not considered expedient, the existing roof of wood should be well tarred, and then covered with a layer of roofing felt. Two or three coats of tar should next be given the upper surface of the felt. Each coat should be allowed to become dry before another is applied. This will ensure the roof being waterproof for some months, and if care is taken to repeat the tarring once or twice a year, and a gutter made and kept in good order along the eaves, it will form a most useful roof permanently, and the tarring will do some little to keep the roof cool during the sultry weather. The plan of tarring and felting the top surface will also prove most advantageous in cases where a double roof is constructed. It costs comparatively little, and its advantages are so great that it is very advisable to carry it out in all cases.

DISPEL THE GLOOM.

Efficient lighting is another important feature which must not be overlooked. As will be obvious, it is a point which is very largely controlled by site and locality. In all cases the interior of the building should be quite as well lighted and as bright as any ordinary living-room, so that the birds can see to move about and feed with perfect freedom right up to the hour of sunset at least, and this in ordinary conditions of weather in autumn or spring. It goes without saying that the site of the proposed aviary and its proximity to other buildings, will very materially affect the quantity of "lights" or size of windows required to obtain this result, and where birds are to be kept in cages instead of flying loose, a rather stronger light will be necessary in the room to ensure the cages being fairly well lit, even if they are arranged on the side opposite the window.

AVOID TOO MUCH GLASS.

At the same time, it must be borne in mind that a great area of glass is to be avoided, if possible, on account of its rendering the whole interior of the building subject to extreme fluctuations of temperature, and the objectionable "sweating," which it is extremely difficult to avoid in any ordinary building where much glass is a feature. Lighting by "skylights" is also an objectionable feature in many ways, and should be avoided in all cases where sufficient light can be obtained by ordinary windows. These should be of a fairly good type, close-fitting to exclude the fatal cutting draughts, but made to open with ease and freedom, so that they may be utilised at any time in fair weather to give the place a good airing.

WIRED SASH FOR WINDOW FRAME.

Useful to prevent birds escaping from the aviary.

Wire-covered frames must be made to fit over the window spaces, which should hang on hinges, in order to be easily movable to allow free and easy access to the windows. (Never, by the way, place any serious obstacle in the way of getting the windows open, as this is apt to cause needed airings to be deferred to a more convenient season when one is busy, and perhaps omitted altogether.) These wire frames are necessary to prevent the escape of birds, or ingress of feline marauders, when the windows are open, and are most advisable for the latter purpose, even when the birds are being kept in cages.

THOUGHTS ON VENTILATION.

The chief difficulty relating to this feature is to provide for a thorough and efficient change of air in the building constantly and in all conditions of weather which may be ruling outside, and yet to avoid all draughts, and also as far as possible too striking contrasts in the temperature inside the house. Any system that provides for a progressive and gradual change to be going on automatically must naturally be the best suited for the purpose in view, but, unfortunately, such

an ideal condition of things requires a certain amount of expert knowledge to carry it into effect.

THE ELEMENTARY POINTS.

One of the fundamental laws of the science is to provide inlets for fresh pure air at or near the level of the floor, and corresponding outlets for the discharge of foul used-up air in the highest parts of the interior space. Of course this is simply utilising the known natural law that heated air, being lighter than cold, automatically rises to the top in a confined space, and thus the air which becomes more or less heated in the process of breathing, and through the presence of animal bodies, rises upwards and passes off through the outlet provided for the purpose, at the same time that a corresponding supply of fresh air is pouring

SLIDING VENTILATOR FOR BIRD-ROOM.

in at the lower apertures. In an existing wooden structure this system may generally be carried out by boring a row of half-inch holes with an auger round the top of the walls, or in the apex of the gables, as the case may be, in the manner shown in the inset to illustration of lean-to aviary on page 6, and a corresponding row around the bottom of the walls.

PROVISIONAL FORESIGHT.

In building a new structure, however, it would be far better to dispense with such makeshifts, and insert a proper ventilator in the floor; and instead of the holes in the gables of a span roof building, leave an inch or so of open space all across the ridge of the roof, and cover this with a small super-imposed span raised an inch or so above the proper roof.

The amount of space allowed in all cases for ingress and egress of air must be regulated by the size of the structure, and the number of birds it is intended to accommodate. Sufficient should be provided to ensure the atmosphere in the house being free from any stuffy, birdy smell, and yet not enough to make it quite as chilly in cold weather as it is in the open air. A simple yet practical test is to take a short walk in the open air in the morning, after the birds have been closed up all night, and then go into the room and note the effect of the air in the house. If the ventilation is insufficient, the air will feel quite oppres-

"OUR CANARIES."

SELF YELLOW CINNAMON CANARY.

sive and heated, and may even cause a feeling of sickness if the deficiency has been very great. The ingress of fresh air should be increased until the air is tolerably pure and not overheated when the house is unlocked for the first time in the morning after being closed all night.

FRESH AIR WITHOUT DRAUGHTS.

To attain this object it is necessary to have some means of regulating the ventilation to suit the varying conditions of weather prevailing outside. It

TOBIN'S APPARATUS FOR IMPROVED VENTILATION.

- A. The Wall.
- B. Ventilating Pipe.

will be obvious to all that during the hot summer months a far greater amount of air will be necessary to keep the place cool and fresh as would suffice in the winter time.

It is, therefore, important to have the ventilating orifices fitted with sliding shutters, which can be pushed to and fro to open or close the aperture, and thus increase or decrease the supply of air in a moment, to suit every passing need. Much as we insist upon the necessity for doing this part of the work thoroughly, we must also impress upon one and all the absolute necessity of guarding against cold draughts in all weathers. Cold of itself will very rarely do any harm to a healthy bird, but it must be generally distributed and not dispensed in tiny cutting streams, as it were, or in cold currents that flow over the birds when they are at rest, and chill them to the marrow. The apertures for the ingress and egress of air must be so arranged as to prevent as far as possible any strong current passing direct from one to the other; and

again, the cages or perches for roosting at night must be so arranged as to be out of the path of any such current if it should be temporarily set up by the direction or force of the wind outside.

TOBIN'S SYSTEM OF VENTILATION.

A system of ventilation by means of pipes passing through the wall, which worked on the syphon principle and insured perfect ventilation with absolute freedom from draughts, was dealt with some years ago in the leading Press of this country, and was known as Tobin's system of ventilation. The sketch given here shows the principal features of the system.

It consists of making the inlets by passing a pipe horizontally through the wall, and adding a short elbow pointing upwards inside the house or room, and a similar elbow of at least twice the length on the outside. When this is properly fixed, the pure cool air passing down the long outside elbow is syphoned out at the other end into the room, without any possibility of draughts occurring. It is, in fact, bringing pure air into the room with a syphon, just as much, and in an analogous way, as one might draw off fluid from a vessel of any kind by a syphon pipe. This system seems to be one that is generally applicable to any kind of building, whether the walls are wood or stone or brick; thick or thin; and its exclusion of draughts should render it peculiarly suitable to the needs of bird fanciers and aviarists.

A WORD ON DECORATIONS.

What has already been written about elaborate ornamentation and decorations in cages and small aviaries will apply in a somewhat less degree in the case of larger structures. But in large out-door aviaries where the birds have liberty to fly about at will, and unlimited opportunities for bathing, they are better able to resist the attacks of external parasites of all kinds, and it is rare that these pests will become really troublesome. More scope may therefore be given to one's artistic tastes in adding to the appearance of the aviary by judicious ornamentation. Care must, however, be taken to avoid overstepping the bounds of prudence, and such things as virgin cork and similar rustic-looking decorations should be rigidly barred from the covered-in sleeping quarters, and, save in the very largest structures, limited to a trivial amount in the open-air space. They give the desired artistic touch to the whole—of that there can be no question—but are only too often, sooner or later, apt to become a pestiferous nuisance. Remember that every extra fitting or ornament may ultimately form an additional source of worry and anxiety, by becoming another harbour for insect pests and disease germs. It would be a suicidal policy for anyone to rest on his oars, so to speak, and think that he and his stock are immune to such attacks, or some day he will probably have a very rude awakening. In a greater or less degree birds kept under all conditions are susceptible to such forces; therefore, it is the only wise policy to always bear in mind the possibility of their attacks.

In the matter of nesting sites, perches, the feeding and water receptacles and baths, all that has been written concerning them in our indoor aviary will apply equally here, and it will be sufficient to remark that the number of such receptacles rather than the size should be increased with the increasing size of the structures under consideration. This will prevent much quarrelling among the birds. Nesting sites in particular must be supplied with freedom, not only to prevent quarrels, but to avert tragedies and loss of young. Food and

A GROUP OF MODERN PRIZE-WINNING CANARIES.

Top: Even-marked Border Fancy and clear Norwich plain head. Centre: clear Scotch Fancy. Bottom: Variegated Crest, lightly-variegated Crest-bred and clear Yorkshire.

water vessels should for preference be kept under the semi-open portion, but the baths may with advantage be placed in the open-air section.

THE QUESTION OF TEMPERATURE.

At this point we may refer to the question of heating the place by artificial means. The question so frequently crops up from the new beginner, and almost invariably takes the form of a request as to what particular method of heating is best, that it would really appear as if every beginner commenced with a foregone conclusion that heat is essential, and he only wishes to know how he can best utilise it.

As things are now, when one breeder partly rears, moults, and keeps for the greater part of the year his stock in an abnormally heated room, and others carry on similar operations without any artificial help in that direction, it is practically impossible to say whether heat should be used in any given case. Thus it would be folly for one living in a bleak, cold position to set up an outdoor aviary, obtain stock from a room in a more mild and sheltered part of the country, and which has also been reared with the aid of artificial heat, and try to breed with such birds in a normal temperature. Such an attempt must assuredly end in failure, and the end of the first breeding season will invariably mark the commencement of a run of trouble and adversities, which, as Shakespeare says, "come not as single spies, but in battalions," and one's star of good fortune must be in the ascendant if he gets any more good results out of those birds.

THE CASE FOR BOTH SIDES.

To succeed with birds bred under these wholly artificial conditions one is practically compelled to keep up such conditions at the commencement, though it will be quite possible to gradually modify them so that in the course of a few seasons a hardier and acclimatised type of bird is produced, which will thrive quite well under more natural conditions.

On the other hand, if one wishes to start without heat, it is absolutely necessary to make oneself sure that the birds obtained in the first instance have been reared and moulted under quite normal conditions of temperature. If they are also the produce of birds bred under similar conditions, then one has a good chance of success with them, and it would be a bad policy to introduce heat among such stock. Cold, of itself, will very rarely cause the least inconvenience to a healthy bird not hitherto accustomed to artificial heat; but damp and draughts are the bane of the caged bird's life. Eradicate the two latter, and the former may be very largely disregarded.

VARIOUS FORMS OF HEAT.

In cases where heat is used, or where it is necessary for acclimatisation, there is nothing better than a hot water pipe installation, with the source of heat either

A STUDY IN CROSSING.

CLEAR PINK - EYED COCK. CINNAMON MARKED HEN.

Bred from Self Cinnamon Norwich Cock, and Pink-eyed Berder Fancy Hen.

Drawn life size.

out of doors or in an adjoining building, so as to avoid having any fumes from the combustion of fuel in the room to contaminate the air.

The latter method would be the most economical, as the expenditure of fuel required to keep the pipes heated will be decidedly less if the furnace and boiler be under cover, than is the case when they are placed in the open air. To guard against accidents by fire the boiler-bed and furnace should invariably be built of bricks and mortar, unless one of the portable complete apparatus made in iron castings as supplied by horticultural providers is used, and even in that case it will economise working cost to construct a brickwork shelter for it. When no other available building adjoins the aviary, and in the case of the span roof aviary

A SIMPLE SYSTEM OF HOT WATER HEATING.

standing in an open space, this shelter should be built against one end of the enclosed space outside the wire flight, as shown in our illustration of span-roof aviary.

Where a gas supply can be connected by means of compo. piping a portable hot-water coil can be obtained which is very effective in moderate sized aviaries, but with this, as with the more commonly used and extremely risky oil-heated apparatus, there is a perpetual danger of something going wrong and wiping out the stock in a few hours by asphyxiation. Any system which has its source of heat in the room must have a protecting cover provided with a flue pipe to carry the fumes off into the open air, and the outside end of this must be provided with a suitable cap to prevent a down-draught.

Do not forget that heat may give rise to many draughts from little unsuspected chinks and crannies, so be on your guard to discover them, more particularly in a warm room.

LET MALTHUS FLOURISH!

Having got through all these preliminary stages of Canary culture the population of the aviary will present itself. The accommodation provided by any particular aviary will depend very largely upon the object of the owner. If raising young is no moment then a rough calculation of the floor space may be made and taken as a safe index of the capacity of the enclosure on the basis of one bird for each square foot of floor space. Cubical capacity is of little value as a guide;

A COMBINED BIRD HOUSE AND OPEN-AIR FLIGHT.

actual floor space is everything. In no sphere of life are the main principles of malthusianism more essential to the welfare of the community than in the stocking of aviaries. The natural increase in numbers which may reasonably be expected must always be taken into consideration if overcrowding is to be avoided at all times. Therefore, when one is anxious to raise young during the summer, it is a safe plan after working out the full accommodation of the space at disposal to deduct two-thirds of the result, and start each season with a stock numbering only one-third of the total accommodation.

Contrary to the usual practice when breeding in cages polygamy is the most successful method with Canaries flying at liberty. Nothing will go further to extinguish all chances of success than a superfluity of males. No sooner will the mate of one cock be gone to nest than he pays his addresses to his neighbour's spouse in the most scandalous manner possible, and then the strife begins, which, by the time the majority of cocks become temporarily unattached, develops into a veritable reign of terror which shows neither respect nor mercy for the gentle sex or chicks, either or all of which are unceremoniously thrown out of the nests with the utmost *sang froid* to make way for yet another abortive attempt. In all ordinary cases two cocks will be quite sufficient for every six or seven hens.

A TYPICAL CASE.

The troubles which may confront the aviarist are well shown in a few remarks of Mr. H. Wright, of Norwich, who writes on this subject:—"Norwich is not a place where Canaries are bred in out-door aviaries. I have seen very few, and then only a few Canaries were bred. I have tried it on different occasions, but the results were not very successful. About three years ago, my son decided to try it, turning into an aviary three cocks and five hens, all Norwich, about the middle of April. The cocks fought continually, so he removed two of them. The hens then built and mostly had good eggs, but they would go to each other's nests. Some lost their young, and would go to the nests that had young and feed them. I have seen three hens fighting for the possession of a nest of young ones. About thirty young were hatched, and of these six were reared."

Fortunately there is another and brighter side of the picture than this account reveals, as will be shown by the racy notes very kindly sent us by Mr. J. S. Clarke, of Woodford Green, which contain also some interesting remarks on aviary construction.

ON OUT-DOOR AVIARIES.

"These remarks are written," writes Mr. Clarke, "chiefly for people who love birds for themselves, and there are many such who care little or nothing as to what type a bird may be, neither do they exhibit. If taken to a show, they say in all probability, 'What a nice lot of birds.' To them the cardless waster

upon whom a fond and foolish owner has wasted his entry fee is simply a bird; the first prize winner, in their eyes, is no more. I am much indebted to just such a man for a lot of the information contained herein. In towns and suburban areas where space is limited, I do not think a less expensive or more interesting hobby could be found than an aviary of birds. Let me at once state that such a place would not be suitable for breeding fixed types of Canaries with a view to exhibiting them. Canaries of a common, hardy sort can, and have, been bred in aviaries such as I will briefly describe. With the aid of a few tools they can be

easily put up by anyone possessing average gumption.

GROUND PLAN OF COMBINED BIRD HOUSE AND OPEN FLIGHT.

A. Doors. B. Windows. C. Lobby with double doors for entrance into open flight. D. Staging. E. Boiler for hot water heating apparatus.

shelters at either end warmer. Whilst building always have your wife and children round you; the former is useful for running errands and finding the tools the latter mislay.

AMATEUR THEATRICALS.

"Don't forget to strike your finger with the hammer occasionally instead of the nail you intended. As you jump around and shout, you will contribute largely to the gaiety of the home. The finger being no longer painful, and the laughter having died away, we will continue building the aviary. The floor can be wood, in which case it must be raised two or three inches above ground, or just gravel, but best of all cement. Doors as required. For light, a glazed sash can be procured second-hand from most builders for a small sum. Don't forget to protect the glass with $\frac{1}{8}$ -in. mesh wire netting. It is not absolutely necessary to go to the timber yard and lay out a lot of money. Large boxes, packing cases, etc., can

"First of all, if possible, let your aviary face south. If you have a wall to build against, so much the better, it will save time and expense. The roof is one of the most important items. Galvanised corrugated iron is rainproof. I always use it. If you have a wooden roof under that, the building will be cooler in summer and warmer in winter. Put some perches high up against the wooden roof; it makes a warm roosting place. Case in your aviary at both ends, leaving an open fly in the centre, covered in front with $\frac{1}{2}$ -inch netting, suspended from the roof therein one or two small fir trees for the birds to play in. Do not forget to put a weather board or two, according to the height of your aviary, top and bottom of the open fly. It will prevent the rain driving in, and also make the

be bought cheaply, and with a little ingenuity pieced together. When finished cover neatly with tar felt, and, hey presto! your aviary is ready for its inmates.

THE THING THAT COUNTS.

"Now for our friend's practical experience extending over many years. He says: 'Do not have too many male birds. If you do much fighting and destruction of eggs takes place. Eight or nine Canary cocks are quite enough for twenty-five hen Canaries.' To which I can add the news that he usually has a small swarm of Canaries to dispose of to the dealers after every breeding season. Working on these lines you are always on the tip toe of expectation, as when the young birds appear the parentage is nearly always in doubt. For nesting places my friend is quite eccentric. Small wooden boxes with half the lid broken off and the remaining half nailed down, cocoa nut shells, tins, regulation earthenware pots, anything in fact that a nest can be built in. Branches of trees are often fixed to these nesting places, behind which the hens sit in quiet seclusion. In a house built on similar lines but without the open fly, with the inmates all paired in separate boxes with loose wire fronts, one of our most successful (Southern) breeders year by year successfully produces many rare and beautiful hybrids, which tends to prove that bird lovers who cannot spare a room in the house for their pets, may profit by the details given herein, and having built themselves an outdoor aviary, will be enabled to give free rein to the hobby of keeping cage birds."

LIMITATIONS OF THE SYSTEM.

As our contributor justly points out at the beginning, there is a limit to the amount of control which a breeder can exercise over the selection and breeding for typical exhibition points in a stock of birds which are allowed to fly at liberty in an aviary. Still, it does not follow that this control must necessarily be obliterated. A large proportion of it will certainly have to be sacrificed, but sufficient may be retained to enable the owner to exercise a substantial amount of control over the minor qualities of the stock in general, although the absolute control necessary for pedigree breeding and the production of superlative exhibition points will be wanting.

But in this class of breeding one may still adhere to the chief principles of control by restricting any particular point to the one sex. Thus, for example, one may make up a group of birds consisting of a clear yellow cock and a lightly ticked, or wing, or eye, marked yellow cock, but let the tick or mark be on the small side, and the bird bred from two clear parents, and add five or six buff hens, for which the following would make a good selection, viz., one clear bird bred from double yellows, or with a fair amount of marked blood in her veins; two lightly ticked; one wing or eye marked, with small but good shaped mark, or marks, and not bearing the same marks as the cock. For instance, if you are

using a cock marked on one wing, then this hen should have both wings clear, but may be marked on one or both eyes; and if the cock is marked on one or both eyes, the hen should be lightly marked on one or both wings, but the eyes, and head altogether, including the beak, must be clear. To complete the group of five a green marked may be added, and if six hens are required, the sixth should be either a self or a broken green. The group might also be formed in the same manner, but with the colour transposed, having the buff on the cocks' side and the yellow on the hens', the markings remaining the same.

ON A LARGER SCALE.

In making up larger groups for more extensive aviaries this suggested group may be duplicated with only the difference of omitting one ticked cock, leaving two clear cocks and one ticked only for a group of ten or twelve hens. If twelve hens are used it will also be advisable to omit the second green hen and substitute in her place a clear with a similar pedigree to the other clears. The object is to avoid breeding too large a proportion of variegated birds whilst retaining a sufficiently strong leaven of green blood amongst the stock to keep a good deep rich tone of natural colour in the clear birds that will be bred. Quality should be neglected on neither side, but type and feather should figure as strongly as possible on the hens' side, which may with advantage be of a medium size. The cocks, if yellows, should be of large size, of good substance for the breed in question, well feathered and free from harshness, and of good shape and typical throughout. Given these elementary conditions, it is quite possible to produce some really good birds in this way. Selection on the part of the owner will also come into play to an appreciable extent, and by adhering to the lines laid down the general standard of the stock bred will be materially raised and there will, after breeding a few years on this system, even be a sporting chance of producing a few moderately good exhibition birds. But, nevertheless, the breeder whose chief object is the breeding of birds for exhibition must not rely upon this method. Only that absolute control over the mating of the birds and full and reliable knowledge of their pedigree which is got by breeding in separate cages, will enable one to reach the highest rung of the ladder, or even to maintain a position much above the level of mediocrity.

ANOTHER ASPECT OF THE QUESTION.

But it would appear that breeding in cages need not of necessity preclude one giving the birds the benefits of open-air life. The experience of Mr. E. Pretty, of London, affords some striking proof in this direction, and also gives very strong evidence of a practical kind that, as we have already said, highly developed fancy points do not necessarily render any variety less able to exist and flourish under natural treatment; or at least as nearly approaching the natural conditions as is possible in domesticated creatures; or call for any abnormal artificialities in the treatment of the stock so developed.

As the result of the practical test of sufficient length to show some effect, good or bad, Mr. Pretty's experience is of special interest. "It is now two years," he writes, "since I started keeping Canaries out of doors. I have never regretted it. There is one unpleasant thing about it, namely, having to stand out in the snow and rain to feed and water them. But the health and stamina of the birds pay for the unpleasantness. My cages are 24 inches long, 12 inches deep, and 20 inches high. If I had new ones made for outdoor work, I would have them 18 inches deep, and all the wirework galvanised, as the exposure to all weathers plays sad havoc with the wirework. There should be only two perches, placed as far apart as possible, and the food and water should be placed inside, between the perches, where the droppings cannot get into it. For seed and water vessels I use the deepest penny salt glasses I can get."

SIMPLE LIFE ARISTOCRATS.

"I breed out of doors," continues our correspondent, "Crests, Lancashires, Norwich Plainheads, Yorkshires, and Cinnamon. I breed more birds out in the open than I breed indoors. The only covering they have is the cage top covered with tarred felt, showing what the natural elements will do for the birds. The best time to put them out is the end of February or early in March after we have had some severe weather. Of course, the birds would be taken from a cold room. The food should consist of Canary and German rape. A fourth part of a teaspoonful of maw seed should be given every day in very cold weather, and a fourth part of a teaspoonful of hemp may also be given, but do not overdo it or you will get the birds too fat. All birds intended for show should be caught up in the middle of July and moulted indoors, as it is impossible to keep birds in show form in towns out of doors."

From this account it is clear that outdoor work is by no means restricted to the most plebeian type of Canary, as we have here some of the highest types, which have often been considered difficult to manage indoors. There are indeed very few breeds, not excepting the Dutch Frill as the latest addition to the list of fancy varieties, which have not been bred and kept outdoors, notwithstanding the general opinion that only the hardiest and commonest of stock are suitable for the work.

FRILLS WITHOUT CURLS.

If there is one variety less suitable than all others for an outdoor life in our variable and damp climate it is probably the Dutch Frill, and that not so much by reason of any inability of a physical nature, as from the fact that the frills need a dry atmosphere to appear at their best. The curls in the plumage are doubtless affected by moisture to a certain extent in just the same way as an artificially curled feather, but the plumage attached to the living bird has the

power of recovering its twist on the return of favourable conditions, which is absent in the feather no longer attached to any source of life. That there is ground for this assumption is shown by a remark made recently by one of our West Indian correspondents to the effect that on warm days the curls appear to much better advantage than is the case on a rainy, chilly day. The Dutch Frill, it may be noted, is the popular variety in those Islands, where it may possibly have been introduced long ago by Dutch or Spanish trading vessels, or both.

A MODERN FRILL CANARY.

This is a variety of the Canary Family much in favour on the Continent. This drawing was made from a First Prize specimen at the Crystal Palace Show.

"OUR CANARIES."

LANCASHIRE COPPY CANARY.

AN OUT-DOOR BIRD-ROOM AND RESULTS.

A more fitting conclusion of this chapter cannot be given than the following notes from an out-door enthusiast, Mr. A. Thomas, of Loftus-by-the-Sea, giving a brief description of his bird-rooms and the results obtained in them. "For fanciers wishing to breed Canaries out of doors," writes Mr. Thomas, "I will give a description of my bird houses. The first house is 9 feet by 7 feet wide. The sides are 7 feet high up to the wall plate, with a span roof. The sides and ends are made in sections and bolted together. The floor stands one foot six inches above the ground, so that cats can get underneath to keep away the mice. The door is 2ft. 6in. by 6ft. high, with a fanlight over the top. The roof is made in two parts. The front side has a window 5ft. long, by 3ft. wide, resting on the middle rail. I nailed laths on the bottom edge of the floor joist and boarded in between, then filled in with sawdust, and boarded on the top with one inch floor boards. I prefer a second roof hinged together at the top, and resting on feet at the bottom, to be lifted up in summer to keep the house cool, and shut down in winter to keep out frost. I have a chimney in three inches square. The whole of the framework is covered with $\frac{3}{4}$ inch match-boarding, then covered with felt; and the inside, floor included, I covered with oilcloth."

A NEW WING.

"This house I found too small, so I added another house to the end, 5ft. by 7ft. long, with a porch 3ft. square. In this house I prepare cages, and store cages that are not in use. I have ventilators of fine wire gauze at the top, and shutters over these to close in cold weather or fogs, as sometimes we have fogs from the sea in April and May. I have shutters to the window in winter to keep out frost. A canvas on the floor makes it look neat, and it is easily kept clean. This house I shall board inside, and stuff the middle space with slag wool, cleared of dust, as I think it will prevent any cold getting through.

"I have found I can breed as many Canaries in this house as I could indoors, and I have never had one go wheezy. The frost got in and froze all my water glasses last winter, yet the cocks were in full song and the hens in good form all through the winter. I do not use heat of any kind. Canaries are far more healthy without it. I once tried heat, and all my birds went into moult just before breeding time. I never tried it again."

THE ROUTINE.

In these rooms the birds are bred in cages instead of flying loose altogether, and for the following notes about the general routine work and management, and the results in actual practice, we are still further indebted to Mr. Thomas, who writes under a later date, "My breeding cages I make 2ft. long by 1ft.

wide, some are slightly smaller. Double cages take up too much room. Some of my cages I made sixteen years ago. I clean them every year, and like whitening, as I fancy lime affects the birds' eyes. I use nursery cages for the young, and fix a piece of cardboard across the front, so that the old birds can feed them over the top but cannot reach them to pull out their feathers. I use white pottery nest pans, and fix a screw through the bottom of pan into a flat piece of wood, 4in. or 5in. long, and 1½in. wide, then nail on another piece at right angles to one end, and bore a hole to hang it by.

"For feeding I give only Spanish canary seed as staple during the winter, with a little German rape at week-ends. To prepare them for breeding, in addition to this I mix together 14lbs. Spanish canary, 1lb. each of hemp, German rape, and millet, and ½lb. each of linseed and maw, and use this

Mr. A. Thomas' system of fixing the nest pan.

twice a week. I never give green food until the young are hatched. I prefer lettuce or chickweed. Dandelion I do not care for, as I find it brings the hen on too fast, and they want to nest again before the young are able to leave the nest. For rearing young I grind a good slice of bread and the yolk of an egg in an egg mill, scrape cuttlefish bone over it, add a tablespoonful of maw seed, and mix all well together. I use only the yolk of egg."

FOR THE YOUNG BIRDS.

"I grind up all the egg shells I can get into powder and mix with the egg food, and crack their seeds in a coffee mill to get them on to seeds. I never stop the egg food until they get through the moult, as I find that is the time they go wrong—stopping the egg food. I give them less egg and more bread; then egg with colour food. I stop all green foods after they leave the old birds. I use flight cages about 5ft. long for the young birds. I think the birds grow better in that way. I darken the cages with a blind, as young birds sometimes pull feathers out of each other and make their wings and tails bleed. When I see a bird with blood on its wings I take it out of the flight and cage it separately until well. I colour feed all my birds, and find I can sometimes get them a better colour by keeping a number together. Medicines I rarely use—I generally give my birds Scott's Emulsion, and find it brings them into condition as quickly as any medicine that I have tried, and brings them round if they go thick."

VARIETIES KEPT AND RESULTS.

"I breed cinnamon-marked, green-marked, and clear Yorkshires, and also crosses with these and the Lancashire, Belgian, and sometimes with a long-

JUDGING THE POSITION OF A BIRD BY THE CLOCK,
As described by Mr. Thomas on page 76.

tailed Norwich, with plenty of leg and thigh, such as a Norwich breeder would not think of breeding with. I try to get all my hens ready for breeding together, so that if any go wrong I can change either the eggs or the young. I find the young birds grow quicker when the moon is filling than they do when it is going back—at least, I think so. I have tried double-yellowing and bred some good buffs in that way; feathered like marble. The yellow cocks so bred will nearly always produce yellows, but if it is done too much they will come without the body feathers—only having flights and tails. I have bred some good double buffs, especially Belgians, to get larger birds. I generally pair clear cocks with marked hens—paired in the reverse way I get them too heavily marked in the Yorkshires.

“I train the young birds to run into show cages and get them to stand upright. They will show themselves off at six or seven weeks old. Some of them will try to stand plumb. Having a dash of Belgian blood in them they will not stand across the perch, but are up at half-past twelve when you scratch the cage. My breeding results have been from 50 to 60 birds a year for the last four years.”

TIME AND LUNA'S INFLUENCE.

Two brief references on these topics in the notes just concluded will bear some explanation for the enlightenment of the novice and the fancier whose knowledge has been wholly gleaned in the school of modern thought and ideas. The reference to young birds in training being “up at half-past twelve” may appear curious to the novice just starting in the fancy, but to an old and seasoned breeder it conveys a very definite meaning and refers to the position shown by the hands of a clock at the time named. This method forms an excellent and popular standard of comparison for the proper typical pose of birds of position. To take the Yorkshire as an example, an imaginary straight line drawn through the centre of the bird from eye to tip of tail when in position, should coincide as nearly as possible with the position shown by the hands of a clock at five minutes before five. Thus the young birds in question showed unmistakable signs of their near relationship to the Belgian, by overdoing the typical pose, and endeavouring to stand bolt upright after the manner of their posturing progenitor, the Belgian, which should exhibit a plumb line along the back from top of shoulders to tip of tail when in position—or, as a breeder might put it loquaciously, “be up at half-past twelve.”

The remarks concerning the influence of the moon upon the growth of young birds will at least seem novel, though in many cases they will doubtless be ridiculed. Let them laugh who will. Though we are no slaves to superstitious follies or star-gazing montebanks, we can be patient with a theory so hoary and time-honoured—and particularly so when it is probably beyond the power

of man yet to prove the fact to be contrary. It is not quite a relic of former days either, for there are still thousands of country hen-wives who would never dream of putting eggs to set until the calendar had been consulted, and the commencement of incubation so timed that the eggs must hatch, if at all, when the moon is waxing toward the "full," confident in the belief that the chicks will possess a more substantial amount of vitality and vigour to commence life, and consequently have a better living chance. Whether it may be so, we do not pretend to say, but granted that it were a fact its utility is of little account, as our clutches of Canaries' eggs are not saved up and set at pre-arranged times in the way that would be necessary to put such an idea into practice. Neither will we discredit the idea that the same force which sways the billions of tons of water in the ocean, and, as recent discoveries show, the more solid matter of the universe in the tides, may in some subtle manner exercise an influence over the infinitely more sensitive and impressionable animate frame. We let the theory stand for what it is worth and leave it with an "open verdict," merely adding as a rider to prevent hasty and prejudiced judgment the truthful assertion of Shakespeare, that there may even yet be more things in heaven and earth than are dreamed of in our philosophy.

THE NURSERY CAGE.

A Useful and Necessary Appliance in the Breeding Room.

CHAPTER IV.

EXHIBITING CANARIES.

IN these days the exhibition of fancy Canaries is almost a fine art, and is a subject which requires close and careful study by everyone who desires to succeed in carrying off the coveted trophies and challenge cups, which were never so abundantly offered for competition as now. The success and popularity of Canary shows in the last decade may well be taken as an index of the wide-spread interest in, and rapid growth of, the hobby. These exhibitions have done a vast amount of good, not only in providing innocent pleasure and recreation for thousands of the community, with which we need not concern ourselves, but also in providing the necessary stimulus and friendly rivalry among the devotees of the pastime which was essential for the rapid rise and progress of the fancy. In these matters competitive rivalry must ever be the soul of progress and fresh endeavour. Disappointments may, and do, come to many when the glittering gems of the prize-list pass incontinently beyond one's grasp, but so long as

“Hope springs eternal in the human breast,”

so will the next prize-list as surely give a fresh impetus, blighted hopes give place to desires born anew, and the earnest fancier decide to make another plunge and tempt fate once more.

ETHICS OF EXHIBITING.

Thus the year goes round; always the same, yet ever new. And it is to this spirit of friendly rivalry that we owe the multiplicity of breeds and varieties which grace the show benches of to-day, many of which are of quite modern growth and their origin practically contemporaneous with the sole cause of their evolution—the growth and popularity of competitive exhibitions. But the subject needs study. One of our best-known judges who has risen from the ranks of breeder and exhibitor has well said that, to become a successful exhibitor one must be tactful and up-to-date, and still further draws the inference from the truism that our judges being only human like ourselves, having their own personal likes and dislikes, one of the greatest secrets of successful exhibiting is to know what kind of specimens to show under various judges. This knowledge can be best obtained by visiting a number of shows judged by different judges, especially to study the type of birds winning the premier honours in the variety one is interested in.

BE SPORTSMANLIKE.

But let one and all remember before all else that in this pastime of exhibiting Canaries one should be prepared to lose with as good a grace as to

"I generally pair a clear
Cock with a marked
Hen."—(Vide page 76)

win. It is both futile and foolish to adopt the legal maxim of abusing the winner, or the judge either for that matter, when one fails to score a win. It is far better and more dignified in every respect to preserve a perfectly cool demeanour, and to keep a tight rein alike on spirit and temper: neither allow boundless enthusiasm to carry you beyond reasonable limits when you carry off the cups and trophies, nor righteous or misplaced indignation to betray you when you win—*nothing*. Exhibiting is, in a sense, merely one method of gratifying the sporting instinct which every man possesses more or less. Therefore, above all else, endeavour to show good sportmanship, and if you lose one day hope to win the next. Do not expect a bird that won yesterday must necessarily win again to-day, even if it meets the same birds under the same judge, nor accuse a judge of bias if this has happened. There are so many little details that might have turned the balance against it on this occasion. It might have been tired and seedy at judging time, but picked up since, or it might have been refreshing itself by taking a dip in its water tin, and in either case appearing at a serious disadvantage for the time being. When these things are taken into account and it is remembered that a judge must distribute the honours for the merits of the birds as he sees them, and not as he thinks they may appear a few hours later, some latitude must, in justice, be allowed for these apparently contradictory awards.

CONFORMITY TO CUSTOM.

When embarking in the exhibition arena it is well to set out with a stern determination to avoid any deviation from the prevailing customs and usages in the conduct and government of shows. In the matter of cages, the style, size, colour, water tins, perches, right down to the string used for tying on labels, one should conform to the orthodox and recognised details. However good a taste one might have in preparing the cages to suit particular birds, or however smart and excellent contrivances one may devise for convenience in holding cards, labels, perches or any other matter of detail, it should be rigidly excluded from the show cages if it differs in the least apparent manner from that in common vogue; otherwise, if the owner is a successful exhibitor, these little disparities will, sooner or later, be pounced upon by his unsuccessful rivals and may cause him much unpleasantness. His motive may be of the most innocent and honourable description, but it will not deter the disappointed exhibitor, who is a bad sportsman, endeavouring to smirch it when the owner reaches the zenith of a successful career. It is, therefore, most advisable to studiously avoid even the appearances of evil.

SAFETY SHOW CAGE NEEDED.

There are now so many excellent models of show cages on the market that it would appear as if there were no room for further improvement.

Indeed, the only direction we can see for inventive genius lies in the production of a safety cage from which the bird cannot be removed without sufficient trouble to attract some attention, which would go far to prevent theft or injury at shows. Such cases are, however, happily of rare occurrence, and we may at least hope that by the time the desired invention is produced, there will be no more need for its use. Several attempts to perfect such a cage have been made, but the probability is that the idea is impracticable, inasmuch that access to the bird must be free and comparatively unobstructed to the judge, should he wish to remove the bird from its cage to examine it minutely before arriving at a decision, and his time is often far too limited to allow it to be wasted in getting birds in and out of the safety cages so far devised. Were it permissible for the exhibitor to secure the cage before it left his possession until its return, the thing would be quite easy, but that being impossible makes the matter largely impracticable.

UNIFORMITY IN SHOW CAGES.

In cases where specialist clubs have adopted a particular style and colour of show cage it ought to be generally used by all fanciers of that particular variety. To do so would help us a long way towards the millennium when the exhibition world will be free from petty jealousies and suspicion. But that time does not appear to have arrived yet, and everyone has a pretty free hand to exercise individual ingenuity in the matter of show cages and staging. First of all one must consider the fact that it is the birds and not the cages that have to be judged and that the exhibits must, or *should*, appear of perfectly neutral ownership before the judges. This conformity to recognised conditions should extend also to the colour of cages. The outsides are invariably painted or enamelled of a black colour. Black paint having the peculiarity of remaining a very long time in a slightly "tacky" condition, it is much better to give the outsides two thin coats of black enamel similar to Brunswick Black, and finish off with a coat of copal varnish.

NO GLOSSINESS INSIDE.

Enamel is also largely used for the insides. But as this dries with a glossy surface, which some hold detracts much from the appearance of the bird, it might be better to use a paint which will dry with a flat or dull surface. To do this get a sample of the exact colour required—a piece of coloured paper will do—take it to a painter and ask him to mix the quantity required of "flatting," and to make it to dry hard. This is a term used in the trade for paint mixed without oil or varnish, and which dries with a perfectly dull surface. It will dry quite hard, and may be washed almost as much as enamel. Do not use ordinary paints, nor be persuaded to take those

A NORWICH PLAINHEAD

**Illustrating the untidiness of feathering at the thigh and root of tail as described
by Mr. Geo. Gardner on page 85.**

that are sold in tins ready mixed, as they will not answer the same purpose. Go to a working painter, explain your object and get him to mix what is wanted. The colours used should be those which contrast with and show up the colour of the birds to the best advantage. Remember that the most skilfully got-up bird will be handicapped if shown in a slovenly cage, or one painted inside with an unsuitable tint. For yellow, buff and lightly variegated birds the inside of the cage should be a rather deep porcelain blue; several shades lighter for Cinnamons; for Lizards and Greens a light sage-green, sometimes called a greenish-grey. The floor of the cage may, with advantage, be always done with white.

A SHOW MANAGER'S ADVICE.

On the subject of exhibiting generally, Mr. J. W. Ramsden, of London, whose brilliant success as manager of the Great National Crystal Palace Show in late years has earned for him the popular title of Prince of Show Managers, has very kindly sent us the following notes:—

“When deciding upon exhibiting a bird, choose a show, if possible, where the railway journey can be made without a break. If a change, or changes, have to be made *en route*, dispatch the birds in good time, for connections are timed for passengers, not parcels or live stock. It often happens that trains are late in arriving at junctions. Passengers are hurried into the trains waiting for them, but the poor birds are left on the parcels trolley, waiting to be rebooked and forwarded by the next train. For cross-country journeys consult the time table carefully and send the birds off so that they will arrive at the show in good time. This helps both the exhibitor and the show manager. A bird that arrives at a show in good time has every chance to recover from the fatigue of the journey before being judged; whilst a late arrival is seriously handicapped by being judged when tired and hungry.

“For greater security it is as well to insure the exhibits when on rail. A case can be insured for as low a fee as threepence. The insured value, it is true, will not be the real value of the exhibits, but an insured case is better looked after during the journey, and this in itself is well worth the small fee mentioned.

PRUDENT ADVICE.

“In exhibiting, be sure to read the rules and regulations governing the show carefully. Make your entries before the advertised date of closing, and if you do not wish to dispose of the bird, or you are not quite certain of its real value, place a prohibitive price on it in the column provided for the purpose on the entry form. Many a novice has exhibited a bird and priced it at a pound or two when really the bird was worth five times the price quoted. On reaching the show he has found his bird marked ‘First’ and ‘Sold’—much to his disappointment.”

"Be careful to exhibit the bird in a clean, smart cage. If a cage has to be bought for the purpose, purchase it a month before the date of the show, so that the paint and enamel may set hard before use. Nothing annoys a judge more than when handling a cage to find the paint still "tacky" and his fingers soiled. When sending birds to a show always pack them in cases or hampers. Never send them wrapped in paper. Birds wrapped in paper more often than not arrive with the paper torn, and exposed to the chilly weather, so often prevalent during the show season. Exhibits packed in cases or hampers are nearly always packed first for the return journey. It is when all such packages have been dispatched that a few birds are found left on the show benches. Enquiries elicit the fact that there are no cases for them and they have to be wrapped in paper and sent off perhaps

hours later than they would have been if suitable cases had been provided. Water tins should be sent with exhibits, and the name and address of the exhibitor clearly marked on the inside of the lid of the package. 'Live Birds' should be painted on the sides of the cases in bold letters.

"The bird should be washed five or six days before the show and sprayed lightly with distilled water each day up to the day before sending to the show."

The Disappointment of the Novice Exhibitor.

(See page 82.)

PACKING CASES CONSIDERED.

These necessary receptacles for conveyance to and fro on more or less lengthy journeys must have careful consideration. When the owner is able to accompany the birds and see them properly fed and watered after staging he has a vast advantage over his less fortunate brethren, not only in seeing that the exhibits are properly attended to upon arrival at the show, but also in supervising their safe conduct on the journey. But the fortunate ones are comparatively few; hence the need for good sound packages for the conveyance of exhibits in safety. These should be of such a nature as to withstand a large amount of rough usage without injury, combined, as far as possible, with lightness in weight. Albeit, in this matter, if any error is made, it is always best to err on the side of thoroughness. When an accident happens to valuable birds packed in the flimsy, fragile and makeshift type of case the owner has far less real cause for grievance, and his complaint will carry less

weight than that of the man who can point to good, strong and stable packing cases as a sufficient protection against all ordinary risks of travel. The kind of fastener used on the outer case should be such as will be perfectly secure on the journey to and fro, yet quickly and easily undone by anyone so as not to give unnecessary trouble to show officials in the hurry of unpacking and staging and re-packing. Do not use any kind of tricky fastening which may be a puzzle to others and cause the loss of a considerable amount of time at the show; then there will be no excuse for birds not being unpacked and staged in time for judging.

THE FOUR CARDINAL POINTS.

Let the prominent features of packing cases be : stability, security, warmth and simplicity. The size of the cases may be regulated by individual

THE CORRECT WAY TO PACK BIRDS FOR A SHOW—AND THE WRONG WAY.

requirements, but it will be wiser to have several small ones than one large one. Cases made to hold two, three and four cages are most convenient, as with these sizes any number of exhibits between two and eight may be sent in two cases. Cases to hold two, three and six cages will be equally suitable for larger exhibitors. Closely-woven wicker cases are much lighter than wood ones, and may be used with advantage during the warmer months of the year. They should be well lined with canvas or baize. A pocket should be made in the lining, preferably on the inside of the lid, or a couple of elastic bands placed across, and the space plainly labelled "For Cards." During the height of the show season the weather is more treacherous and severe and wooden cases should be generally used. These should be made of quarter-inch deal for cases up to the three-cage size, three-eighth-inch boards for the four- and six-cage size, and a proportionate increase in strength for any larger size. A few snips taken out with a gouge round the top will afford all the ventilation that is required. A canvas pocket must be tacked on the inside for the reception of cards, or elastic bands substituted. Elastic bands will accommodate any size card and hold it securely in place. And it is so simple, just

"OUR CANARIES."

YORKSHIRE CANARIES.
CINNAMON-TICKED BUFF. CINNAMON-MARKED YELLOW.

two strips of flat elastic, about an inch wide, fastened across the inside of the lid parallel to each other, and about three inches apart.

As regards the outer fastening there is nothing that will comply better with the requirements than leather straps with buckles. Two straps should encircle each case, and be permanently attached in order to avoid the risk of their becoming detached and lost during a show. They must be so fixed that the buckles fit over the opening of the lid. In order to prevent tampering with the exhibits, or the interference of the curious *en route*, it is only necessary to place a dab of sealing wax, or a wafer over the junction of the lid and the box, and to attach the show address label with a string that goes all round the cages, and seal the knot by which it is tied with wax. This method is both expeditious and secure, and reduces the risk of tampering with the exhibits *en route* to a minimum.

A JUDGE'S COUNSEL.

Upon the question of exhibiting, that well-known and popular judge, Mr. Geo. Gardner, of London, has very kindly contributed some excellent advice on the subject, as seen from a judge's standpoint. "Anyone who intends to succeed in the exhibition of Canaries," he writes, "will have to observe rigidly and religiously the strictest attention to feather conditions. It is of no use staging a bird in these days that is out of health, or lacking in bloom. The race in this respect is very keen. What a judge looks for is, first of all, a clean bird. Of course, that is allowing that you have the requisite points present of type, quality and colour. A dirty or soiled bird, be it ever such a good one, vexes a judge, and often an otherwise good bird is pegged back points for that reason. Some exhibitors are very slovenly in this respect. It may be from lack of time; it may be from neglect. Whichever it may be it is antagonistic to full success. Judges demand the presence of cleanliness and nattiness, and they penalise its absence.

"By nattiness is meant compactness of feather—the absence in all plain-head varieties of looseness or untidiness of feather, either at the thighs or root of the tail. It is no use showing a bird of the plainhead varieties with 'trousers,' or slack thigh feather, or a loose feather at the tail root. It is no use the novice concluding that this is a minor item—it is not so. A very fine point often decides the issue, and this frequently is that fine point.

THE VALUE OF MINUTE DETAIL.

"By cleanliness a judge means freedom from soils. Birds are fed so levelly and of such exquisite colour; birds are bred so carefully, and of such beautiful feather; the most scientific attention is paid to shape, that in these days of keen competition, a judge is bound to be influenced in his decisions by what the novice may consider minor details. They are not so. They frequently mean all the difference between a 'First' and a 'V.H.C.,' which latter is

not seldom given as a solatium—partly to hint to the exhibitor that he has a good thing, and partly as a punishment for slovenliness and neglect.

“Lack of nattiness is sometimes produced through jadedness or overshadowing. ‘Do not be too greedy’ is the moral to draw here. Clean feet, clean nostrils, aye, cleanliness all round the root of the beak, and clean tail tips, are essential details of staging. Never exhibit a clean bird in a dirty cage. Some do. Beware of dust also. Dust soils. Watch that the perches are clean, and the cage in keeping with the bird. To spoil the ship for a ha’porth of tar, is an offence against good sense.

“Do not put a bird out of a flight direct into a show cage and expect it to face the music of streams of show-goers and critical examiners unperturbed. You will rue it if you do. Give it a little training by acquaintance with a show cage. How can a judge fairly weigh the merits of a wild or unsteady bird, maybe with a tail or wing feather away through bashing against the cage? The exhibitor must think—and think diplomatically. In fact there is more gained and lost by detail and ‘finish,’ than meets the eye of the man who is in too big a hurry to stop and consider, and he suffers in consequence. When he suffers he condemns the judge.”

ON TRAINING.

On the question of training preparatory to exhibition we have had various opinions expressed. Mr. A. G. Filby, of London Fancy fame, writes:—“In preparing birds for exhibition, beyond getting them used to the show cage by running them in for a few hours daily, I do nothing.” This would appear at first sight contrary to the general opinion. On consideration, however, it will be seen that the difference is more apparent than real. All varieties do not require the same amount or the same kind of training, but what every single exhibit requires, and must possess, as shown by our judges’ comments, is a certain amount of tameness, and a readiness to show confidence in humans. Yet this must not be overdone. It should stop just short of bringing the bird that degree of tameness when it wants to fight and play with every finger that approaches its cage. In this condition, a judge no sooner begins to handle a bird’s cage than it crouches across the perch, its feathers standing out, and wings dropped, challenging the visitor to fight; or, maybe, comes right up to the end of the perch, and with one foot on the perch and the other gripping the wires of the cage, squeaks out its challenge in this manner. In either case the effect is the same in preventing a judge getting a proper view of the more necessary points of excellence. Their chances will be as seriously handicapped as are those of their wild and unsteady competitors.

“Training operations,” write Messrs. Hopper Bros., of Keswick, “should be commenced when the birds are five weeks old. Do not neglect the bath and plenty of fresh air. Should you decide to show, do not send them on a

long journey, if possible, for a start. Select the shortest journey, particularly if they are first-season birds. Do not run them into the show cages at the last minute. Let them have at least two hours in the show cage before packing, and see that your travelling case is a nice fit for your show cages—neither too large nor too small. When the case is large and requires a lot of packing up to keep the cages firm the birds become wild and dash about, often breaking wing and tail feathers, if nothing worse occurs, and if too small the trouble is equally as bad. Try to remember the show officials will have others to pack and unpack.”

WHERE TRAINING MOSTLY TELLS.

It is in the birds of position, as the Belgian, Scotch Fancy, Yorkshire, and to a less extent the Lancashire, Dutch Frill and Border Fancy

(for the Border Fancy is undoubtedly closely approaching this class of birds) where training in its highest form is required. Writing of the Border Fancy Mr. J. S. Wilson, of Workington, says :—“ Staging a Border for exhibition demands some skill at the present day. The man who cannot wash his birds and turn them out ‘as clean as new pins’ every time, cannot hope to be long successful on the show bench. All show birds require a period of training to subdue extreme nervousness. They should be run

When the travelling case is too large and requires a lot of packing the birds become wild and dash about.

into show cages and handled and examined as in the process of judging. This should be repeated daily, in fact, it can scarcely be overdone. Nothing enables a good specimen to show its points better than steadiness on the perch. Many judges have no patience with a nervous, fluttering bird.”

BELGIAN BREEDERS' METHODS.

Judging from the remarks of a very successful Belgian breeder, Mr. John Fairley, of Coatbridge, intuition plays a certain part in the training of this variety. According to this authority, the birds should be taken in hand as soon as they can do for themselves. His method is to “run them into show cages and speak to them kindly and handle them gently, till I get them to understand what I want, which does not take long if they are good Belgian birds, as they are very intelligent and quick at picking up what is required of them. When within three weeks of a show, I take what I think will win

and train them three or four times a day for a few minutes each time up to the date of the show."

The method of Mr. James Robertson, of High Harrington, one of our oldest and most successful exhibitors and breeders of Belgians, demands even closer application and more manual training. His remarks are worth weighty consideration. "A matter sometimes takes possession of me," he says, "respecting the breeding of birds of peculiar shape other than that of the original wild bird. Does not nature say 'so far you may go but no further,' and adopt means to bring deformity back to the original shape if allowed natural selection or treatment? High class specimens mated together seldom produce any young, so I am rather of the opinion that if any of our peculiar shaped birds were allowed natural selection and surroundings, not being trained or wrought with in any way to induce shape or position, they would revert back to the common stock. These thoughts cause me to handle the young Belgians much, and induce them to put themselves as much as possible in (to my mind) an unnatural position, which, when once acquired, they seldom forget; it seems rather to grow upon them like any bad habit in the human."

A HELPFUL RUSE.

With its closely related variety, the Scotch Fancy, Mr. James Little, of Newcastle, emulates some Yorkshire breeders in turning a ruse to good account. "When the birds are fit to take away from their parents," he writes, "I put them in a show cage for three weeks, and hang them high up so that when you go near they naturally look downwards, and they want handling only when you are feeding them. After that I put them in the flight, and let them stay there about fourteen weeks, only handling them about once a week. I think they thrive better in the flight when young, and by the end of the time mentioned you will see if you have any that are likely to be good show birds." An analogous method to this is that of some Yorkshire breeders who train the birds in an open wire show cage, and place a spray of tempting green food or some other tit-bit on the top, almost over the perch, to induce the bird to spend as much of its time as possible reaching up to nibble at it, and at the same time pulling itself up into a good typical, racy, and upright pose.

A WORD ABOUT THE GREEN.

There exists a wide-spread opinion among the novices in exhibition matters, that the green varieties, on account of the naturally dark hue of their plumage do not require the usual hand-washing preparatory to being shown, as is found so essential in all light-feathered varieties. In some instances this may be very true, as when one enjoys the privilege of living in a pure atmosphere in the country, when the air is not loaded with smoke and grimy smuts, as is too often the case with fanciers residing in large towns. But the experience of Mr. V. H. Deacon, of Liverpool, as given in the following notes from his

pen on the subject of exhibiting, show that this successful breeder of Greens is an ardent advocate of the usual form of preparation. He writes us:—

“In getting the Greens ready for the show bench, I know a lot of Green fanciers do not advocate the washing of Greens. Personally I wash mine every second or third show, and I find I benefit accordingly. The day I intend washing them I spray them first thing in the morning, with a little glycerine added to the water, as I find by doing this that after the birds have been washed the feather is more soft and silky. After washing the bird, I get it as dry as possible with a silk handkerchief, and then put it into a steam drying cage, and when the fourth bird is washed the first one is ready to come out. I

FOR PRACTICE IN WASHING, THE NOVICE SHOULD USE GERMAN HENS.

then well rub him down with a silk handkerchief until I get a good shine on him, put him back in a show cage till next morning, and then let him have a bath. I usually wash them five days before a show. I do not believe in rolling the birds up in flannel as soon as they have been washed, as I found when I tried this that the feathers about the neck had a twisted appearance, and put it down to the bird moving his head about when wrapped up in the flannel.

“I may say that I manage to keep my show birds in hard condition during the show season, and anybody who has followed the Green Canary Association's competition during the first eleven weeks of the show season, knows that

it is only birds that are hard and healthy that can do it. I put it down to the following diet during the show season: Best Spanish Canary seed and a teaspoonful of crushed sunflower seeds twice a week; no other seeds of any description, but once a week a little sweet apple.

THE PROCESS OF WASHING.

Washing a small bird is always a most delicate and risky matter for an inexperienced hand to tackle, and although we may describe it faithfully in minute detail, the beginner at the job will be most soundly advised to proceed cautiously, and endeavour to get an object lesson or two before becoming an operator himself. In these days of many fanciers' societies, with frequent lectures and demonstrations on every kind of fancy topic, it is no very difficult matter for the novice to get such object lessons by becoming a member of his local society, as few seasons will be allowed to pass without one or more washing demonstrations being given for the edification of the novice members. Having attended a few such demonstrations, let the next step be to wash one or two of the commonest birds obtainable as an experiment, and to acquire the first elements of skill in handling them during the operation. We have known our ubiquitous friend, *Passer Domesticus* (to give the common House Sparrow his scientific cognomen) caught and "put through the mill" for this purpose. But he is a very poor substitute for the domestic Canary, inasmuch as he shows too much fight and gives as much as he can in return for the uninvited attentions to his person by gripping with his beak and stubbornly holding on to the bristles of the brush or sponge or even the tenderest part of your fingers, so that it is exceedingly difficult to make any progress, and in the end one has acquired but a very unreal idea of the delicate handling required by the highly-bred and submissive Canary. Taken altogether, the very best subjects to learn on will be a few of the commonest German hens. The financial risk is quite trivial, and the knowledge gained will be in every particular just what is required for the all-important task of operating upon valuable show birds.

REQUISITE PARAPHERNALIA.

Before commencing one must make a point of checking off everything that is necessary to complete the task. A good, bright, clear-burning fire, a supply of boiling water, a supply of cold water, a cake of good pure soap, two small sponges, or bits of soft flannel, or one sponge and a soft badger hair shaving brush, a small camel hair artist's paint brush about as large round the bristles as an unsharpened lead pencil, not larger (this will only be required to clean the nostrils and round the beak when this portion is badly soiled); three earthenware bowls large enough to hold the bird in and move the hands quite freely; a good supply of old linen handkerchiefs, or pieces of old sheets of an absorbent nature; a drying cage; and a drying board which consists merely of a piece of board 4 feet long by 15 inches wide, the exact measurements are

of no importance, which is placed along the fender, tilted a little towards the fire, and is intended to lay the birds on when wrapped in the drying cloths until ready to be transferred to the cage. Lastly, but by no means least, see that everything is perfectly clean, including the perches and inside of the drying cage, and the floor of the cage covered with a piece of clean dry flannel or a layer of clean sawdust; and have a pair of very clean hands to start with. Have the drying cage nice and warm, and the cloths all placed conveniently around the fire to keep hot and dry, and be handy to take hold of as and when required.

A DRYING APPARATUS.

The somewhat extensive list of washing appliances may be curtailed

THE DRYING APPARATUS, DESCRIBED ON PAGE 92.

a little, and the result made easier and more successful rather than otherwise by the use of a specially made drying apparatus. This has the advantage of being portable and always ready for use in any position, and does away with the necessity for blocking up the domestic hearth and fire with drying board and cages. Proper drying of the plumage is almost as important a factor of success as the preliminary ablutions, and when used with discretion the apparatus in question will bring about the ideal drying conditions with a minimum amount of

trouble and attention. Such an apparatus has been invented and used by one of our leading exhibitors, who recently published its description, which we give here for the benefit of fanciers generally. With a small amount of ingenuity anyone can construct a similar appliance.

With this article in use after the final rinsing, the bird is carefully dabbed over with the sponge which is squeezed as dry as possible from time to time, in order to extract as much moisture as possible from the plumage,

and the bird is then rolled in a warm drying cloth and transferred at once to the archway running through the middle of the hot water tank. This tank, it is needless to say, should be filled with hot water at the commencement of the proceedings, and the heat, sufficient for all parts of the apparatus, is afterwards maintained by the small spirit lamp, which is shown underneath. The chief virtue of the apparatus lies in the novel hot water tank, specially designed to dry the birds in the best possible manner.

The owner's description of the drying apparatus is as follows:—Dimensions as given in sketch; wooden sides, with door in each; wooden top, with piece of perforated zinc let in for ventilation; glass front and back; zinc hot-water tank, with arch opening or "tunnel" running right through, for purposes of the preliminary drying. A piece of very thick felt is laid on the "tunnel" floor, and the heat is supplied (or maintained, rather) by a spirit lamp.

WHEN ALL IS READY.

Having completed all the preparations the fancier may now proceed on the lines adopted by that well-known exhibitor and popular judge of Canaries, Mr. J. C. Barnes, of Sheffield, who writes:—"I fix the drying cage on a small stool with the wire facing the fire, at a distance from which the birds will feel a fair amount of warmth. They must not be too near—where they are likely to dry too quickly. If too near the fire, you will have the feathers curling very much, and apt to dry harsh. Two ordinary basins will be required to wash the birds in, one for washing and the other for rinsing purposes, a piece of soap containing as little soda as you can secure, also a badger-hair shaving brush, or a camel-hair brush, either of which will answer the purpose admirably, as they are very soft and will not injure the bird's eyes like other kinds do. For drying cloths I prefer pieces of old bump sheet, or, better still, old silk handkerchiefs. These I place over the oven door to get nicely warm for putting the birds in when I have washed them. I next get a jug and fill it with cold water. This I use to reduce the hot down to about 80 degrees, which is about the proper heat for washing purposes. You have now two lots of water ready (one for washing and the other for rinsing). It is necessary to hold the bird firmly, yet not tightly. Birds, as a rule, naturally struggle a little while undergoing the process, so be as gentle as you can.

"I generally take the subject in my left hand, with its head between my thumb and finger, the tail lying along my wrist, and its back upwards. I then dip all of it, except the head part, into the warm water for a second or two, allowing the feathers to soak. I commence to wash the tail first, well rubbing in the soap; then I do the back and sides. After these are finished, I turn it over and wash the throat and under-part of the neck, proceeding along the breast to the neck again; I then turn it back to the position I had it in at the commencement to do the head and neck, not forgetting

SOME RESULTS OF CROSS-BREEDING.

Lancashire-Yorkshire, first cross. Lancashire-Norwich, first cross.

round the beak, which very often you will find extra dirty. The neck I pay special attention to, as this is considered the dirtiest part and the most difficult to do.

SOME USEFUL HINTS.

"Do the job thoroughly. It requires work to get the dirt out. Don't be worried about the soap entering the birds' eyes. The soap won't harm them. You can now transfer the bird to the other basin and give it a good rinsing, cleansing it from every particle of soap. If you leave the least bit of soap in the feather, all your labour will have been in vain. The washing process is always an exhausting one for the bird, however proficient the operator may be. The novice who washes a bird for the first time, generally thinks that the bird he has experimented with is booked to go where so many other birds have gone, but by careful handling, seeing that it does not contract a chill, and going through the process as quickly and efficiently as possible, in a matter of half an hour's time after it has been placed into the drying cage it will be seen trimming its feathers and returning to its former self. After giving the bird a good rinsing go over it with the sponge to take away the moisture out of the feathers." It will now be ready to wrap in one of the drying cloths and place either upon the drying board or in the archway of the drying apparatus, as the case may be, for the initial stage of drying. "Some fanciers," goes on our contributor, "recommend starting washing the birds at their heads first, but my experience is that by leaving the head until last you exhaust a bird very much less, and consequently, the quicker it comes into condition again. The proper, and by far the best, way is to wash the feathers the same way as they lay, as, if you do otherwise, you are almost certain to break or damage some of the quills, and that would spoil a bird for exhibition purposes.

"Some of the birds may sit a little mopy when placed in the drying cage. If so, stir them up, and keep them on the move, thus preventing their catching a cold, and assisting them to get dry by compelling them to hop from one perch to the other, to and fro. In a very short time your birds will appear to be none the worse, and will possess a much brighter and brilliant appearance. When you take the birds out of the drying cage place each one into a small cage separately (I always use show cages for the purpose) to dry thoroughly. It is advisable to leave them downstairs overnight, covering them over with something to keep them warm and free from any draught. By morning they will be ready for removing to their usual room, and the first thing to be done is to syringe them. This should be done for two or three mornings, or if you should prefer to run them back into their own cages (which must have been previously well cleaned out and be free from any dust), you might with advantage hang on a bath. It is very often the case

that birds will not bathe the morning after they have been washed, but they will do so on the second day."

ANOTHER METHOD OF PROCEDURE.

The plan adopted by that veteran fancier, Mr. W. Shakespeare, of Kentish Town, who probably enjoys the distinction of being the only avine valet, in that washing and preparing birds for exhibition is taken up as a profession, varies to some extent from the more usual method as described so well in the above notes. We, therefore, are permitted to give the following summary of Mr. Shakespeare's method. "In the first place," he writes, "you want a sharp fire, clean cloths for drying, and the drying cage ready. The one I use is about 16 inches long, 9 inches high, and 10 inches wide, with wire top doors opening one each way from the middle, and it fits on a zinc tank which holds about a gallon of hot water. Also three bowls for water and two sponges. I use the water in the first bowl fairly warm, the second a little cooler, and the third one only slightly warm. Hold the bird in the left hand, on its back, and well saturate its feathers before commencing to operate. When ready, commence on the breast, then wash under the wings and the tail, holding the tail against the side of the bowl to wash it. Then begin under the throat and neck, and gradually work right down the bird to the tail again. Now hold the root of the tail and wings, and turn the bird over on its stomach and wash the back, wings and tail; then wash the head, neck and sides of face and the nostrils, and work down the bird to the tail again. Then commence to rinse it well in the second bowl of water, and finish the rinsing in the third bowl. Now dry it well with cloths and put it in the drying cage, and leave in the same room, if possible, till next morning.

THE FINISHING TOUCHES.

"I recommend the birds to be washed about three days previous to showing. The last day before you take them to a show, groom them up with a little glycerine on a soft silk handkerchief. When starting washing," he concludes, "you must be firm, but by no means nervous." Then he adds the cautious advice in making the initiatory preparations to see that the feline member of the household is securely confined in the cupboard—a bit of wholesome advice which will pay well for its careful observance.

We must, however, caution the beginner to proceed very warily in attempting the grooming with glycerine, or disaster is certain to follow. The work requires an ability that can only come of much experience to do it successfully, and the novice should, therefore, experiment for a time on birds not intended for exhibition, in order to acquire the adept skill necessary for carrying out this form of preparation, and also to observe its various effects when correctly performed and when overdone. A small, soft silk handkerchief, old but

clean, is the ideal, with just the faintest suspicion of glycerine on it; it is gently stroked all over the bird in the direction the feathers lie as the bird is held in the hand, gently grooming the feathers smooth all over the bird. When successfully performed a beautiful bloom and lustre will appear to add life to the feather and the bird will appear to the very best advantage. But it is extremely easy to overdo the matter, and if this occurs, even in a slight degree, the plumage will catch and hold every particle of dust and dirt it comes in contact with, even if it does not, as may easily happen, clog the web of the feathers together in such a way that the bird is utterly ruined for showing until after its next washing operation. The safest way for the novice is to see the thing done, if possible, and then learn from practice on a few birds which are not required for showing.

AS AN ALTERNATIVE.

There are two other methods for the use of this valuable shampoo which have many adherents. In the one case, a few drops of glycerine are well mixed in the water with which the birds are sprayed for a day or two after the washing has been performed. This method also has slight risks of being overdone or of the birds not being sufficiently energetic in pluming themselves afterwards. The other plan, and by far the safest of all for the amateur, is to well mix a small proportion of glycerine in the third bowl of water in which the bird is rinsed for the last time to complete the washing. The proportion should be a small teaspoonful to a pint of water. When thus used it materially assists in bringing back the bloom to the feather and is so safe that the veriest tyro, if adhering to these instructions as to quantity used, will never fail. Then if the birds are sprayed each day afterwards, nothing will surpass the use of pure distilled water, as already mentioned by Mr. J. W. Ramsden, for the process, and then a final rub-down with a silk handkerchief in which is not a trace of glycerine will complete the toilet.

In the further manual grooming of birds for the show bench, cognisance must be taken of the variety in hand. All plain-headed, short-feathered breeds must be smoothed off as neatly as possible about the flanks and breast to obliterate any tendency to loose feathers or frill. On the other hand, the Dutch Frill should have at least five days to recover from the washing before being shown, and its frills deftly groomed in the interval with a camel-hair brush in the approved style and direction. Much can be done, and that quite legitimately, in this way to improve a bird's natural points. A more pronounced and decided curl may be given to the frills where it is considered advisable, and a little divergence from the most desirable direction of the curls may often be most successfully corrected by slightly moistening the offending plumage with a brush dipped in warm water and gently brushing with a dry brush (which should be warmed from time to time) in the

proper direction until the feathers are quite dry, finishing off with a few strokes of a silk handkerchief.

TO PREPARE A CREST.

Heavily feathered varieties like the Crests and Lancashires should always be allowed a day or two longer to recover from washing than the short, close-feathered breeds. An interval of five days between washing and showing is none too much. This gives the web of the feather a chance to be well plumed, and gives the owner time to discover and correct many little faults in

**"AN OTHERWISE GOOD CREST MAY SHOW A DECIDED TENDENCY
TO SPLIT AT THE SIDE."**

plumage by judicious grooming. A Crested bird, especially, may have its chances very considerably improved sometimes by perfectly legitimate and skilful grooming. An otherwise good and large Crest may show a decided tendency to split at the side and this is frequently caused by a single feather, or maybe two or three, having a tendency to grow to one side, and with sufficient substance to hold the under or over-lying feathers in the same wrong direction; or it may be simply due to a feather or two having been given a twist in the wrong direction in washing the Crest. But whatever the cause, the offending feathers should be moistened with warm

"OUR CANARIES."

CLEAR BODY DARK CRESTED NORWICH CANARY.

water to render the quills more pliable, and then brushed gently in the required direction with a small, warm and dry camel-hair brush until the feathers are quite dry. Then continue a little longer with a small pad of old silk made nice and warm, and grooming all round the crest to give it the best possible shape and droop, always keeping the centre as small and round as possible.

DRESSING THE CREST.

Roughness at the back of a crest, which often causes a patch of bare skin to be seen, may often be very largely hidden in this manner by grooming the rough and outstanding feathers closely down on the back of the head after the preliminary moistening. For all these operations it will be most profitable to use a properly made crest brush, which can be purchased for a trifle, and which is of the most suitable size and texture. Too large, too small or unsuitable texture in brushes will prevent one manipulating a crest to the best advantage.

HEALTH AND HIGH CONDITION ESSENTIAL.

To succeed on the show bench, birds must be in best possible health, and in a fairly high condition generally. On this subject we again draw upon the experience of Mr. J. C. Barnes, who writes concerning this topic:—"I am not a great believer in over-forcing, but I do believe in giving help to birds that have to undergo the ordeal of exhibition. It is essential that show birds appear on the bench in the best of trim, but at the same time I advise you not to get your birds into too good form. Conditioning birds can be overdone as well as underdone. By getting your exhibits into too high condition, they are apt to pull themselves out of shape; use discretion and don't overstep the mark.

SOME USEFUL TONICS.

"I use egg and bread-crumbs with a little sugar and maw seed added, Parrish's Chemical Food, Allen and Hanbury's Byno-Phosphates, hemp seed, gentian and a special mixture. To one egg boiled hard (15 minutes) add trifle more bread-crumbs than egg, one teaspoonful of maw seed, half teaspoonful of moist sugar. To each bird give half teaspoonful a day. Parrish's Chemical Food can be placed in the drinking-water two or three times a week, to the strength of port wine colour. It is a strengthener and safe to use. Allen and Hanbury's Byno-Phosphates is most excellent, and finds favour with me more than anything else I use by the way of liquids. To every ounce of water I give one teaspoonful stirred well together three times a week. A better conditioner for birds I do not know. Hemp seed is relished, but give in moderation. Gentian acts as a tonic, and a few drops given in the birds' drinking water twice a week is beneficial.

THE PRIME CONDITIONER.

"The special mixture I mentioned is made as follows:—One pint of the best port wine, 1 lb. of honey and 1 oz. of citrate of iron and ammonia. Heat the wine, then add the honey, stir well, and when dissolved add the citrate, again stir until all the crystals have melted and are mixed with the rest. When cold, it can be bottled and is ready for use at any time. Give it in the egg-food, adding sufficient of the liquid to make the same moist but not wet. Mix well together and give to each bird half teaspoonful every other day or thereabouts. You will soon find your birds in the pink of condition, and will be amply repaid for the little extra trouble and expense. The port wine is a strengthener, the honey acts beneficially on the bowels, and the citrate is a valuable stimulant. This recipe can be used with benefit on all breeds, and is really a grand conditioner."

HOW TO MAKE ENTRIES.

The art of exhibiting having been now fully described, we venture to give the few preliminary details which must be first observed before a bird finds its way to the show bench. Having possession of the birds and a desire to exhibit them, the owner should look up the list of show dates fixed and the advertisements of coming shows in the weekly organ of the fancy, *Cage Birds*, and select a show or shows offering classes for his particular variety. It will be advisable to select for a start shows with a limited radius which includes one's own district as this will assure short journeys to and fro. When one has acquired some experience will be the time to launch out for large open shows and longer journeys, and, *inter alia*, keener and closer competition.

THE FIRST STEP.

Having selected a show, write the Secretary, whose address will be found in the places just referred to, a polite request for a schedule of the classification. This will arrive in the course of a day or two, and will be accompanied by an entry form. Fill in the required particulars of the birds you intend to exhibit, get a postal order or other form of remittance for the amount of entrance fees, and enclose it with the filled-in entry form a few days before the advertised date of entries closing. Never wait until the last day for sending in your entries. That only inflicts undeserved punishment on an over-worked and long-suffering Secretary. Do not forget to enclose your name and address in all communications. In a few days the only usual acknowledgment of, and receipt for, cash sent will arrive in the form of cage labels, which are to be attached to the cages in which the birds are shown. The class numbers will be marked on these, so be careful when sending several birds to tie the correct labels upon each cage, and thus avoid the disappointment and chagrin of finding you tied on the wrong labels, with the consequence that your birds are marked

"wrong class" at the show. When the important time arrives for sending off the birds, they must, or should, have gone through all the preparatory stages already described, be allowed an hour or two in show cage before final packing, then tie on the correct labels, pack up securely, and send off in good time, and determine to either win or lose with an equally good grace.

ON THEIR RETURN.

When the birds return from their expedition unpack them at once in a comfortable room quite free from chills and draughts, give a little warm water to drink, or, if the weather is very cold and severe, or the journey has been a long and exhausting one, give a little warm milk in which a few drops of whisky have been mixed for the first few drinks. Give also a small teaspoonful of egg food with a few drops of the special port wine conditioner mentioned just now mixed in it—just enough to leave the food still crumbly moist—not more—as the egg food should never be given in a wet or sloppy condition. Add another thirty drops of the mixture to an ounce of water and give this in place of drinking water until the following day. Keep the birds in a cosy room for the first night after their return, and gradually harden them off, as it were, before returning them to the bird-room. As already pointed out, overshadowing must be strictly guarded against. Six times in a season at a distance from home should suffice to satisfy any fancier who studies the welfare of his birds.

EXHIBITING FROM A JUDGE'S POINT OF VIEW.

Mr. J. C. Barnes, in this connection, says:—"Competition, no matter in what variety, now-a-days, is so extremely keen, that one must put forth all his energies, tact and so forth, when placing exhibits on the show bench, if success is to be attained. The experience I have gained as an exhibitor and judge I shall endeavour to state as plainly as possible, so each and every one will grasp quite easily the hints I wish to convey. First of all, pardon me for placing before you a motto that my old school-master used to ding into our ears daily, and that was, 'what is worth doing at all is worth doing *well*.' These words, I am fully convinced, are well worth studying by those whose ambition it is to gain honours in the avicultural world.

CLEANLINESS ESSENTIAL.

"Well, now, for birds to stand well up in the cards, they must be shown clean, as those that are shown in a dirty state stand down in the majority of cases. A good specimen is well worth staging for all it is worth, and a moderate specimen looks far better when clean, than when in a somewhat dilapidated condition. I always make it a practice to wash my birds a matter of five days previous to them facing the judge. By giving them this

length of time their toilet has, in almost every case, been set right, and they appear in smooth feather. In fact, those fanciers who live away from the smoke and dirt of a city I should advise to wash their birds a full week previous to the show day. Many make a great mistake in tubbing the birds too late and not giving them ample time to plume themselves and set their house in order before being judged. After having washed your birds, it is necessary to spray them each morning previous to the show day. This procedure tightens and conditions the birds. Again, always see that your cages are neatly enamelled, perches clean, cage labels tied securely on and easily seen so as not to cause either the judge or stewards of the show unnecessary handling of your specimens to find same.

DESPATCHING TO THE SHOW.

"Having entered your birds for a show, be sure and get them off in good time, the night previous to the function taking place, if at all possible. I will give a few reasons why I advise you to do this. Birds having done maybe, a long, wearisome journey on the railway, and having been handled in transit, not too gently perhaps, become excited and unsettled somewhat. Should this be the case, and your birds arrive at a show just previous to judging time, they are too nervous to do themselves justice, whereas when they have been staged the night previous to the show day they have settled themselves and appear in far better trim when the honours are given out. Again, I have seen birds which have arrived just on the point of judging time appear thick and down and therefore not capable of going the pace necessary to place them anywhere near the top of the ladder. If such birds had been in the show-room the night previous, such would not have been the case; they would have pulled themselves together before the placing of the cards.

THE ORDER OF THE BATH.

"Again, in many cases, when birds arrive at a show and are taken out of their travelling cases and placed on the bench with water provided them, in they go for a bath with all their might and in the twinkling of an eye are like drowned rats almost. When this happens, they cannot possibly get dry and smooth before judging is over. Again, when birds are sent on their journey one never knows what connections and changes in transit takes place which means time, and those forwarded same morning as a show often have placed on their cages labels to this effect, 'too late for competition,' and only their owners really to blame. Therefore get your specimens off in good time."

CHAPTER V.

FEEDING.

THE feeding of our Canaries at different seasons, in the various stages of their existence, and for particular effects, is a subject which demands a chapter to itself in order to give it proper consideration, and render the information readily accessible for reference at all times when difficulties arise in which the question of diet may, and all too frequently does, play an important part. It is safe to assert that of all the troubles that beset the path of the Canary fancier and the ills that bird flesh is heir to only a very small proportion arise from causes which are quite outside the realm of dietetics. Given proper attention to cleanliness and hygiene, a constant supply of pure fresh water, and a properly selected and well regulated dietary Canaries are among the most healthy and least troublesome of all domestic pets, and are probably subject to but few ailments. Yet it is a fact beyond dispute that under adverse conditions of diet and management really sound and healthy birds after an adult moult are of comparatively rare occurrence.

SHOULD STUDY THE DIET.

This will undoubtedly appear to be a very wild and sweeping assertion; nevertheless, it is based on long experience of inner knowledge, as it were, of the hobby of Canary keeping, and the fancier who wishes to see his stock wear well, and keep well, until a good old age, and to avoid the loss and worries inseparable from a stock of weakly birds, lacking in constitutional stamina, and consequently susceptible to every unhealthy influence, and offering little or no resistance to disease or the evil effects of unwholesome surroundings, should make a close study of diet and general hygiene his first care as a matter of principle as well as prudence.

THE ESSENTIALS.

It is not our intention to enter into a long dissertation or prolix details upon the scientific problems which the question involves, or of the physiological effect of particular foods upon the living organism. All such learned essays are, in our humble opinion, in better taste when restricted to their proper sphere in a work on physiology, to which all who wish may readily refer and dip into the scientific aspect of the question, and acquire what an old pedagogue was wont to describe as "useless literary acquisitions" to their heart's content. But we are convinced that the vast majority of fanciers seek to know little of, and care less for, the obscure and mystic phraseology, as it undoubtedly is to the great bulk of this class, of this branch of science. Therefore, empiric though it will appear in the eyes of the scientific, we have decided to take the average fancier on his own ground, and tell him in language every word of which he can understand from the result of long years of practical experience of ourselves and some of the most skilful and

practised breeders of Canaries of modern times how to feed and treat his birds at all seasons and for all purposes.

The most essential points to be observed with the utmost care and rigidity are cleanliness, purity, and freedom from contamination of any kind whatever in every item of food supplied, or, it may well be said, in every article, whether of food or other necessity, supplied for the use of the birds. Freshness of food supply is a doubtful virtue if used without a qualifying term, or a definite refer-

HAND FEEDING YOUNG CANARIES BY MEANS OF A SMALL GLASS SYRINGE.
A useful method when the parents are bad feeders.

ence as to the particular food alluded to. Seeds may be quoted as an example, forming as they do, the great bulk of the diet. Here freshness would naturally be taken to imply the use of the seeds immediately after harvesting and storing: whereas, this would be a distinct disadvantage with one of our most valuable and largely used seeds—to wit, Summer rape. This seed is very apt to scour birds a good deal when used soon after harvesting, and requires to be properly stored and mellowed, as it were, for some months before it is in the best condition for

WHAT IS THE WORLD LIKE OUTSIDE ?

Young Canaries ready to leave the nest and commence life on their own.

use. With this exception most, if not all, other ordinarily employed seeds are best used within the year following the growth for reasons which will be found in a later chapter on seeds and foods. It is when we come to deal with putrescible items of food as soft, moist articles such as egg food, bread and milk, and so forth, that absolute freshness is of the first importance, and which, also will be presently dealt with.

NECESSARIES OF LIFE.

Contrary to the opinion sometimes expressed the actual necessities of life are extremely limited in number, and might for all practical purposes, and often with decided benefit to the health of the birds, be almost entirely restricted to four or five items. It must not for a moment be considered a real necessity to be constantly changing the food from one item to another in order to ensure the health of the bird. Such is by no means the case, and it is no uncommon rule to find that the birds which most frequently break down, or end their career of usefulness prematurely are just those which have been consistently treated most liberally in the way of multifarious items of food, under the mistaken impression that the greater variety of food supplied meant corresponding increase of health and fitness.

THE BOUNDS OF VARIETY.

Of course this must not be taken as a disparagement of all variety in feeding, as, within certain limits, it is both wholesome and beneficial, but what we wish to be clearly understood is that the thing may be very easily overdone, and that a slavish devotion to constantly recurring changes of régime are the outcome of a mistaken notion concerning the importance and necessity of such changes. Good sound Canary seed, and well stored summer rape, are the "bread and meat," so to speak, of the Canary, and almost the only items of diet which may be considered as wholly indispensable, and must be always on the menu either mixed together or separately, as the convenience of the owner or other circumstances suggest.

THE MENU IN DETAIL.

In addition to this necessary staff of life other items may be looked upon as either partial or sole luxuries; those which we would put under the former classification being in certain conditions, and at particular seasons, among the most urgent necessities. Hemp for instance must be regarded as essential during a good portion of the breeding season, and in a minor degree during severe winter weather where birds are kept in outdoor avairies or cold rooms. At other times it is a luxury best suited for occasional use. White millet although never largely used as food for Canaries in this country, was at one time much in favour with Continental breeders—chiefly French and Belgian breeders of large framed birds—with whom it formed a large proportion of the staple food of their birds. Its use in appreciable quantity can, therefore, scarcely be so disastrous as English breeders have been led to

believe. It is, nevertheless, and we believe rightly, now used in the most limited quantities. As a staple diet Canary seed is so much superior to millet, that there is never a prospect of the latter now supplanting it as long as good sound, or even a moderate quality of Canary seed is available. Inga, thistle, sunflower, linseed, sesame, gold of pleasure, are all rich, oily seeds suitable only for occasional luxuries, and in certain conditions, as will be pointed out presently. Maw is of exceptional benefit during the moult, and as an appetiser for "seedy birds," or to tempt them to partake more readily of any particular food they are offered and do not appear to appreciate. Teazle is also a useful appetiser for occasional use, whilst such items as oats, groats and rice, are most useful to partly supplant egg foods, or for building up the frames of large varieties. Egg food, bread and milk, and similar moist foods are essential during the breeding season, less so in the moulting period, and most useful during periods of exceptional strain and illness.

A WORD ON MOIST FOOD.

Having used the term moist foods just now, it may be advisable to digress here for a moment to point out what is meant by the term. It does not mean a food saturated with water, or reduced to a pasty mass, much less a sloppy mess. Such a degree of moisture as will not release any perceptible moisture on to the fingers when handled is all that is desired, or with just a slight sense of dampness to the touch, yet, to all appearances, dry. The inner part of a loaf of bread one day old may be taken as a convenient type of what is required. When making the egg-food with fresh hard-boiled eggs, no additional moisture to what is contained naturally in the substance of the eggs is necessary to bring the prepared food ready for use to the proper degree of moisture.

A COMMON MISTAKE.

Most novices, when mixing soft food, err on the side of making the food too moist, which, besides being less palatable to the birds, has the very serious disadvantage that in a wet condition it forms a far more suitable cultivating medium for the germs of septic fever than is the case when it is used in a more dry state. Bread and milk will in some cases prove an exception to this rule, as it will be found impossible to prepare pure bread and milk in this condition of comparative dryness. But even in this case it should be pressed as dry as possible without reducing it to a sticky paste, save in the few cases of illness where it is advised to be given with only just the surplus fluid drained off. In all such cases only sufficient for the birds to clear up in a few hours should be given at a time.

It is only in this country that the first named three of these may be called uncommon, as they are well-known and frequently used articles in various parts of the Continent, where they would form a kind of substitute

for our egg food. Among French breeders a kind of very light fancy bread, called "Colifichet" is frequently used as part of the bird's diet; in Germany a kind of cake known as "Gofio"; and in some places it is a kind of cake called "Simnel" cake which is popular. The last named was formerly a well-known and popular cake in this country, it being a time-honoured custom amongst our forefathers to eat "Simnel cake" with the old folks at home on "Mothering" Sunday—as the fourth Sabbath in Lent is still called in country places, and when recently made must have formed an excellent substitute for the ordinary egg food, compounded as it invariably was, at that time of hard-boiled new-laid eggs and stale bread crumbs—the latter probably of a far coarser and less refined quality than is common in these days.

Mealworms as a dietetic tit-bit are given by some of our oldest breeders in much the same way as they are given to Skylarks, but in smaller quantity—that is, one or two a day in addition to the usual diet. Canaries which have come to recognise these larvæ as juicy luxuries know well enough how to deal with them, and there will be no risk at all of them creeping away if they are simply tossed into the cage, or placed on the end of a perch. But Canaries which have never been offered them are either afraid to go near, or totally ignore their presence, so that it is necessary to provide against them making unwelcome excursions all over the room or house, by crushing the head part, and fastening the mealworm with a pin on to the end of a perch, until the birds have been "blooded," so to speak. Once they have tasted a few such succulent morsels they will require no inducements to take them promptly as soon as the opportunity occurs. That they are most beneficial items, we have proved beyond doubt, by the rapid improvement that will take place in a bird which is down in condition, and also when dragging along in a protracted soft moult, when one or two mealworms a day are added to the diet for a time.

**The Stalk, Blade, and Head
of growing Canary Seed.**

MEAT FOR CANARIES.

To the great majority of fanciers flesh meat will appear as the strangest of all items of a Canary's diet. Yet it has its devotees, and was brought forward for discussion at a debate held by a prominent society of Canary breeders a few years ago. At this meeting Mr. Ramsden related how, on a visit to Yarmouth once, he saw an old postman with what is known as a "liver-knob" (a piece of boiled liver), grating it up with scraped carrot for

some young Thrushes, and putting some of it meanwhile in an egg-drawer for some young Canaries, which devoured it eagerly. The liver was boiled hard.

It is interesting in this connection to point out that liver boiled until hard, grated, and mixed with a little meal has long been known to poultry breeders as one of the finest substitutes for insect food for young chickens hatched early in the year, when natural insect food is unobtainable. Some other fanciers have experimented with meat meals prepared for feeding poultry and pheasants with a good deal of success, whilst one well-known and prominent fancier, during the debate in question, described his method of preparing grated beef by hanging it in a dry oven until it was thoroughly dried throughout, when it could be easily grated for use on a nutmeg grater.

TO GRATIFY A CRAVING.

Another method of supplying flesh for a definite purpose has been brought to our notice by more than one amateur breeder, who claim to have used it with signal success for the special purpose alluded to. In this case a scrap of raw lean beef or mutton is fastened in the wires at the end of a perch when a hen that is rearing young commences to pluck, and suck the quills. The plan is said to be quite successful, in that the hen supplies the evident craving that possesses her for the time being by pecking and sucking at the meat, and the young thereby escape her unwelcome attention. Whether this craving is natural or not we need not stay to enquire, but when we reflect that although by nature a seed-eating bird, it is more than probable that, as with almost, if not every seed-eating species in a state of nature, a certain amount of insect food is partaken of as a necessity at certain seasons, and therefore a kind of instinctive craving for insect food is still inherited in greater or less degree by our domestic Canaries—a craving which, through long generations of forcible suppression has, in the species as a whole, become dormant, and of little or no effect, yet in individuals showing a tendency to revert back to the original stock, may become an effective principle and cause the subject to seek to satisfy the desire by canibalistic attacks on the young, or by devouring the tender quills of the sprouting plumage.

A POINT IN FAVOUR.

Supposing this theory were correct, there is no other time in all the year when the tendency for it to break out and become operative is stronger than when she is undergoing the excitement of rearing a brood of young, and another clutch of eggs simultaneously developing in the ovary—a combination of circumstances which would appear to invariably accompany the vice. The circumstantial evidence in favour of the theory is rather strong, and has not diminished since we first pointed out this possible explanation of the vice several years ago. Nevertheless, this proposed remedy is given wholly on

the authority of our informants, it having been our good fortune to be void of opportunities for putting it to a practical test personally since it was proposed to us. Still, no harm will be done by making the trial when suitable cases crop up, and a preventive or remedy for the vice is worth some trouble to discover.

In like manner, being advocates of the simple life, we must admit the soft impeachment of having but little practical experience of the use of flesh

AN INGENIOUS ARRANGEMENT FOR GIVING CANARIES VAPOUR BATHS.

Fig. I. Vapour Cabinet for giving Canaries inhalations or vapour baths. Note the door is cut short at the bottom to allow access of air to the lamp for the purpose of proper combustion.

Fig. II. Wire trestle to hold vessel containing liquid for inhalation, so the lamp may be placed underneath.

Fig. III. An ordinary travelling cage, with the bottom removed and strips of wood nailed across in its place, ready for the use of the little patient to be subjected to a vapour bath, or inhalation.

meat in any form as a part of Canaries' diet. When given in the form of crissel and similar preparations of meat, even in small proportions, the cages are very apt to become malodorous through offensive evacuations, so that we never continued the régime long enough to express any dogmatic opinion about it.

So much having been written concerning the feeding stuffs and diet in general, a menu for each important period of the year will help to simplify matters for the fancier. The winter months will form the most convenient

starting point, as it is during this season that the foundation of success or failure, as the case may be, of the following season is laid. It is, too, the period when one seems to go wrong more often than any other. Curiously enough, during the time the birds are breeding and moulting the average fancier seems to get more into the usual and proper routine, which may be but the natural outcome of the large amount of practical instruction given during these seasons in the weekly journal *Cage Birds*. But when the moult is over, in a vast proportion of cases, the birds are kept on a diet either too high or too low in condition, so that by the time the new year opens, the stock is either run down, or overfed and ready to come into premature

breeding condition at the slightest encouragement. In either case the result is bad, and will not add to success at the proper season.

The expression method of relieving obstinate cases of egg-binding in Canary hens, as practised by Dr. T. A. Bowes.

After a sketch kindly supplied by Dr. Bowes.

QUALIFYING CONDITIONS.

It is difficult to lay down hard and fast rules, as the conditions under which the stock is kept will make a material difference to the diet required. Birds, for example, which are kept in a cold, unheated room, with limited space for exercise, will require a greater proportion of heat forming, or oily seeds, to keep them in good condition, than will those which are housed in a comfortable and artificially heated room. In a manner of speaking, artificial heat may be looked upon as providing in a different way the same result as one gets from fat, oily foods. It will therefore be seen that a diet which is perfectly suitable for birds in a warm room is insufficient for those kept in a cold one, whilst a diet which would be most suitable for birds in a cold room, with plenty of exercise, would almost certainly prove too stimulating for those in a warm room, and would probably result in bringing them into breeding condition prematurely.

HOW DISCRETION IS NEEDED.

It is easy to write down a list of foods which should not be given too freely, and of those which may under any ordinary circumstances be used with freedom. But such a list would, after all, have to be modified to suit every particular case, and in modifying, a good list may, through ignorance or indiscretion, be turned into a bad one. As a staple diet during the winter months, good sound Canary seed is unrivalled. This and a little pinch of rape every second day, and mixed seeds twice a week, with a small quantity of egg-food or bread and milk in between once during each week, and a spray

"OUR CANARIES."

BUFF AND YELLOW EVENLY-MARKED BORDER FANCY CANARIES.

of green food or fruit daily when weather is mild, will form a good general plan of management.

It may be varied at discretion on the lines of increasing or decreasing the allowance of mixed seeds, according as the birds are kept in warm or cold rooms, and as they have more or less space for exercise. Give more to those which are kept in the coldest place and have more space for exercise, and less to those which are kept in the warmest place and have little exercise.

WHEN SPRING ARRIVES.

Kept on the lines indicated there will be but little need for the forcing treatment which is too commonly regarded as a necessary preliminary to the pairing time. Given proper treatment and healthy stock—and none other are worthy the position of stock birds—the natural influences operating at the right season should, and will, be all the stimulus that is required to start the birds breeding. The staple should still consist of plain Canary seed, and the pinch of summer rape may be made a daily item. Mixed seed consisting of hemp, inga, teazle, and millet, one part of each, and a half part each of linseed, maw, and gold of pleasure, may be given in the proportion of a half-teaspoonful per bird every second day, and a similar quantity of egg food on the intervening days.

FOOD DURING INCUBATION.

Green food, of which all birds are fond, should also form a daily item as soon as the weather becomes mild and open, but care must be taken that none is given in a wet or frosted condition. This diet should be continued until the hens have laid their clutch of eggs and commenced to sit, when it must at once be reduced again to the plain menu of the winter season, until the time arrives when it is necessary to add extra for the needs of the young which in the natural order and fitness of things should put in their appearance. As to what constitutes the best mode of feeding at this important period opinions vary so much, even when one professedly aims at a simple diet, that no apology will be required for adding to our own a selection from the experiences of other notable breeders.

FEEDING THE YOUNG CANARIES.

When the hatching process is completed one should begin to supply egg-food to each pair as occasion requires, beginning with pure egg yolk, and gradually bringing them on to the ordinary egg-food by the third day. From the fourteenth day until the young are three days old the bath should be withheld, unless given for some particular purpose as will be mentioned hereafter. In the meantime, if all goes well and the hen feeds the young satisfactorily, adhere to simple methods only.

IN THE EARLY DAYS.

For the first three days let the usual seed diet and egg-food suffice. Give the latter in small quantities, and give a freshly prepared supply, whenever possible, at least three times each day. Do not try to economise by mixing any that may be left over with the freshly made supply. This is the very worst kind of false economy. Throw away all that is left, and wash out the egg drawer before giving the fresh supply.

Half a teaspoonful at each meal will be sufficient for the first two or three days: but one must use discretion and not adhere to any hard and fast rule as to quantities. Some birds consume a far greater amount of egg-food than others, and it is a safe plan to endeavour to regulate the supply so that the quantity given is just cleared up before the time to give a fresh supply. It is not difficult to manage this, by noting the condition of the egg drawer for the first few days, and increasing or diminishing the supply as seems necessary.

THE GROWING BROOD.

By the fourth day after hatching the egg-food should have been gradually brought to a compound of one part hard boiled minced egg and two parts stale bread crumbs, which will be sufficiently nourishing for the rest of the rearing process. For hens that are whimsical or delicate feeders a sprinkling of maw seed, or a very slight dusting with soft sugar, or both, as may appear to give the best result in tempting the hens to eat and feed the young more freely, may be added. Or a mixture of equal parts egg, bread, and crushed stale sponge cake may be used instead of simply egg and bread. Any kind of plain wholesome biscuits may, of course, be substituted for ordinary bread, as is very commonly done in these days—perhaps too much so. There is, in fact, too much importance attached to the superior digestibility and assimilability of good biscuits over the common household bread, regardless of the fact that the greater amount of waste matter which bread admittedly contains may in many cases be of the utmost service in providing waste products for the intestinal canal to work upon and thereby promote healthy action of the lower bowel. Just as whole-meal bread, when substituted for white bread, is often the most effectual cure and preventative of constipation in the human subject, so may bread possess an equally salutary effect over biscuits in the dietary of young canaries.

WHEN TO GIVE THE GREEN FOOD.

Green food should be added on the fourth day; in this, as with egg food, adhering to the principle of little and often. A week later a supply of cracked hemp is of the greatest service in helping to make lighter the task of the

parents to provide for the needs of the young brood, which rapidly become more and more exacting and ravenous from this time. When the brood is a large one, or the hens show signs of flagging in their duties when the full diet as above detailed is being supplied, a small quantity of rape soaked overnight in cold water, and drained until apparently dry on the outside, given in a separate vessel will often prove effectual in exciting them to renewed activity. But great care must be taken that this does not become sour in hot weather. Beyond this the fancier should not desire to go, unless stress of exceptional circumstances compel him to do so. Happy is he, and the better his birds, who is able to confine his attentions to the cult of the simple life.

A YORKSHIRE VIEW OF IT.

It is interesting to note here the interpretation given to the term simple living by Mr. D. Mallinson, of Huddersfield, whose long years of practical experience as a successful breeder of Yorkshires entitles his opinions to the deepest consideration and respect. On the subject of diet for young broods he has very kindly contributed the following notes:—

“The feeding of my birds has always been simple. I always use the best Spanish canary seed as their staple food. During the breeding season hard boiled eggs with home made bread and a little granulated biscuit. Also summer rape, Niger seed, and crushed hemp seed about equal parts, a little dandelion or lettuce supplies all that is necessary for the hen to rear her young. Some hens will not feed, no matter what you try them with. Others will take to one particular food, perhaps crushed hemp or green food. Should a hen take to feeding on any particular food, I let her have plenty of it.

A PLAIN DIET THE BEST.

I find if she takes to feeding on any of the above named foods the youngsters will thrive just the same if she scarcely touches the egg food. I have had hens bring out good, healthy, strong youngsters on seed and green food—jumping on the edge of the nest before they were twenty-one days old. It is not always those that get the richest food that make the best birds.

INFANTILE TROUBLES.

“Egg food should not be made too rich; it is too strong for the youngsters, and in many cases it is the rich diet that causes so many young birds to die from eight to twelve days old. It causes either constipation or diarrhœa. They lose appetite and cannot take their food as usual. The hen, therefore, begins to stay more on them, having little work to do, and in hot weather causes ‘sweating’ to come on, and they die in the nest—half grown birds. I do not always blame the hen for this. There is something amiss with the youngsters, the hen having fed well up to that age. Thousands are lost every

year at this stage, and I know of no remedy to cure it. A pinch of Epsom salts in the birds' drinking water sometimes works wonders, but for one nest you rear you will lose a dozen if they begin to show these symptoms at this stage.

WATCH THE HENS.

Some hens, I believe, would sit three months if they were allowed to do so. These I call wasters. They seem to forget that the youngsters want feeding, or do not care. They will squash them flat in the bottom of the nest in two days. I have kept some of this sort until another season, but I find nine out of ten are the same the year after. The best plan if you have a hen of this description is to remove the eggs to another hen and try to rear the young that way. There is a great opening for scientists to discover a good reliable feeding mixture that would be safe to make them feed, but then it may not all be for the best, as we should get overstocked. The market would soon be full. They would get practically of no value, so it perhaps works out right."

AFTER REMOVAL.

Continuing from this stage, Mr. Thos. Arnot, of Hawick, of Border Fancy fame, gives his method of treating the young in the following sentences:—

"From the time I take the young from their parents, I continue the egg food and crushed hemp seed, with a piece of stale bread soaked in boiled milk, three times a week; and twice a week I take a little grit and sieve it, putting the finest amongst the egg food until the young are able to crack the Canary seed, which is generally when about six weeks old. I also give a little German rape seed on the top of their Canary seed; this they seem very fond of. Should any show signs of softness caused by scouring, I add some cuttle-fish bone amongst the egg food, and if it does not put them right I just try tincture of gentian, 10 to 15 drops in the drinking water, and keep sprinkling the floor with permanganate of potash during hot weather, and add 15 to 20 drops to the bathing water."

WEANING THE SPANGLED ONES.

In no variety is more care required during the nestling and weaning stage than in the Lizards. One little error of judgment which exposes the plucking by the hen for a single day may be fatal to the show career of a promising bird. It is, therefore, not surprising to find the most skilful breeders of the variety adopting somewhat drastic methods of weaning, as shown in these notes from that veteran fancier Mr. Levi Butterworth, of Rochdale.

"In the weaning process," writes Mr. Butterworth, "many of the old fanciers had different methods, as fanciers have to-day, some preferred taking the hen from the young, leaving the young in the cage they were reared in.

Others took the young from the hen, putting them in a nursery cage in front of the breeding cage so that the hen could feed them through the wires of the cage. But I have seen hens, when they have wanted to go to nest, pluck the young through the wires of the nursery cage, so that it would be risky to wean Lizards in this way. The best plan to adopt in weaning Lizards is, the first time you see the young perched on the side of the nest box, to take

MR. LEVI BUTTERWORTH'S METHOD OF WEANING YOUNG LIZARD CANARIES.

the nest box out of the cage and leave the young ones with the hen until the following morning. I rise at the break of day and prepare the egg food."

THE DEED OF SEPARATION.

"I then go into the birdroom, place a chair in front of the window, and put the weaning cage on the chair in the best possible light. Then I put a small saucer containing egg food on the cage bottom in the centre, and scatter egg food on the cage bottom on each side of the saucer, and put egg food in the egg drawer, so that in whatever part of the cage the birds may be, they can see the egg food. After this, no matter how good the birds may be, I leave them without the least anxiety. I have not lost a single bird in the weaning process since I began treating them in this way. When the young have been in the cage one day, I remove them to another clean one, also in a light place, and let them all stay together for about two days, then if any are likely to be fit for the show bench I put them into separate cages.

After the birds are weaned, besides the egg food I give them crushed hemp seed and a milk sop once a week until they begin to eat canary seed, when I discontinue the hemp and gradually reduce the egg food until I feel satisfied the birds can do without it."

CATERING FOR THE GIANTS.

In writing of the Lancashire, Mr. J. Garner, of Hazel Grove, says:—"The method of feeding of our early breeders was about the same as it is at the present time. They had to rely upon new laid eggs and home made bread, which many breeders now cannot find anything to equal. We were not blessed in those days with such patent foods the fancier now has to select from, and perhaps we have got into a groove and do not like to come out. But, still, I consider the old-fashioned way the best."

FROM ROCHDA' TOWN.

Yet another experienced breeder of the variety, Mr. William Adams, of Rochdale, sends us details of his method. "For feeding," he writes, "I use new laid eggs, home made bread, and maw seed, mixed well together with hemp, rape, groats, and dandelion. In fact, anything they will eat I supply it *ad lib.*, but am careful as to its being fresh. They are the best judges of what suits them. I generally wean them at three weeks old, gradually withdrawing egg food, a little crushed hemp, rape, and crushed Canary seed until I get them on hard seed at six weeks old. Their staple food afterwards is the same as the old ones. My seeds generally consist of best Spanish canary, hemp, rape, maw, groats, inga (a little), and during the moulting period I generally mix 2 lbs. of linseed in 14 lbs. of the seed mixture."

A USEFUL MENU.

The dietary favoured by Mr. T. H. Melhuish, of Cardiff, for his stud of high-class Yorkshires would also form an admirable menu for non-breeding birds, providing due care is taken to limit the extras, in the way of mixed, oily seeds and soft foods during the summer months, at which time also the supply of green food should be increased. The object is to prevent overstimulating these birds at a season when all the natural forces are extremely susceptible to any exciting influence. "Keep the seed boxes," writes Mr. Melhuish, "filled with a mixture of three parts Canary to one part summer red rape. I do not favour Canary only. Experience has proved to me they do better on these two sorts. If you cannot get a good sample of ready mixed seeds, use these proportions:—hemp, 2lbs.; groats, 1lb.; linseed, 1lb.; white millet, 1lb.; gold of pleasure, 1lb.; maw seed, 1lb.; and give one teaspoonful per bird on the sand tray twice a week. Green food when in season—water-

Some bad points which are reproduced in the breeding of Belgian Canaries.

Faulty legs and tail, too short in neck,
and not straight enough in back.

Wide open tail and crossed wings, but
well up on legs, nice head and shoulders.

(From sketches kindly supplied by Mr. J. Robertson, of Harrington.)

cress, dandelion, lettuce, celery tops; and in winter apple, banana or carrot. In February feed two or three days a week on egg food, half teaspoonful per bird; for hens a little cream should be mixed in with a steel fork if possible."

THE SCOTSMAN'S METHOD.

Before closing our chapter on this important subject, we give the opinions of two breeders of Scotland's national

Canary. Mr. R. G. Joliffe, of Glasgow, says:—

"As regards the feeding of newly paired birds, give them plenty of finely-chopped egg with biscuit. I generally use one of the small mills, costing one shilling, two teaspoonsful of this, with a little maw seed and crushed hemp with the husks blown off as much as possible, and once a week a little linseed and teazle seed."

FEEDING FOR EXHIBITION.

When preparing birds for show, Mr. Joliffe goes on to say—"For several weeks previous to your show date you should begin to feed them with a little hard boiled egg and biscuit—we in Scotland use Tea biscuits or rusks (such as are given to infants) crushed to small particles, and mixed with the yolk of egg. Here, again, the small mill will be found useful. Putting the egg and biscuit in together blends both nicely, equal proportions of biscuit and egg. This should be given fresh every morning, with a little maw seed every second day. No green food should be given at this time. Small bits of carrot will make their feathers nice and glossy and tight in feather."

The egg producing organs of a Canary about eight hours before the second egg of a clutch is due.

1. Egg due in three hours.
2. Ovule to form egg due in thirty-two hours.
3. Ovule to form egg due in fifty-six hours.
4. Ovule due in eighty hours.
- A. Aperture in Oviduct to receive Ovule.
- B. Oviduct.
- C. Vent.

From a sketch kindly supplied by
 Dr. T. A. Bowes.

THE USE OF LIME WATER.

In the notes which are kindly contributed by Mr. John McLennan, of Edinburgh, a well-known breeder of the Scotch Fancy, it is of interest to note the use which is made of lime water in preparing the food. "In rearing the young," he writes, "I have always used Tea biscuits—two biscuits to one egg, in addition to two tablespoonsful of stale bread dried in the oven and ground in the egg mill, moistened with lime water and sweet milk in equal proportions (the milk to be scalded), until it is in a nice, crumbly condition.

On this I feed in the morning, adding at night a tablespoonful of boiled German rape. In addition, ripe chickweed is supplied three times daily in very small quantities, until the young are ten days old. After that age, if the chickweed can be got thoroughly ripe and dry, I supply them with it three times daily. Another splendid seed for rearing is the white heads of dandelion. When ripe this seed is unsurpassed for both young and old birds. When the young leave the nest I gradually reduce the green food, until at the age of five weeks they get no more."

'TWIXT NEST AND MOULT.

"I crush canary and hemp, adding German rape, white maw and gold of pleasure, mix all together, and they learn to pick this mixture very soon. It must be sparingly given at first, as the young are very apt to over-eat themselves, with the result that the stomach gets out of order, and at this stage of life, which is from five to seven weeks, I have lost many a promising bird, before learning how to treat them. Milk sops I find best if they begin showing a paleness in the legs, which is the first indication they are going off condition, and this for three or four days generally brings them right. When I want to keep up the strength of the bird I give a little egg food, adding a small quantity of salicylate of bismuth, which prevents them eating too much, cleanses the stomach and bowels, and generally keeps them in condition."

ON FEEDING IN GENERAL.

Writing on the Norwich Plainhead, Mr. J. C. Barnes, to whom we have already expressed our indebtedness, touches upon the subject of foods and feeding in these terms as the outcome of his long practical experience. "It may be advisable," he says, "to touch upon the seeds provided to ensure the correct feeding of our pets. I always make it a practice of procuring the very best Spanish Canary seed I can lay hands on. This is used as a staple diet.

"Next in order is German summer rape. This should be of a brightish red, sweet and nutty in taste. I administer this about twice a week, in a proportion, say, of three parts Spanish canary seed and one part rape.

"Hemp seed I use pretty freely during breeding season, for the parent birds to feed with. At other times I don't use much, still, this can be given with advantage during very cold weather, being of an oily nature and creating warmth.

"Maw seed is a favourite of mine all the year round. It can be given in many ways with very beneficial effects. Instances:—It can be mixed with the egg food, and is greatly relished by the birds. It also is a capital conditioning seed to give to any of your stock that may appear a little down. Again, when a bird is loose in its bowels maw seed will often rectify this ailment as it has a soothing and binding influence.

A LANCASHIRE COPPY AND BORDER FANCY.

Typical representatives of the largest and smallest breeds of the Canary family.

"Inga or niger seed, which is the long black seed, I don't favour greatly, although I use a little just previous to pairing up time.

"Linseed I provide my birds with during the colour-feeding period, as it assists in getting sheen on the plumage. I generally use linseed meal and mix it amongst the colour food. By this method you can get it into your birds better. Whole seed they often fight shy of, so my experience teaches me.

"This exhausts the list of seeds I utilise, and no other seeds need be stocked to keep your birds in the most robust condition.

"Fresh water every day, clean gritty sand to be always kept in the cage, cages and perches to be scrupulously clean, and fine sawdust on the cage bottom. If this is carried out very little disaster will be in evidence."

CLEAN FOOD ESSENTIAL.

Too much importance cannot be attached to absolute purity and cleanliness of all food supplied. This has already been made clear as regards all soft and putrescible foods, which are subject to rapid changes and decay. But the principle must be rigidly applied throughout and have no limit. All seeds should be fully protected from all external contamination. Mice in particular must never be allowed access to stored seeds. The seeds they foul and leave behind are far more dangerous to the stock than is the loss to the owners of the amount of seed stolen.

Beetles and weevils are also addicted to infest stored seeds, and render it dangerous to the health of the birds, and rape and linseed when not well and properly stored are peculiarly apt to become infested with an almost microscopically minute mite, which soon renders the seed as fatal as poison to the birds. Dusty seed is also most injurious in a variety of ways. In many cases it is probably the cause of a condition of wheeziness which is often mistaken for Asthma, and it is always extremely detrimental to the vocal organs of Rollers and all singing birds.

Seeds stored in close tins or jars in a variable temperature, are almost certain to become musty through "sweating" and prejudicial to health. The ideal way of storage in quantity is in sacks or coarse canvas bags, providing the place is dry and vermin proof. In all other cases tins ventilated with small perforations, more or less according to the size, will form the best storage receptacles, but care must be taken to see they are kept in a cool and perfectly dry situation, and not exposed to extreme fluctuations of temperature.

SUITABLE GRIT NECESSARY.

Grit in the gizzard has been not inaptly called a bird's teeth, from its supposed action in grinding or macerating the food. As the grains get worn and smooth they lose much of their grinding power, and are replaced by a

fresh supply, so that in a state of Nature the "bird's teeth" are being constantly changed and renewed, it follows that in confinement a supply should be given. A caged bird's greed for grit after a period of enforced abstinence goes to prove its necessity. The proper use is to have a supply of suitable sized grit constantly accessible to all birds kept in confinement. A mere powder of dry sandstone is of no use except as an aid to keep the cage floor clean. A proper form of gritty sand should be as free as possible from dust which will rise in a cloud when a handful is dropped on the floor—this kind is apt to prove very detrimental to the vocal organs of singing birds—and should contain grains up to about the size of small summer rape seed. When such a gritty sand is strewn on the cage floor to help in keeping them clean the

birds will help themselves as necessity arises, but when sawdust is used in the cages a supply should be given in a small vessel by itself, and changed from time to time. In large aviaries also a separate grit box should be kept, and an occasional sprinkling of common salt among the grit will prove a very refreshing appetiser.

Numbered Rings for Marking Young Canaries. Enlarged from proper size.

A SOURCE OF SUPPLY.

A splendid kind of grit may be obtained everywhere, even in the midst of our largest towns at times, simply for the trouble of collecting it. This consists of the heaps of grit which are blown off newly-repaired roads and streets into the channels and corners of buildings by storms of wind. In most cases this is comparatively free from dust, and only requires sifting to a proper size in a sieve of small gauge. The modern steam-roller is by no means a bad maker of grit for cage birds, as these road-sweepings will show. Similarly, a very good sample of grit may be collected from the channels on country roads or just outside towns after heavy rainstorms, with the additional advantage that it will be ready-washed and clean; the dust and mud having been washed away and carried down the sewers. The samples of fine, almost powdery, red sand one often meets with are better avoided. Besides containing an undue proportion of dust, which is very injurious to the vocal organs of songsters, it is practically useless as an aid to digestion, and is too apt to discolour the plumage of Canaries intended for exhibition if used at all liberally. Of course

excellent grit may be bought cheaply by the hundredweight direct from the sea coast by large users, and in penny bags by the fancier in a small way.

LIMITING FOOD SUPPLY.

A question which is too much disregarded by Canary fanciers is the regulation of the food supply to meet the requirements of particular cases and circumstances. Sufficient attention is not paid to the obvious fact that in nearly every individual case our caged Canaries live an easy luxurious life, and are practically barred from anything which merits the term of vigorous exercise. Therefore when the strain of breeding and moulting (if such it can be properly termed) is past, their actual necessities in the way of food are most limited, and the evils of overfeeding are far more difficult to combat than the opposite condition, when, as is the unvarying rule, an unlimited supply of food of one kind or another is continually accessible. Birds' appetites and dispositions vary tremendously, and whilst some will not overfeed themselves in any circumstances, there are many others who are so devoted to the good things of life that they do little else but eat and rest. The consequence is that they become dull and lethargic—a kind of feathered "Weary Willie" with an eternally tired obsession—and have every external appearance of weakness and delicacy, which grows upon them and renders them unfit and useless for any serviceable purpose. Though the plan entails a little more attention in order to avoid a calamity, if such birds were kept in a good sized cage and the amount of food supplied limited to the actual needs of the moment, as it were, the labour would be very well repaid by the increased usefulness of the birds in the seasons to come. There is no reason why such birds should not be set apart in this manner and fed each morning and evening in the same manner as poultry keepers supply their stock. It would be a safe plan to calculate the needs of the birds by allowing a fair sized teaspoonful of seed per head for each day's supply, and give half the quantity in the morning and the remainder in the evening just before roost time. Or the control may be based upon observation of the actual consumption of each such group over a few days and giving just such quantity at each feed as will be cleared up in, say, two hours' time. Such regulation of diet, we are convinced, will prove of the greatest value to the health and usefulness of the birds in the circumstances described.

"OUR CANARIES"

CLEAR CAP GOLD LIZARD CANARY.

CHAPTER VI.

DISEASES.

OUR LIMITED KNOWLEDGE OF THEM.

NOTWITHSTANDING the vast popularity of the Fancy in late years and its spread among learned and scientific persons, many of whom have brought to bear their skill and scientific training upon the study and investigation of the numerous ailments which afflict, or are supposed to afflict, our feathered pets, it is nevertheless a fact that, as yet, our real knowledge upon the subject barely suffices to convince us how very little we know of the whole subject of bird diseases. So far as our Canaries are concerned the number of diseases they are heir to which have been scientifically investigated, and have their history understood, is exceedingly limited, and what has been actually learned from these researches has generally been so largely at variance with all preconceived ideas of the cause and cure of avine ailments that it is safe to say that in a few years hence when scientific research has traversed a larger field of bird ailments the vast majority of the literary effusion now being devoted to the subject will be relegated to the archives of out-of-date material, to be thenceforth only taken out to amuse, or form a subject for ridicule. Therefore in the present state of our knowledge the well-worn axiom to "throw physic to the dogs" is one of the soundest that can be offered for the fancier's consideration. Indeed, the trenchant sentence said to be delivered by one of our most prominent professors to a class of medical students—"Be sceptical to the pharmacopœia as a whole—he is the best doctor who knows the worthlessness of most medicine"—exactly expresses the wisest attitude the fancier can adopt towards medicines as a whole.

FOLLY OF ANALOGOUS DEDUCTION.

It is curious that of all the mass of literature devoted to the subject, there exists extremely little that, when closely scrutinised, shows the slightest stroke of actual research or investigation. There is practically nothing save theorising and reasoning by deduction from human ailments, apparently in blissful ignorance of the fact that all animated creatures do not suffer from the same kind of ailments; neither do drugs always produce a similar effect on man and animal, nor even upon different classes of animals. Many substances which are deadly in their effects upon mankind can be taken with impunity by some animals. To give only a very few examples, horses can take large doses of antimony, dogs of mercury, and rabbits of belladonna, without injury; whilst many birds in a state of Nature take as food substances which are deadly to both mankind and certain animals. It is evident, then, that the known effect of any particular drug upon the human subject can never be the means of any certain deductions so far as birds are concerned, even if it were known that both were suffering from a similar complaint.

The whole case was well summarised in a letter written to us a few years ago by a medical friend who has carried out a large amount of research work in the realm of bird ailments. "Unfortunately," he wrote, "so little has been really worked out about bird diseases that one is very much in the dark, and reduced to trying to explain the *post-mortem* appearances as well as one can by their analogy to human diseases—a very unsatisfactory method, for it leaves out all consideration of various special disorders which in all probability attack birds, but of which we know nothing, and it is reasonable to assume that such diseases have special features and histories distinct from those which occur in human beings."

POINTS WHEREIN BIRDS DIFFER FROM MAN.

The probability of some conditions being peculiar to birds is raised to a practical certainty when we consider how widely birds vary in other vital points from ourselves. The normal temperature of their bodies— 108° to 110° —for instance, is roughly from 10° to 12° higher than that of man. Another important distinction is in the quantity of fluid consumed, which is probably in proportion to their weight at least three times as much as man. We were induced to make an experiment on the subject by an incident which occurred at a meeting of a defunct Cage Bird Club when Dr. R. H. Clarke gave his lecture on the subject of Septic Fever. Our old friend, the late Mr. E. P. S. Elfick, had expressed the opinion, based, as he afterwards informed us, upon casual observation, that a Canary consumed about twelve drops of water a day, and as this quantity, by a curious coincidence, worked out very closely with the average consumption of a human being in proportion to weight, it was taken as a working base. Being convinced the bird's consumption was much understated, we made an experiment extending over twelve days with a tame Greenfinch which would eat or drink from the hand. This bird was kept in a small cage, but allowed to fly about the room for an hour each day. An unlimited diet of canary, with a little summer and winter rape, linseed, and millet, was provided, and on two days a little hemp was given. No water was given in cage, but a supply was offered from 4 to 6 times a day in a small vessel from which it drank as much as it pleased each time. During the twelve days it drank 254 times, or a fraction over 21 times a day. Assuming that one drop and a half of fluid was consumed at each drink, and this is probably under-rating the quantity, it gives an average consumption of over 30 drops a day.

ANALYSIS OF THE TEST.

It is interesting to examine the detailed analysis of this experiment, and especially to note the high rate of consumption on the two days, marked with an asterisk, when hemp was added to the diet, and on one of the following days. In any experiment of this kind the nature of the food is, of course, an important consideration.

Date 1896.	State of Weather.	Number of "drinks" taken each time water was offered.	Total number of drinks each day.
August 9	Cool	3 — 4 — 2 — 2 — 2	13
" 10	Warm	3 — 5 — 2 — 2 — 3	15
" 11	Cool	3 — 5 — 5 — 2	15
" 12	Cool	4 — 2 — 2 — 3 — 2	13
" 13	Warm	4 — 3 — 6 — 5 — 3	21
" 14*	Cool	5 — 8 — 6 — 5 — 3 — 2	29
" 15	Cool	4 — 5 — 6 — 6 — 4 — 2	27
" 16	Warm	4 — 2 — 4 — 6 — 6 — 1	23
" 17	Warm	4 — 3 — 5 — 5 — 2 — 5	24
" 18*	Warm	7 — 6 — 5 — 5 — 4 — 2	29
" 19	Warm	3 — 7 — 5 — 4 — 2 — 1	22
" 20	Warm	3 — 3 — 5 — 7 — 2 — 3	23

Water offered 4
and 5 times a day.

Water offered 6
times a day.

INDISCRIMINATE DOSING REPREHENSIBLE.

The really practical fancier who values the best interests and welfare of his stock cannot afford to cultivate a vapid sympathy with that kind of bird-keeping which necessitates the fitting up of a special corner of the bird-room as a kind of avine dispensary for the storage of the host of drugs and nostrums which are now prescribed for the medical treatment of cage birds. The knowledge, how to *prevent* disease by proper and judicious management of the stock is of so much greater value to the fancier than the knowledge how to cure the ills which arise from improper food and general mismanagement, that the former is of paramount importance. The bird that is often in need of some drug to patch up its health is of little use for anything. Certainly it should be most strictly prohibited from reproducing its kind. And there's the rub, for as often as not such a bird is merely patched up in the hope of getting a nest or two of young from it. Yet, curious anomaly, the young thus born in weakness are expected to grow up in strength and vigour.

The multiplicity of extremely handy, and mostly cheap, proprietary medicines on the bird market are undoubtedly a great temptation to the young and inexperienced fancier, who is far too apt to regard these so-called "cure-alls" as modern miracle workers, designed to counteract the natural effect of bad management or unhealthy surroundings without a removal of the cause, which in most cases would be sufficient to enable Nature to effect the necessary cure. We do not for a moment assert that none of these pro-

prietary articles are of value. On the contrary, some of them are of great utility and value when applied with discrimination to suitable cases.

IMPROPER USE OF DRUGS.

When using proprietary articles of any kind, and more particularly drugs and medicines, it is of the greatest importance to adhere as far as possible to the instructions of the manufacturer, who knows their ingredients, and, consequently, ought to be the best judge of their application. Some of these preparations appear to produce a different effect when given in the water to that observed when given in the beak. We once endeavoured to give a much-advertised remedy for asthma to a Canary by the beak, as per instructions, but he was such an obstinate old fellow that it was practically impossible to give it in this manner. A proportionate dose was mixed in the drinking water, which resulted in setting up a violent diarrhoea.

Medicine containing powerful drugs of a poisonous nature should never be given direct in the beak. Neither should drugs which have no affinity with water, and are insoluble, be given in the drinking water when an emulsifying agent cannot be added. Of the latter class of drugs the Tincture of Benzoin, also known as Friar's Balsam, is, perhaps, the most frequently misused. Its greatest effect is to make a filthy mess in the drinkers which it is difficult to clean out.

In response to our request for an opinion Dr. Bowes very kindly wrote us:—"I will answer your question about Friar's Balsam. I agree with you its chief, virtue is to make a disagreeable mess. It is composed of the resin benzoin, the balsams of storax, and tolu, aloes, and alcohol. The first three are insoluble in water, but the aloes partially soluble, so that on adding it to water the resin and balsams are separated, and make a sticky mess, and the aloes remain partially in solution. The effect would be the laxative of the aloes and the stimulating property of the alcohol. Given in the drinking water of birds it can only have any effect on lung conditions by its stimulating properties, and indirectly by unloading the digestive tract. Both these are useful, as will be seen later, but this object can be equally well obtained without disfiguring the water vessel." In a word all the good to be got from it can be equally well obtained, and that much more agreeably, by adding a few drops of whisky and a pinch of Epsom Salts to the water.

HOW TO GIVE MEDICINES.

The actual method of administering medicines to cage birds must necessarily vary. Whenever possible, it should be given in the drinking water, but watch the birds to see that they really drink when they approach the vessel for that purpose. It is only when absolutely necessary that medicines should be given by the beak, as the flutter and excitement of catching a sick bird two or three

THE WRONG WAY.

THE RIGHT WAY.

Two methods of holding a bird when administering medicine by means of a quill.

times a day will often do more harm than any medicine can remedy. And it is not always *possible* to give medicine by the beak. Some birds have quite a *forte* for holding the stuff out of sight in the beak and throat as long as they are held in the hand, but as soon as they are released a sudden jerk of the head scatters it all over the place. There is a right and a wrong way to do it which our artist has endeavoured to show. A quill is the most serviceable article to administer liquids with, as this can be held firmly between the mandibles, and the beak held upwards and head backwards in the best position for

THE MEDICINE DROPPER.

How to hold it when giving medicine to a bird.

swallowing. Do not let the bird have free use of its neck, but keep it a little outstretched, in the natural position for drinking, by holding the head between the tips of the thumb and forefinger of the hand holding the bird. A medicine dropper, or the filler of a fountain pen, are also very useful appliances, whilst a camel pencil dipped in the liquid and held against the sides of the beak is also a very easy method of administration if the medicine is not very objectionable to the bird. Everything, however, depends upon the individuality of the patient and attendant combined.

WATER AND VESSELS EMPLOYED.

When giving medicines in the water the kind of vessels used and the water supply is of great importance. Only glass or china vessels should be employed. Never under any circumstances give medicines in any kind of metal drinker, as the drugs contained in the medicine will often act chemically upon the metal surface of the drinker and convert the contents into a totally different composition, and not infrequently render it most harmful, or actually

CANARIES OF THE PAST.

YELLOW CINNAMON (Rev. W. K. Suart). **MARLED YORKSHIRE** (Mr. E. P. S. Elfick).

WINNERS IN 1894.

poisonous. The value of a medicine may also be considerably reduced by placing it in "hard" water, such as the ordinary service supply in most places. To derive the fullest benefit from that useful medicine Chemical Food,—to give Parrish's Syrup of Phosphates its popular name—it is essential to administer it in distilled water. When placed in hard water the mineral salts held in suspension, which give the character of hardness to the water, act upon certain of the ingredients in the syrup and precipitate them to the bottom where they will be found in the form of sediment, and much of the virtue of the medicine is lost. To be on the safe side it is best to make a point of using distilled water only when giving any form of medicine whenever possible, and where this is not available to use the next best substitute, which is to be had everywhere, viz., clean rain-water, filtered and well boiled, or next to this, the ordinary hard water, well boiled, in either case allowing it to stand until cold before use.

SYMPTOMS AND DIAGNOSIS.

Upon this subject we do not purpose being prolix and verbose, as it is extremely doubtful whether lengthy details on the subject can ever be of practical value to the ordinary observer. Beyond a very few pronounced symptoms, the significance of which will be given in the proper place, there is very little in the external appearance of a bird to convince the casual observer of what is really wrong inside. It may be merely a chill due to a chance exposure to cold draughts, or it may be the worst scourge of the fancier—septic fever—the external appearance will be precisely the same in the eyes of the great majority of owners. What, then, can the owner do in such circumstances? His best course may be clearly outlined. He should first carefully consider all the details of his feeding and management, and the generally prevailing conditions, and endeavour, with the help of the list of ailments and remedies given presently, to arrive at the true state of affairs, and commence the treatment which seems most appropriate. Should the patient fail to respond at once to this treatment no time should be lost in sending a brief account of the symptoms, age, sex and breed of bird, how and where kept, and how [it is fed and treated generally, to the Editor of the weekly journal, *Cage Birds*, and look out for a reply in the next available issue. If several birds become ill and die off in succession, it is always safest to act on the supposition that the illness is of a contagious or infectious nature, perhaps both, and to put in force without loss of time the most stringent system of isolation and disinfection at command, until assured of the real nature of the complaint. To be satisfied on this point one should get a *post mortem* on the remains of one of the first victims after suspicion is aroused. This can be obtained for a very trifling sum, through *Cage Birds'* veterinary expert, for whose address and rules concerning *post mortem* the columns of the journal should be consulted.

DR. BOWES ON CANARY AILMENTS.

Before passing on to our brief summary of diseases we give here a few detailed notes on the commoner ailments of Canaries and their treatment, which have been very kindly supplied by Dr. T. A. Bowes. "*Wheeziness*," he writes, "is a symptom of a departure from the normal inspiratory mechanism. It may be a symptom of no consequence, or of serious import. Any attempt at treatment of it should be directed to its cause, and as this will depend upon a correct diagnosis of the source of the wheeziness it is desirable that the conditions under which it is in evidence should be fully detailed and appreciated.

"It appears to me capable of division into two main classes:

"I. NOT ASSOCIATED WITH REAL DISEASE, but due to extraneous conditions.

"These are: (a) *Pure Nervousness*.—The advent of a stranger into the bird-room, especially when the hen is sitting, will often produce a temporary noisy, wheezy breathing with a partially open beak. It disappears with the exit of the stranger or shortly after.

"(b) *Irritation*.—A spluttering, wheezy cough from (i.) tobacco smoke, (ii.) fluff and dust from nesting material or dusty seed, (iii.) from feeding young, especially when parent is rearing the brood by itself, and more so if a large one. It is due to overwork and irritation of food particles, and is not infrequently attended by some huskiness in the voice.

"II. ASSOCIATED WITH DISEASE.

"(a) *An Ordinary 'Cold'*.—An infective catarrh of the mucous membrane of the nose, throat and upper portion of air passages. It gives rise to a discharge of thin fluid from the nostrils, and if the larynx becomes involved in the downward spread of the inflammation, the voice will become husky, and a wheezy inspiration and expiration produced and frequent irritable cough. The bird is not ill to the same degree as in other conditions, as bronchitis and pneumonia, and takes its food. It is usually well in a week or so. By way of treatment, see that the bird is not exposed to draughts or excessive cold, and nothing in the way of dusty seed to increase its cough. If remedy required, 10 drops each of glycerine, sweet spirit of nitre, and 20 of syrup of tolu in an ounce of water.

"(b) *Acute Bronchitis*.—Arises by a downward spread of the inflammation to the smaller bronchial tubes as a sequence of an ordinary catarrh, or it may arise primarily in the bronchial tubes.

"The symptoms become exaggerated, the bird is ill, feathers puffed out; it has no energy and moves little, and the breathing is rapid and laboured, and cough distressing and frequent, and the noisy breathing accentuated. If the amount of secretion thrown out is much, so that the tubes become blocked, a faint blue tint of the beak will probably be noticed.

"The bird should be kept in a room where the temperature is between 60 and 70 degrees, where the air is fresh and free from dust or vapours of oil stoves and tobacco. It is advisable to give only egg food and maw seed, as the powers of digestion are lowered with the general depression of the system, and such a diet is more easily assimilated.

"To the mixture suggested for catarrh 10 drops of Ipecacuanha wine may with advantage be added, and in the bad cases, with blue tint of beak which may indicate commencing heart failure, 10 drops of whiskey or brandy may be also added.

"(c) *Pneumonia or Inflammation of the Lungs*.—An acute infection, inflammation of the lung tissue. The onset is sudden, and it produces a great depression of the system, and the sufferer is seriously ill. The breathing is rapid and embarrassed, occasional cough, but not the amount of discharge as in a cold. As the inflammatory process advances the lung tissue becomes solid with exudation, and this limits the available breathing space, and the deficient air entry does not allow of proper oxygenation of the blood, and the blue tint of the beak becomes marked. In from four to seven days the bird dies or gets well, and the rational treatment is by stimulants (as the days go on), to keep the heart acting till the inflammation has reached its highest point. A similar mixture can be given as for bronchitis, with addition of 10 drops of oxymel of squills. Egg food, maw seed and milk sop desirable.

"(d) *Chronic Bronchitis*.—May be a sequel to *a* and *b*. The cough and wheezing do not clear up, but remain always present, the victim not being ill, but never quite as brisk as it should be, and there is loss of voice. It is frequently associated with asthma, and may for practical purposes be considered a part of it.

"(e) *Asthma*.—This is a condition in which the chief difficulty is in expiration. The air enters the lungs readily enough, but there is obstruction to its exit. There is a spasm of muscles of the air tubes, together with some amount of mucous secretion. In order to drive the air from the chest extra play is brought to bear on the abdominal respiratory muscles, and it will be noticed that at each attempt to empty the chest the abdomen is raised and the tail depressed. This rises again during inspiration, so there is a movement of the tail which resembles that of a pump handle.

"Asthma is most in evidence at night, and in many cases it is not discovered until the owner goes round the bird-room with a light to discover the delinquent, which gives evidence of its presence, even in the dark, by the whistling sound produced by the passage of the air through the narrowed air tubes. In bad cases the condition is present during the day as well, but it is desirable to know, by a nightly visit to the bird-room, if any of one's stock is asthmatic in a milder degree. The casual observer who only sees his birds by daylight

might notice nothing much wrong with these birds, but mark one of them, and stir it up during the day so that it hurries about the cage a bit, and the breathing is at once hurried, and each expiration accompanied by a whistling sound.

UNFIT FOR STOCK.

"It is highly undesirable to breed with birds that have asthma even in a small degree, as the tendency to it is passed on to the next generation, or it may miss one and make its presence annoyingly evident in the grandchildren. It is just these cases which are missed by not going round the room at night that may mean disappointment and lack of success for the owner, for he will quite unknowingly be courting disaster by perpetuating the strain, which must, and will, retrogress.

"Treatment, to my mind, is useless, as the tendency to it is never got rid of, and although temporary success may attend efforts at alleviation, the complaint sooner or later recrudesces. It is usually less marked in the summer months, and some of the milder asthmatic hens are very good feeders, and may be used as such in case of necessity. It is true that diet does some good in cases of established asthma, but it does not eradicate it. I have seen a case of asthma alleviated by a diet of maw seed alone continued for three weeks—but not cured, only lessened in degree.

A SIMULATIVE CONDITION.

"There is one condition which simulates true asthma, and that is when a spasm of the tubes produces irritation in the digestive organs. Some birds eat enormously, and the quantity consumed is not properly assimilated, and the by-products of disordered digestion poison the system and give rise to the spasm. If such cases are treated by aperient medicine, such as Epsom salts, and the bowels thoroughly cleared and the diet restricted in quantity, the trouble disappears and does not return if the proper quantity of food is given."

SOME COMMON AILMENTS AND THEIR TREATMENT.

In giving a brief summary of some of the ailments which are likely to be met with among Canaries, and the treatment most efficacious for them, a few brief words of warning may be added to the advice already given concerning injudicious "doctoring" of cage birds. In the first place, do not let imagination run riot with good sense in perusing such a list of ailments as is here given, and fancy that every bird which is not a living exponent of the principle of perpetual motion must necessarily be suffering from one or other of these ailments and in need of constant dosage. Among birds there is no dissimulation; no sham illness in order to secure an easy berth and a larger share of the milk of human kindness. They vary to a degree in disposition and temperament, some being naturally as sluggish in their habits as others are mercuric and volatile. But

even the most slow and sluggish bird is not necessarily sick, and makes no pretence of being so. If closely observed, it will always be found lacking in that woe-begone appearance of utter collapse which characterises the bird that is really ill. When a bird becomes ill from an acute disease it quickly shows unmistakable signs of its trouble. But, even so, nothing is more difficult than for the amateur to differentiate between symptoms which seem all "much of a muchness," and, as remarked on a previous page, no time should be lost in seeking expert advice when one's initial treatment fails to bring about speedy improvement.

FIRST STEPS IN TREATMENT.

Never resort to drugs until more simple and natural means have failed. If a bird that is naturally bright and active becomes dull and listless, the condition of the bowels should be noted. This, in fact, should be one of the first points to consider in every case of illness. If there is any constipation, the withdrawal of all hemp and rape from its diet for a day or two and the substitution of a fair supply of crisp, tender green stuff, or a ripe grape broken open, will frequently set matters right. If it does not do so in the course of a day, then a pinch of Epsom salts, or twelve drops of syrup of buckthorn should be added to each two tablespoonfuls of drinking water until the necessary effect is obtained. On the other hand, if diarrhoea exists, a dose of Epsom salts should still be given for one day only, and a little hemp and maw added to the diet, all green food withheld and a scrap of ripe banana substituted. A little dry crushed plain biscuit each day will also help to give relief. If this is not effectual, provided no fault can be found with the feeding and hygienic conditions, and no other symptom of illness presents itself, twenty drops of whisky and five of tincture of opium in each two tablespoonfuls of water will soon bring about the desired effect, and the patient recover its normal condition.

SAFETY WITH UTILITY.

As a first step in the treatment of ill-health an aperient, such as a dose of Epsom salts, or sulphate of soda, equivalent to as much of the powdered drug as will cover a sixpence in each two tablespoonfuls of drinking water for one day, is invariably a safe thing to give even if the most pronounced symptom is undue looseness of the bowels, provided only that the evacuations are not tinged with blood. Never continue any drug treatment daily for a length of time. Whenever the use of drugs is necessary it is best to give them only on alternate days with pure water in between, or for one-half of each day, with pure water on the remaining half. In very acute cases, however, medicine may be given for a short time two days in every three, but pure water should be allowed at least every third day.

The list of ailments now given in alphabetical order for convenience of reference must not for a moment be taken as the sum total of the ills bird

flesh is heir to. It is rather limited to just what is believed will be found of the most service to the average fancier, and the remedies prescribed are also those which experience teaches us will consistently give the most satisfactory results, and are at the same time the safest in the hands of the novice, whose ideas respecting powerful and dangerous drugs are often hazy and peculiar. It will then be found that remedies which may be popular in some quarters are either ignored or relegated to a lower position, simply because an equally satisfactory result is to be gained by a simpler and safer means. In all cases where more than one remedy is suggested preference should always be given to the first named, then if that fails to give a satisfactory result in a reasonable time, the others may be tried in the order named. It will, however, always be best in such cases to consider whether the cause of the complaint has been removed, or a wrong diagnosis made.

AILMENTS ALPHABETICALLY ARRANGED.

ABSCESS.

Is better understood by the term "boil" or "gathering." Used in its proper sense Canaries rarely suffer from the trouble. It will sometimes be found around the oil gland; probably due to injudicious interference with the gland under the impression that it is something unnatural. When it appears quite ripe it should be pricked with a clean needle, the contents gently pressed out, the place well washed with a lotion of a small teaspoonful of boracic acid dissolved in half a teacupful of warm water. Then dry gently and anoint each day with a little zinc ointment. The term is often incorrectly applied to small sores which are apt to occur on the heads of too closely double crest-bred crests, for which similar treatment may be adopted should the sores become troublesome.

ANÆMIA.

Is seen among badly-kept and cared-for birds, and especially such as are hand-reared by negligent persons or naturally by bad parents. It is best observed by an unusual lack of tint in the legs and beak, and there is a weakly and delicate appearance generally. The best treatment is to add a little bread and milk, sprinkled with soft sugar, to the diet every second day for a time, and a mealworm daily is a good addition. Ten drops of chemical food in each tablespoonful of drinking water every second day, and three drops each of tincture of gentian, tincture of calumba, and aromatic sulphuric acid, in the same quantity of water on the alternate days for a week or fortnight, will be most effectual.

APOPLEXY.

Canaries often succumb to this fatal complaint. When it is not a complication of some other disease its onset and termination are too sudden

CLEAR YELLOW SCOTCH FANCY CANARY.

and rapid to allow any treatment to be adopted. Prevention is the only rational thing. Birds of an overfed, full, plethoric habit are the most likely victims, and if such specimens, especially when not mated, show undue excitement during the spring and summer months, they should be restricted to a limited diet of seeds, and a liberal supply of green food, together with aperients if necessary to keep them free from constipation. If an attack could be anticipated with certainty for a day, or in the case of a bird having a slight seizure and recovering, the removal of the whole of the tail feathers in addition to above treatment will give it the best chance of avoiding or recovering from attack.

ASTHMA.

The cause, symptoms and remedy will be found in Dr. Bowes' article at commencement of this chapter. Other very useful remedies are:—
I. R/- Potass: Iod: 5 grains; Tinct: squillæ, Ammon: Brom: and Chlorodyne (Squire's), each 30 drops; Vin: ipecac: 10 drops; Decoction of Senega to one ounce. Dose: six drops in each tablespoonful of drinking water. II. R/- Glyc: Chlorodyne, Oxymel of Squills, and Vin: ipecac: equal parts of each. Dose: five drops to each tablespoonful of water. These mixtures should be dispensed by a chemist.

BALDNESS.

When not the direct result of insect pests the loss of plumage which generally occurs about the head and neck is almost invariably the result of age or debility. Advantage should be taken of natural moulting time to treat the complaint. Warmth, frequent bathing, a generous but not too fattening diet, minus hemp, and a dusting of a mixture of two parts flowers of sulphur to one part chlorate of potash on a little bread and milk twice a week is the best treatment. Externally the bare places may be slightly moistened twice a week with carbolised vaseline, or a mixture of equal parts glycerine and perchloride of iron. In very obstinate cases paint twice a week for a month or so with a mixture of two parts glycerine to one part glacial acetic acid. This must be used quite sparingly, not in greater strength than the above, and not applied anywhere near the eyes.

BOWELS, INFLAMMATION OF.

Occurs in birds from a variety of causes, but most frequently from errors of diet, or impure food or water. The bird becomes dull and listless and rapidly passes on to a state of utter collapse. Constipation may be present at the beginning, but gives place to more or less severe diarrhoea. If the bird is caught and feathers of the abdomen blown aside, the inflamed condition is only too obvious. The first step in treatment is to see that everything is in a thoroughly clean and sanitary condition. Keep bird in a cosy but well-ventilated place, free from draughts, and on a diet of bread and milk, with

a third of a teaspoonful of maw seed daily, and a pinch of canary. Give two drops of a mixture of pure salad oil and syrup of buckthorn direct in the beak in the morning and afternoon of the first day, and one drop of the pure oil may be dropped in the vent at the same time. When this has had time to act on the bowels, dust the bread and milk each day with as much carbonate of bismuth as will cover a threepenny-piece, and leave the rest to Nature. When the most acute symptoms subside cease giving the bismuth, and add three drops of dilute sulphuric acid and two of tincture of opium to each tablespoonful of the drinking water. If constipation should become too pronounced, the opium must be omitted, and twelve drops of glycerine substituted until the undesirable symptom is corrected again.

BROKEN LIMBS.

Amateur attempts at surgery are so frequently productive of nothing better than needless torture to the patient that it is only in the most simple cases that they should be attempted. A badly broken toe or leg is far better snipped off with a sharp pair of nail scissors and the wound seared with a hot knitting needle. Simple fractures, that is, when the bone has not broken through the skin, may have the broken ends brought together into a natural position, and firmly, but not too tightly, bound to a miniature splint made out of a match stick, or the quill of a feather, the perches placed low and convenient, and the bird kept quiet for a month before the splint is interfered with. A breakage in the thigh should be left severely alone, and also wing fractures, the bird being simply placed in a small low cage where it cannot flutter about much, and kept very quiet. Nature will make the best job of such cases without interference.

BRONCHITIS.

For symptoms and treatment see Dr. Bowes' article on page 128. Other excellent remedies are, I. R/- Ten drops of whisky, three each of Oxy-mel of Squills and Paregoric, and one of Eucalyptus Oil, well shaken in each tablespoonful of water. II. R/- Two drops each of Glycerine, Oxy-mel of Squills, Tincture of Lobelia, and Ipecacuanha wine, in each tablespoonful of water, or III. R/- Two drops each of Syrup of Squills, Sweet Spirits of Nitre, Glycerine, and Liquor Ammon: Acet: in each tablespoonful of water. The bird must be kept warm, and in bad cases the use of inhalations will be of the greatest benefit. The vapour cabinet illustrated is designed especially for this purpose. The cup containing the liquid for vapourising may be heated with a small spirit lamp or a Clarke's night light. The fluid in the cup should be about a tablespoonful of a mixture of 1 oz. Izal, 1 dram each of pure Terebine and Eucalyptus Oil to 4 ozs. of water. It may be used three or four times a day for fifteen minutes each time. Great care must be taken that the bird

does not get chilled afterwards. It may be left in the cabinet permanently for a day or two whilst under treatment—much the safest course to adopt.

COLDS AND CHILL.

Are commonly the result of exposure to cold draughts. The bird must be kept warm for a few days and quite free from draughts. See Dr. Bowes' article for treatment. Any of the medicines prescribed for bronchitis may also be given in bad cases. Mr. T. H. Melhuish, of Cardiff, writes :—"If a bird should take a chill, I use only one remedy—1 oz. Glycerine, 3 drms. Aconitum, 3 drms. Essence of Lobelia mixed, and give 10 to 14 drops in water, and a little egg food moistened with honey. Never breed with a wheezing bird, the young will show it sooner or later."

CONSUMPTION.

Contrary to popular opinion this malady is probably extremely rare in Canaries, the vast majority of cases, if not all, supposed to be tuberculous being due to a totally different bacillus—viz., the septic bacillus.

DIARRHŒA.

Treat first with an aperient for one day—either a few drops of Syrup of Buckthorn or a pinch of Epsom salts in the water. Stop all green food for the time being. To each ounce of water afterwards add 30 drops of ordinary chalk mixture; or 20 drops of whisky and 4 drops of Tincture of Opium, or dust a morsel of bread and milk with Carbonate of Bismuth, and give to the bird for a day or two. Always look carefully into purity and quality of all seeds, foods and water.

EMPHYSEM.

Is an inflated condition of the skin which is puffed out with air locally, and sometimes more or less generally, but is most often found about the base of the neck. If the air does not quickly disperse of itself, prick the skin with a clean needle. Add as much citrate of iron and quinine as will cover a threepenny piece to two ounces of water, and give for drinking for a few days.

EYE AFFECTIONS.

The commonest trouble affecting the eyes is cataract, which is still too common among the Crest and crest-bred Norwich, but not so rampant as was the case some years ago. It will be found more fully dealt with in the chapter on the Crest and Crest-bred. There is absolutely no practicable means of curing it.

Inflamed and watery eyes occur at times from exposure to cold draughts. If at all persistent, bathe with a lukewarm decoction of poppy heads or camomile flowers with a few drops of laudanum added. After drying, drop in each eye a drop of rose water, in each ounce of which ten drops of laudanum and five grains of sulphate of zinc have been mixed.

FEVER.

Septic fever, which occurs in many forms, and is one of the worst diseases the fancier has to contend with, is the only form of much importance to the ordinary fancier. Its only remedy lies in prevention and hygienic treatment. It is too important a subject to deal with in a limited space, so every fancier should provide himself with Dr. R. H. Clarke's exhaustive treatise on the subject, entitled, *Septic Fever*, 7d. post free, and the Nutshell Series booklet on *Disinfection of Bird-rooms and Cages*, 2½d. post free, both published at the office of *Cage Birds*.

FITS.

Epilepsy is occasionally a serious trouble with unhealthy weakly individuals. Treatment in almost every case is extremely unsatisfactory, and it would invariably be the kindest and most prudent course to chloroform an epileptic subject. If treatment is attempted, it should aim at by a thoroughly wholesome diet, not too rich, and keeping the bird in the best general health, and not fat condition. Keep the bowels regular with occasional mild aperients if necessary, but preferably with a well-proportioned diet containing a good supply of green food; and give five grains of bromide of potassium in each ounce of drinking water two days in every three every alternate week whilst attacks are frequent.

INDIGESTION.

Digestive derangement may be suspected when a bird is unthrifty and always out of condition, and is constantly at the seed, cracking seed and nibbling and rejecting the kernel. If the seeds are faultless in quality, give such birds a supply of a mixture of three parts Canary to one part summer rape, and add separately each day a morsel of bread sopped in cold milk, drained and sprinkled with a little soft sugar and a pinch of maw seed. Give a little green food daily if seasonable, and at other times a morsel of ripe banana. Add three drops of syrup of rhubarb, and as much Epsom salts as will cover a threepenny-piece to each tablespoonful of drinking water every second day for a week, and on the alternate days three drops each of tincture of gentian, tincture of calumba, and aromatic sulphuric acid. Continue the latter on alternate days until bird is eating seed freely, and then gradually withdraw the bread and milk.

LEPROSY.

A disease affecting the feet of Canaries was brought to our notice some years ago as being very common among Canaries in the West Indies, which would appear to be closely allied to, if not actually analogous with, leprosy of the human subject. It is locally known as "Crab," and takes the form of a growth of a waxy-looking substance on the under surface of the feet. Until recently it does not seem to have been known in this country except in

**THE CORRECT METHOD OF HOLDING A CANARY WHEN CUTTING THE
OVERGROWN TOE-NAILS.**

Inset.—An enlarged toe-nail, showing vein in toe, and the place to cut, just above the vein.

certain foreign Finches, but as one or two cases have aroused suspicion of late we mention the matter here. As it is most contagious it behoves every fancier to stamp out its first appearance when recognised, and burn all perches and disinfect the cages occupied by affected birds. The sketch given of the disease shows the feet of a bird which was but slightly affected. It is more fully described in an article on the Dutch Frill which is kindly contributed to our chapter on that variety by a native of Trinidad. If recognised at the beginning, when only a small part of one toe is affected, amputation of the affected part is the most rational treatment, putting sentiment aside to render good service to the subject. Any other treatment is probably worse than useless by keeping up and spreading the contagion. A recent writer in *Cage Birds* gave a remedy for what was evidently this disease, which, curiously enough, is practically identical with that in vogue among Trinidad fanciers, but whereas this writer claims it to be a cure, we are informed by our Trinidad correspondent that the relief is but temporary, and that the growth of the substance quickly recommences.

THE REMEDY.

In the words of the writer: "Procure a small bottle of peroxide of hydrogen; pour a tablespoonful in a saucer; catch the bird and place feet in liquid; keep them there until it stops foaming. Then take the bird, wipe its feet and have ready a small bottle of lotion, viz.: one part collodion, one part salicylic acid, and paint the feet with this lotion, using a small camel-hair brush for the purpose. Give three coats, and see that each is perfectly dry before painting again. In a day or two after place in a saucer a very small piece of soda (common washing) and pour a little boiling water over; and as soon as the soda water gets cool, place the bird's feet into the liquid for a few minutes. Wipe, and then repeat the treatment. You will find in a week's time that the bird will be completely cured. If, however, it still suppurates, repeat the process again. The peroxide will clear all the matter, leaving it quite healthy."

LIVER, CONGESTION OF.

This is frequently the result of prolonged high feeding on too stimulating foods. When a bird is continually dull and sleepy, picking over its food, but eating little, often constipated, and occasionally troubled with undue looseness, puffy in feather, and very susceptible to weather changes, liver derangements may be suspected. Keep the bird in a nice cosy place, but not overheated, and see it is quite free from draughts and extreme variations of heat and cold. Give a diet of plain canary seed only as staple, with a pinch of summer rape twice a week, and every second day a morsel of bread and milk sprinkled with maw seed. Give a variety of green food daily. In each ounce of drinking water add six drops each of dandelion juice and syrup of rhubarb until a free action of the bowels is obtained. After this a crystal of sulphate of soda the size of a split

A WELL-MATCHED PAIR OF NORWICH PLAINHEADS.
BUFF COCK.
YELLOW HEN.

pea, half as much sulphate of iron, and six drops of dilute sulphuric acid in the same quantity of water every second day for a week, then missed a week, and repeated the following week if necessary, should enable the bird to pull itself together on a proper diet and hygienic treatment.

LOSS OF VOICE AND HOARSENESS.

The latter is generally the forerunner of the former and is nearly always due to cold draughts, overheated air and extreme fluctuations. These causes must be removed. Add a little bread and milk sprinkled with soft sugar to the diet. In each tablespoonful of drinking water add three drops each of Liq: Ammon: Acet; and Oxy: Squillæ.; two of Sweet Spirits of Nitre; and five of Glycerine, for a few days. An inhalation morning and evening for a day or two in the vapour cabinet illustrated on page 107, will also be of great benefit. For inhalation use either the mixture recommended for bronchitis, or twenty drops of Friar's Balsam and six of eucalyptus oil in two tablespoonfuls of water. Guard against chills afterwards.

MITES, EFFECT OF.

These pests have been fully dealt with. There is, however, one effect of their presence whilst the birds are moulting which is usually ascribed to another cause. This is the production of imperfect feathers as shown in our sketch. It is probably due to the mites piercing the quills of the feathers and extracting blood close to the base. To prevent the appearance of such imperfect plumage the course is quite obvious.

MOULT OBSTRUCTED.

It sometimes happens that after a bird has got well into moult, a sudden chill, from a considerably lowered temperature or exposure to draught, causes it to stop, and to exhibit signs of serious illness. This is called being "stuck in moult," and if not speedily relieved the bird will either die, or have its health and future career thoroughly ruined. It should be given a vapour bath morning and evening for a day or two, using only plain water in the vaporiser (see page 107), and kept in a quite warm equable temperature until relieved. A little bread and milk sprinkled with sugar, and twenty drops of Brandy and five of Sweet Spirits of Nitre in each ounce of drinking water is the only other treatment needed.

PIP.

A relic of old times, and a complaint which almost invariably exists only in a vivid imagination. If the oil gland should really appear a little swollen and inflamed, smear it slightly for a day or two with carbolised vaseline, or cold cream, and add a pinch of Epsom salts to the drinking water. Do not interfere any further with the oil gland.

PNEUMONIA.

See Dr. Bowes' article for symptoms and treatment. Warmth, stimulants, and light diet, such as bread and milk, are the chief things to rely upon. Twenty drops of Brandy in each tablespoonful of drinking water for one half of each day, and two drops each of Sweet Spirits of Nitre, Oxy-mel of Squills, Liqueur Ammon: Acet: and Glycerine, in the same quantity of water for the remainder of each day is also a good form of treatment.

PROLAPSUS.

Is a protrusion of a portion of the lower intestines from the vent. Usually brought about in hens by the laying of abnormally large eggs, or too frequent

Deformed Toes and Methods of Dealing with Them.

Fig. 1. Back Claw which comes forward put back into place with a piece of rubber tubing. **Fig. 2.** Crooked Middle Toe, tied into position with fine wool or silk, and a piece of quill.

laying, resulting in a weakened condition of the muscular membranes. It may also occur from obstinate constipation or diarrhœa. In any case the bowels should be induced to act freely and easily, and the protruding organ, after careful bathing in a little cold tea, or a solution of extract of wych hazel, gently returned to its normal position, and a scrap of nut-gall ointment inserted in the vent.

QUARANTINE.

As a preventative of contagious and infectious diseases, a period of quarantine is of the utmost importance with every fresh bird, acquired from whatever source. It must be remembered that all such diseases have a period of incubation, which is the time that elapses between the introduction of the microbes into the system and their development to the stage when they give rise to discernible symptoms of illness. During this period the bird may present the appearance of being perfectly healthy, although it will be carrying the germs of disease in its system, and in many cases disseminating them among its companions, so that by the time it shows signs of illness itself, it may, and probably has, infected quite a number of its comrades. Therefore, the only safe plan is

to rigidly isolate every newly acquired bird in quarantine for some days before allowing it to go near one's own healthy stock. At least fourteen days should be allowed to elapse, but where convenient to do so a month is more advisable in order to be quite on the safe side. Birds probably carry infection in their plumage for a considerable time, so that it is best to err on the side of safety, if at all. Where any reason for doubt exists it is a wise plan to wash the bird when first obtained, and again at the end of the quarantine period, using a little Jeyes disinfectant in the first two waters on each occasion.

DEFORMED TOES.

Deformities of the toes are commonly the result of accidents, due to badly shaped or inconveniently placed perches. Sometimes they occur whilst the birds are yet in the nest. The great point is to apply remedial

measures as early as possible. Except in the nest where we have found mechanical means more successful we have little faith in their utility, not only on account of the risk of overdoing the correction of the deformity and setting up another quite as bad, or worse, but also because these devices are a source of worry to the birds, and cause them to do mischief in pecking and trying to remove the bands or ligatures, as the case may be. A variety of the most successful methods of treating various deform-

Further Methods of Dealing with Deformed Toes.

A—Strip of quill for holding in position. B—Shows toe bound in position.

ities is illustrated in our sketches. But whenever the employment of a set of thin perches will enable a bird to occasionally grasp it with its toes in a natural manner, these should be relied upon to correct the deformity, and will rarely, if ever, fail to do so in the course of time. Where this means fails and the deformed toe is an obstruction to the bird's free motion, amputation is preferable to more drastic mechanical means.

When claws are overgrown cutting should be resorted to. For this purpose a sharp pair of nail scissors is the best instrument to employ.

TUMOURS.

Hard nodules of cheesy matter which sometimes appear about the head and neck are often most easily removed by operation. But as unskilled interference is very apt to make matters worse, and cause unnecessary suffering, the amateur should not attempt the operation by himself (or herself).

WHEEZINESS.

As will be seen from Dr. Bowes' article this may result from a variety of causes. When due to over-feeding, saline aperients should be added to the water for a time, the amount of solid food limited, and a fair supply of green food added to take the place of the solid food withdrawn. A favourite remedy for wheezy birds and songsters when commencing to sing after moulting (to clear away the huskiness), is a paste made by taking the yolk of a hard-boiled egg, whilst hot, and well mashing up with it a heaped teaspoonful of lard, a similar quantity of soft sugar, a salt spoonful of powdered grain of paradise, and a similar quantity of cayenne, and a teaspoonful of maw seed. The heat of the egg will reduce all to a soft, pasty mass; add a little finely powdered biscuit to reduce it to a fairly stiff dough, and spread out in a layer about half an inch thick to dry. When cold it will be much harder, and may be cut into cubes and a piece stuck in the wires of the cages where and when required for the birds to peck at.

Diseased Foot of Canary.

WORMS.

Although not free from the attacks of a variety of intestinal parasites, Canaries should not be treated for them indiscriminately, as the pest is not really of common occurrence. When ocular proof of their presence is found in the droppings, all food should be taken away at night, and next morning a teaspoonful of crushed sponge cake slightly dusted on top with fresh ground areca nut given. When a fair amount of this has been consumed give two drops of olive oil in the beak, and add four drops each of tincture of gentian and tincture calumba to each tablespoonful of drinking water for three or four days.

WOUNDS.

When these occur from any cause the place should be bathed until quite clean in warm water to which a few drops of IZAL or Jeyes disinfectant has been added; or a solution of boracic acid—a teaspoonful of acid to a teacupful of water—may be employed. Then dry carefully and paint over the wounded surface with Friar's Balsam. This may be repeated daily if the wound is of a serious nature until it is getting nicely healed. In all simple cases it is best not to interfere as long as the healing process goes on satisfactorily.

CHAPTER VII.

BREEDING.

A TIME FOR LOVE.

THE ides of February, in the calendar of modern times, is still, to a certain extent, supposed to mark about the date when little birds select their partners in the joys and sorrows of the approaching season of nidification, and when, as so often happens, we get a few consecutive days of bright, mild weather towards the middle of the month, the feathered creatures, utterly oblivious of the oracular wisdom which cursed a "fair Februeer" as the bane of all other months, begin to chirp their love songs, and quickly arrive at a mutual understanding that they should set about their family cares forthwith. And all too often the inexperienced owner, impatient of delay, and deceived by the delusive sunshine, encourages, rather than deters, their ill-timed inclinations. Then, almost invariably, when a little progress has been made, there comes a rude awakening; a sudden change to cold occurs just as the birds are going to nest; or, maybe, when they have begun to incubate, or hatched out young; and, in either case, the result is disastrous. The young are practically certain to die of cold; the eggs to be chilled and rendered sterile; and the old birds are frequently upset, and remain unproductive for the rest of the season. Birds that are just about laying, and especially if they be young hens who are nesting for the first time, are peculiarly liable to succumb to egg-binding when a sudden change to cold is experienced.

AN UNINVITING PROSPECT.

All this does not make up a very bright picture, yet it is a fair average description of what occurs year after year by young fanciers placing too much trust in a somewhat lengthy spell of spring-like weather in the early part of the year, and mating their birds too early. Whatever the birds of a past generation might have done, it is self-evident that their descendants in these days do not follow their reputed example by choosing their mates on the feast of St. Valentine. Nevertheless, there are a few species of hardy and robust birds who brave the elements at this inclement season. The denizens of the rookery are the most familiar examples; and they may be seen busily engaged in nesting operations by the middle of February or very soon afterwards. But the little birds—No; they will wait until a more seasonable time, as a rule; but their domestic brethren, protected as they are from the adverse circumstances which influence the wild creatures, are ever ready to set about nesting if only a few consecutive fair days occur at the beginning of the year. Therefore, the owner has to exercise his better judgment to prevent them getting to work too early, unless he has a properly-fitted room, with a heating

apparatus, with which the temperature can be regulated to a nicety. Under these conditions all may go on well, and brood after brood of birds be brought to maturity.

THE PROPER COURSE.

But when birds are kept under more normal conditions, as is the case with the vast majority of fanciers, the best course to pursue at this unstable season is to devote attention to preparing the birds in readiness for the proper season, and, as far as possible, endeavour to prevent them becoming in too fresh condition prematurely. When they appear to be coming too forward, and are seen singing furiously at each other and answering a wee call from another bird with a vigorous challenge, they will need judicious feeding on a plain, wholesome diet for a time to cool their ardour, and it may be necessary—certainly it is always advisable—to keep the sexes out of sight of each other; if they can be also kept out of ear-shot until the mating season is close at hand so much the better. Too much space for exercise cannot be given, but, as space is usually of a limited kind, the birds should be so placed in groups of three or four in large flight cages, not overstocked with perches, so that the birds may have to use their wings to a certain extent in travelling from perch to perch. Only birds of the same sex must be placed together in the same cage, and there they should remain until the first week in April, which is quite early enough to put the birds together for breeding.

ANOTHER VIEW.

On this point, however, opinions vary considerably, as is well shown by the following note from Mr. R. G. Joliffe, hailing from bleak and bonny Scotland. He writes on this subject:—"The cocks and hens should be put together early in March, or even February is not too soon. Much depends upon the weather, but as a rule the first week in March is the best time. Before putting them together it is advisable to put them in separate cages, and so place them that they may be able to see each other. Indeed, it is an advantage to place them as close as you possibly can, to make them as familiar with each other as possible. Without this plan it often happens that quarrels take place of a serious nature. The hen frequently resents the cock's advances; ill feeling results, and is not at all conducive to their future well-being."

THE CRUX OF THE MATTER.

Though we respect and value the opinion of so experienced a breeder, we would venture to re-iterate that the real point is to be equipped with good appliances for heating the room if necessary, and thereby be at all times very largely independent of the vagaries of our climate—it is doubtful whether, with the very best appliances, one can ever remain long totally regardless of these influences. Otherwise, as our correspondent candidly admits, much

"OUR CANARIES"

CLEAR YELLOW CREST-BRED & CRESTED CANARIES.

depends upon the weather. If we next face the sober fact that at the season in question absolutely no reliance can be placed upon continued fair weather the wisdom of not taking a sporting risk is at once evident.

INFLUENCE OF HEAT.

It goes without saying that to a certain extent—more or less according to the completeness and efficiency of the arrangements for heating—the normal temperature outdoors may be counteracted by artificial means, and when this is done breeding may well commence a month earlier than otherwise would be advisable with every reasonable prospect of the first round of eggs being quite up to the average in fertility. This, of course, is a very important consideration when breeding for profit, or numbers, which is much the same thing, is the main object, as it enables three broods of young to be reared with little or no further extension of the breeding season at the close than is necessary for two broods under quite normal conditions. Young birds may also be had in a better developed condition for the first feather shows. But it is probably in the breeding of songsters pure and simple where the method scores best on the profitable side of the hobby, as the early youngsters thus obtained will be able to get a larger amount of training in song, before and after moulting, than later bred birds, and are therefore a marketable commodity earlier in the season before the demand for songsters has been so fully supplied by imported birds. This is an element in the hobby which the British breeder who goes in for the profitable breeding of songsters on a business-like scale cannot afford to ignore.

A simple wire appliance for the safe handling of eggs.

WHAT SHALL THE HARVEST BE?

As with the question of heat or no heat, it is somewhat difficult to lay down a definite rule as to the number of nests each hen should be allowed to have in a season. In this connection not only the prevailing circumstances but also the health and temperament of the individual hen must be taken into account. It may be taken as a general rule that two broods of an average number are quite sufficient to take each season from highly-bred fancy varieties, whilst hardier and more robust varieties may be allowed a third brood if they desire it, providing the season is not so far advanced that the young of such a brood would still be in the nest at what ought properly to be the moulting season.

There are exceptions which may safely be made to this rule. A high class hen, for example, may have started nesting early, and produced a clutch of unfertile eggs, or a small clutch which has been transferred to a foster parent,

or she may be a strong, vigorous bird and a free breeder, and in each instance she may be allowed a third brood. Similarly, a commoner bird in the same circumstances may be allowed to go to nest a fourth time. But a fourth brood should never be really encouraged, and should rather be regarded as one, or perhaps two, broods stolen from the following season. The greater the number of broods beyond a third taken from any hen in one year the less may one expect from that individual hen in the next season, if not in every season that is to follow. It very often means closing prematurely a hen's career of usefulness.

LENGTH OF THE BREEDING SEASON.

Assuming that three broods are hatched all round, the total length of the breeding need not extend beyond five months. The actual length will depend more upon the early beginning than upon the close, which has a well-defined limit imposed upon it in all save quite exceptional cases—the exceptions inevitably crop up in every side branch to prove the rule—by the natural moulting period, the approach of which at once closes the breeding season by removing all parental desires from the birds for the time being. Even if there are half-grown young in the nest when the parents drop into moult, the chances are all in favour of them being left incontinently by the parents, either to die, or to be transferred to a kinder foster parent, or reared by hand, as the owner may decide, or have opportunities for doing. Consequently it is wasting the vigour of the birds for no useful purpose to encourage nesting to be carried on until the parents are overtaken with moulting or are likely to commence before there is a fair chance of any young that are hatched being out of the nest and able to do for themselves.

Late breeding should therefore be consistently discouraged, and every opportunity taken from about the end of July onwards to break up pairs and stop breeding operations, in order to give the birds a little time to recuperate their strength before the moult commences.

CARE OF STOCK BIRDS.

This consideration for the well-being of the stock birds must indeed be a standing feature of one's treatment all round the year. Upon it will depend a great deal of the success both in quantity and quality which one will be able to attain in the hobby. The general health and high condition of the parent stock will find its reflection in the vigour and stamina of the progeny, as well as in the increased power of the parents to transmit their own typical perfections to their young. It thus becomes a matter of great and far-reaching importance to devote the strictest attention to these birds, which, though they may not be quite so aristocratic in appearance as the cream of the show birds, are, nevertheless, the originators of the latter, and capable of producing more like them. If they are themselves show birds, care must be taken not to overshadow them, particularly towards the end of the show season, when the breeding season will be once more approaching.

PITFALLS FOR BREEDERS OF EVEN-MARKS.

Birds with markings such as those depicted above must be avoided by breeders of Even-marked Canaries.

SELECTION OF STOCK.

Writing upon this subject, our friend, Mr. R. G. Joliffe, says:—"In the selection of stock for breeding purposes I would strongly recommend fanciers to purchase none but good birds. It is not necessary that they be prize birds, but the cock or hen should at least be a bird of outstanding merit; and I would advise that the cock bird should excel in the points most highly-esteemed by fanciers; be careful that your birds are of good constitution. Many may meet with disappointment in failing to get good birds from well-bred parents, in point of fact even highly-bred birds do not in many cases bring forth the best results. From a good bird, judiciously matched with one known to be of a good strain, the best results are often obtained. When birds are too highly-bred, the young generally are found to be very tender and difficult to rear. It is a mistake to match two birds of almost equal merit in points, unless they possess to an equal degree, or almost so, all the good points so much desired. Care should always be taken not to pair two birds of moderate quality together. But care should be taken that in matching or pairing your birds, it should be done in such a manner that one bird is conspicuous in points lacking in the other. By adopting this principle, the blending of both will often result in one or two good birds being obtained."

THE VALUE OF A PEDIGREE.

The successful breeder of high-class stock cannot afford to dispense with a complete register and stud-book in which to preserve for future reference and guidance the pedigree of his breeding stock, as far back as it can be traced with certainty. It is not sufficient to know only the parents of the individual birds, nor yet the grand-parents, but to ensure thorough control over the results of breeding as far as it is possible to secure it one must be able to trace its breeding backwards for several generations—certainly not less than five or six, and the longer the unbroken chain of years over which one can ascertain the undoubted parentage of each bird of a pair, the more precise a judgment will he be able to form as to the character and quality of young they will produce.

On this point Mr. W. Spillman, the well-known Norwich enthusiast of Devonport, sends us some pertinent remarks. "Do drive home the point of good breeding," he writes. "Avoid the introduction of foreign blood as you would a pestilence. If pedigree is of no avail, why is it that nearly all I know who breed methodically get less wasters than the haphazard breeder, although the latter may spend as many pounds as we spend shillings? Year after year, I know people who send afar for fresh stock, pay fabulous prices, and they remain in the same old groove.

"Of one thing I am certain, and convinced more than ever, that the hen plays the most important part in the type and quality. At the same time it is not necessary to have an exhibition bird on either side to breed winners. I could say much about what has happened in my twenty years undivided attention to

the Norwich Plainhead. I look upon the hen as the mould in which the bird is made. Don't be guided by what you see on the surface alone. Enquire into what is underneath. I hear someone say 'All bosh!' Ah, well! my friends, I know; and what I have learnt by experience I give freely, and ask for its acceptance in the same spirit.

"About three years ago the W.C.O.S. held a members' show in Devonport, and it fell to my lot to secure a fair share of the good things. During the afternoon I saw a trio of Norwich fanciers discussing the pros and cons of my winning buff hen. I made for their company and the conversation terminated, but I said 'Go on,' and Mr.—, who generally says what he thinks, said to me, 'Whatever you breed from her will be small in head.' I smiled, and said I didn't think so. 'She is bred right,'—mark well the words 'bred right,'—'and the cock she will be mated to has a very fine head and neck, which will counteract the part you complain of.'"

PROPHECY FULFILLED

"And so it did, for it was from this pair that I bred the cup-winning yellow that was shown fourteen times, and won twelve first, one third, and one fourth, prizes, and on the last-named occasion it was unpacked after twenty-four hours and put direct on the judging table.

"I know there are many fanciers who pay little regard to what a bird comes from, and pair them up as they appear suitable from a surface value. But when one looks upon a hen to be worth apparently about 3s. 6d., and is told she produced £20 of stock in her first season, you commence by saying: 'What was she mated to?'—and you may add to that 'What did she come from?'"

BLOOD WILL TELL.

The Rev. David Dickson, the noted Crest breeder of Lowestoft, writes in similar terms of this highly-cultivated breed. In his own words: "It happens sometimes that a breeder will get a show specimen from parents of very inferior appearance, and he concludes that this will invariably be so; but in this, as in other departments of the animal world, blood stands supreme. And if the origin of the parents, or one of them, could be traced, it would be found that somewhere there came in the blood which reproduced itself through the parents. Breeders know that even in the best strains a show specimen is the exception, while brothers and sisters from the same nest may in appearance be only ordinary birds with no special attractions, and some may even be sold as 'surplus' at a very low figure, and yet these birds are capable of producing birds of the highest type and quality, because they have blood of a good strain. It is most important then, on starting to breed Crests, that the fancier should, as far as possible, ascertain that the foundation birds of his stock are of good origin and have possibilities of reaching a high

standard. A strain is only built up after much patience. The breeder will find that even with his best judgment the birds will throw back, and youngsters of inferior quality will result; but he will not be discouraged; perseverance, and wise 'after-selection' will in time eradicate defects."

THE TREATMENT OF EGG-BOUND HENS.

A jug is filled with very hot water, a piece of light material tied over the mouth, and the hen held over the steam which percolates through.

the new variety without the introduction through the male. The same principle is ever at work, though less obviously, in all other varieties over the green and clear varieties of colour. It will therefore be seen that when any improvement in colour, or size, is desired among one's stock, any fresh introduction with that object in view should be made on the male side, whereas the hen should be looked to for improving the general type and quality.

CONSIDER BOTH SEXES.

It will have been gathered ere this that as far as possible in actual practice neither sex should be neglected, or allowed to fall below a fair standard of typical excellence, so that one has to fight his way to victory, as it were, with a single weapon, when two might always be available. But when fresh introductions are necessary for any special purpose, then, these general rules must be given due consideration if the best results are to be obtained.

INFLUENCE OF SIRE AND DAM.

In making a selection for suitable pairs, the breeder must never overlook the part played by either sex in exerting an influence over the young. For general type and quality the female parent is the mainstay for the breeder to rely upon, whilst size, colour and markings must be expected to come in greatest measures from the male parent. The influence of the male over colour is seen at its best in attempts to transmit the cinnamon colour to any variety in which it has not existed previously. It will soon be discovered that however freely the cinnamon colour may be infused from the female side alone, it will not be possible to implant and perpetuate the cinnamon colour on

BACHELORS UNTIL TWO YEARS OLD.

"Late-hatched birds of the larger breeds, Lancashires and Crests, should be held over (from breeding) until the following season."

SEXUAL DISTINCTIONS.

To be able to recognise the sex of any given bird is, of course, essential before the beginner can select pairs or stock birds for himself. Unfortunately, the information can scarcely be conveyed in print, nor much more easily by personal tuition. The external signs of sex have so completely disappeared from the domesticated Canary as to be recognised with certainty in all cases, apart from song or other incontrovertible proof, only by a kind of intuition which comes of experience. Indeed, in particular cases the most experienced breeders may be baffled. The song may nearly always be taken as a sign of the male sex, but there are exceptional cases where a hen will sing with sufficient power and freedom to deceive the hearer. But, still, these cases are quite exceptional, and one will rarely go wrong in taking a good, free and bold singer without scrappy jerks and breaks in the performance, and in which the throat palpably swells out and throbs violently whilst the song is going on, as evidences of the male sex. The call notes, or "sweetings," of the cocks are also more defiant and liquid, and bold and ringing, compared with those of hens. The general appearance and carriage are more bold and dominant, the eye more alert and bold, and there is a more graceful sweep of outline from the lower breast to the under tail coverts. All these distinctions, however, are comparative, and not at all times easy for a novice to appreciate. One other difference in adult birds is the shape of the vent, which is more constant and easily seen. In the male bird it will be found prominent and pointed, whereas in the hen it is flat and expansive and on a level with the abdomen.

YELLOW AND BUFF.

These two types of colour, which are constantly before the novice in descriptions of birds, are not infrequently a puzzle to the reader. To him a yellow and a buff will generally appear as two yellow birds, though even the untrained eye of the novice will recognise that one is a better coloured yellow than the other. The difference lies in the fact that the colour in the feathers of a yellow—whether it be rich or pale—extends to the tip of the webs of the feathers, which gives the bird a richer and more even tone of colour throughout. In a buff bird, however, whilst the yellow colour in the body of the feather may be just as rich as in a yellow, it will be found, when closely examined, to stop short at the edge of the web, so that there is a narrow margin of white around the web of each feather. These white margins are seen as a kind of overlay to the yellow tint of the body of the feather, and give a general appearance of mealiness to the bird, especially about the head, neck, shoulders and upper back, as though the plumage was covered with hoar frost, or the bird had been sprinkled over with a white powder or meal. In fact these birds were termed "mealies" in olden days

—a term which still exists in describing London Fancies. In the Lizards the terms "Gold" and "Silver" are used in place of "yellow" and "buff" respectively.

FAILING TO BREED.

One of the most serious disappointments the young fancier, with only a pair or two of breeding stock, has to contend with is the total failure of a hen to breed, although she may appear in the most magnificently healthy and promising condition, and have every possible luxury and convenience for acting according to natural instincts, including a vigorous mate, whose evident anxiety to proceed with the business only adds to the chagrin of the owner. The discouraging feature has been brought to our notice so often that we consulted our friend and collaborator, Dr. T. A. Bowes, of Herne Bay, upon the subject, who very kindly undertook to look into the matter, and who, after dissecting a number of suitable subjects to endeavour to throw light upon the matter, has kindly contributed the following notes:—

"SQUATTING" HENS.

"This term is applied to hens that endeavour to perform the functions of building a nest, laying eggs, and incubating them, but fail wholly in the production of eggs. Attempts at nest building are sometimes excellent, but more commonly no effort is made, or at best a very indifferent one. Then follows the curious squatting process. She starts attempts at incubating eggs which are non-existent, by sitting in the empty nest or in the well-finished nest, and is perfectly content to exceed the usual period of fourteen days, extending it even up to eight weeks, unless stopped by the removal of the pan. Hens of all ages are subject to it, and a change of cock has no effect; even one that may be famous for his success in sending hens to nest will signally fail to overcome the perverted hen, although she is apparently quite healthy in every other respect.

"The following instances, which are all actual occurrences, may well be studied in an endeavour to throw light on this puzzling and disappointing condition. In every case the hen apparently was in good health and promised well."

CASES INVESTIGATED.

"1. A one-year-old untried Border hen, or an older tried hen, paired up in the usual way, makes attempts at building, but after a few half-hearted efforts pulls the nest to pieces, and makes a fresh start, only to repeat the process several times till a month or so has elapsed. Then laying occurs, and incubation and rearing of the young proceed naturally.

"2. An untried Crest-bred hen, one year old, paired up, makes partial attempts at building, but lays no eggs. Incubation is started, and the squatting on nothing is allowed to go on for fourteen days. The pan is removed and shortly the hen is started again and natural laying occurs.

"3. An untried one-year-old hen is kept in a box-cage by herself, and no nest-pan or material is offered. No eggs laid, but the hen selects a spot on the floor of the cage and sits on it for some four or five weeks. She is then placed in a breeding cage, with pan and material, and the cock introduced, whom she immediately calls to her, and copulation takes place. No attempt is made at nest building, and an egg is dropped on the floor of the cage on the eighth day.

"4. An untried young German hen fails to lay eggs, does not attempt building the first year, and does not squat.

"5. A third-year hen that rears two nests and incubates addled eggs for six weeks at third attempt.

"6. A three-year-old Border hen that goes a first round but squats at the second attempt."

FROM BAD TO WORSE.

"7. A trial Norwich hen in her first season rears naturally three successive broods. In the second year builds, but no eggs laid. The third year she builds an excellent nest, lays no eggs, but begins incubation.

Eggs put under her after two weeks. She duly hatches them, but makes not the slightest attempt at feeding, and sits tight on the unfortunate young till they are killed and flattened out.

"8. A tried or an untried Border hen, not paired up, but kept alone, lays an occasional egg on the floor at intervals, and makes attempts at incubating it.

"9. A three-year-old Crest-bred hen in the past two seasons makes no attempt to lay, but squats.

"In most, if not all, of these instances of failure to lay eggs, the actual time of laying is indicated by some slight fulness in the region of the vent. To understand the significance of these various cases, it is necessary to investigate the natural process of egg production. It is not improbable that the capacity for reproduction in hens is a variable quantity. Some hens are capable of laying more eggs than others; of having larger clutches; and of spreading the reproductive period over a greater number of successive years. It

TESTING THE FERTILITY OF EGGS.

To ascertain the Fertility or otherwise of eggs undergoing incubation they are held before a hole cut in a piece of black cardboard, the latter being held to a strong light.

is also possible for the reproductive organs to lie dormant for a considerable period, as is evidenced by hens which show no indication at all of building or laying their first year, but do so the second year, or are made to miss a year by being kept alone during the second breeding season, and begin again if opportunity occurs the following year."

A NATURAL CYCLE.

"In a hen that has reached an age when it is capable of laying eggs, and that is possessed of a normal reproductive system, there is an instinct at a certain time of the year to accomplish a reproductive cycle for the propagation of the species. The cycle consists of building a nest, the laying of eggs, incubation of the latter, hatching and rearing the young. In order that the cycle may be fully carried to a successful issue the presence of the cock is necessary before the eggs are laid.

"That eggs may be laid an ovary is necessary for the production of the internal part or yolk. An oviduct must be present to receive the yolk and cover it with the white of the egg, the membranes and the shell, and conduct the egg from the ovary to the vent that it may be deposited external to the bird for future incubation. The organs are best studied in a hen that is actually engaged in egg laying. With this object in view the hen quoted as instance No. 3 was given late at night an overdose of chloroform vapour, the first egg of the clutch having been dropped in the early morning of the same day. The next egg would have been due in the early hours of the following morning, so that the death of the hen occurred as nearly as can be estimated about eight hours before the second egg of the clutch would have been laid.

THE INTERNAL ECONOMY.

"On opening up the body of this hen, the egg due in eight hours was found situated in its lowest portion, partially covered on the left side by the convoluted oviduct. On the right side were the intestines, and above the stomach was in contact with the upper portion of the egg, which lay with its narrower end towards the vent. It was not until the convolutions of the oviduct were turned aside that the ovary came into view, lying high up behind the stomach on the left-hand side of the body of the bird. Though the ovary was in contact with the upper portion of the egg, it was found that the oviduct on being separated and laid out straight was over three inches long.

"A sketch (shown on page 115) has been made showing these organs as nearly as possible actual size but, for distinctiveness, not in their anatomical relations. This shows the ovary containing 60-70 countable round globular bodies, called ovules, in various stages of development; a convoluted oviduct empty at upper end, but containing an egg close to the vent. This egg was full, but the shell was thinner than usual, indicating that the process of shell formation was not yet complete. In the upper end of the oviduct was

an aperture destined to receive the ovule of largest size that was approaching maturity. The smaller ovules were white in colour, but as they increased in size the colour became more of a yellow tint. The three large ones as they developed became correspondingly deeper in colour till the largest of them was of the same tint as the yolk of the egg near the vent.

THE GENESIS OF THE EGG.

"Each of these three large ovules was enveloped in a membrane continuous with the substance of the ovary carrying a network of blood vessels, and as the size of ovules increased the membrane became increasingly thin towards the free pole of the ovule, and it was suggestive that when fully developed the membrane would give way at the thinnest spot and the ovule escape free to be embraced by that portion of the enveloping oviduct which contained the aperture to allow of its ingress into the lumen of the duct. Once inside it is given its successive coverings till it reaches the vent complete and ready for expulsion.

"It was possible to estimate the clutch that would have been laid; three large developing ovules, one egg in the oviduct, and one dropped previously, making a total of five in all. Assuming an egg laid every twenty-four hours, it follows that counting from the death of the bird the three largest ovules would be capable of development into complete eggs, and expelled in thirty-two, fifty-six, and eighty hours respectively.

"The ovary and reproductive systems are very vascular and are connected by nerves with the brain like all other internal organs, and impulses are sent from them to the brain, and the resulting ones from the brain are capable of influencing the blood supply and the activity of the ovary."

EXCITING CAUSES.

"Given, therefore, ovules in such a state that they are capable of coming to maturity, egg production can be precipitated by:—(i.) The seasonable impulse: from the inherited instinct to reproduce. This takes place in the early part of the year with the advent of (ii.) Warm weather: which not only improves the general health of the hen and increases the circulation of the blood, but also by its presence gives promise of greater ease in obtaining the (iii.) Increased food supply: necessary for egg production and the feeding of the prospective young. (iv.) A stimulus to reproduction by the singing and proximity of the cock. In response to such stimulation, impulses are sent out to the ovaries and reproductive organs, inducing a greater flow of blood to them. This determines a greater supply of nourishment locally, which is conducive to growth and development. The proximity of the cock is not in itself an essential for egg production, as hens will lay

without ever having seen one or heard its song. But this proximity undoubtedly hastens the maturation of the ovules, by turning the thoughts towards the reproductive functions. The presence of the cock in the same cage does so to a much greater extent. Hens often lay in four or five days after being paired up, although quite ready to lay with the cock in next cage for the previous two or three weeks. Maturation of the ovules can thus be hastened by

Crested Canaries with a heavy, dense crest require the edges over the eye trimming away during the breeding season.

“(a) Warm weather, or artificial warmth in springtime.

“(b) Increased food supply by giving stimulating foods and seeds.

“(c) Placing the cock in sight of or proximity to the hen.

“(d) Pairing up and supplying material and receptacles for the nest and eggs.”

RETARDING INFLUENCES.

“It can be retarded by

“(a) Any factor which has depressed the general health, strength and condition of the hen, such as an illness during the previous winter, overshooting the preceding autumn, a late or prolonged moult, or insufficient care and feeding through a cold, damp and dismal early spring.

“(b) A cold spell of weather about the time that laying should take place.

“(c) Withholding stimulating and increased food.

“(d) Not allowing hen to see or hear the cock, nor have access to material and receptacles.”

ANATOMICAL CONSIDERATIONS.

“From the study of the anatomy of the reproductive organs it follows that absence of eggs can be due to any cause which prevents the ovules from maturing or interferes with their passage along the oviduct. These would be

“(i.) Absence of the ovary, or mal-development of it and the oviduct. The whole system might be ill-developed and out of proportion to the rest of the hen, or there might be a narrowing of the oviduct in some part of its course that it would be impossible for the egg to pass through it.

“(ii.) Inflammation of the ovary, or duct, or the structures round about them. This might so change the character of the ovary as to form a resistance to the proper development of the ovule, or prevent its extrusion

"OUR CANARIES"

YELLOW SELF GREEN YORKSHIRE CANARY.

from thickening of the delicate membrane covering it. If the inflammation had been severe enough it might lead to subsequent atrophy of the organ. Inflammation of the upper end of the oviduct might close the opening in it, or make it adhere to other structures, so that it would be impossible for the ovule when fully developed to get into the duct. If occurring lower down, the inflammatory condition might kink or narrow the duct to such an extent as to quite prevent the further progress of the egg."

REASONABLE HYPOTHESES.

"These anatomical grounds are hypothetical at present, but it is reasonable to suppose that they could exist. In those of the instances dissected, Nos. 4, 9 and 10, there was no evidence that would lead to the conclusion that there had been any inflammation. The ovaries in each case were present. The ovary of No. 4 in comparison to that of a healthy strong untried Border hen of the same age was a little smaller and more compact, that is to say, that this particular bird has not apparently advanced so far sexually as the Border.

"That of the Crest-bred hen, No. 9, comparing the size of the bird to that of the Border, was not as large as would have been expected, but otherwise was natural in appearance.

THE PROPER SEQUENCE.

"The Reproductive Cycle mentioned above is worthy of fuller consideration and elucidation. The various stages of it, namely, the building of the nest, laying eggs in it, incubation of the eggs, the hatching, feeding, and rearing of the young, should naturally be consecutive and properly related. It is obviously out of order for the eggs to precede the nest. When the ovules in the ovary are approaching maturity from any or a combination of the various causes suggested, an instinct impels the hen to select a place in which to build a nest for the reception of the completed eggs. The nest should be ready by the time the first egg is laid, but its completion can be delayed from a variety of causes, or it can be absent, the only evidence of its intention being a few strands of material with no appearance of shape or order."

AN INTERRUPTED CYCLE.

"Supposing the hen to have the desire to reproduce, and the ovules are not matured enough to stir up to a proper extent the instinct to build, it is probable that half-hearted attempts only will be made, and though the cycle is started, the due completion of one stage fails from insufficient stimulus from a deficient preceding stage. The eggs laid, or at least some of them, there is a consecutive impulse to incubate them, and it appears probable that the number in the clutch has nothing to do with the onset of incubation. In some cases, no doubt, the impulses to make the stages of the cycle continuous are so strong that as soon as the nest is completed there is a

desire to sit in it, and start incubation at once. The incubation stage is normally broken by the hatching of the chicks, and their movements beneath the hen are probably the stimulus to her to begin the feeding stage. The sitting on addled eggs can be, and is sometimes, prolonged for six weeks, and it seems feasible to suggest the absence of the movements of the chicks as the cause of its undue prolongation."

STILLNESS BEGETS PATIENCE.

"In squatting hens this absence of movement may be the cause of the hen's patience. If eggs have been put under a hen that has been squatting or sitting on eggs for some prolonged period, it seems probable that a habit has been acquired which not even the movements of the chicks is strong enough to break. The hen does not rise and has no stimulus to feed, with the result that the young are crushed or starved.

"By the time the feeding stage is nearing completion, and the young are able, in part at least, to look after themselves, another batch of ovules is on the way to maturity, and the reproductive cycle is again about to be repeated. It will thus be seen that many and varied factors may cause a deviation from the normal reproductive cycle."

CONCLUSIONS ARRIVED AT.

"Having outlined normal and abnormal cycles, some attempts may now be made to suggest explanations for the instances previously quoted.

"No. 1. Ovules not sufficiently mature. Stimulus from pairing up sufficient to start instinct to build, but not to complete the process, and not sufficient to lead to incubation until time elapsed for further maturation of the ovules.

"No. 2. Ovules again immature. Stimulus sufficient to start cycle and incubation, although no eggs laid. By time pan removed, ovules sufficiently advanced for a natural cycle to be started, and successfully carried out.

"No. 3. Impulse to lay at normal time. Maturation retarded by absence of receptacle, material, and the cock, and therefore no nest or eggs. Cycle continued and incubation stage induced. Cycle broken by change of cage, and presence of cock precipitates maturation to such an extent that no time for selection of nesting place, and no nest built from previous denial of material. The cock being very vigorous, the usual few days' chasing and driving about of the hen also prevented her having opportunities for nest place selection."

LATE DEVELOPMENT.

"No. 4. Probably reproductive system lying dormant for the first year, or insufficiently developed.

"No. 5. Incubation continued from lack of movement of chicks. Eggs not necessary for continuance of this prolonged incubation process. If a hen

is on eggs which are gradually removed, or get over the nest into the corners of nesting box, the hen will become a 'squatter on nothing.'

"No. 6. Can be explained that ovules are not ready, or that hen has reached the end of her reproductive power as far as eggs are concerned.

"No. 7. This hen may have had some inflammatory trouble of the ovary after her first year. Stimulus in second and third year sufficient to start cycle. Movements of young insufficient to arouse her from the stage of incubation to that of feeding.

"No. 8. Stimulus sufficient to mature an ovule at intervals, but not strong enough to bring the clutch to maturity at the usual daily interval.

"No. 9. Possibly the ovaries ill developed, and any stimulus from them is not sufficient to rouse up the instinct of reproduction."

SUMMARY.

"The conclusions arrived at with regard to squatting are that the condition is an outcome of an abnormal reproductive cycle. The causes of the deviation are varied, and it cannot be assigned to one definite cause. Any stimulus arising from the external world may be deficient, or the nervous sexual organisation of the hen may fail to respond as it should to a stimulus which, in the ordinary way, would be of sufficient strength to produce a definite result. The tone of the nervous system may be below par, although no evidence of this is forthcoming from the general appearance of health and well-being of the hen, and the specialised centre controlling the reproductive organs would share in the lack of tone of the whole nervous system. In the present state of our knowledge there is no evidence to show that the suggested anatomical causes of absence of eggs in association with squatting have anything to do with the production of the condition, but it must not be assumed that such causes could not be present until it is proved by repeated dissection that they are absent.

"Each case must be considered separately on its own merits, and a full view of the possibilities of the defect borne in mind, lest an erroneous idea be entertained that a hen which squats one season will of necessity do so the next. If a repetition occurs in two successive seasons and the hen is in apparently perfect health in other respects, and external possible causes have been guarded against, it is more probable that the condition is due to a defect in the sexual organisation of the hen, which it is unlikely that any form of treatment will alter."

CHAPTER VIII.

PAIRING AND SITTING.

THE COMING OF AGE.

THE age which it is advisable for Canaries to reach before undertaking the important task of propagating their species must be taken into consideration. Generally, when "the time of the singing of birds has come," it is believed that any small bird hatched and reared in the previous season is sufficiently matured to take up the cares and duties of family life. If Art had not interfered with the ordinary course of Nature this might be a rational conclusion, because during the intervening winter Nature, with a cruel and relentless hand, has tested and tried the stamina and robustness of old and young alike and decreed that only the physically fit and sound shall survive to continue the race. But our Canaries are immune to these selective processes, and the tendency all too often is to foster and "patch up" the weakly bird as long as possible, and frequently with the professed aim of getting young from it before it succumbs in spite of all care and attention—a most suicidal policy, as already pointed out.

It, therefore, becomes necessary for the owner to decide whether any given bird is sufficiently mature and robust for mating. The fact must not be overlooked that all individuals, even of the same species, do not mature at the same rate. There are examples of precocity which to all intents and purposes will be as fully matured and fit to breed at six months old as others are at eight or nine months, and it must again be remembered that when, as is sometimes the case, breeding operations are carried on late in the previous season, some of the stock may be barely six months old at the beginning of the season. The best general rule is: mate up young and old together, putting a hen of the previous season with a cock that is over one year old, and *vice versa*. But when one is buying in fresh hens for breeding it is good policy to insist upon having young hens of the previous season, always giving preference to early hatched specimens. This plan prevents one's being imposed upon by having hens given him that have been "tried and found wanting" in the previous season.

THE AGE OF DECREPITUDE.

The period of a bird's usefulness in the breeding depends not only upon its physical stamina but also, and very largely, upon care and management. A period of five years probably closes the breeding career of the vast majority of specimens of both sexes, but there are exceptional cases where individuals will continue productive for twice this length of time, and a well-preserved and well-cared-for cock will not infrequently continue to fill eggs satisfactorily until well advanced in the teens of years.

Albeit, the second, third, and fourth seasons must be regarded as the prime of the average Canary's life, and its most productive period.

A MODERN EXHIBITION CINNAMON CANARY.

This crayon drawing well depicts the type, position, and slight back "pencilling" characteristic of the present-day show Cinnamons.

The first season is far from being always the best except in the case of picked birds; the cocks, not having reached the most virile condition, are not infrequently responsible for clear eggs, and the hens, unless well matured and skilfully managed, sometimes make a hash of things generally during the first half of the season; which places the results of first season birds more on a par with those of the fourth or fifth season. Of course, much of this may be counterbalanced by the usual method of mating first-season birds with those over a year old. Very old birds which one desires to breed from should be mated with second or third season birds in preference to yearlings.

DEFERRED BREEDING OPERATIONS.

When dealing with late-hatched birds of any breed, but more particularly when they are of a large breed, such as Crests or Lancashires, it is an excellent plan to run them over the first breeding season un-mated, keeping the sexes quite separate, and, if possible, out of hearing as well as out of sight of each other. If they have been doing the round of the shows as young birds, this course will be of still greater material benefit, in that it will allow the birds to throw off the effect of this exhausting work, and become thoroughly sound and mature before the system is taxed with the work of reproduction. This is a sound, economic method; by husbanding the birds' strength in their early days, they are in the best possible condition for producing strong and robust off-spring with the minimum tax upon their own vital reserves. Many of our most successful breeders are aware of the value of this course, and systematically hold over a portion of the yearling stock un-mated.

PAIRING FOR LIFE.

A less generally known plan is to pair the birds and keep them together permanently all the year round afterwards. Whether this plan would prove successful with the mass of amateur fanciers whose cages and other conveniences are often of a somewhat primitive and cramped type, may be open to question. But that it succeeds well in some cases is shown by the notes kindly supplied by that enthusiastic and skilful Belgian breeder, Mr. James Robertson, of High Harrington. "As a rule," he writes, "I prefer to keep the birds in pairs during the winter, as far as possible. Circumstances, however, do not always admit of this. I never pair until it is noticed that both birds are fit. Nor do I give them any encouragement by placing the boxes or egg pans in. I generally give both. But most hens prefer the pan to the box, with moss, etc."

THE PLAN OF MANAGEMENT.

"When ready, I begin by giving a little egg-food; they generally take this when dandelion heads are not to be had, but when green seeds are to be had they will feed on them alone. I may mention that the largest and best birds I ever had the fortune to breed never touched or saw egg-food, nor any substitute

A STUDY OF HEADS.

1. Lancashire Cobby. 2. Yorkshire. 3. Border Fancy. 4. Lancashire Plainhead. 5. Clear-cap Lizard.
6. Scotch Fancy. 7. Norwich Plainhead. 8. Crest-bred. 9. Crest.

for egg-food. Egg-binding in the case of some fanciers causes several losses in a season, but by giving green seeds (either dandelion, chick-weed, shepherd's-purse, or other suitable seeds in season) I have not had an egg-bound bird for years. The pairs do best when left together; that is my experience, and both make model parents—sitting, rearing, and feeding perfectly, and giving no trouble. I am now referring to the pure-bred bird. When a cross-bred bird is used the result is sometimes very different."

LIKE BREEDS LIKE.

Although the phrase "like breeds like" has become an adage, it is by no means universally supported. It is nevertheless true that the fancier of to-day is more inclined to adhere to it as a principle than was formerly the case. This is chiefly due to the fact that in regard to every one of the popular Canary varieties of to-day there exists more material for the fancier to draw upon when mating his stock than was the case years ago when these varieties were in a more transitionary state. Then the scientific breeder who knew the pedigree of his stock and what it was capable of doing would frequently prefer to mate up a specimen which, externally, appeared less perfect in type than others that were discarded. But in all such cases there was sure to be blood in the chosen bird that was of more valuable service to the breeder than existed in its more typical competitor, and the breeder knew to a nicety what aptitude the bird possessed for transmitting certain points to its progeny.

UNIFORMITY OF TYPE.

To-day, however, the type is more securely fixed in these varieties, and by reason of their popularity there is no lack of good all-round material to supply all demands, so that the fancier who can afford to secure ready-made material to produce the highest class of birds can generally obtain it. Therefore, it is no uncommon thing to come across breeders now who pin their faith to the principle that "like breeds like," and who prefer to mate good, all-round exhibition birds, or birds fit to win in any show, rather than comparatively imperfect specimens. It is simply that as the type becomes more firmly fixed and popularity is responsible for a redundancy of material, the stock birds naturally advance in type, and merge into the perfect show specimens without any marked line of distinction between them.

TO FIX POINTS.

Whatever objection may be brought against in-breeding as a whole, there can be no gainsaying the fact that it is the breeder's most powerful ally in developing and fixing desirable points. But it will also act no less powerfully in fixing and perpetuating bad points that are not desired. The breeder is, therefore, called upon to exercise his utmost powers of discernment to avoid in-breeding with birds which have inherited any typical imperfection. In the words of Mr. W. Spillman: "It is most important to have the birds properly

mated; it matters not how they are bred, if not judiciously mated poor results are bound to follow. Were I asked how near I would go in in-breeding, I should say there is no limit for the first time; but to continue in a haphazard manner would, to say the least, be madness. If your strain is thoroughly healthy, there is no reason why you should not mate father and daughter, or *vice versa*, but you must have an object for so doing. *Size can be increased by judicious in-breeding.*"

ANOTHER VIEW OF IT.

Writing on the same topic, Mr. D. Mallinson, of Yorkshire fame, remarks:—"I had never believed in in-breeding, as I had always been taught that it was detrimental to the stock. It made them weaker. I had, however, carefully studied the matter, and came to the conclusion that it would be a certain way of improving my birds, and would help me to keep closer to markings if I could only keep the birds as healthy and robust under this breeding with related pairs. I determined to try it. Nothing ventured, nothing won. So I began very carefully and went no further than cousins. I found they were just as hale and hearty as before, and after a few years of breeding, I had improved my stock more than I had done in twice the time by the old method. This showed me that in-breeding was an important thing in enabling one to get nearer the desired goal. I paired very carefully and never risked too near relations till I seemed to 'hit on' all at once."

THE BALANCE OF POINTS.

The theory of compensating faults in one bird of a pair by having good corresponding qualities in its mate is pointed out in the following notes anent the Border Fancy, kindly supplied by Mr. J. J. Robson, of Carlisle, per Mr. Hugh Connerton:—"In selecting a cock for breeding clear Borders, I prefer a large, good-coloured bird with nice round head and bred off green-marked birds for preference. The green blood will materially help the colour. Let us suppose that this bird is just on the large side, which tends to make him a bit coarse in feather, and, say, is not clean cut, rather weak in chest, and carries his wings a bit loose. He must be mated with a fine-feathered, stylish buff hen, clean cut, having a good chest and well carried wings full up at the tips. If, on the other hand, we have a light-marked hen, we must mate her to a clear-bred cock. If both birds are off lightly marked parents, half the progeny may be marked; yet we may from such parents have better coloured birds in the clears. It is much easier to breed type than to breed birds well up in colour. There is no royal road to breeding even-marked birds. Many attempt it: but few succeed."

A MATCHED PAIR DESCRIBED.

"A properly marked bird that has pear-shaped eye marks and well-balanced wings, and is good in all other points, is a rarity. The cock may be selected with the secondary feathers of both wings marked—one wing may be heavier than the other—with perhaps a slight tick on some other part of the body or the

head. To pair with such a bird, you require a hen that has a tendency to be marked on both eyes. She may also have wing marks. With such a balancing of markings one may expect an improvement in the marks of the off-spring, and may breed some nice un-even birds, or possibly an even-marked bird.

"A few points must be watched: Don't breed with birds capped—*i.e.*, one having dark feathers on head, or that is patchy on breast or back; nor with

A BAD HABIT.

A hen Canary which plucks her own shoulder feathers.

birds having dark under-flue. Such marks often show themselves afterwards, and are difficult to get rid of."

WHEN BIRDS ARE READY.

Having finally selected the breeding stock, and decided upon the matings that are deemed the most in keeping with the outlined principle of balancing points and compensating any particular failing, it will require but little discernment

to decide when the birds are getting into the proper condition for mating. The fact will be thrust upon one. The birds seem to be seized with an uncontrollable frenzy of restlessness. They career around the cage, the cocks literally bubbling over with song, and the two singing furiously at each other; or the cock will be found vigorously responding to the call of any hen that may be within earshot, the hens on their parts shrilly flinging challenges and call-notes about broadcast, whilst they restlessly flap and flutter about the perches. This is the ideal condition for the middle of March or thereabouts; and, whenever possible, breeding operations should be delayed until that season. Then the birds will be in prime condition for mating and getting to work in a business-like way without delay.

It must not be assumed, however, that this is the only proper condition for a bird that is ready and fit to mate. Much depends upon the temperament of the individual, and it is not even absolutely essential for a male bird to be in vigorous song to be capable of fertilising eggs. Provided it is in good sound health, and is active, it is always safe to give it a chance in the breeding cage to test its fertilising powers. The most silent and undemonstrative birds will at times prove exceptionally good breeders.

THE PRELIMINARIES.

Never mate a bird before it is ready and shows a desire for a mate. It is sheer waste of time, and possibly a waste of the services of a good bird, which, allied to a more forward mate, would give a creditable account of its stewardship. Far better let a bird remain unattached for a season than attempt to mate it before it is ready.

But when mating is about to take place, the birds should first be carefully examined individually. Overgrown claws and beaks should be trimmed to the proper length to avoid future accident to eggs or to bird. Dense heavy crests should be clipped off at the sides to the upper margin of the eyes in order to leave the sight unobstructed, and the fronts should be clipped back to about the middle of the beak. Dense, heavily-feathered birds, such as Crests, Crest-breds, Lancashires, and Dutch Frills, should have all loose flowing tips of feathers trimmed neatly off the flanks, abdomen, and under-tail coverts. Do not, however, cut the tail short, nor disfigure the bird. All that is necessary is to trim off loose superfluous tips in such a way that a prepared bird will look more neat and trim than before the clipping was done. No disfigurement at all is necessary nor yet advisable.

TYING THE HYMENEAL KNOT.

Having concluded all the preliminaries satisfactorily, and all things being ready for pairing up the birds, an introduction is necessary before putting them together. In many cases the introduction is dispensed with; but the advantages so far outweigh the little extra trouble entailed, that it should never be omitted.

If double breeding cages are in use, the cock and hen should be placed separately in each compartment, with the wire slide between. In other cases the cock should be placed in a small wire cage, and hung on the front of the breeding cage. In either position the birds quickly strike up an acquaintance, and arrive at a mutual understanding that the yoke of Hymen is, after all, preferable

to single bliss. When this stage is reached the birds will be found spending a good portion of their time close to each other, maybe whispering "sweet nothings" in each other's ears, twittering to or pecking at each other through the wires; and the cock when not engaged in singing violently at the hen as he meanwhile totters and dances about the perches, constantly calls the hen

Wood mould for shaping the nests.

to the wires and gives her choice morsels of food which she readily accepts, and, like the immortal little Oliver, asks for more. When this is the condition of things, the birds should be put together in the same cage, and supplied with nest-box and cuttle-fish, when, in the natural order of things, all will go as merrily as the proverbial marriage bell, and many useless bickerings and squabbles, which would often occur otherwise, will be avoided.

NEST BUILDING.

In a few days, after the birds are put together, the hen may be seen hunting curiously about the cage, whilst the cock probably uses all his wiles to tempt her to enter the nest-pan. At first she may ignore it, but never mind. Later on the excitement grows upon her, and she may be seen catching up the feathers of her breast or shoulders and awkwardly endeavouring to carry them about and place them in the nest-pan which she has taken to.

Now is the time to give her a supply of nesting material, which should have been withheld until this time. Examine it all carefully and see that it contains no long horse-hair, hard stubby thorns, or dust, any of which may prove injurious to health, or give rise to accidents. Some hens are shockingly bad nest-builders, but do not interfere with them at all until the third egg has been laid. To do so before is worse than useless. From this stage leave the birds as much alone as possible. Do not try to make them to do things according to your ideas. Avoid all interference and keep the birdroom as quiet as possible; let there be no noise while going about the daily tasks.

Shaping the nest by means of a fowl's egg used hot.

THE LAYING PERIOD.

Although no hard and fast rule can be laid down as to when the first egg should be due, it may generally be looked for within fourteen days from the putting of the birds together if, of course, they were in the requisite high condition above described. In some cases the first egg will appear in a week, whilst in others egg-laying may be deferred for a month. In the latter event the hen will be found to have been probably not so forward as was suspected; such a hen should be fed a little more generously.

After pairing takes place, which may be immediately upon the birds being introduced to each other, a careful observer will notice a gradually increasing fulness about the hen from the set-on of the thighs to the under-tail coverts.

A Device to Defeat Egg-Eating Birds.

When this has gone on for some days and the hen grows less energetic in the building operations, and begins to look sluggish towards evening, an egg may, in most cases, be looked for the following morning. But if it is not discovered, and the hen still presents her usual appearance (or very nearly so), do not interfere. Simply take a peep into the nest and the bottom of the cage each morning afterwards until the expected has happened.

The normal conditions now are for an egg to be laid each morning until five have been deposited. Perfectly normal clutches may vary from four to six in number; and in exceptional cases as low as three, or as many as eight may be the number. Occasionally two eggs may be laid on consecutive days; then a day missed, and two more laid consecutively. Abnormalities occur where only one or two eggs are laid, and others where this number is laid, and no more for a week or so. These latter cases are best dealt with by giving the first eggs to other hens with small clutches to hatch, and leaving the hen that lays them to sit and rear the last portion of her clutch. If any other "unattached" eggs are available at the proper time, she may be given enough to make up a full normal clutch, but it is not a wise policy to entrust any but common eggs with these hens until their capabilities of hatching and rearing young have been proven.

REMOVING EGGS AS LAID.

It is good policy to remove the eggs as laid and to return them on the evening of the third day. This enables them to hatch out within a few hours of each other, and it also gives all the young an equal start in life. Most hens commence to incubate from the first egg, and if the eggs are not removed as suggested, it is no uncommon thing for the youngest of a brood to be two clear

"OUR CANARIES."

WING-MARKED DARK CREST.

days younger than the eldest, in consequence of which it never gets a fair chance ; indeed, with all save exceptionally good parents, this young one is crushed out of existence by the time it should be starting to show the quills of its future plumage.

When removing the first egg a dummy nest egg should be substituted for it, which will suffice to keep the hen broody in case a day is missed in laying the clutch. An egg register should be attached to every cage, and on this should be noted the dates of the laying of each egg, the date when they are put to be sat on, and when they should hatch.

RE-ARRANGING BADLY MADE NESTS.

When the eggs are being returned on the third evening, is the opportune time to interfere with any badly constructed nests and put them in good form for their destined purpose. At this time the hen is quite under the influence of the incubation fever, and will resignedly accept any nest that is prepared for her in the vast majority of cases. A hot egg which has been boiled for the egg food next morning makes an excellent nest moulder ; just set it large end downwards on top of a pan filled with cow hair and twist it round and round until the hair is hollowed and smoothed to the requisite depth, and keep the depression well centred in the pan or box. A wooden nest moulder, similar to the one here illustrated, with two different-sized ends and suitable for making nests for large and small breeds, is most useful. It should be turned out of hard wood—box-wood is excellent. It can be warmed in a cool oven sufficiently for use.

MONOGAMY VERSUS POLYGAMY.

The hen having been duly set, the question arises as to what to do with the cock. Opinions differ even among experienced breeders as to whether he should be left permanently with the hen during the breeding season, or be removed and caged alone, or his services utilised to send another hen to nest whilst the first hen is sitting and partly rearing a brood. It is really a question which is very largely dependent upon the temperament of the individuals concerned. There are hens which positively refuse to sit when the cock is taken away, and on the other hand there are many cocks which are too vicious and mischievous to be allowed to remain with a hen whilst she is sitting. It is, therefore, necessary to treat each pair according to their known idiosyncrasies, and either leave the pair together or separate them as may be found necessary. In the great majority of cases the hens will sit and rear the young by themselves, and do the thing much better than when pestered by the presence of a vigorous cock who is continually wanting the hen to begin nesting again before one brood is ready to do for themselves.

In all cases where he is removed, whether on account of his mischievous propensities or in order that he may be mated with another hen, it is essential, if the best results are to be obtained, that the cock be taken at least out of sight,

and, whenever possible, out of hearing of the hen, and not returned until the hen is again ready to commence nesting.

When space is limited and stock small it is at times economical to run the cock with two hens alternately, and if he is young and robust, no harm whatever will result. To do this the cock should be mated in the usual way with the second hen as soon as he is removed from his first mate, and when the second hen has laid her complement of eggs, and is put to sit on them, he must be again removed and caged alone until the first hen is ready to nest a second time. Thus, the round should go on, each hen going to nest alternately to the same cock.

In large flight cages with plenty of secluded nest-boxes, one cock may be run with two or three at the same time, but there is always a great risk of the birds interfering with each other's nests and making a muddle of things generally.

THE PERIOD OF INCUBATION.

The normal time of incubation for eggs of the Canary is thirteen clear days, so that hatching should in the ordinary course of events take place on the fourteenth day after a hen is put to sit on the eggs. Thus, if the first three eggs of a clutch are returned to the nest on the evening of the last day of the month, and another egg is laid on the following morning, all four chicks, assuming the eggs to be fertile, should hatch out on the fourteenth of the month. Very warm weather and a close-sitting hen will shorten the period by several hours, and the eggs will probably hatch on the afternoon or evening of the thirteenth day. On the other hand, the opposing conditions—a cold, chilly season and a light-sitting hen—may extend the time of hatching to the fifteenth day, when the eggs should hatch during the early part of the day; otherwise the prospects of their doing so successfully will rapidly become remote.

EGG TESTING.

It is a comparatively easy matter even for a novice to tell whether the eggs are fertile after the seventh day of incubation, but as little practical good can accrue from the knowledge, it is scarcely worth the risk of disturbing the hens to acquire it. An unfertile egg is often useful in the nest for the first few days after hatching to prevent the hen from sitting too closely on the young, so that even when one discovers any unfertile eggs in a given clutch, it is an advantage rather than otherwise to let them remain. When only one or two eggs of a clutch are fertile they may be given to other hens with eggs that are at the same stage of incubation, in order to make up full clutches of fertile eggs; the other hen may then begin again a week earlier than if she were allowed to sit her full time. But this we do not consider an advantage, as the full time of incubation only affords a fair period of rest before a hen should begin nesting again.

To test the eggs one needs a small piece of black or blackened, cardboard with a hole cut out in the centre slightly smaller than the outline of a Canary's egg. Then, by holding this before a strong light, and the egg in front of the hole and close up to it, the egg will, if fertile, appear dark and opaque; if it is an unfertile one, it will appear quite clear and transparent, the yolk being seen clearly as a slightly dusky patch moving around as the egg is turned, always floating to the top.

Later on, when the eggs are near hatching, they may be placed in a cup of warm water standing on a firm and steady table. Bring the eggs gently to a standstill with the tip of the finger, and then watch for a minute or so. The presence of live chicks in any of them will be very soon apparent by the uncanny movements of the eggs, which will begin to quiver and "bob" about quite distinctly from time to time as the chicks within them make any effort at moving, even if ever so slightly.

One word of caution may be given here: never lose hope of a clutch of eggs, which are supposed to be chilled or spoiled from any other cause than irremediable fracture. However unfavourable the outlook may be, make it a point to let every egg remain under the hen for its full time, and many surprises will be found in store for the owner. It is wonderful what an amount of vitality is in the chicks at a certain time, and eggs, which were believed to be quite beyond the pale of possible fruition, will again and again be found to hatch out strong and robust chicks.

CHAPTER IX.

THE TROUBLES OF THE LAYING PERIOD.

WE have already dealt with the ordinary risks of egg-laying, but in this short chapter it is our purpose to consider those of a more uncommon kind. If a hen lays but one egg, or one or two abnormal eggs, or refuses to lay at all after being mated for a month or so, it will be best to separate her for a fortnight and feed her on a diet of plain Canary-seed, with a little bread and milk (sprinkled with soft sugar and maw seed) daily, giving also a fairly liberal supply of dandelion each day. The whole of a dandelion plant of a quite tender growth may be plucked and given the hen, root and all, to pick over. At the end of a fortnight she may be tried again. If the trouble occurs with a very young hen, it will be still better to turn her into a large flight cage and keep her unmated until the following season; whilst an old hen, unless a very good and reliable feeder, should be discarded incontinently. It often happens that a hen of this type proves an excellent foster-parent for other youngsters, and in such a case will prove a valuable asset for the breeder of high-class birds to have at hand for times of necessity.

EGG EATERS.

One of the most unmitigated nuisances in the bird-world is the Canary that devours its own eggs, or the eggs of its mate. The problem as to how to cure such is a difficult and vexed one. Placing a china egg in the nest for the bird or birds to try issues with and work off their superfluous energy upon in trying to break it open is recommended as a cure by some fanciers. Another plan is to blow the contents out of a real egg and refill the shell with a nauseous compound of mustard, cayenne, and a pinch of salt, mixed to a cream with a few drops of water or vinegar, and then seal up the hole and place the prepared egg in the nest of the egg-eater for him (or her) to sample the contents. Our experience of these tricks does not leave a high impression of their utility, though we must admit our opportunities for testing them have, fortunately, been limited, but others claim to have met with happy results from them.

A more reliable and practical method, however, is to aim at saving the eggs—if they are of a good strain and worth some trouble to save them from injury—and transfer them to a more reliable pair to hatch and rear. It is important to discover which bird of a pair is the culprit. If it is the cock, then it is only necessary to shut him away from the hen each night when eggs are expected and return him next morning only after the egg has been secured. When the hen is the culprit a specially constructed nesting receptacle is essential. This is easily prepared by making a small chip or cardboard box about 1 $\frac{3}{4}$ in. cube measure, to slide out the same as an ordinary match box. Cut a round

hole in the top large enough for a Canary's egg to drop through with a little room to spare. Now drill a hole in the bottom of an ordinary nest-pan also large enough for an egg to drop through easily, so that an egg laid in the pan will drop through the hole immediately. Glue the little box securely underneath the nest pan, with the hole in top neatly centred over the hole in the bottom of the nest-pan. A layer of wadding or bran should be placed in the box to lessen to the egg the shock of dropping. By this means the eggs will drop into safety automatically as soon as laid. Of course, such a hen can never be entrusted with eggs for incubation, and is only worth troubling with when of a good, well-bred type from which it is particularly desired to get young.

EGG BINDING.

By far the commonest trouble during the laying period in all stocks where there is any flaw in the general management is eggbinding. This distressing complaint demands very prompt measures for its relief; yet one should not jump to hasty conclusions if a hen does not produce an egg on the exact morning it was expected to do so, and begin to treat the subject for a complaint which may not exist. The symptoms presented are most pronounced and unmistakable; therefore, treatment never need be attempted unnecessarily.

If a hen does not lay on the day she is expected to do so, and besides appearing in good health is fairly active and lively, do not be tempted to touch her. Wait a few hours or a day, or even longer. In short, do not meddle with her until she begins to show signs of evident distress. When egg-binding really occurs, the first sign will be that when the owner goes to look in the nest in the morning the hen will be found still sitting there, and looking thick, ruffled, and exhausted, not over anxious to be driven from the nest and, perhaps, having the eyes half closed. If driven from the nest, she will almost immediately huddle up on the perch or floor of the cage, and exhibit over again the symptoms just described. This may be regarded as a typical case, and as such requires prompt treatment.

CUTTING AN OVERGROWN BEAK.
Showing the method of holding the bird.

THE TREATMENT.

Steaming may be resorted to as a first aid, and unless it is a severe case nothing else will be necessary. Before touching the hen, get a pint jug—it is the best all-round article for the purpose—half-filled with very hot water, and tie loosely over the top a piece of gauze—pieces of common butter or cheese cloths will serve the purpose admirably, and may usually be begged from the “domestic authorities”—pressing it down a little in the top of the jug, so as to form a kind of nest in which the bird can sit. Now test the heat of the rising steam by holding a sensitive part of the hand or arm upon the gauze. The bared elbow will afford the best test, and the steam should not be hotter than the elbow can comfortably bear.

Now warm a little castor oil, and, after gently catching the bird, blow aside the feathers at the vent, and with a small feather or camel-hair pencil place one drop of the warm oil upon the vent. After a few seconds place the bird on top of the water jug, as though she were in a nest. Release her from your hold, but keep the hand over her to prevent her struggling away. Before placing her on the jug, arrange her plumage so as to give the steam full play over the vent and abdomen.

OBSTINATE CASES.

Sometimes the egg will be laid in a minute or so, but if it is not, allow her to remain over the steam for five minutes—this is why one must carefully test the heat of the steam before commencing, so as to avoid the least danger of scalding the bird—then remove her, and give 2 drops of a mixture of equal parts of glycerine and brandy in the beak, and place her in a cosy nest in a small travelling cage, and put her in a warm place near the fire until she is relieved. If she has not laid in a couple of hours, repeat the treatment all over again, but instead of dropping more oil in the vent, smear it over with a mixture of vaseline and belladonna extract, which any chemist will prescribe on being informed of the intended purpose. But in the case of the hen laying soon after she is first placed upon the jug, return her to her proper cage, and give 10 drops of glycerine and 30 of brandy in the drinking vessel for the next two days.

EGG-BINDING SCIENTIFICALLY CONSIDERED.

For the following excellent exposition of the subject our thanks are again due to Dr. T. A. Bowes, of Herne Bay.

“A. CAUSES ARISING IN THE HEN.—The egg having been fully formed in the oviduct, reaches the lowest portion of this organ ready for expulsion. At the time of laying, certain forces are brought into play against certain resistances. The junction of the oviduct with the cloaca is narrower than the circumference of the egg, as is also the vent orifice. The first resistances therefore are:

THE FEATHERING OF THE MODERN CREST.

Drawn from life to show the abundance of body feather on Crested Canaries of the present day.

" (i.) *Rigidity of end of oviduct at its junction with cloaca, or rigidity of the vent.*—If these are present, a greater force than usual is necessary for their expansion sufficient to allow the egg to pass.

" (ii.) *Constipation, with a loaded lower portion of the bowel.*—The egg filling up the lower portion of the abdomen, the bowel runs, as it were, over its surface on the right side, and if this is full it prevents the egg from coming sufficiently down to satisfactorily distend the oviduct end and vent, and a certain amount of force will have to be unnecessarily expended in drawing out the contents of the bowel.

" (iii.) *Deficient moisture in the parts.*—If there is lack of secretion in the lower part of oviduct the natural lubricant for the egg in its extension is lessened in quantity, and defective lubricant means increased resistance.

" (iv.) *Deficient Expulsive force.*—The muscular contractions of the oviduct and abdominal walls form the power that is necessary to overcome the various resistances present. Any cause which interferes with the full development of the muscular strength becomes a factor in the case. (a) An aged hen has less strength than a young one, although the lack of strength in the old bird will be compensated for to some extent by the expansile parts having already been distended by previous egg laying. (b) General debility from over egg production or strain of rearing several successive broods. (c) Over-fat hen. Muscles that are infiltrated with fat cannot work as satisfactorily as those that are not. In these fat hens there is also a quantity of fat in the abdominal organs, and therefore the lessened room for the egg in the abdomen must entail a compensating stretching of the abdominal wall with a further diminution in the available power.

FAULTS IN THE EGG.

" B. IN THE EGG. (i.) *Shell-less.*—The lower part of the oviduct secretes the necessary lime-salts to form the shell of the egg. Inflammation of the oviduct may produce irregularity of secretion and more be thrown out at various points, producing a rough and irregular surface instead of the uniformly smooth one of a normal egg. With defective lubrication this roughness would help to form a resistance to be overcome. If no lime-salts are secreted the egg becomes shell-less, so with the object of preventing such a thing, I always see that as much lime salts as the hen will eat is given in the form of crushed old mortar. I think the shell is secreted in the last twelve hours before laying, as I have felt a soft egg at night which has been laid with a normal shell next morning. A shell-less egg is soft and elastic, and there is not the same grip for the expulsive muscles as in the case of the firm, unyielding egg with a shell. Some of the muscular power is lost in indenting the egg, in the same way that a rubber ball is indented and altered in shape by the circular pressure of the finger and thumb.

" (ii.) *Alteration from the normal shape.*—The egg is laid with the thicker end first, and the natural egg shape is the one which presents the greatest facilities for expulsion. Compare the two figures of the real egg-shaped one and the more rounded one.

The greatest circumference A C has to pass through the resistance of the opening of oviduct into the cloaca and the vent, and these two are approximated close together at the time of laying. Once past this line A B C the elastic recoil of the stretched parts running over a diminishing cone surface to D shoots the egg out. In the usual-shaped egg (*fig. 1*) the distance B E is greater than in *fig. 2*, the more rounded egg. This means that the diameter of the cone increases more gradually from E to B in *fig. 1* than in *fig. 2*, and the point is finer. The blunt end of *fig. 2* is less easily inserted into the resistance of the end of oviduct, and more force is required to dilate the latter. The finer point and more gradually increased diameter of the

Fig. 1.

Fig. 2.

cone form a much better dilating wedge than the blunt point with a more rapidly increased diameter. It is therefore obvious that the more pointed and elongated the egg is from the end to the greatest diameter the more easily the resistance of the parts in front will be overcome, and that a blunt point and more rounded egg with a shorter distance from the presenting end to the greatest diameter are structural disadvantages to easy expulsion.

" (iii.) *Large Size of the Egg.*—The larger the egg the greater the distension of the soft parts necessary before it can be laid. The logical deductions from the study of these factors in egg-binding is that treatment should be preventive, and failing that it should be active. Avoid constipation by sufficient green food, and salts if necessary. Avoid over-fatness by regulation of diet and oily seeds. Do not breed with old hens, or those who show any weakness in general health, or over-work during the preceding show season. Do not take too many nests in the season from a hen. The giving of niger seed is said to have a beneficial effect in the prevention of egg-binding, but my own birds never have it, and I have every reason to believe they are as free from egg-binding as possible, as I have never had an egg-bound Canary. Plenty of crushed mortar is, I believe, essential, and judging by the pounds of it mine consume it is quite harmless both to the old birds and nestlings.

" Assuming that egg-binding should occur, and that the egg which I was certain from the size, shape and appearance of the hen, say, in the evening was due to appear next morning and it did not, I should judge from the condition of the hen whether she was in difficulties. She might be humped up, feathers puffed out and

obviously in pain. I should catch her, and if the egg felt soft through the abdominal walls and she was not very ill, I should offer some mortar and wait a few hours. If she ate it, the egg might appear then. If the egg were hard, *i.e.* had a shell, and the bird ill, I should have no hesitation in using an "expression method" to increase the *vis a tergo* with a view to overcoming the resistance in front.

"Some years ago I kept Budgerigars and these are very prone to egg-binding. From my experience with them I discarded as lengthy and ineffectual all attempts to obtain relief by castor oil by mouth, oiling vent and steaming. I used to express the egg at once, and the bird was well in a very short time. I never had a failure that I remember and have even expressed the egg after death. This method was published, I believe, for the first time in a paper on Budgerigars by myself in *Cage Birds* some years ago.

"Briefly, the method, which is illustrated on page 108, was: bird on its back in left hand, head towards right hand; finger and thumb placed on sides of egg near vent and drawn backwards with gentle pressure on the egg to be sure of pushing aside the intestines and oviduct which lie partially over its surface. When sufficiently drawn back the finger and thumb holding egg between are gently, slowly and firmly pushed forwards towards the vent and the ease with which the egg is expressed into the palm of the hand is magical. I do not think it causes more pain than usual; it is certainly quicker and therefore must relieve the bird of hours of suffering, and as far as I know it is free from any ill effects as it simply imitates nature and supplies the defective expulsive efforts.

"Great care and gentleness are required, and a delicate touch is a very great asset in the accomplishment of the manoeuvre. On no account should the egg be pinched between the finger and thumb, or it will be broken and is then more difficult to get away. Personally, I have done it, *i.e.*, broken it, and got it away successfully, and on the rare occasions that I had an accident, once only, as far as I can remember, it was due to my not taking sufficient time and care in the correct placing of the finger and thumb. Only sufficient pressure should be made to prevent the egg going backwards between the finger and thumb, and the whole arrangement of the egg and finger and thumb should be pushed forwards towards the vent. If the first attempt fails to extrude the egg, it will have at least partially dilated the oviduct end, and a series of gentle pressures forward with re-adjustments of thumb and finger will push the egg down until its greatest diameter has passed the resistance in front, and the manipulation will succeed. The fancier who has a very heavy hand and not a delicate sense of touch would be wise to ask a fellow fancier who is better in these respects to attempt it for him. I think it would be justifiable, if the usually suggested means failed, for him to attempt it if he is careful and the condition of the hen is such that death must ensue if left unrelieved."

CHAPTER X.

HATCHING AND REARING.

THE TIME OF HATCHING.

THE all-important fourteenth day of incubation is a time of great anxiety for the young fancier, whose self-restraint is then taxed to the utmost to prevent a natural and justifiable curiosity over-stepping the bounds of prudence and trespassing upon the realms of interference. All too often human nature is too weak to overcome temptation, and the expectant Canary mother-bird is hustled off her speckled treasures, if such they still remain, to gratify the owner's curiosity, at the one time above all others when perfect freedom from scare and excitement is most essential. One such lapse from a wise determination not to interfere in the affairs of the hen's domestic state is apt to lead to frequent falls, with the consequence that the birds, and the hen in particular, are kept in a condition of constant flurry and fright from the unwelcome attentions to which she and her nest are subjected, in addition to the natural excitement arising in connection with her earnest expectations.

This is a picture of things as they should not be but which are only too common amongst young and inexperienced fanciers, and they are undoubtedly a frequent cause of hens failing to perform their maternal duties from this time forward. The hen may become obsessed with a dread that some mischief is intended to her newly-arrived brood and sits closely upon them, refusing to leave them even long enough to pick up a decent meal for herself, and scuttles back in such unseemly haste that she quite misses the idea that the chicks are naturally looking forward to a share in the good things of this life. All oblivious of such necessary items she flops down upon them, anxious only to hide them from prying eyes and fingers, until hunger again forces her to make another hasty and equally unsatisfactory expedition, which is repeated again and again until the life is finally crushed and starved out of the unfortunate little bodies. Let the young fancier take this to heart as an awful warning of the result of a meddlesome policy, and absolutely shun all interference during hatching time save in cases of sheer necessity.

DIFFICULTIES OF HATCHING.

On the morning of the fourteenth day, if the faint "cheep, cheep," which denotes the arrival of the little strangers is not heard, advantage should be taken of the hen's absence at the food box to have a peep into the nest. Never flush the hen off the nest if it can be avoided, and if it should be necessary to do so, do it as gently as possible, "tweeting" and "talking" to her meanwhile. Examine the eggs without any unnecessary handling and if they show signs of "pipping" towards the large end, leave them severely alone. If no signs of "pipping" are apparent, wait until the evening and

A RESULT OF HAPHAZARD BREEDING.

An Aviary-bred, coarse-feathered Yorkshire Canary, neither trained nor colour fed.

examine them again. If they still show no external signs of "pipping," and the weather has been moderately warm during the previous fortnight, the eggs should be immersed in warm water for a minute or so (as described in a previous chapter) and their behaviour closely watched, when the presence of live chicks will be unmistakably indicated by the motions of the shells in which they are enclosed. At this stage we would advise no further interference. Return all to the nest until the following morning, and if no further progress has been made by that time, the immersion may be repeated, and then in the evening a small opening may be made in the top

If a hen plucks her young ones a strip of cardboard should be run through the wires of the nursery cage.

of the large end, just enough to ascertain the position of the imprisoned bird's beak; then slightly scratch the shell from a spot as near as possible to the tip of the beak about a quarter way round its smallest circumference in each direction. The shell will then be brought to the point of separation for one-half of its circumference with the bird's beak in the centre of the weakened portion, which should

enable it to lift off the top of the shell with the minimum of force.

Leave the chick, or the hen, to complete the process. Never turn out a chick bodily, save in the most exceptional cases when it appears quite dry within the shell. Even this much assistance we strongly advise being given only as a last resource—when death in the shell seems otherwise quite inevitable. In such case the assistance rendered will reduce the chances of death by the merest fraction, and is therefore justifiable. But so long as there remains the slightest chance of an egg hatching naturally all interference, beyond an immersion in warm water during warm, dry weather is not only wholly inexcusable, but calculated to reduce the chances of survival materially.

THE EGGS THAT DO NOT HATCH.

Some confusion exists in reference to the terms employed to describe eggs that do not prove fruitful. Technically there are but two types—those that have been duly impregnated with the germ of the male, and are accordingly rendered fertile, or capable of producing a complete living structure of their kind; and those that, not having been so impregnated, possess no vital germ, and lack the vital principle which springs into life in response

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to the influence of heat, such being termed unfertile, or in more common parlance, "clear" eggs. These latter eggs, if sat upon for a full period of incubation, will still present the same appearance when broken as a freshly laid egg. It does not follow that because a true pair of birds have been kept together, and have apparently gone through all the forms of mating and copulation, the eggs will prove fertile; such is by no means a universal rule. Sometimes the contents of the shells dry up into a hard mass during incubation. These eggs may be either fertile or unfertile, but the shells are of an imperfect description, too porous in character, and allow the moisture in the egg to evaporate when heat is applied, so that instead of hatching, supposing them to be fertile, they become a tiny mass of solidified albumen.

Addled eggs are those which have been duly fertilized but in which the germ for some reason has lost its vitality after commencing to develop and before reaching the complete stage; the germs having died, decomposition soon sets in, and at the end of the period of incubation such eggs will contain a mass of foul-smelling decomposed matter varying in degree with the stage of development which the chick had reached. It may be little more than a fresh egg with slight streaks of blood, which are slightly malodorous; or it may be an almost fully developed chick which assails the nasal organs with violence. Full-grown chicks dead in shell may sometimes be the outcome of sudden vibratory noises, such as slamming of doors, vigorous hammering close at hand, and the like, and can only be prevented by the avoidance of the causes.

THE FOOD SUPPLY.

When the young have duly made their debut on the stage of this mundane sphere, the wherewithal to support the spark of life and develop the immature frame is the first consideration. For the first week or so this duty devolves almost solely upon the hen, who must have a regular supply of food suitable for the purpose always accessible from the evening of the thirteenth day of incubation. What this food consists of will depend to a certain extent upon the leanings of the fancier. There are probably few subjects upon which the principle of the well-worn adage, "many men, many minds," is seen with more effect than upon that of feeding and rearing young Canaries. Whilst in the early days of the Fancy there would seem to have been scarcely two ideas upon the question of the proper food for rearing the young, now-a-days, when the hobby is almost universally popular, this same question of food has become quite a thorny one, and instead of fanciers being of one mind, there are scores of fanciers to be met with daily holding just as many different views. There exist the egg and the no-egg-from-conviction class, and a very great class who would like to dispense with

egg-food on the score of expense and to get rid of the trouble of preparing it and keeping the supply fresh and sweet, each class having adherents holding varying and dissimilar views.

A large variety of foods has been referred to in the chapter on feeding, and we need only stay here to mention the method given us by Mr. J. W. Bruce, of Coldstream, who writes:—My mode of feeding is as follows: one egg to two Abernethy biscuits, with a teaspoonful of maw seed, well mixed together, and as much of this as they will eat. No green food, except when a hen is getting a little constipated."

ANOTHER VIEW OF IT.

On the other hand, Messrs. Hopper Bros., of Keswick, writing concerning the Border Fancy, say:—"On the thirteenth day of incubation give a little yolk of egg and biscuit, or stale bread crumbs. Also add hemp seed to the canary and rape, and as the young get older increase the egg food, and add the white of egg with yolk. Do not disturb the hen any more than you can help, but take a peep when she is off and examine the nest. Should it have a sour and disagreeable smell you may be sure that one (or more) of the young has diarrhœa. Look into the nest, and should you find one of the young looking blue and shrivelled up, destroy it—if you do not, it may be the means of your losing the whole brood."

The first sign of diarrhœa in any of the young must not be neglected. Moist succulent green stuff should be withheld for a few hours, or for a whole day if necessary, and a little dry, crushed arrowroot biscuit and crushed hemp mixed together and given in addition to the ordinary egg-food. The latter may also be dusted slightly with prepared chalk until the looseness is stopped.

HELPING THE UNFORTUNATE.

Examine the cage floor regularly every morning and evening after young are hatched, in order to see if any unfortunate youngster has been accidentally dragged out of its nest; or, better still, seize an opportunity when the hen comes off for food to peep into the nest and "cheep" to the young when, if all is going well, they will probably raise their heads and gape for food, and one will be able to see, at a glance, if the proper number are safely ensconced within the nest.

If any have been dragged out, and appear cold and stark, do not jump to the conclusion that they are dead. Take them up gently, place them between the palms of the hands and hold them in front of a fire as closely as can be done without burning the hand, and breathe through the thumbs on to the birds from time to time. A few minutes of this treatment will often resuscitate an apparently lifeless chick. As soon as it gets quite warm and lively, replace it in the nest.

At these visits of inspection careful note should be taken of the young to see whether they are being fed and cared for properly. If all is going well, the young should increase perceptibly in size day by day, and should always present a perfectly dry, soft, fluffy appearance. If the downy covering of the young begins to look moist or to lie flat, something is going wrong. Look and see if the nest is dry and clean, and watch the hen closely to see whether she feeds the young on returning to the nest; or examine the condition of the young birds' crops in the evening. If the youngsters are not properly fed, and the hen appears to partake reluctantly of the soft food provided, pander to her tastes as far as possible; give a variety of foods and green foods, always in small quantities and perfectly fresh each time. Also give her a bath each morning in which a little common salt has been dissolved—in the proportion of a heaped teaspoonful to a pint of water—and in the drinking water add in each two tablespoonfuls for one-half of each day as much glauber salts as will cover a sixpence when pounded. Continue this treatment until the hen appears to be performing her maternal duties satisfactorily.

"Keep the young in the nest as long as possible."

HENS "SWEATING" YOUNG.

Non-feeding and "sweating" the young, as it is popularly called, generally go hand in hand. The following notes on this subject, from the pen of Dr. T. A. Bowes, are of special interest:—

"Is it diarrhœa?" writes Dr. Bowes. "Whatever the cause and whether or not there are several factors in its production, the first departure from the normal appearance of the young occurs about the fourth or fifth day after hatching. The beautiful, healthy, downy appearance of a nest of young ones becomes broken by the down on the head disappearing and becoming plastered level with the head. At the same time the young are not properly fed, and although they may rise for food I have seen that the hen takes no notice, but settles herself comfortably on them again, and they do not get the necessary meal.

"I consider that the essential cause lies in the *condition and disposition of the hen*, and that she fails in her maternal duties. I have a hen which, season after season, refuses to feed her young, and "sweats" them; and except that she is not active, there is nothing wrong with her. I have also noticed that the first nest may go, and the second be quite right with improvement in the

hen's condition and from the fact that she has got over the first strangeness of being a mother. The first step in the production of this condition seems to be *over anxiety and nervousness on the part of the hen* together with some *disorder of her digestion or metabolism*. She feels sluggish and sick, and when she comes off the nest for food thinks she has nothing to do but to get back as quickly as possible to keep the youngsters warm, forgetful that on the second and third days she has probably given them enough food to keep them going, and that in the natural order of things a certain amount of droppings must be formed; or, feeling as she does that she cannot fancy an unsavoury meal, she leaves the excrement where it is, flops down on the nest, and takes no notice of the young rising for food."

AN ELEMENT OF VICE.

"Once this is started, a vicious cycle is produced. Sitting tight on the nest which has become slightly soiled, is like putting a frame on a heap of fresh manure—heat and moisture are created, and the young are kept in a sort of hot-house, which makes them soft and limp, and they do not rise of themselves to feed, even if the hen is now become very willing; and thus they do not get sufficient food and liquid by the mouth. At the same time the hen's breast feathers, where they touch the soiled nest, become moist and light brown in colour, and some amount of good might be done by letting her have a bath, which not only cleanses but also gives her more time off the nest, and the young get aired and refreshed. It also gives the cock an opportunity to coax the young to take food.

"Things usually go on from bad to worse from this point; the nest becomes more pasted over with the light brown manure and as the young *do not get sufficient liquid and food* the excretions now become altered in quality and quantity. Less copious and not now of a gelatinous coherent quality (which is advantageous to the hen especially in reference to her cleaning operations), the excretions become thinner in calibre and more friable, so that if she tries to get it away it won't come. As the young have now less strength the vent is not thrown up towards the side of the nest as it used to be and in addition the vent itself becomes stuck together by the heated excrement. A violent effort is made and a little possibly expelled through a narrowed orifice, which only runs down the abdomen wall and soils the nest still more. Through the lack of liquid by the mouth, that present in the tissues is rapidly absorbed in order to get an evacuation at all and the young become shrivelled up with protruding bones and a reddish yellow colour of the skin. Also the curve in the neck appears accentuated, the head being more thrown back, and with this there is hardly strength to lift the head or open the beak. All the time the hen still sits on the young, heating them more, she having starved them at first, and now they have not the strength to feed.

"In favour of the hen being the source of the trouble there are the following facts: (i.) It will occur time after time with the same hen with the eggs from another pair; (ii.) Artificial feeding will sometimes tide the young over till their strength returns and they make their own demands for food greater, if their condition is not too bad when this feeding is resorted to; (iii.) Remove the young to another hen who is feeding well, and the condition disappears at once and the youngsters make headway."

CANNIBAL TRAITS.

Other vices of the parents, from which neither male nor female is quite free, would seem to display on the part of the birds a bent towards cannibalism.

"The most critical period in the life of the young birds is when they are just leaving their parents."

It sometimes happens that the young when only a few days old are discovered minus toes and beaks, which appear to have been bitten off by one or other of the old birds. It is, of course, impossible to say whether this is done deliberately and with malicious intent, or whether it is the result of accident—the old bird or birds nipping the parts involved in mistake for something quite different. In some cases, at least, we are inclined to think it is indirectly caused by insects worrying the hen, and as it is extremely rare one hears of it occurring among well managed stocks, the inference is that some fault of management may very often be at the root of the mischief, the means of combating it being in that case obvious. Later on, when the plumage of the young is bursting the quill, and onwards until they leave the nest, the trouble of a hen plucking out the plumage of the young is a very common

one with hens who begin to want to nest again about this time. Sometimes the method of providing a second nest box and material will stop the trouble, the hen paying attention to these additions and leaving the young in peace. In other cases where it is apparently the result of vice, we have met breeders who claim to have cured it entirely by pinning a tiny morsel of raw lean beef or mutton on the end of a perch, for the hen to peck at—a simple method which (fortunately, we would say), we have not yet had an opportunity of putting to a practical test personally. Yet it should be well worth a trial when the trouble crops up.

PUTTING ON A CLOSED MARKING RING.

1. Over the front toes. 2. Over the back toe. 3. The ring in position.

AVOIDING THE RISK.

Where valuable birds are concerned, however, it is the best policy to take no risks whatever if one discovers the commencement of these mischievous habits. If a supply of foster parents is available, the young of the better type of bird should be transferred to them, and their own young either distributed among other feeders to keep them in readiness as long as possible to take over any other good specimens, or the young of the feeders may be given to the pair of good birds. The latter plan is, however, not greatly commended, as it is too apt to provide the culprit with the means of continuing the habit, until she becomes confirmed in it, whereas if she is given no young and is allowed to go to nest again, there is a very fair chance that she will rear the next brood without showing such vicious propensities.

When the young brood exposed to this plucking habit are of either of the "annual" breeds—London Fancies or Lizards—it is of the utmost importance to avoid all possible risk of plucking; otherwise a promising brood may be utterly ruined in a day or two by this habit.

A good supply of trusty feeders should, therefore, be kept available in case their services are required; and as soon as any sign of plucking becomes

HOW TO MEASURE THE LENGTH OF A BIRD.

noticeable transfer the young without loss of time to feeders. In doing this care should be taken to mark the young when they are being transferred so that no error is made in their pedigree, and also to foster them with a hen having young as nearly as possible of the same age. In the evening—just after the birds have gone to roost, or just before they settle down to roost—is the best time to make the change. In the former case a light should be left, if necessary, to enable the hen to get back on to the nest.

MARKING THE YOUNG.

If all goes well, the young brood will make rapid headway after the first three or four days, and the quantity of egg-food should be steadily increased day by day, and a liberal supply of green food kept at hand. Do not, however, satiate them with large quantities at once. Always aim at having a “clean egg pan” at each feeding time, in the sense that the whole of the last supply has been consumed and the birds looking out keenly for more, and feed at least twice, or better still three times, daily.

Under these happy auspices the youngsters will soon attain a size when it is necessary to put on marking rings (if the owner adopts what is at once the safest and the most permanent method of marking his birds for identification), and to enter a record of their breeding in his pedigree book—viz., closed and numbered rings. These rings, when once placed on the leg (providing they are of a proper size), cannot be removed without injury to the bird unless cut off, and they must be worn by the birds all their lives. Each ring should bear a distinctive number, and the date of the year. Open rings which can be removed and replaced at will may also be used and can be put on at any time, the best time being when the young are about to leave the nest, as they will then be accustomed to their presence when they leave the nest, and will not be so prone to peck and worry at them as when put on after leaving the nest. The chief objection to open rings is that they are apt to be removed and mislaid or forgotten, and the bird's identification in the pedigree book become doubtful, or lost.

TIME AND MANNER OF RINGING.

No hard and fast rule can be laid down as to the exact age for putting on closed rings. The proper time covers a period of two or three days from about the seventh to the tenth day. A little experience in ringing a few broods will best teach one to recognise by observation when the young are the proper size for the rings to be put on; about the seventh or eighth day for large breeds and the ninth or tenth day for small breeds will probably be the best time, but a more definite line than this cannot be laid down. If put on too soon there is a great risk of the rings slipping off again into the nest, whilst if ringing is delayed a few days too long, the legs

will have increased in size so as to make it difficult to get the rings on without injury to the tiny fragile toes and legs.

HOW IT IS DONE.

When the proper time has arrived get the rings all placed handy on a cleared table, take out the nest of young, and first examine the condition of the nest. If it is much soiled around the sides or in the bottom, make a new one in a similar pan or box, dust it well underneath with pyrethrum powder, and then take up a youngster from the old nest and arrange it carefully in the left hand with the tips of the thumb and forefinger free to hold the leg and foot which is to be rung, place the hind toe back against the shank of the leg, and the three fore toes straight out and close together; hold them in this position between the tip of the thumb and forefinger. Now take up a ring, put the three fore toes through it, and pass it on over the foot, and upwards over the hind toe and leg until it is past the end of the hind claw; now release the hind toe, which, returning to its normal position, will prevent the ring again passing over the foot voluntarily and dropping off. Place the bird in the clean nest, and repeat the process with each of the others in turn. It is all a work of moments, and the nest of young may be returned to the cage in a very short space of time. Nevertheless, we prefer doing all these operations in the evening, at or near roost-time, as the old birds are then far more tractable and quiet, and are less apt to resent any interference. They settle down to roost as soon as the young are returned and re-commence the daily round next morning as though nothing had happened. If the brood is young and the rings appear to go on too easily, always make a point of looking in the nest for the next day or two to see if any have slipped off, in order to replace them at once before the foot has grown too large for the ring to be replaced.

On the other hand, if the young are already so large that a difficulty in getting on the rings is anticipated, place the rings in a saucer of hot water—not so hot that the finger cannot be comfortably borne in it—or hold them in the mouth whilst getting the birds ready and take them direct from the water or mouth as required to slip over the foot. The heat will slightly expand the rings, and the moisture will help to slip them easily over the foot.

CHANGING THE NEST.

If the nest is dry and clean when the young birds are rung it will not be necessary to give a new nest at that time. A dust with fresh insect powder round the edge will suffice, and this is always advisable to prevent insect pests becoming very numerous. But by the time the young are about a fortnight old the sides of the nest are often in a very soiled condition, and a new clean nest at this age is always advisable for sanitary reasons. This may be made ready in a similar pan

or box and dusted with insect powder; and just as the birds are going to roost, take out the soiled nest, transfer the young to the clean one and replace in the cage. The disturbance is then practically *nil*. In making the new nest at this age remember that the birds have grown considerably larger, and if there is a full brood, a rather larger cup should be formed in the nest than was required for the hen when laying and sitting.

FROM NEST TO NURSERY.

The age when the young leave the nest will be found to vary from the twentieth to the thirtieth day after hatching. These periods may be taken as the two extremes. The great majority of young birds will get on the perches between the twenty-fourth and the twenty-sixth days. The actual time depends very much upon the feeding qualities of the parents and the number of the brood.

Never try to hasten on this event. On the contrary, as long as the parents are doing their duty well and do not pluck the young, make every effort in the way of quietude and avoidance of anything likely to startle the young, and try to keep them in the nest as long as possible. During the last week or so in the nest they will often climb on to the edge of the nest for a short time, and a trivial thing—a sharp noise, a sudden move, or any unusual appearance—may send them scurrying into the cage bottom; and after such an event it is no easy matter to get them to remain quietly in the nest again.

RETURNING THE COCK AFTER REMOVAL.

At this stage the hen will, in the natural order of things, be about turning her attention to nesting again, and in those cases where the cock was removed at the commencement of incubation he may now be safely returned. In most cases after duly paying court to the hen he will settle down quietly and take over the major portion of the task of feeding the young. After that all will go well if the hen refrains from plucking when about commencing to build another nest. This event may be postponed until the young are on the perches, but if it is not, they will at this stage still be old enough to place in a nursery cage where the cock, and probably also the hen, will continue to feed them as long as is necessary. But if plucking has commenced, one must be careful to arrange the perches in the nursery so that the young when resting upon them, or when being fed, are not easily accessible to the old birds, save, of course, the beaks only when the youngsters gape for food. In the case of a very bad plucker who has for some reason or other to be entrusted with the care of the young at this stage, the end of the nursery cage adjoining the wires of the breeding cage may be partly covered by having a strip of cardboard tacked on the upper part, leaving only about three inches of open wire across the end at such a height as to bring the beaks and heads of the young well in view when they rise for food. A supply of egg food and crushed seeds should be kept in the nursery for the young to peck

at when so inclined, and thus learn to feed themselves. Let the food be always perfectly fresh, and give only in small quantities.

TAKING AWAY THE YOUNG.

Do not be in too great a hurry to separate them as long as the parents continue to feed them. In every case it will be better to leave the young with the parents a few days longer than is really necessary than to separate them even half-a-day too soon. It should be ascertained without doubt that they are cracking Canary seed fairly easy. If a supply of soaked rape was allowed the parents in feeding, this should be gradually replaced with dry rape. One will almost invariably find that the first seed the young are able to negotiate themselves is the rape, and from this they go on to the Canary, finally to the slightly cracked hemp. But the Canary, which is to provide their staple food, is the one they must be able to crack without difficulty. Egg food will still be forming a portion of their daily food, but it should be diluted by about two-thirds its bulk of powdered biscuit, or bread crumbs. If the young have been flying loose in the breeding cage with their parents, they may be placed at once in a flight cage; but take care they are not turned in with a lot of other birds stronger and more vigorous than themselves. But if they have been finished off by the parents in a nursery cage, they should be kept for a short time in an ordinary breeding cage before being placed in the flight, in order that they may exercise their wings and legs a little.

AFTER SEPARATION.

Probably the most critical time in the life of young Canaries is the first few weeks after being finally separated from their parents. At this stage the novice often has a most disheartening proportion of losses, yet given a proper and judiciously selected diet suited to the needs of the birds, the losses after leaving the parents and being able to cater for their own needs should be an extremely small proportion. In almost all cases of birds dying at this stage the cause will be found to exist in dietetic mismanagement. The first point after actual separation being accomplished, one must be on the look-out for a day or two to see if any of the birds go "thick" through being separated too early. A constant plaintive "chip, chip," beginning a few hours after the separation, is a sign that one had better be on the look-out for the author. If matters seem to be getting serious, such a bird must be placed in a nursery before it gets weak, and hung on its parents' cage again for a few hours. Here again it must be watched to see if its parents feed it. If they do not it should be tried on the cage of any pair whose young have very recently been taken away. Hand-feeding a few times for a day or so is the only other remedy.

THE YOUNGSTERS' MENU.

An unlimited supply of good sound Canary seed should be provided as the staple diet as soon as the birds are separated. A limited supply of dry summer rape should be given (separately) each day, and for a week or so a small quantity of egg food, prepared as described above, should also form a daily item. For the first day or two a dessert-spoonful of egg food may be given to each brood of four or five birds each morning, and in the afternoon a heaped teaspoonful of rape should be given. After the first few days the quantity of egg food may be gradually diminished, and a little extra rape added, and three or four times a week a small teaspoonful of cracked hemp given in its place. After about a week or ten days the supply of egg food should be dropped for a day now and again, and by the time they have been separated a fortnight the supply of egg food may be reduced to three times a week. Later on this may be further reduced to twice a week, and its place occasionally taken by a supply of stale bread scalded with milk, pressed nearly dry, and sprinkled with a little soft sugar.

No green food should be given for a few days after removal, and afterwards a ripe plantain stalk should be given for a few weeks. Seedy chickweed may be given later, and if any signs of constipation occur, a flowery head of tender groundsel will correct it. But at all times give only wholesome green stuff, and never a bit that is stale, or sodden with water, either from rain or through rinsing, after being gathered.

Cleanliness in everything is the keynote to prevent the great majority of young bird troubles—clean cages, clean sand, clean food, clean water, clean vessels of all kinds, and much trouble is avoided.

CHAPTER XI.

MOULTING.

WHAT IT IS.

THE wonderful phenomenon of a bird casting off its covering of feathers and growing a new supply in the space of a few short weeks each year would appear to us as one of the great wonders of creation, were it not so familiarised by constant occurrence before our eyes as to deprive it of any sense of novelty. Yet by many it is even now so little understood as to be looked upon as a disease. Such is by no means the case. On the contrary it is rather a wise provision of Nature which tends wholly to the preservation of the health and general condition of the subject.

We have only to reflect for a very short time upon the probable condition and appearance of birds after a few brief years of existence were no such provision made for the periodical renewal of their outer covering when it became frayed and torn, and often partly plucked

A type of the ordinary box-pattern moult cage.

out, in the wear and tear of their daily lives and the quarrels and bickerings of rivalry and courtship. Even in the case of our domestic Canaries, protected as they are continually from the storms and stress of existence experienced by birds in a state of Nature, a bird becomes a rather sorry sight when the moult is deferred for a few months beyond the time when, in the natural order of things, it should take place. What, then, would be the condition of feathered creatures generally were they limited to a single coat of feathers throughout life? Simply deplorable. But Nature wisely steps in and decrees that when the toils and cares of nesting and rearing of young have been duly performed, so far as the outer covering of feathers is concerned, birds shall cast off the old and put on new for more efficient protection against the rigours of the inclement season which immediately follows, and to start the next season of courtship with a full and perfect plumage. The young birds also undergo a partial change, and put on the adult plumage of a rather denser character than the nestling feathers which are discarded.

"OUR CANARIES."

BUFF SELF GREEN.

THE TIME FOR MOULTING.

The natural moulting season will, therefore, be seen to fit in the interval between the close of the nesting operations and the onset of Winter. The middle of the month of September should mark as nearly as possible the centre of the season, and the bulk of the process should take place between the beginning of September and end of October. This, however, will be far from including the whole of the time when more or less moulting is going on. The earliest of the birds to drop into moult will begin to cast feathers towards the end of July, whilst the latest beginners, or the very slow moulters, will often continue to cast feathers until November is well advanced.

The actual length and progress of the moult is materially affected by the prevailing atmospheric conditions at the end of Summer and during the Autumn. A hot dry spell at the end of the Summer and a mild equable Autumn, with a fair average humidity, but not actually wet, or damp, atmosphere, are the ideal conditions to ensure a quick and complete change, and the birds will, under such conditions, generally be in a prime condition of feather for the November shows. The earlier the moult commences, within reasonable limits (which must preclude its interference with the normal breeding season), the better, as an early beginning will enable the birds, including also those which naturally moult very gradually (except only quite abnormal cases), to get well through the moult and fine in feather before the long chilly nights of the late Autumn arrive.

MOULTING CAGES.

Although it is not essential to have any special type of cage to moult the birds in (save with such varieties as Lizards and London Fancies, which are often addicted to feather plucking), it is most advisable to do so, and particularly in the case of highly bred specimens which are destined to figure on the show-bench. A properly designed moulting cage not only protects the new plumage from dust, soiling and injury, but being more cosy and (unless very badly placed) quite secure from draughts and chills they tend to make the moult run evenly and smoothly and to materially shorten it. The smaller amount of wire in the front of these cages also serves to tone down the light, and thereby keeps the birds quieter, which again tends to hasten the moult, and, at the same time, helps to keep them from mischievously occupying themselves, or fluttering wildly about and damaging the young quills of growing feathers.

We give three types of these moulting cages, of which the type shown as No. I. is the ordinary kind, suitable for all general cases. A fair average size will be one 18-ins. long, 14-ins. high, and 8-ins. from back to front, and in these cages two birds may be moulted together.

No. II. is the moulting cage specially useful for Lizards, or their near relatives the London Fancies; it is the type used by Mr. J. Hampshire, of Lizard notoriety,

who writes concerning them :—" My cages are $15\frac{1}{2}$ -ins. by $14\frac{1}{2}$ -ins. by 8-ins. deep. I find this a very suitable cage, as it is large enough to put two birds in for moulting if required—in fact, I have bred most of my best birds in these cages. But I always keep each bird in a separate cage that seems likely to make an exhibition specimen. I use what I term a 'three-ply shutter' cover, which hangs on the front of the cage. This is very light and thin, being only one-eighth of an inch in thickness. I find that this kind of covering keeps the birds more steady, and does not allow them to climb about and slide down the wires as paper does." Three-ply wood, we may be allowed to remark, is made for, and is much used by, fretworkers, and although it is so thin it is yet free from warping. This type of

The Moulting Cage for Lizard Canaries as used by Mr. J. Hampshire.

cage, we believe, was originated and used by Mr. F. W. Baker, probably the largest and most successful breeder and exhibitor of Lizards of his day.

A SPECIAL CAGE.

Our third design shows a modification of a special type of cage known to fanciers of the old school, which may safely be regarded as the last thing for the safe and successful moulting of the highest-class exhibition specimens of Lizards and London Fancies that show wild and unsteady traits. In this style the top and front are wired, the hinged shutter being placed on the top instead of in front, and the wires on top running lengthwise from end to end. The latter arrangement of wires is necessary to allow the glass slide shown to slip in from the top. The glass slide is made to fit the front of the cage inside behind the front wires, and may consist of a simple sheet of glass cut to the correct size, with the edges bound round with a strip of thick paper or tape three-quarters of an inch wide to cover the sharp edges of the glass on both sides all round; or it may be cut half-an-inch smaller than is required each way and set in a light framework of thin wood, which will slip easily in the grooves which must be provided down each side of the cage. This type of cage will effectually

prevent the birds climbing about the wires or injuring their plumage by rubbing against them, and the wildest birds may be moulted in safety one in each cage, and they will invariably be found to grow materially steadier during the process. All food and water vessels are arranged inside in sliding troughs, and the door may either be placed in front as usual, which necessitates raising the glass slide to introduce the hand, or it may be cut out of one end as in a show cage.

TO START THE BIRDS.

Given healthy, vigorous stock, no special efforts will be necessary to get the birds well started in moult at the proper season. The closing of the breeding season is an important factor, and when an early moult is particularly desired the first step towards it must be the early separation of all breeding pairs. The birds should then be allowed to fly in good large flight cages and be fed plainly for a week or two. At this period a little colour-food must be given three times a week to all the birds that are eventually to be colour-fed. About the end of July, if the weather is warm and dry, cover over the flights, give a more generous diet, and await events. Do not be impatient at this stage. Keep a close watch upon the cages, and as soon as a wing or tail feather is discovered on the floor of the flights containing adult birds, if they are to be colour-fed, discover the bird that has dropped it and transfer the individual at once to the moulting-cage, where it must be given the colour-food daily (as described in our next chapter).

It will always be most advisable to transfer the birds to the moulting-cages in twos at the same time to prevent quarrels when a second bird is placed in these small cages with one that has already been in occupation for some time. Therefore, if a single specimen drops into moult, another one that shows the dull, listless appearance, loose and comparatively rough plumage, now and again snatching "forty winks" of sleep during the day, and often pecking aimlessly about the floor of the cage for something it does not seem to find (which are all symptoms of an early onset of the moult), should be selected to go into the moulting-cage with it.

THE YOUNG BIRDS' MOULT.

The moulting of the young birds differs from that of the adults by the retention by them of the large quill feathers in the tail and wings—or, as they are popularly termed, the flights and tail. These feathers are not shed naturally until the second moult, when the bird is in its second year. Consequently the commencement of the moult is indicated by the appearance of a few small feathers, which one must be satisfied are cast off naturally, and not plucked out by its fellows.

Otherwise the order of the moult is the same in old and young—from stern to stem, so to speak, the hindermost body feathers being cast off first

and gradually spreading upwards to the head, which is the last portion to moult. In the adults the normal moult begins with the loss of the quill feathers of the wings and tail and progresses upwards in the manner just described.

HASTENING THE MOULT.

Once the birds have commenced to shed feathers the aim should be to keep the process going on evenly without a break, and to get them through the moult quickly. To do this, heat and moisture are the chief, if not the only, essentials. In a room where the temperature can be regulated to a nicety, an even day and night temperature of seventy degrees is not too much, and, in case of dry weather being prevalent, if this is kept moist (the steam from a boiling kettle being allowed to escape into the room at regular intervals) so much the better. This moisture is not only of great service in helping on the casting of the feathers, but is also invaluable for aiding the growth and development of the new plumage.

Canaries moulted under such conditions on colour-food will be found to excel in colour, quality and quantity of feather, the plumage being much better developed in length, substance and quality. Tepid baths are to be preferred under such conditions, and it goes without saying every precaution to avoid chills must be taken. The usual treatment of moulting birds in conjunction with these additional factors will very materially shorten the moulting period if put in force as soon as the moult begins. But to adopt these or any other means to endeavour to force a healthy bird to begin moulting prematurely, is scarcely a legitimate or a wise policy. When the moult shows a tendency to drag, a little stimulant (such as twenty drops of whisky or brandy in each tablespoonful of drinking water, combined with a few shreds of saffron) will generally suffice to keep things going.

STUCK IN MOULT.

As already indicated, the course of the moult should be an uninterrupted process from start to finish. Any break or suspension of the process, or failing to get through it completely, will inevitably seriously affect the bird's condition, and not infrequently result in a complete break down of the system, and an early demise of the subject. Yet, with certain individuals—probably possessing some unsuspected constitutional weakness—a trifling thing may stop the moult altogether. A sudden and great drop in the normal temperature to which the birds are exposed, or a severe chill from any cause, will often produce a suspension of the moult. It is, therefore, of the utmost importance to protect the birds from such predisposing causes. If the process is suddenly and prematurely stopped, and the bird exhibits such signs of distress as sitting with its head tucked up, or in a sleeping position and feathers loosely puffed out, its condition is very serious, and unless speedily relieved the bird's term of existence will be perilously near the

end. It should be placed at once in a small cage in a quite warm position, given two or three vapour baths daily for a day or two (for which purpose the cabinet shown on page 107 is specially designed) and its cage kept closely covered. It may refuse its usual food, in which case a supply of maw seed and bread and milk sprinkled with soft sugar *ad lib.* should be provided until recovery takes place. Twenty drops of brandy, five of sweet spirits of nitre, and a few shreds of saffron

should also be added to its drinking water, and if the symptoms become really critical, two drops of a mixture of equal parts, by measure, of brandy, glycerine and malt extract should be given in the beak every three or four hours until an improvement takes place.

NATURAL COLOUR VARIETIES.

The modern practice of colour-feeding Canaries does not apply equally to all varieties, and in a few cases is

A Special Moulting Cage for unsteady Lizards; with movable shutter at top and glass slide at front.

strictly forbidden. It will be useful to clearly indicate here which breeds should be moulted without colour-food, in order to appear in the tint that is bred naturally in the plumage. Foremost among these breeds stands the Border Fancy, which the rules governing the club watching over its interests strictly forbid to be colour-fed, and any signs of the birds having been so fed would inevitably result in disqualification on the show-bench by any qualified judge. Belgians, Scotch Fancies, Lancashires, Crests and Crest-breds, Rollers and Dutch Frills, may all be regarded as natural colour birds, seeing that colour plays a more or less insignificant part when their merit is tested on the show-bench, although the practice is not definitely forbidden by the clubs devoted to these breeds. It is consequently wholly a matter in which the owner must exercise his own discretion as to whether his birds are colour-fed or not, and whilst it would be perfectly legitimate to do so, there is little doubt of the fact that the practice is not very prevalent in regard to these breeds. Crests and Crest-breds are the most frequently fed of the breeds named, but in every case it is done more for the purpose of gratifying the taste of the owner than for enhancing the bird's chances on the show-bench. Green varieties of every breed are purely natural colour birds and must be moulted as such. Indeed, colour-feeding, instead of adding to the bird's merits seriously militates against them, and utterly spoils the pure green colour, which is the most essential point about the variety,

and greatly handicaps its chances of success on the show-bench. No one but the veriest novice would fall into the error of colour-feeding Greens.

IMPROVING NATURAL COLOUR.

Although these natural colour birds are strictly barred from the ordinary process of colour-feeding there are legitimate means by which the natural depth and richness of tone may be perceptibly increased. In the first place health alone plays an important part in the matter. A bird that is weakly and run down in condition will invariably lose a certain amount of the tone and natural lustre of its plumage which add the final richness to the feather of a bird that is in high condition and in perfect health. It is well said that "a good horse is never a bad colour," and an analogous proverb might be applied to our Canaries with an equal foundation of fact to the effect that a perfectly healthy, high-conditioned bird never lacks a bloom and warmth of tone in its plumage which at once place it in front of a less physically perfect specimen in point of colour and beauty.

To obtain this ideal condition a generous and varied diet to keep up a good supply of rich pure blood whilst the moult is in progress is one of the most essential requirements. The diet must not be limited to hard, dry seeds. Let a variety of seeds be always available, but in addition supply also a varied assortment of green foods; half ripened seed-stalks of the many plants generally used for green food, or wild seeds, which should contain the fully developed seeds in a milky state; fruits and vegetable substances, particularly banana, sweet apple and carrot; and every now and again a little egg food, crushed sponge or madeira cake, or bread and milk. It is not necessary to give all these items at one time. It is better to ring the changes on them, using them all in turn and keeping one or another going regularly as a daily item in addition to the staple of dry seeds.

A plentiful supply of marigold and nasturtium blooms should also be kept available right through the moult. In former days the latter were looked upon in much the same way as we now regard colour-foods, but immediately fell into disuse as colour producers when the modern process which is so much more powerful was discovered. Still they are so little valued now as a colour-food that it is considered perfectly legitimate to use them freely in moulting the Border Fancy Canary, many of which breed have doubtless had their chances of success materially increased by their free and regular use whilst moulting.

LIGHT AND OTHER INFLUENCES.

The varied regimen advocated will also tend to supply other substances in a natural form which are extracted and utilised in the manufacture of colour in the internal economy of the bird. An excellent aid to increase of natural

THE ROLLER CANARY.

Roller (or German) Canaries, and the tiny wooden cage in which they travel to this country.

colour is to dust the soft foods given with a light covering of saccharated carbonate of iron. The effect of this upon richness of colour is very marked. But whilst it is perfectly legitimate to use it for natural colour breeds where artificial colour is not forbidden, we should scarcely consider it a legitimate method of improving the Border Fancy, though we are by no means convinced that its use is not sometimes resorted to, as the absence of any red, "or hot" tone accruing from a liberal use of the ordinary "feeds" renders it practically impossible to stake one's reputation on any given subject having been colour-fed with it. The absence of strong sunlight whilst the plumage is growing and maturing is also a material help to getting a rich tone of colour.

Very strong daylight, and particularly sunlight, has a most detrimental and bleaching effect upon certain colours and delicate tones of colour, and yellow is particularly susceptible to these influences. For this reason it is essential, if one wishes to obtain the best results, to shut out strong daylight whilst the new plumage is growing and maturing, as birds are more than usually susceptible to the bleaching effects of light whilst in an immature condition. It is not necessary to put the birds in darkness. A light cover may be hung over the fronts of the cages, or a curtain suspended before them at a distance of two or three inches, and in a very bright room the window-blinds drawn down in addition. All that is really necessary is to reduce the light in the cages to a kind of gloaming, which will keep the birds quiet and steady, but still leave them sufficient light to find their way about the cage and to the seed and water vessels quite comfortably.

MOULTING THE BORDER FANCY.

For the following notes on moulting this popular breed we are indebted to that well-known breeder, Mr. J. S. Wilson, of Workington. "In moulting the Border," he writes, "I strongly advocate the covering-up process. The more rapid the moult the better the result. This, of course, only applies to the likely exhibition specimen, for the Border requires no coddling. Cleanliness, generous egg-feeding, and a consideration of variety of food, combined with proper room and sufficient ventilation, are all that is desired."

A THORNY SUBJECT.

"Although the breed has made great headway, there are one or two pit-falls it would be well to avoid if its future is to be assured. The chief of these, in my opinion, is the question of colour and colour-feeding. As everyone knows, both the English and Welsh Border Fancy Canary Club and the Border Fancy Canary Club have banned colour-feeding altogether. When first mooted I opposed this course, and, far from seeing anything to induce a change of opinion, I have observed much to convince me that the question is far from settled,

and will call for further discussion and action in the near future. I do not think I am giving any secret away in saying that many present-day winners are judiciously fed. These birds win at one show, and at the next—where the judge is of a suspicious temperament—they are left cardless.

“This is unsatisfactory, to say the least of it, but what of the fancier

A method of shading the birds from strong light during the progress of the moult.

who has been breeding for colour, and occasionally produces one quite equal in depth and intensity to any slightly-fed bird? Imagine his feelings when the judge, answering his enquiry as to why his bird is passed, calmly informs him—‘Your bird is colour-fed.’ This is no mere flight of fancy of mine, but is what actually happens dozens of times every Show Season, and there are lots of fanciers who will bear me out. Something will have to be done to put this matter on a proper footing. I contend that it is absolutely impossible for any living judge to say where natural colour ends and colour-feeding begins. This being so, it is surely manifest that the rule is not only absurd, but opens the door to evils seen and unseen. Let us end this policy of make-believe, throw the question of colour entirely open, and insert a clause in the schedules instructing judges that Borders are to be judged *irrespective of colour*. This done, we shall have removed one great cause of dissension and danger, and shall be the better able to pull together

for the well-being of the Border Fancy Canary, and for common fairness to all.”

AN IMPORTANT PERIOD.

Upon the importance of the young birds’ first moult Messrs. Hopper Bros., of Border Fancy fame, have something to say. To use their own words:—“an important period in the life of the young Border Fancy is the moult. You will have your eye on one or two future Palace cracks. All the birds want is a quick, healthy moult, and when they are about nine or ten weeks old stray feathers will begin to fly about. A little Epsom salts in the drinking water three times a week for the first two weeks will be found very

**NASTURTIIUM AND MARIGOLD BLOSSOMS:
TWO NATURAL COLOURING AGENTS.**

beneficial; also give a few ripe dandelion heads. Do not omit to give the bath, and allow plenty of fresh air. As the moult progresses begin to cage off the best, and keep them well acquainted with the show-cage. Give a little maw seed and a little egg food. Should any of the birds show signs of bowel trouble give, for a day or two, a little bread scalded with milk. Give equal parts milk and water to drink. A few drops of Parrish's Chemical Food mixed with the egg food now and again during the moult will be found very beneficial. Having got your birds through the moult, your object must be to keep them in sound health and condition. Feed on the best Spanish Canary seed and summer rape, with now and again a little maw seed, and a little hemp."

MORE USEFUL ADVICE.

Mr. Hugh Connerton, writing on behalf of Mr. J. J. Robson anent the moulting of the Border Fancy Canary, says:—"Whilst the birds are moulting keep them free from strong light; allow them a free use of the bath, and put them in as large a cage or flight as possible, wherein they can have plenty of exercise. Some fanciers put in the drinking water a concoction of saffron and rum which has been much diluted with boiling water. A teaspoonful is added to the drinking water to help the colour. Then towards the end of the moult a little piece of sulphate of iron is added to tighten the birds up."

Another Border Fancy enthusiast—Mr. Thos. Arnot, of Hawick—also writes giving his methods of moulting this variety. "I turn all young ones into flights," he writes, "and avoid crowding as much as possible, as it is the means of a great amount of trouble before the moulting begins. As soon as I see the young showing signs of the moult I put them in cages in pairs and cover all light-feathered birds by using strong paper and making a parcel of each cage, only allowing them room to get through to the drinker; and when I clean out my cages I sponge all dust away and wash all the perches so as to prevent the birds from getting any dirt on their new plumage. I always keep a good supply of sand on the bottom of my cages, and cuttle-fish bone so that the birds can get at it.

A MISTAKE TO GUARD AGAINST.

"I give nothing but the best Canary seed, taking care to see there is no dust amongst it; and every other day I give them a little German summer rape and a little hemp seed twice a week, and as a tit-bit egg-food also twice a week. I never use any colour-feed, but make a free use of the bath with soft water for the birds to bathe in, and an occasional plantain stalk and good, sound linseed when they are finishing the moult, and fresh linseed meal added to the egg-food. I generally get a fair amount of polish on my birds. A mistake a great many fanciers make is in sending their birds out to shows before they are ready, and the birds in consequence become stuck in the moult;

whereas with a little patience in getting the birds into right bloom before exhibiting them, it will repay the owner. But it requires as much patience to get a Border Fancy Canary into the pink of condition as it does to wait and see what a certain nest contains when one is expecting a champion Even-Mark amongst them."

MOULTING THE "DONS."

We are indebted to that Glasgow breeder of the National bird of Scotland, Mr. R. G. Jolliffe, for giving us his methods of moulting this breed.

"Moulting is a severe period," he says, "and much depends on one's treatment at this stage, the more so in the case of young birds, which are generally more difficult to manage than older birds. A bad moult generally means that the cocks and hens fail to breed in the first season, which condition of things is usually brought about through cold or improper diet, or neglect. Great care should be bestowed on them at this stage or the consequences might prove serious—possibly the undoing of your season's work, besides worry, and expense.

"The young birds will begin to moult when from eight to ten weeks old. Those hatched and reared early in the year are sometimes longer in beginning. Some will shed their feathers with perfect freedom; some again will show difficulty in doing so: all rests on the constitution and health of the bird, the stronger ones getting over it much more easily than the weaker ones; in fact, many succumb at this period. The drain on the bird's system being so great during the moult, they should be well fed. A few dainty bits may be given them, but sparingly, such as egg and bread (or biscuit), maw seed, millet seed, linseed, and a few groats. Hemp seed I think is injurious and can be done without. A small bit of mutton suet, or a tiny piece of apple can be placed between the wires of the cages for the birds to peck at. Near the end of the moult a little boiled carrot may be supplied fresh two or three times a week for several weeks, which will help to tighten the youngsters, and put a fine gloss on the feathers. At this time green-food should be avoided, with the exception of a lettuce leaf now and again, which will do the birds no harm; or even a little groundsel, but this must be given very sparingly, in any case supplied perfectly ripe, to avoid giving them diarrhoea. Plenty of fresh air, clean cages and plenty of sand must be given. A bath will be found of service at this period, and will promote the growth of the feathers; but care should be taken not to overdo it, or harm may result."

AMONG THE GREENS.

With a few remarks on the proper treatment of the Green varieties during this important period we must close this chapter. Anent the moulting of the Norwich Green, Mr. V. H. Deacon says:—"As the Greens require no

colour-feeding and, therefore, are not so much trouble to the fancier during the moult, I usually get all my birds into the flights as soon as the breeding season is over, supplying them with a little egg-food twice a week, and a mixture of the following seeds:—equal parts inga, teazle, German rape and linseed, and just a small portion of hemp seed. When the birds are half-way through the moult I have a good look over them, and what I think are likely to make up good for the show-bench I cage off separately. I then drop giving the egg-food, supplying them with the above mixed seed every other day. But towards the finish of the birds' moult, I gradually stop giving the mixed seed, and substitute crushed sunflower seeds and linseed—and to their drinking water I add about ten drops of the following mixture: to a pint of best port I add two pennyworth of ammoniated citrate of iron and two-pennyworth of tincture of gentian. I may add that I have the baths on every day when the weather permits, as the bath helps the birds to cast their old feathers, and is a grand 'conditioner.' ”

AIDS FOR THE GREEN COLOUR.

For the following notes and useful hints on assisting the moulting process of the Greens without detriment to the purity of the colour, our thanks are due to Mr. S. Hadwin, the well-known Liverpool fancier of Greens, who writes:—

“As regards the general management of the Green, this does not differ from that of other varieties so far as breeding is concerned, except that the Green, being a very hardy variety, is more easily looked after. It is when the moulting time approaches that the difference comes in, owing to the fact that the Green, in all its varieties, is strictly non-colour-fed. The slightest tinge of red caused by pepper-feeding is absolutely fatal to the Green colour: even the use of cochineal to assist the moult will have bad effects. At the same time there are two agents that, if used during the moult, will help to quicken it and tighten the bird's plumage, and at the same time give a lustre and richness to the feather. Saffron, in the early stages of the moult, will help to throw off the feathers and deepen the Green colour, and ammoniated citrate of iron in the later stages will tighten up the feathers and give them that rich bright appearance so desirable in a show specimen. Greens not having to be colour-fed give very much less trouble during the moult than their colour-fed brethren. It is the same during the show season; very rarely do Greens require washing; that is, if they are kept in clean cages. Plenty of baths are all they require.”

The views of Mr. J. W. Metcalfe concerning the Greens are expressed in the terse note with which we close:—

“I am,” he says, “a great believer in giving the birds plenty of light. Sheeting-up I don't care for; the more a bird knocks about, the sooner the feathers fall out.”

"OUR CANARIES."

CLEAR BUFF YORKSHIRE.

CHAPTER XII.

COLOUR-FEEDING.

WHAT IT IS.

FAKING! Staining from within!! Obtaining prizes by false pretences (or at least endeavouring to do so)!!! Systematic cruelty!!!! Such are a few replies which one might expect to hear from a certain class of bird-keepers to the question: "What is colour-feeding?" But the vast majority of breeders and exhibitors of the colour breeds believe, and know, that their opponents are wrong on each and every score, and so far from this universally recognised and legitimate practice having any element of fraud or faking about it, it has, without a shadow of doubt, contributed more to fair and honest open competition than all other laws and regulations made for the prevention of unfair or illegitimate competition put together. That abuses did occur in competing for the honours of the prize list in the early days, before the art of colour-feeding was discovered, is proven up to the hilt by the immense furor and immediate suspicion which the team of colour-fed birds shown by Mr. Bemrose at Norwich in 1873 aroused.

In the archives of fanciers' historical records we find the birds arousing suspicion, being disqualified, or subjected to chemical tests to discover external colouring matter simply because they stood out in tone and depth of colour a long way in front of their fellow competitors—a striking proof this that the abuses mentioned were only too well known in those early days. And what would have been the result in these days if the process of colour-feeding had not been recognised as a legitimate means of bringing out the natural beauties of the birds intended for exhibition to the fullest possible extent?

Colour must and will always bear a certain weight in adjudication, even though the judge is quite unconscious of its influence and of the absolute impossibility of drawing a definite line between colour obtained by colour-feeding and that which is solely due to breeding. It must always give rise to disputes and contentions (such as we now occasionally find cropping up in the ranks of Border Fancy breeders) if colour-feeding be totally barred and ruled a fraudulent practice.

HOW COLOUR IS FED.

The term colour-feeding is commonly misunderstood, and by none more than the opponents of the practice, whose criticisms would invariably lead one to suppose that a certain colour was fed to the bird simply to be carried to the surface from within the body and deposited there in this indirect manner

instead of being placed directly on the outside. In this there is just that measure of a half-truth which, it is said, is ever the blackest of prevarications. If it were wholly true, why should we not have a class of scarlet or crimson Canaries by colour-feeding on cochineal, which was a popular colour-food in pre-cayenne days? Or a strain of magenta coloured ones by dosing with logwood, which was also drawn upon as a colour-food? Or, wonder of wonders! why should not this agent, and its well-known mordant, iron (which is almost invariably used at the latter end of the moult), give us a class of black Canaries? Why? Simply because, as we said just now, the whole thing contains but half a truth.

To give the term colour-feeding its proper weight and meaning we must regard it as implying the feeding, or supplying with abundant nutriment at the opportune time, of the natural pigment cells within the bird's system which Nature has designed for the manufacture and deposition of colour in the plumage. The fact that the colour which we supply for the purpose is, to our senses, somewhat similar to that which we wish to produce, is probably only coincident with the idea that "like produces like," which has restricted the researches of fanciers among suitable colour agents to a certain groove. But the fact is of little importance beside the one that the agent supplied is merely so much raw material out of which Nature's own machinery can best and most readily, as results lead us to believe, evolve and fashion the elements required for the production and deposition of her own colour cells. That this is so is apparent, seeing that, as we all know from common experience, although we supply the identical colouring agents to yellow and buff birds the results give us deeper and richer tones of yellows and buffs, and not all yellows as might reasonably be expected if the colour we, figuratively speaking, poured in were merely *oozed out* on the surface. If that theory were correct, it goes without saying that buff birds should, *ipso facto*, be transformed into yellows by colour-feeding instead of, as experience tells us, being converted into a more glorious buff with a richer shade of ground colour against which the white mealy tips of the feathers stand out in greater relief.

THE EVOLUTION OF COLOUR-FEEDING.

Prior to the year 1871, when the discovery of the wonderful effects of cayenne first became known to the public, such things as cochineal, a strong solution of saffron, marigold blooms, beetroot, mustard seed, and even logwood solution, port wine, and iron, either in the sulphate or carbonate form, were among the best known and commonly used agents to improve the colour of birds. It was towards the close of the moulting season of 1871 that Midland fanciers first heard of certain wonderfully coloured birds possessed by a Sutton-in-Ashfield breeder—now believed to be Mr. Harry Shaw, at one time

a partner in the Fancy with the late Mr. John Simms, also of Sutton-in-Ashfield. For some time the secret was well kept, and it was claimed that the extraordinary colour was the peculiar property of the strain in which it had been established by breeding. Some of the birds were exhibited in several places during the season 1871-2, and rapidly pushed their way to the front in spite of the fact that every opportunity was taken to throw discredit on both birds and owner by their opponents, who honestly believed the colour was due to some skilful dyeing of the plumage.

Pods of the Hot Pepper.

Eventually the secret was purchased by Messrs. Bemrose and Orme, of Derby, and it is now a matter of history how Mr. Bemrose showed two cayenne-fed birds at the Crystal Palace in February, 1873, and on being suspected of foul play promised to bring out the next season a whole team of birds of colour which should carry all before them from Whitby Show, in September, to the Crystal Palace in the following February.

The threat of Mr. Bemrose was no idle boast, and was practically fulfilled the next season, when he turned out a team that proved invincible wherever shown, and a climax was reached at the Norwich Show, held in St. Andrew's Hall in that city, when several Norwich fanciers protested in a body against the birds, with the result that seven specimens were selected and submitted to the County Analyst for chemical examination of the plumage. But the birds passed through the ordeal, and were certified as being free from any external colouring matter.

Meantime the secret was rapidly leaking out in other quarters, and upon the fact that a single person was known to have boasted of making no less a sum than £50 by the sale of the recipe (which he had himself acquired as a gift) being brought to the knowledge of Mr. Bemrose, he forthwith gave the secret to the Fancy world in the columns of the "Journal of Horticulture," wherein it appeared on December 11th, 1873. It proved to be nothing more than feeding the birds daily whilst moulting with a portion of soft food with which was mixed a proportion of cayenne. Some believed, and others repudiated the idea. But time proved that the information was correct, and this common culinary article became the chief and almost the only colouring agent for many years.

THE MORALITY OF CAYENNE FEEDING.

After a time the practice of cayenne feeding began to be severely criticised and denounced as cruel and objectionable. Opinions were divided on the subject, and although those whose experience and knowledge of the subject gave the greatest weight to their opinions were among those who most strongly repudiated the idea of cruelty, or any evil effects upon the health or system of the birds, it may be well within the bounds of probability that the unskilful or indiscriminate use of a powerful stimulant like cayenne as a daily item of food for weeks together was not altogether without ill-effect. That the wholesale destruction of health and disorganisation of liver which was laid to its charge by over-zealous opponents was literally correct, we do not for a moment believe. The obvious vigour and stamina of the colour-fed breeds as a whole were diametrically opposed to such a theory. Other known causes, too, of these ill-effects were apt to be overlooked, such as feeding largely, or almost solely, as was often the case, upon rich egg-food for weeks at a time during the whole course of the moult; and rightly or wrongly cayenne was the convenient peg upon which all and sundry losses and ills in Canarydom were promiscuously suspended and held up to opprobrium.

But if cayenne feeding had in reality been an unalloyed evil it was certainly of that type from which good is eventually evolved. For it set men thinking and investigating in other directions for a less noxious substitute, with the result that the colouring properties of the "tasteless peppers" which are now commonly used for the purpose were discovered. It was a misfortune that this substance came to be popularly known as "tasteless pepper," as it is doubtless due to this term that much of the prejudice against the old cayenne feeding is still attached to it, whereas the fruit from which it is prepared is as harmless and innocuous as the succulent tomato, which it resembles in no small degree.

OUR MODERN SYSTEM.

The present system of colour-feeding is well explained in the following notes kindly contributed by Mr. J. W. Ramsden, whose researches into the subject of the botanical identity of the plant from which our "tasteless pepper" is obtained have been somewhat extensive. "To-day," writes Mr. Ramsden, "the article most used for colour-feeding is what is known as tasteless or sweet red pepper. A pure sweet pepper is not only harmless, but beneficial to the most fragile and delicate bird. It is the fruit of the *Capsicum annuum grossum* cultivated in Spain and other parts of the world, and used for salads or served like tomatoes. Colour-feeding improves and deepens the natural colour of the bird that is being fed. It will therefore be easily understood that the bird that will be richest in colour after being colour-fed, will be the bird that was richest in natural colour. To obtain natural colour you must breed for it.

THE BEGINNING AND THE END OF COLOUR-FEEDING.

In the Norwich (lower figure) the red plumage is seen breaking through on the flank and the wing-butt; in the Yorkshire the moult is nearing its close, only the head (always the last part to finish) remaining the natural colour.

"Select a bird, a cock for preference, that is variegated or marked with deep bronze green markings. Mate it to a clear bird of the opposite sex and colour; and the produce of the union will be birds teeming with natural colour, birds that will colour on feeding 50% better than those bred from clear birds.

"The moulting season is a critical time for birds, especially the highly bred exhibition stock. Get your birds into good condition, for strong healthy birds moult easily, whilst birds in poor condition usually have a bad moult. Cages should be clean and all traces of red mite removed. The room, too, must be well ventilated, but free from draught."

PUTTING ON "FEED."

"All will then be ready to commence the moulting season and colour-feeding. It is safest to cage your best exhibition birds singly, but birds you know to be of a peaceful disposition can be placed three or four in a cage. If you have a large flight cage—not too high, and the perches all one height from the floor for preference—you may turn a dozen or twenty birds in. As soon as one starts feeding on the colour-food they will all 'follow suit.' It often happens that the best fed birds are those that have been fed in a flight.

"Many fanciers cover their birds up during the moult, but this is hardly necessary. I have found that a red or yellow blind kept drawn over the window will subdue the light quite enough to prevent its affecting the colour of the birds; it will also prevent the birds from seeing the colour of their new feathers so well, with the result that they will not fight or pluck each other so much. It is also a matter of great importance that the moulting room be kept at an even temperature. I like an even temperature of about 65 degrees, and it assists the birds very much if this heat be a moist one.

"The colour-food should consist of the ordinary egg-food, to which must be added a proportion of the finest pure tasteless pepper. Commence with the following mixture: two or three of Peek Frean's tea biscuits, one hard-boiled egg (using the whole of the egg), two teaspoonfuls of fine sugar and one teaspoonful of pure tasteless pepper. Day by day gradually increase the amount of pepper until the maximum of four heaped-up teaspoonfuls is reached. To ensure equal distribution pass the whole through a biscuit mill one hour before using. Allow a full teaspoonful of this colour-food to each bird per day."

BLEND OF "HOT" AND "COLD."

"It is a matter of opinion whether a better or more lasting colour is obtained by using a small quantity of cayenne pepper in the colour-food. Many well-known authorities advise mixing 2 oz. of pure Natal cayenne pepper to each pound of the tasteless pepper, and using the blended peppers as above

described. If the pepper used be somewhat dry, 2 oz. of salad oil should be added to each pound of pepper. The oil assists in extracting colour; it also produces a gloss or sheen upon the plumage. Care must be taken not to make the egg-food too rich, as a continued use of rich food is apt to upset the bird's liver. A good many fanciers use too much pepper; they overdo it. The blood, it should be remembered, will only absorb a certain amount of colour—to give more is to court disaster.

Pods of the tasteless (or "sweet") pepper.

"To those who desire to merely improve the colour of their birds, and not to colour-feed for show purposes, a simple method is, to make or get made a sponge cake or other suitable cake, in which has been mixed some tasteless pepper. A small piece of this coloured cake can be grated and given daily, but such good

results will not be obtained from this as from the fresh-made egg-food. To obviate 'tailing' and 'fighting,' birds intended for first-feather shows should be colour-fed from the nest. The mixture described above should be given, and I have always found breeding hens feed well on it."

DAILY FEEDING ESSENTIAL.

"Long experience has proved to me that the average bird colours better when fed on colour food daily, and is of decidedly stronger constitution when the seed box is not removed from the cage. I am willing to admit that a bird teeming with natural colour will colour well if fed every other day; but all birds are not full of natural colour, and it would be foolish for anyone to expect birds of poor natural colour to colour well unless colour-fed daily.

"In those rare cases where a bird refuses to eat colour-food remove the seed box from the cage during the day and replace same during the evening for an hour or so. The bird will then be forced to eat the food provided, and having once tasted it, will not require forcing again. Towards the end of the moult, give the birds a little iron as a tonic. Iron feeds the blood with its colouring matter, and fixes the colour on the plumage. As colouring matter deposited by vegetable substances fades more or less, it is important that something should be used to fix the colour, and I believe the best agent to be either sulphate or citrate of iron. The daily dose must be a small one. Sulphate or citrate of iron can be given in the drinking water, say about ten grains to the quart.

"It sometimes happens that a bird will get 'stuck in its moult.' In such cases, put the bird in a warm place, and add a little hot cayenne to its food; this will generally restart the moult. No green food should be given through the moulting season to birds that are being colour-fed, as the feed is somewhat relaxing. In those rare cases where it is found to be too relaxing, add a little rice flour to the feed. Trouble is sometimes experienced in weaning birds from the colour-food, especially in the case of Cinnamons. I find that a good plan is to place mixed seed on top of the colour-food, and gradually reduce the amount of colour-food until the bird is being fed on seed only. Those who wish to keep their birds fully charged with colour, I would advise to give a small amount of colour-food once a week right through the show season."

FEEDING FROM THE NEST.

The subject of colour-feeding will probably always have both supporters and opponents. But it is an infinitely delicate matter to deal with the frail and tender constitutions of the young ere they leave the nest, and it is no wonder that the followers of the system of feeding for colour generally differ amongst themselves as to the advisability of colour-feeding from the nest. Under our present system colour-feeding is essential to success on the show bench in all colour breeds. Given two birds equal in all other respects, but one non-fed or imperfectly fed, and the other of a nice, level and brilliant colour, no judge can conscientiously ignore the latter. It is his bounden duty to award the prizes to the best bird as it appears before him, and consequently he has no course left open but to award the palm to the best fed bird in the case illustrated, so that colour, and colour alone, may be said to have won, and rightly so.

Feeding from the nest has certain points in its favour. In the first place it will do away with the necessity of the cruel operations of "tailing and flighting" the young birds, as their feathers will absorb sufficient colour from nest feeding to pass muster on the show bench after the moult. Another advantage is that nest-feeding paves the way, so to speak, for the colour-feeding proper, as the bird's system will be already highly impregnated with the necessary colouring agents, and when feeding begins prior to the moult the superfluous colour will the more readily overflow and be deposited in the new growing plumage. Again, there are many hens that have evidently acquired a fondness for colour-food in the shape of sweet or tasteless pepper when it is made palatable in the egg-food, and such hens not only devour the soft food more eagerly, but feed the young more freely upon it. But let it be clearly understood that for nest-feeding the "cold" feeds only must be employed. Hot Natal and cayenne pepper must be utterly avoided. It is of the greatest importance that the feeds should be of the best, and absolutely pure. The cheapest food may well be the most costly in the end, for even a trifling

FOUNTAINS OF COLOUR.

Green-marked birds are recognised as the best to breed from to keep up the colour of a strain.

amount of adulteration, which would barely produce any effect at all on a mature specimen, may cause serious injury to the exceedingly delicate organs of the nestlings.

"TAILING" AND "FLIGHTING."

This operation is happily becoming more and more rare; so much so that the young fancier of to-day is frequently puzzled to know the meaning of the term. It consisted of the forcible plucking out of the large wing and tail feathers of young birds at their first moult in order that the new feathers might also show the effects of the colour-food—the feathers, as already stated, not being shed naturally until the second moult. The desired effect was certainly gained, but at the expense of suffering, and sometimes serious injury to the birds, which, from a moral standpoint was, and is, wholly indefensible.

We shall, therefore, leave the subject here, mentioning it only to express our entire approval of the decadence of the practice, and the earnest hope that it may never be revived. Of course, if a bird has sustained broken feathers in a natural way prior to the moult the removal of the broken quills at the commencement of the moult is not only defensible, but advisable, and will be as much in the bird's own interest on account of the extra comfort it will have in possessing perfect wings and tail when re-grown as in that of its owner.

TO FIX AND REFINE.

When the moult is drawing to a close the final touches of quality and colour of plumage are given by the colour-feeder. A few grains of clean and bright linseed about three times a week are an excellent means of adding a permanent lustre and quality to the plumage. But do not overdo this seed, as it is apt to set up diarrhoea and cause the cages to become unpleasant. Soon after the plumage is fully grown, the linseed may with advantage be replaced by a cube of carrot stuck in the wires for the birds to peck at, which also has a good effect in making the plumage close and tight. To make the colour given by the colour-food more durable, and to prevent its fading so soon as it otherwise would, a small crystal of sulphate of iron should be dissolved in the water two or three times a week, and preferably on those days when linseed is not given.

With a little care in properly alternating these two items, they will be found to counteract the undesirable effects of each other, as the linseed, especially when given in any but the most limited quantity, is apt to prove very relaxing to the bowels, whilst the iron is decidedly constipating in effect. The iron not only makes the colour more durable and lasting, but also helps very considerably to tighten the feathers at the end of the moult, besides acting as a useful strengthening tonic for the bird at a time when one is most likely to be needed.

LIZARD FANCIERS' METHODS.

In no variety are skilful moulting and colour-feeding more important than in the Lizard Canaries. We are, therefore, greatly indebted to that most successful exhibitor of this variety, Mr. F. W. Baker, of Shaw, for the following description of his method:—"To get the necessary depth of colour," he writes, "it is advisable that the very best feed should be used; that it should be given at regular intervals; and that it should be commenced in good time, to allow of its getting thoroughly infused into the blood before the bird commences to cast feathers. Otherwise you will get an uneven and patchy colour, and your labour will have been in vain. I find the following 'feed' excellent for the Lizard Canary:—1 lb. pure hot Natal pepper; 2 lbs. best tasteless pimento; $\frac{1}{2}$ lb.

UTENSILS FOR MIXING COLOUR-FOOD.

Tin of colour-food; sieve to pass the egg and biscuit through; basin and spoon; hard-boiled egg; quantity of biscuits.

raw sugar; $\frac{1}{4}$ lb. pure almond oil. Rub and mix the whole well together, and pass through a sieve. I have tried many tasteless peppers by themselves, and have found I cannot get sufficient colour in my birds without having recourse to hot pepper also.

Before commencing to colour-feed it is necessary that each bird should be placed in a cage by itself, the cage being first well cleaned and lime-washed. The cage should not again be cleaned out

until the bird has finished its moult. Strange as this may appear, it is a fact that continual cleaning of the cage has a tendency to stop the bird casting its feathers, and it is necessary that the Lizard, to make an exhibition specimen, should have a sharp, quick moult."

THE SECRET OF SUCCESS.

"The grand secret lies, not in the quantity of feed you can cram into the bird, but in the regularity with which it is given. I always endeavour to give the 'feed' so that the bird will feed from it the last thing at night before it retires to roost, and immediately it awakes in the early morning. I use ordinary household bread, in the proportion of three parts bread to one part of hard-boiled egg, and I give each bird one teaspoonful daily, mixed with a sufficient quantity of the colour-food already mentioned."

ANOTHER METHOD.

Somewhat similar is the procedure of Mr. J. Dewsnap, of Glossop, who writes: "I start colour-feeding when the birds are about eight weeks old. I use 5 lbs. of tasteless pepper to 1 lb. of hot Natal, 1 lb. of granulated sugar, and 4 oz. of almond oil. I start with one teaspoonful to one egg and a slice of bread about one inch thick, and increase to six teaspoonfuls to the same quantity of egg and bread crumbs. When the birds go into moult I cover them down with a white sheet, about four inches from the cages. I do not put them in darkness, but only break the strong light from them. Twice a week I put a crystal of citrate of iron in the water and a little linseed in the seed box."

OTHER RECIPES.

An excellent colour mixture for general purposes is made up of 12 ozs. of tasteless red pepper, 1 oz. Natal, and 3 ozs. of soft sugar thoroughly blended together and kept in a wide-mouthed glass, or glazed earthenware jar. If good hot tones are desired, and the use of hot Natal is objected to, 13 ozs. tasteless red, 2 ozs. paprika, and 1 oz. Natal, with the same amount of sugar may be used.

If birds refuse to eat the colour-food freely when a sprinkling of maw seed is added thereto, it is probably due to an excessive use of oil or other colouring agents. We never yet experienced any difficulty in getting it partaken of even when a larger proportion of hot Natal than is mentioned above was used. Neither should it be necessary to take away the seed; indeed, we recollect that some of the richest fed birds we ever moulted simply had a saucer of the pure colouring agents, with a small proportion of maw seed, and no egg or biscuit of any kind kept in the cage whilst moulting as an experiment, and an unlimited supply of mixed seed always available, the birds being at liberty to eat or reject the colour mixture as they pleased. But instead of rejecting it they partook of it freely in moderate quantity and came through the moult a splendid colour.

For feeding Cinnamons, the above feeds may be taken for a basis and 2 ozs. of turmeric and 1 oz. of madder added to each pound.

FOR NATURAL COLOUR BIRDS.

To give a recipe for feeding natural colour birds seems a curious anomaly. Yet the utter impossibility of drawing a boundary line between natural colour and the colour of birds that have been judiciously fed, and the desire to get the best possible appearance on the birds is so well-known that no less an authority than Mr. E. Pretty is responsible for this recipe for improving so-called natural colour birds. It consists of $\frac{1}{2}$ lb. Nepaul pepper; $\frac{1}{2}$ lb. turmeric; 2 ozs. sweet pepper; and $\frac{1}{2}$ lb. sugar.

A GOOD COLOUR-FOOD CAKE.

We will close this chapter with a recipe for a cake with which any but the hottest fed exhibition specimens may be colour-fed with the least possible amount of trouble. The presiding genius of the culinary department of the home should be prevailed upon to mix and bake a cake in the ordinary manner with the following ingredients: 1 lb. flour; $\frac{1}{2}$ lb. sugar; $\frac{1}{2}$ lb. colour-feed; 2 ozs. fresh butter; 2 new-laid eggs; teaspoonful baking powder; and a pinch of salt. Mix meals and powders well together, work in the butter, beat eggs to a froth, and add sufficient milk to make the whole into a stiff dough. Bake in a quick oven. After a day or two, when it has matured so as to be readily crumbled without becoming pasty, pieces may be broken off and stuck in the wires for the birds to peck at any time, or it may be crushed to crumbs as required daily, a pinch of maw seed added, and given in the egg drawers.

A HANDY MOULTING FLIGHT.

To moult a quantity of birds together, a long flight cage is very handy. It can be built underneath a stack of breeding cages. The fronts are on hinges to facilitate cleaning, and one small compartment is arranged so that in this the birds may readily be caught.

"OUR CANARIES."

THE DUTCH FRILL CANARY.

A variety much in favour on the Continent.

CHAPTER XIII.

REVIEW OF BREEDS AND VARIATIONS.

THE ANCESTRAL STOCK.

IT is a curious fact that, notwithstanding the great popularity of our domestic songster from the very earliest times of which we have any record, all trace of its origin or evolution from its wild ancestors is absolutely lost in obscurity. Not a tittle of proof or actual evidence of the identity of the ancestral prototype seems to have been preserved, so that apart from the legendary story of the shipwrecked refugees on the Isle of Elba (which is now generally discredited) nothing remains but the merest speculation and theory to indicate from what source has sprung the race of caged pets now so thoroughly domesticated as to be reasonably considered a wholly artificial or man-made creation, and withal possessed of such widely different characteristics as the plain but tuneful Roller, and the feathery, crowned Crest, or the be-spangled little Lizards and the hunch-backed Belgian.

When we consider these immense and wonderful variations of size, form, colour and markings, we cease to marvel that able writers have occasionally been inclined to the supposition that the race originated from a combination of more than one ancestral type. But the present difference in type, were it even greater than it is to-day, is no criterion for the existence of a dual stock. In the poultry world, which it is universally agreed is descended from a single ancestral stock—the Red Jungle Cock of India (*Gallus gallus*)—we have an even greater variety of types, as witness the trim and fantastic Rose-combed and Japanese Bantams, the Frizzled Bantam, the monstrous Cochins and Brahmas, and the immense crests of the Houdans and Polish.

POSSIBILITY OF DUAL STOCK.

Reasoning by analogy it will thus be seen that the striking divergence of type in our present-day Canaries does not necessarily give the slightest support to the theory of a dual stock. It is now generally conceded by the best authorities to have, in all probability, originated from a sub-species of the Serin Finch (*Serinus serinus*), of which several very closely allied species exist on the Continent, reaching from Spain and Germany, through Switzerland and Italy, to Greece—this region embracing the earliest known birthplace of the cage-bred singing bird known by the name of Canary. The particular sub-species to which we owe our pets we may never know, but it is reasonable to assume that if more than one such species shared the honour of this creation, there is every reason for believing that two of these Serins—both sub-species of the same type (*Serinus serinus*)—which would produce fertile young when mated back to the parent stock, and also

probably, *inter alia*, were the joint ancestors of our Canaries. For it must be remembered that the sub-species in some cases are so closely related as practically to merge one into another with the least possible line of demarcation to separate them from each other.

Granting the probability of such dual ancestors, it is reasonable to suppose that some departure from the fundamental green colour would occur more quickly and in a greater number of cases, and also that abnormalities of type and colour markings would occur more freely than if a single ancestral type were employed, and it would then be far more clearly understood how certain varieties of our Canaries throughout the historical times of the Fancy have possessed certain strongly marked features in common, yet stood quite apart, as it were, from their equally domesticated brethren. We should better understand, for instance, why the Lizards and London Fancy, though so closely allied to each other, yet differ so widely from other breeds, and why the Cinnamon has always appeared to stand alone as a unique colour variety possessing peculiar powers of stamping its characteristic colour on other breeds, and yet retaining its own peculiarities undiminished within itself.

ACCIDENTAL CROSSING.

These considerations lend a certain amount of colour to the theory of more than one sub-species being concerned in the ancestry of our Canaries, and the probability gains some strength when we consider the condition of aviculture and the limited extent of our scientific knowledge of ornithology in those days. The knowledge even of generic distinctions must have been decidedly limited, and the separation of species and sub-species of the most primitive description. It is, therefore, not improbable that more than one of these Serins which had a close affinity (alike in typical characteristics and external appearance), were known to these old fanciers by a common name, and believed to be one and the same species, and were, therefore, unconsciously, in a sense, bred with each other and among themselves indiscriminately, until a sufficiently pronounced break occurred in the general type of the progeny to attract attention and direct breeders' efforts into particular grooves, which eventually led to the evolution of distinct varieties with more or less fixed and hereditary features. Hence, assuming this theory to be correct—and the evidence in its favour is at least fully as strong and convincing as any against it—it is a curious fact that we owe our present-day wonderful array of striking and unique varieties, as portrayed in our frontispiece, to the accidental crossing of closely related sub-species arising out of ignorance of minor specific distinctions on the part of the pioneers of the Fancy.

AN EARLY CENSUS OF VARIETIES.

After many long years of patient breeding we come down to the dawn of the eighteenth century, when we have what is probably the earliest, and certainly the most extensive, complete record of the then known varieties of Canary—in all

29 varieties. At this time the birds would appear to be variations rather than distinct and established breeds. They are enumerated by Hervieux in his *Treatise on Canaries*, published in 1713, in the order of rarity as follows:—1. The common grey Canary; 2. The grey, with small feathers and white feet; 3. The grey, with white tail; 4. The common blond Canary (possibly synonymous with our buffs); 5. The blond, with red eyes; 6. The golden blond; 7. The Canary with blond small feathers; 8. The blond, with white tail; 9. The common yellow Canary; 10. The Canary with yellow small feathers (which might imply that the large feathers of the wings and tail were of some other colour, and if they were dark the birds would very probably be the prototypes of London Fancy); 11. The yellow, with white tail; 12. The common agate Canary (which may, we believe, possibly have been the ancestor of our Lizards); 13. The agate with red eyes; 14. The agate with white tail; 15. The Canary with small agate feathers; 16. The common Isabelle Canary; 17. The Isabelle, with red eyes (which, in our opinion, is very probably the progenitor of our cinnamons); 18. The golden Isabelle; 19. The Canary with Isabelle small feathers; 20. The white Canary with red eyes (possibly albino freaks, yet sufficient to show that the recent production of white Canaries is by no means unprecedented); 21. The common variegated Canary; 22. The variegated with red eyes; 23. The Canary variegated with blond; 24. The Canary variegated with blond, and with red eyes; 25. The Canary variegated with black; 26. The Jonquille Canary, variegated with black, and with red eyes; 27. The Jonquille, evenly variegated with black; 28. The full Canary, which is rarest (the term being clearly defined as referring to a bird that is fully and entirely yellow Jonquille); and lastly, 29. The crowned, or crested Canary, which, even in those far-off days, is described as one of the most beautiful.

BREEDS THAT HAVE DISAPPEARED.

The great majority of the variations of those early days, taking them merely as colour varieties, have their counterparts in most, or all, of our popular breeds to-day, but as distinct breeds, if they ever existed as such, they have filled their niche in the temple of fame and disappeared from our ken as the pendulum of fashion has swung in favour of new and more distinct breeds, as these sprung up and became sufficiently fixed in type to breed true to certain recognised and distinct features. Some of these colour varieties became common, and appealed to a particular class of breeders who doubtless took them in hand to develop and cultivate (just as each breed to-day has its particular class of admirers), and so fixed and strengthened their peculiarities as to develop and perpetuate distinct branches from the common stock, which ultimately became the progenitors of such unique breeds as the Lizard, the Cinnamon, and the Norwich.

That these old breeds, characteristic branches of root stock as they doubtless are, should have been lost, and that others are being allowed to drift rapidly

towards extinction is a matter for sincere regret. Apart from all sentimental and aesthetic considerations their potentialities in the manufacture of new breeds, and up-keep of most of the popular modern breeds, which we owe chiefly to their influence, was, and is, of the greatest value, and that this neglect of the seed-bed, as it were, should increase rather than otherwise with the growth of the Fancy is deplorable.

DECADENCE OF OLD BREEDS.

In quite recent times the London Fancy has been practically lost, for though it may not yet be extinct, it has lingered so long on the verge of extinction, from which it is saved by the devoted adherence of the fewest units of devotees, as to be extinct for all practical purposes. Yet no other breed can approach it for unique and striking characteristics. Its near relative the Lizard, though in a much better condition, is much too local and limited in popularity; as also is the Lancashire—formerly known as the Manchester Fancy—the giant of the race. The condition of the Belgian, to which our modern Yorkshire and Scotch Fancy owe so much, is so rapidly falling in abeyance that its old title of “King of the Fancy” is already the merest irony. The pure Cinnamon is in anything but a flourishing position, whilst such masterful productions of the breeder’s skill as the even-marked Norwich are practically *non est*, or when they do appear give rise to a suspicion that art has been responsible for more of the beauty and symmetry of the markings than Nature.

And what is the lesson conveyed by these facts? However unpleasant the acknowledgment may be, all cool and earnest thought points only too significantly in one certain direction: that the vast majority of the units of the Fancy to-day shun the breeds which require the greatest amount of skill and steady perseverance to breed to perfection, and which, by reason of their limited popularity, are less frequently catered for separately by show authorities, and fanciers prefer to tread the more easy path to victory afforded by those breeds that are easiest to produce. When one looks around and beholds the immensely popular breeds, and compares them with those that are either lost or rapidly waning, this fact becomes quite obvious. It will be said, and with perfect truth, that a perfect specimen of any breed is most difficult to produce. Nevertheless, it cannot be gainsaid that the breeds “under a cloud” are just those which demand the highest degree of skill and application if really good typical specimens are to be bred. It is earnestly to be hoped that the fighting spirit of the fanciers of the olden times will revive in good time to resuscitate these ancient breeds, and bring them once more to a deservedly prominent position in the Fancy.

DEVELOPING MODERN VARIETIES.

Yet notwithstanding this revival of the old breeds, the newer creations must not be neglected. Neither is such an event likely to accrue. There is room for

THE WHITE CANARY.

**A recent addition to the Canary Family. Drawn from the specimen
bred and exhibited by Mr. W. Kiesel (London, N.)**

all, and the present-day popular breeds will doubtless always appeal to a goodly number of fanciers, and offer ample scope for improvement and the production of new varieties. A vast field is yet open for the revival and perfecting of the even-marks in both Yorkshires and Norwich; to complete the work which is already well begun in the Border Fancy; and to establish the Cinnamon marking in other breeds as has been so well done in the case of the Yorkshire and Border Fancies. In the Crest variety the yellows offer much scope for improvement, and the yellow crest and cinnamon crest await further development. The rapid infusion of cinnamon blood into other breeds for the sake of variety in markings must sooner or later jeopardise the position of the pure Cinnamon, unless it is taken in hand by more fanciers to preserve its purity and unique characteristics.

But with the sole exception of the London Fancy, no breed is in more need of attention than the Belgian, which, unless its admirers increase, and foster its interests, seem to be in great danger of ere long losing its separate identity and becoming absorbed into the Scotch Fancy. The Greens might well become more widely distributed, and the Dutch Frill as a recent introduction to our list of breeds offers a good chance of success to the beginner. The tuneful little Roller, far from losing any of its prestige as a domestic pet, has made a great advance in popularity, and affords excellent opportunities for training and developing its song.

THE CINNAMON TRAIL.

A few notes by Mr. E. Pretty, anent the past and present use of the Cinnamon in crossing will be of interest here. "There is no bird in the Fancy," he writes, "so useful for crossing to get quality of feather and colour as the Cinnamon; yet in some cases I have known it to throw nearly white birds, and, strange as it may appear, I have known these nearly white birds to throw high-colour ones when paired to deep-coloured cocks. These light-colour birds will be found to turn up in the second cross from the Cinnamon. We may call him, for want of a better term, the actor in Canarydom, for he plays many parts with different breeds of Canaries.

"CINNAMON CRESTS: The Cinnamon cross in this breed is not new. I have known it to be used in Crests—over thirty years ago—for the production of the veiny crest feather and quantity of feather by the aid of double buffing. Since the introduction of the Lancashire, a good cross is a yellow Copsy cock paired to a buff Cinnamon-crested hen. The breeder gains four objects in one year—the Lancashire, the Cinnamon, double-crests, and yellow blood. Once in four years will be sufficient for this cross.

"CINNAMON YORKSHIRES: No bird in the Fancy contains so much Cinnamon blood as the Yorkshire of the present day. He stands first for quality of feather, and with his beautiful silkiness of boxwood-like plumage seems so near perfection that it becomes a question whether fanciers can get any more out of him. Some

Given a photograph by

(Nikell, Shepherd's Book, B.)

A WELL-EQUIPPED AND FITTED BIRD-ROOM

Owned by a well-known metropolitan breeder, Mr. F. Boxall (Chiswick). At the back are the breeding cages, with shelves for utensils and other articles; on either side commodious flight-cages.

of our modern fanciers claim that the beautiful quality of feather possessed by this bird has been got from the Norwich of the early days. Personally, I must differ from them. Years ago Norwich were used largely, crossed with the Belgian, to produce the Yorkshire. The Lancashire was not known as a cross at that time. We did not have the quality of feather in those days that we have at the present time.

"THE BORDER FANCY: Now we see the breeders of Border Fancies putting Cinnamon blood into their wee wonders it will be as largely used in this breed as in the Yorkshires. It is the awakening of Cinnamon blood in the production of quality of feather.

"NORWICH PLAINHEADS: What the Cinnamon has done for the Yorkshire it will do for the Plainhead Norwich. Several of our breeders are now seeing the possibilities of the cross. No doubt it has been abused by unskilled breeders producing small-headed birds, which occurs if the right material is not used. This can be avoided by getting a big-headed and broad-chested buff Cinnamon cock. Do not begrudge a few pounds for a good specimen, as a bird of that description is worth it. This should be paired to a clear yellow hen having a good broad head and a broad chest. Once in four years is sufficient for this cross. Always pair to clear birds when breeding away from this cross."

CREATION OF NEW VARIETIES.

Although visionary speculations concerning the future are more amusing than profitable, we may, in producing an exhaustive compendium of Canary lore, be pardoned for taking a very brief review of the possibilities of new breeds or varieties, which we may confidently hope to see arise in the more or less near future. That our present known varieties will be enhanced by new creations may be looked upon as a moral certainty. Indeed, considering the immense popularity of the hobby of Canary breeding, and the tens of thousands of specimens that are bred year after year, it would be more than passing strange if an occasional freak or sport from any known variety, or a greater or less reversion to some defunct branch or type of ancestral stock, did not appear from time to time, and with hundreds of keen fanciers on the watch for something new or novel, such sports must, in some instances, eventually be discovered by the right class of fancier to turn them to good account in the evolution of some new breed, or the revival of a lost one. That such specimens have cropped up for years past in the hands of breeders who were ignorant of their possibilities we know well. It is nearly ten years since we were privileged to examine the dead body of the last of several Canaries (bred by a lady amateur), which might well have been termed a "clear white," and which we confidently believed might, with its defunct companions showing a similar lack of pigment in the plumage, very probably have become the progenitors of a breed of white Canaries. But, unfortunately, such possibilities had not presented

Our Canaries

themselves to the owner, and the whole stock of these sports had become extinct without an effort to perpetuate the race.

THE WHITE CANARY.

But the production of the white Canary was destined to become an undoubted reality, and a specimen was, in 1907, bred by Mr. W. Kiesel, of North London, from a pair of yellow Yorkshires. Unfortunately, this bird died in the nest, but the following year the same pair of birds bred another white one, which was reared, and eventually caused a sensation as a novel exhibit at the Crystal Palace, in 1909. Luckily this sport occurred in the hands of a fancier who recognised its possibilities, and by carefully following up the same line, and fostering the most suitable material, nearly a dozen white specimens have been bred, and more than half of this number reared, so that by taking advantage of a single sport from an ordinary type, Mr. Kiesel not only has the honour of being the first to produce and exhibit undoubted specimens of white Canaries in modern times, but has laid the foundation of a new variety, which is in a fair way to becoming established. At present grey or grizzled markings are found on the white specimens. Later on, when the breed is better established and more numerous, it is not improbable that melanistic freaks may turn up with black points; or even wholly black sports. But the firm establishment of the white base is the work of the moment. Once that is secured, the grafting on of markings in either grey or black, if available, will come in due course. And a white with grey or black even-marks is a charming acquisition which gives one much pleasure even to contemplate.

A POSSIBLE BLACK CANARY.

The establishment of a white variety must also materially increase the chances of a sport in the direction of melanism, when a black specimen, wholly or in part, may turn up, and by taking advantage of the break, as in the case of the whites, give rise in the future to a black variety. This, at present, is but the object of visionary hopes, and will be looked upon in many quarters as a chimerical fancy. Yet it must be remembered that only, say, five brief years ago, the production of a white variety would have been almost universally discredited. We know that black sports are of comparatively common occurrence from most other established breeds of white animals, so that in this case we are not without the hope that, notwithstanding ordinary known laws to the contrary, such a freak may yet be produced.

THE BLUE LIZARD.

And if we were asked in what direction to investigate for such a sport, apart from patiently awaiting its spontaneous appearance from white stock, we should unhesitatingly say go to the Lizards; endeavour first of all to revive the old Blue Lizard, but mating silver to silver, breed them natural colour, and avoid colour feeding. It is but reasonable to hope that the establishment of the Blue Lizard as a variety would give rise to both black and white sports.

Mention of this now practically extinct variety (which was occasionally met with as a sport in the old days, and which we believe was invariably produced by the mating of two silvers together), reminds us that it should easily be revived on the lines suggested. It is doubtful if the variety ever existed in any considerable numbers, being looked upon rather as a useless and undesirable freak than as an acquisition to the Lizard Fancy. On this subject one of our oldest authorities on Lizard Canaries—Mr. L. Butterworth, of Rochdale—writes:—"At the commencement of my Canary-breeding career I sometimes bred what we called Blue or Slate-coloured Lizards. Sometimes there would be one or two in a nest with ordinary-coloured Lizards, and occasionally I saw similar birds in other old fanciers' bird-rooms. We looked upon them as sports. Had we so desired, we could easily have established a permanent strain. But the feathers of this kind of bird had a soft, fluffy appearance, and the spangles had a dull appearance, so we sold them for singing birds, and never bred with them."

CHAMELEON-LIKE CHANGES.

Continuing, Mr. Butterworth says: "The most wonderful Lizard I ever saw belonged to Mr. Tattersall, of Oldham—an old Lizard breeder and judge of 40 years ago. This bird was a very good Silver Lizard cock in its nest feathers, and after its first moult. But when it got through its second moult it had not a single dark feather on it, its entire plumage being clear buff. In its third moult it again assumed the Lizard plumage, only the tips of its wing and tail feathers being white. In its fourth moult it again moulted a clear buff. It was the only Lizard I have ever seen moult perfectly clear."

BANTAMS OR MIDGETS.

At the present day the trend of fanciers' efforts is all in the direction of increasing the size of varieties or in keeping it as large as possible consistent with standard requirements. To work in the opposite direction is scarcely ever contemplated. Yet when new varieties are in request to maintain interest in the hobby there will be a wide field for the skilful breeder to bantamize, or breed in miniature, any of the existing breeds, as is done in the poultry world. A strain of typical Yorkshires, for example, with a standard not to exceed $4\frac{3}{4}$ inches in length, or dainty, wee Norwich, of $4\frac{1}{4}$ inches, would prove a most attractive novelty. Some efforts were made about a quarter of a century ago to popularise a strain of Bantam Yorkshires, but at that time probably too much attention was required to perfect the ordinary type to leave any spare energy to bestow upon a novelty. Whatever the cause, the efforts to popularise it fell flat, and the strain seems to have quite disappeared.

JUSTICE TO IRELAND.

As a final phantasy, why should we not endeavour to do honour to the Green Isle of Erin, where the Fancy is fast making headway, by seeking to evolve a

special breed as her endowment, or at least assisting Irish fanciers in a common task? Let the Irish Fancy take its place besides the Scotch Fancy and the various specialised English Fancies—then we shall have done one more kindly act to weigh against the oft-time lightly repeated charge of neglect of the “ould counthry.” The Liverpool, or Yorkshire type, of Green Canary may form the base of experiment, and the possibilities of the dream being realised we will leave without comment, simply suggesting at this time the desirable features for the problematic creation of the future—the Irish Fancy Canary:—Shape, style, and position, similar to the Yorkshire; plumage, short, silky, and close-fitting; Size, not to exceed six inches in length over all; Colour, body, emerald green throughout (similar to colour of breast of Budgerigar); flights and tail, as black as possible; legs, feet, and beak, preferably flesh colour. Points to be deducted for veiny feathers or black ticking on breast, flanks, or back, and to be made a disqualification as soon as circumstances will allow.

**Bad position (legs too wide apart)
in the Belgian Canary.**

From a sketch by Mr. Robertson.

CHAPTER XIV.

THE BELGIAN CANARY.

ITS OBSCURE ORIGIN.

IN the Belgian we have truly a deposed King indeed. From the proud position of being universally recognised by the title of "King of the Fancy," with a great host of admirers who bred and loved it for its own sake, and as many more who sought after it untiringly to assist in making new breeds, or improving existing varieties by conferring upon them a portion of its own unique qualities, we now find it in the hands of a very few of its most ardent old admirers who preserve it from immediate extinction. How it first originated will probably never be known. In this, as in the case of all our earliest and most distinct breeds, it is our misfortune that the days of universal education of the masses and cheap literature were undreamed of when it was in a state of evolution, and, in consequence, records as to how or whence it arose are conspicuous by their absence. Whether the Belgian is an exaggerated creation of the early type of Lancashire, or the Lancashire a degenerate type of Belgian we may never know, though it is highly probable that some relationship existed between the early types of these two breeds. The pity of this lack of definite knowledge of origin lies in the fact that although we owe practically all our popular modern breeds to the influence of a very few ancient breeds such as the Belgians, the neglect of these ancestral stocks, should it result in their extinction, must at the same time extinguish the most valuable material fanciers ever possessed, or may possess in the future, for the production of new and distinct breeds. It is a fatal policy analogous to hugging the shadow whilst unconsciously allowing the substance to pass away.

ITS CONTINENTAL STATUS.

Even on the Continent, where it originated, and in former years enjoyed the greatest popularity, it is rapidly declining, according to Mr. James F. Dewar, of Edinburgh, than whom no British fancier is better able to express an opinion on this matter. "Formerly," writes Mr. Dewar, "there were many ardent fanciers of this lovely variety of Canary to be found in all parts of the country and in flourishing societies, and many exhibitions took place every year at the following towns: Brussels, Antwerp, Courtrai, Bruges, Grammont, Ostend, and Ghent; but now, alas, as the Flemish people say, 'Time consumes cities; all heroes die.' Consequently, time also destroys the fancy for our lovely Canary birds, and the *Posture-Vogel*, or bird of position, has waned in popularity."

"Ghent and Antwerp are now the only towns where Belgians are bred, and exhibitions held. Up to a few years ago there were three societies in Ghent, but at the present moment there is but one, and even that, though it boasts an origin

as early as 1804, is but a shadow of its former strong self. This is *De Endracht*, or the Union. *De Arend*, the Eagle, dates from 1846, and still holds its annual show during the Fêtes of Antwerp, subsidised by the town to the value of one hundred francs. In quality the birds are very inferior to those of even fifteen to

twenty years ago, being much decreased in size, whilst the square massive shoulder of years ago is scarcely ever seen.

"In Scotland also the Belgian is in a very bad way, as so many good and true fanciers got disgusted with so many crosses with the Scotch Fancy getting well into the money that they have given up breeding them, or, if still doing so, in a half-hearted way. The wreck of the Belgian has been that, though the very finest were imported, they were not kept and bred as Belgians, but used for crossing, and so lost to the Belgian Fancy."

A Scotch Fancy—Belgian Cross-bred.

THE CAUSE OF DECLINE.

Writing on the cause of its waning popularity amongst us, we have to thank Mr. W. B. Cobb, Hon. Sec. of the United Kingdom Belgian Canary Association, for the following notes, which should be earnestly considered by judges and exhibitors alike. "This question," he writes, "has reached an acute stage amongst those who have the

welfare of the Belgian Canary at heart. I am satisfied that it has increased in numbers and popularity during the past few years. Since the U.K.B.C.A. instituted the young bird class it has always been well supported. Here points one of the finger-posts to popularise the Belgian classes. Exhibitors feel they have a better chance of success in these classes, which object is well worth fostering.

"The greatest difficulty the Belgian fancier has to contend with is the great inroads which the modern Scotch Fancy has made upon the Belgian, to the detriment of the latter and the consequent 'first crosses' appearing in the

"OUR CANARIES."

BORDER FANCY CANARIES.

(Self Green.)

(Self Cinnamon.)

Belgian classes, and until we get all the judges to have the courage of their convictions and 'wrong class' such exhibits, I do not see any hope of increasing the popularity of the Belgian. It is, perhaps, asking a lot from a judge, but not more than we have a right to expect. The model and standard of points adopted by the U.K.B.C.A., if followed conscientiously by judges, would soon deter exhibitors of 'first crosses' from persisting in the practice. There are several young breeders coming to the front, especially around Barnstaple, and it would be only in the order of things that Barnstaple, the original home of the Belgian in this country, should recover its lost laurels."

THE IDEAL BIRD.

To recount the special features of the Belgian, it must possess in the first place a small and neat head, well set on a long, thin and slender neck; shoulders prominent and well elevated, and padded between the pinions; long, broad and straight back, and the body long, straight and tapering, showing a clean-cut chest in front, and a good depth through body from back to front of chest; wings long and carried closely to the body, meeting evenly at the tips; the tail ending off in a perpendicular line with the back, long, straight, stiff and compact; the legs long and straight, and thighs well covered with feathers. The plumage smooth and close-fitting all over. When in position the whole bird should present a bold and commanding appearance, the bird apparently conscious of admiration, and pulling itself together as though full of nervous excitement and anxiety to please, the head carried well below the line of its shoulders, and showing as perfect a plumb-line as possible from the top of the shoulders to the tip of the tail. The typical pose of the perfect Belgian will be better understood from our illustrations, which show the bird "in position," than from any amount of text description.

POINTS TO BE CULTIVATED.

One of the most serious drawbacks to the pure Belgian is loss of size, and this feature, therefore, demands the closest attention in the mating-up of stock. The smooth, close-fitting, fine quality of feather which is always desirable is to-day most frequently to be found on the bird which fails in size to its more coarsely-feathered relative. Two such specimens, though of good type, should not be mated together persistently. A comparatively rough-feathered specimen, if of good Belgian type and quality, is by no means to be despised as a mate for the small smooth bird. But it must be of actual good substance of body after due allowance has been made for the appearance of size which is apt to be conveyed by the coarse feathering. Albeit, the true Belgian properties must never be overlooked. Double-buffing in this breed, as a means of increasing size, is not to be largely commended. There is a tendency in this method to increase the roughness of feather, and also bring about coarseness in head, with its usual concomitant, thick necks—both features which we wish to most strictly avoid.

Whenever two buffs are mated for some special purpose, as may be done occasionally, let them be as smooth and close in feather as possible, even though a little size has to be sacrificed. Also see that the heads are small and neat, and the necks as long and thin as possible. Given these desirable qualities, and plenty of reach and style, long and well set on stilty legs, if the birds are running thin and too slender in body one may have recourse to double-buffing to get increased substance; but one must go back at once to the yellow and buff mating.

Short legs and bare thighs, and any suspicion of corpulency below the chest, are bad points of the true Belgian, and should be corrected by mating such birds respectively with specimens coming of stock excelling in length of leg, neat and well-feathered thighs, and slender tapering bodies below the chest. Any weakness in shoulder should be compensated for by introducing cocks as square and massive in this important Belgian feature as can be procured. Above all, let the breeding pairs consist, as far as possible, of specimens brimful of style and action. The bird that needs no coaxing in the show cage, requires little training, but seems to fall naturally into position as soon as one begins to examine it in its cage is, other points being equal, the bird *par excellence* for the breeding cage.

BREEDING MARKED BELGIANS.

A large field of work exists for the enthusiastic breeder of a strain of marked Belgians; for, strange though it may appear, this, one of our oldest breeds, is peculiarly deficient in markings. Not that marked birds are not to be found, but when they do occur other indispensable Belgian characteristics are either absent or of a very low order, and marked specimens of the true Belgian, with plenty of reach and style, fine head, wedge-shaped and nicely tapering body—which are easily trained and readily get “into position”—are exceedingly rare.

Here, then, is a fine chance for a beginner who aspires to take a leading place in the Fancy with a strain of his own making. By waiting patiently to evolve a race of pure marked Belgians and systematically training the birds as much as possible to aid in developing nerve and style, the object would undoubtedly be accomplished in due course. The constant and systematic training of the birds would form an important and indispensable part of the work, as it would tend to have an effect on the progeny in due course, and thus help towards the realisation of one's hopes. But such a task must not be expected to succeed in a year or two. On the contrary it might, and doubtless would, occupy a number of years to perfect a strain of good-marked Belgians, but there would be many rewards by the way, as the birds would rapidly make their way to the front in the exhibition world, and win many new recruits to the Belgian Fancy. Thus the noble hunch-back of Canarydom would be popularised and saved for posterity.

It is often stated that the Belgian is of a weakly and delicate constitution. A certain amount of truth will lie in such a statement when the birds are kept and bred in unwholesome environments, or on the principle that it needs any

exceptional treatment or warmth, save what is meted out for any other high-class Canary, such as the Yorkshire. That the Belgian, when kept under sound and healthful treatment, is as hardy as most fancy breeds of Canaries is attested by its oldest and most successful breeders and exhibitors, whose opinions bear the weight of long practical experience. On this subject, that veteran Belgian enthusiast, Mr. James Robertson, makes some pointed remarks in the following kindly contributed notes.

MR. JAMES ROBERTSON ON THE BELGIAN.

"Of the origin of the Belgian, or high-shouldered, variety of the Canary, we know little. It has been the means of greatly improving several of our British varieties, for instance, the Scotch Fancy and Yorkshire. But I regret it has not been more admired and the variety propagated by ourselves, as fanciers, seeing that it is so easily managed, being so tame and dignified, and so peculiar in shape and attitude when in position.

"It is generally considered to be of a very delicate constitution; which is not altogether true, as I have found from experience. Certainly imported stock are not so healthy or strong as one could wish; but once get young ones from a pair of imported birds reared and kept in a sanitary condition (feeding them as I will shortly describe), and they will be found to be equal to most of our present varieties, standing our winters in a cold room without any pampering whatever."

UNWHOLESOME CONDITIONS.

"I have never been to Belgium to see for myself, but I have been reliably informed that some of the breeders in that country feed the birds all the year round on egg-food, and keep them in very small cages with one perch only, allowing them no space for exercise, nor using any sand, with the excreta nearly up to the perch. No one could expect other than a constitutionally wasted bird after it had been kept under such conditions. The result is that birds kept under such conditions are said to be delicate and unsound. And no wonder! Some of our home fanciers take it for granted the birds are all delicate, and must be pampered with all kinds of food and medicines to keep them alive, whereas if only a little natural treatment were given and space allowed the birds for exercise, it would add greatly to the health and stamina of the birds."

HOW TO TREAT IN WINTER.

"I will mention how my birds are fed and kept in winter in a room without fire or heat other than the ordinary temperature of the house. I prefer the hens to have the use of a large flight cage, but have to use large cages of box pattern instead (3 ft. long, 16 inches high by 9 in. from back to front, with top to lift off for cleaning), having no room for a large flight. Seed: one box of Canary seed, another box with half niger and half summer rape and at odd times a little hemp or maw seed. Sometimes I put a few kernels of hazel nuts through the egg mill and

give the birds a little suet, or piece of apple, or some boiled carrot occasionally. I find that the birds do well on this treatment, seldom going wrong. But should they become constipated, then Senna leaves put in the drinking water puts them right. I do not use any drugs, but try to alter the diet a little. None of my birds have asthma or wheezing, and they require no lung tonics. I have found medicines of little use."

AS BREEDERS AND FEEDERS.

"Anyone who takes an interest in, and gives attention to, keeping a regular supply of green seeds for the pairs when rearing young need not despair of rearing them.

"In most cases the Belgians will be found model parents as regards sitting, or the rearing of their young. Feeders are not required in their case, so long as the breed is kept pure with no cross in them. But in crossing them with others the trouble commences; that is as I have found it after about 50 years' experience."

A PLEA FOR THE OLD AND TRUE.

"As an old-timer I stick to the old type and the true one, although I admit it is rather difficult to find them now. To define the true shape so that a novice can understand it is rather difficult, so I give three rough sketches.

"No. 1 is the old type, and the type adopted by the U.K.B.C.A.

"No. 2 is another style which has taken a good position at some shows, under some judges, but exhibits no more droop than shown, with a character similar to No. 1.

"The third is the Scotch Fancy.

"The first cross is a little straighter, and the true Belgian fanciers complain of this, as the one that is trying to supersede the true type and that is destroying competition. It cannot be in the interest of the Fancy to destroy the dignified and commanding character of the true-bred bird.

"It is to be hoped that some means may be adopted for preserving the 'King.' It is the most domesticated and the easiest managed of the Canary family."

ITS USE IN CROSS-BREEDING.

Although, as already intimated, the Belgian has been very largely employed, and to its own detriment, as a cross by breeders of the Scotch Fancy, this is by no means the only direction in which it has been so used. Directly or indirectly, it has doubtless played a part in the evolution of nearly, or quite, all our highly-bred varieties in which nerve or position form an essential feature to perfection of type. In the making of the modern Yorkshire it has played a large and most important part, and to its influence the Yorkshire owes its style, nerve and elegant pose. In its palmy days on the Continent it was also allied with the frilled varieties, such as the Dutch Frill and the French Ruffle, and in our own country the Lancashire

From sketches]

[by Mr. Robertson.

TYPES OF THE BELGIAN CANARY.

(See notes on page 232.)

has undoubtedly been associated with it. Some evidence of this is given by one of our oldest fanciers, Mr. W. Shakespeare, who assures us that he once possessed in the old days some crested Belgians of very fair position, and with the pose of the Belgian, which were believed to be the outcome of a cross between a Lancashire Coppy cock and a Belgian hen. Among other novelties, too, of which this veteran fancier has distinct recollections, are some self-cinnamon Belgians; but how these were bred is not known.

A BREEDER'S EXPERIENCE.

As a fitting close to this chapter we give the experience of one of the remaining few prominent breeders and exhibitors of this variety, to wit, Mr. John Fairley, of Coatbridge, to whom our thanks are due for these notes. "I mate a yellow cock, two years old, with a young buff hen. I like the cock to be one year older than the hen, as I find from experience that they do not come to maturity until late in the season, so that it is better to keep them over a season. I pair up the best show birds I can get hold of—yellow cock to buff hen, or *vice versa*, buff cock to yellow hen. I pair

up about the end of March, and I give one teaspoonful of egg and breadcrumb mixed in equal proportions with a pinch of maw seed upon it, until the hen has laid her first egg. I take the eggs from her as laid, and mark them with a spot of ink, and when the clutch is complete I give them to a pair of common feeders—*i.e.*, Common Canaries—and give the Belgian the common eggs. I put up two pairs of Common birds to one pair of Belgians. On the twelfth night I take away the common eggs from the Belgian pair, and replace them by three china eggs for her to complete the full period of incubation—*viz.* 14 days. I then give the bath with a little quassia in the water, and a fresh nest; and in nine or ten days she will lay again, when I repeat the procedure followed during the first round.

THE SCOTCH FANCY CANARY.

(See notes on page 232.)

"About the 21st day I take the young birds away from the feeders and set the hen again. I also take out the cock and place him with the young in a cage by themselves, and he will continue to feed them until the young birds can do for themselves. When the hen is ready to hatch I put the cock back with her, and he assists her to feed the second nest of young. I never lost a young Belgian after it came to the spar. With this method I have been very successful."

ITS HARDIHOOD AND INTELLIGENCE.

Writing on these points Mr. Fairley gives convincing proof of the hardihood of the breed. "My birds are kept," he continued, "in a cold room next to the slates, with the joists only covered with canvas and whitewashed with lime, and a skylight in the roof 24in. by 16in. My room is 16ft. by 9ft. by 6ft. high. This is all the height I could get. I had a nest of four birds hatched out when my room was standing at 32°, and I got them all safely reared. I bred 15 young Belgians in 1908, and won the U.K.B.C.A. Graeme Memorial Shield, and the Reddihough Cup and Gold Medal, and I have won the cup right out, so you will see that, although quite hardy, they are high-class birds. They will not stand alternating heat and cold, but if they are kept in a cold room, you will have no trouble with them—that is, if you get a good pure stock to start with. Purity is my ambition, and it is not very easily obtained. But it can be got, even if it costs a little more to do so than to get so-called Belgian birds which have very little Belgian blood in them.

Show-Cage for Belgian Canaries.

FOND OF "SHOWING OFF."

"Whenever the Belgian sees his show cage put before him he will hop into it, up on to the spar, and soon show you what he can do. He will commence raising his shoulders, and put his head down, and, taking a firm grip of the spar, will rise higher and higher, and show you his nice long back and tail, which should be perpendicular, and legs straight, not bent over, with nice long tapered neck and small head. When in position the neck appears a little arched, with a movement, or nerve, so to speak. He is a very intelligent bird and easily kept. They are the hardest birds I keep, and I have Scotch Fancies and the Norwich, Crest, and Crest-bred, and I have less trouble with my Belgians than any of the rest of my birds."

THE STANDARD OF PERFECTION.

We give on the following page the standard of points for the Belgian Canary adopted by the United Kingdom Belgian Canary Association.

STANDARD OF POINTS.

FOR MERIT, SHAPE AND POSITION FOR JUDGING THE BELGIAN CANARY.

<i>Head.</i> —Small and neat, slightly oval in shape	....	....	....	....	3
<i>Neck.</i> —Long and slender, capable of extension	....	....	....	....	10
<i>Shoulders.</i> —High, square, broad and massive, well padded between the pinions					10
<i>Back.</i> —Long, broad, straight and well filled	....	....	....	....	5
<i>Body.</i> —Long and tapering	....	....	....	....	5
<i>Breast.</i> —Prominent and deep through, from back to front	....	....	....	....	5
<i>Wings.</i> —Long and compact, carried close to the side, meeting evenly at the tips	....	....	....	....	5
<i>Tail.</i> —Long, narrow and straight, carried stiff and compact	....	....	....	....	3
<i>Legs.</i> —Long and straight thighs well clothed					4
<i>Size.</i> —					4
<i>Feather.</i> —For smoothness and condition					6

TOTAL POINTS OF MERIT		<u>60</u>
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POSITION.

<i>Attitude.</i> —Erect stand, easy pose, the line of back and tail being nearly straight									10
<i>Legs.</i> —Straight and rigid	....	....	....	....	....	....	....	....	4
<i>Shoulders.</i> —Elevated	....	....	....	....	....	....	....	....	10
<i>Head.</i> —Depressed									6
<i>Neck.</i> —Long of reach, and arching									10

TOTAL POINTS OF POSITION		<u>40</u>
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GRAND TOTAL		<u>100</u>
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THE LANCASHIRE COPPY CANARY.

The Lancashire is the giant of the Canary family.

CHAPTER XV.

THE LANCASHIRE CANARY.

WHENCE CAME IT?

ANOTHER of our ancient breeds whose earliest history will probably always remain a sealed book is the Lancashire Canary. Its relationship with the old Continental varieties as the Belgian and Dutch scarcely admits of a doubt; and although actual records of its evolution from, or connection with, these breeds are wanting, we may reasonably conclude that the usual classification at shows half a century and more ago affords a certain amount of circumstantial evidence that this was known and recognised by the fanciers of those days. For we have it on the authority of Mr. A. Hamer, whose association with the breed extends over a period of more than fifty years, that in his early days only six classes were provided at local shows in the County Palatine, viz.:—Clear-capped Gold Lizards, Clear-capped Silver Lizards, Clear Yellow Coppy, Clear Buff Coppy, Clear Yellow Plainhead and Half-bred Belgian, and Clear Buff Plainhead and Half-bred Belgian. In all probability these Half-bred Belgians were the Lancashire-Belgian cross, as we know from the oldest records we possess of the breed that the Belgian was frequently adorned with a coppy, or toppin as the tuft of feathers on the head was termed in those days.

The old Dutch Canary, from which the Lancashire most probably originated, is now a scarce variety, closely allied with the Dutch Frill as we now know it but bred comparatively free from curls, but is still to be met with in some parts of Holland. Specimens of this variety were doubtless brought over here by the Huguenot refugees, who settled in various parts of the country and introduced their hobby of Canary-rearing among English people. Indeed, it seems most probable that the Huguenots fleeing from the persecutions of their native land became the real pioneers of the peaceful hobby of Canary-breeding, and added much to horticultural pastimes, as well as the more important additions to our textile industries. The fact that Mr. Hamer's reminiscences of the Fancy trace the Lancashire back over 200 years, and as an exhibition bird for over 100 years, is sufficient proof of its ancient lineage.

COPPY AND PLAINHEAD.

In the Lancashire we have the Crested and the non-Crested birds bearing exactly the same relationship with each other as the modern Crest and Crest-bred varieties. The term "coppy" being the old English designation of a bird with a crest or tuft of feathers on its head is still retained in the nomenclature of this breed, and it therefore follows that the Lancashire Coppy is the Lancashire Canary with a crest, the Lancashire Plainhead being its non-crested ally. Both varieties are bred intimately, a Coppy being mated with a plain-headed bird of

the same breed, with the result that both Coppies and plain-headed specimens are bred from the same pair of birds, and in the same brood. In shape the head adornment of the Coppy differs materially from that of the modern Crested Canary, for whereas the latter should droop and radiate evenly all round, that of the Lancashire Coppy should lie flat and smoothly at the back of the head, thereby giving it a "horse shoe" shape in outline. It must be full and densely packed with feathers, and quite free from breaks and splits.

In the plainheaded variety the head must be as densely clothed with soft profuse feather as possible, projecting over at each side and forming heavy "lashing," as the overhanging eyebrows are termed in this variety. In these, as in all its features, size, bulk and heaviness, combined with freedom of movement and a noble commanding appearance, are leading points in the Lancashire.

WITHIN ITS STRONGHOLD.

Within the borders of the county which has given it its present name the breed has always been a favourite, and had plenty of devotees to preserve a living interest in its welfare; but it is somewhat unfortunate, and not without a certain amount of danger to its future preservation, that it should so long remain so largely a localised breed. True, it has a few admirers in other parts of the country, notably in the West of England, and of late years has found its way South; but there is still good cause to regret its limited range, and consequent lack of popularity generally. That it is still a great favourite in its home county, and in not the slightest danger of extinction, is no criterion for its future popularity. The same conditions would apply to the London Fancy, well within the memory of living man, yet this breed is now almost as extinct as the Dodo. And if we examine the records of any of the breeds which are lost or are in a serious stage of decline, we shall see that one and all have suffered from the same limited class interest or localised popularity, which, like a canker-worm, has eaten out its vitals, and destroyed it from within, as it were, working insidiously and unsuspectingly until it was discovered that the tottering fabric had little or no solid foundation on which it might have been fortified or reconstructed. To avoid such a catastrophe an extensive range and wide interests are an invaluable asset. Let us hope, then, that the many new recruits coming into the Fancy will take up one or another of these localised, or waning breeds, as the Lancashire or Belgian, and thus help to spread and popularise them more extensively in all parts of the country.

For the beginner there is at least one material advantage from the beginning, inasmuch that, as the breeds are not over-numerous, competition is less keen, and the chances of early success as an exhibitor proportionately increased.

The name Lancashire has only been generally adopted in comparatively recent times. Formerly it was generally known as the "Manchester Coppy," or

THE LANCASHIRE PLAINHEAD CANARY.

"Manchester Fancy," but these terms are now quite obsolete. Like the present term, they were cumbersome and unwieldy, and although as a rule we object to the alteration of popular names for any trivial reason, we cannot help thinking that some advantage might accrue towards greater popularity if the term were curtailed and simplified by referring to the birds simply as "Coppies" and "Cuppy-bred."

THE LANCASHIRE DESCRIBED.

A detailed description of the properties of the massive Lancashire—the acknowledged giant of the Canary family—will be best given in the words of a few of its oldest admirers and practical breeders. To that devoted disciple of the breed, Mr. Barker Clegg, of Manchester, our thanks are due for the following notes. Mr. Clegg writes:—"To describe a good Lancashire, when you have bred this variety and lived in the county, is no difficult task. The Coppies should have abundance of nice frontal, flowing forward in 'Horseshoe' fashion, lying well down with beautiful radiation and shape; grand upstanding birds, on pairs of strong legs, with a majestic carriage, and the feather as close on the body as moleskin. The Plainheads show to perfection their gigantic properties, equal, and at times surpassing, the Cuppy. Large, bold, sulky-looking heads, thick necks, long broad backs, and well-carried wings and tail. These properties, with an elegant carriage, position, and a commanding appearance, are the admiration of the fraternity. Some twenty-five to thirty years ago these birds were very numerous in the County Palatine, notably in the manufacturing districts around Manchester.

"For size, feather and position, these birds have been the storehouse of the Canary family. They have been used in a large way by the Crested Norwich breeders and also by breeders of the Cinnamon and Yorkshire. Mule breeders, too, used Lancashire hens largely. There are many good and typical birds in the rooms of the Lancashire breeders to-day, some even that would comply with the description here mentioned. But, unfortunately, they are not seen in very large numbers at our exhibitions, either in or outside the county. I can remember seeing thirty-three Buff Coppies in a class at a Manchester show, and every one of them could have been termed a winner. Since that time there has been a continual draw upon the number of these birds to enhance the properties of other varieties."

SUBSTANCE A CARDINAL VIRTUE.

Messrs. G. Fitton, of Oldham, the senior partner of whom has a record of 40 years' experience with the variety, and won with it at the Alexandra Palace over thirty years ago, and in more recent years at the present Crystal Palace, give their opinions and experiences in the following paper.

"Its principal points," they write, "are length and fulness of the bird throughout: bold neck and head, stand erect, not leaning over the perch, width of skull,

"OUR CANARIES."

THE LONDON FANCY CANARY.

Here is contrasted the bird of to-day (upper figure) with the more perfectly marked bird shown by the old-time fanciers.

but not nipped in at back, or horny, or rough-feathered at the back or sides of the head. Never, if it can be avoided, breed with one that has a hole in the back of the head, as the young are sure to inherit the fault, and it is most difficult to eradicate. The Lancashire cannot be bred too long—the longer it is, given other proportions, the better, but it must have a good round back. The Coppy must be as long and broad in feather as possible, reaching to the tip of the beak, with a slight droop, but fall at the back, showing none of the feathers we term ‘horning feathers’ at the sides. The Plainhead has a well-furnished, good round head with a slight ‘lashing’ over the eyes to make it have a sulky appearance.”

HOW TO BREED THEM.

“In starting the Fancy, get the best birds you can. Do not expect to breed good young from poor parents. The best way to pair is to put a big yellow Coppy cock to a big buff Plainhead hen, or *vice versa*. But it makes a difference when one knows his birds. In breeding for stock birds I should advise a mating of a yellow Coppy cock to a buff Coppy hen, or *vice versa*, in order to keep the yellow blood strong. But in mating for size, put two buff Coppies together. Do not do it more than once, or the young will be very rough. Some fanciers say that one should never double-yellow, so I decided to experiment. I put two yellows together and bred the yellow Plainhead which has won seven first prizes, including the Palace, one second and one third, and has been among the “cracks” on each occasion, and was beaten by older birds. I must admit he has been an exception. Still, it makes all the difference, as said previously, when one knows his stock.”

MORE OWD'AM METHODS.

To Mr. E. Lowe, of Oldham, we are indebted for a valuable description of his system of mating and breeding the Lancashire. Writing of its chief features as already given, Mr. Lowe points out particularly that the neck must be full and thick, fitting on a round, full and long back, with good long wings to give the bird the appearance of what we term long-sided, which is an essential feature in a good Lancashire, and the necessity of good strong legs to carry itself in a bold, up-standing position. “At one time,” he continues, “Crested Norwich fanciers used to scour the Lancashire breeders’ rooms to obtain good Coppy birds. But Lancashire breeders found to their cost that they were losing ground by selling their best birds to Crest fanciers. To produce a good Lancashire, start with a good large buff Plainhead cock and a medium-sized yellow Coppy hen, and follow the ordinary course of mating yellow with buff.

“Experienced fanciers sometimes pair two Coppy birds together to gain head properties; but under such circumstances the Coppies should be of perfect formation, otherwise the result would be disastrous. If one should produce a good Coppy bird from this pairing, either yellow or buff, cock or hen, it should be mated

back to the Plainhead ; that is to say, should the bird be a good yellow Coppy cock it should be paired to a buff Plainhead, and *vice versa*, to prevent roughness of feather in the offspring. A Plainhead bred from the pairing of two Coppies would be just the bird to keep for stock purposes."

DOUBLE-BUFFING.

"I am strongly in favour of double-buffing with Coppy and Plainhead, as it has a tendency to produce larger birds throughout. You can get a better colour in your birds by such pairing, providing you do not go too deep in double-buffing—say, once or twice, and then revert back to yellow and buff, always pairing back to Coppy and Plainhead. My experience in double-buffing has been most successful ; I have produced winning show birds by such pairing. My plan is to keep the best young cock bird, either Coppy or Plainhead (which would be buff) from this pairing, and pair back to a yellow Coppy or Plainhead, as the case may be. From such pairing, I have produced more yellow birds than buffs.

The Lancashire Show Cage.

A FINE RESULT.

"From the above-named method of pairing I have produced three yellow Coppy cocks in one nest, one of them being a great winner on the show bench. This was father to the yellow Plainhead cock that won the Diploma at the Crystal Palace in 1909.

"In respect to double-yellowing my experience has been disastrous, and I should not recommend anyone to try such pairing. The pairs are apt to produce birds of the Yorkshire type, and full of dark blood, which is not wanted in the Lancashire."

TO IMPROVE SIZE AND COLOUR.

"The usual method I adopt in pairing to get size and colour is to pair a yellow ticked Coppy cock and a large clear buff Plainhead hen, or a large ticked yellow Plainhead cock and a clear buff Coppy hen. Or you may pair a ticked buff Coppy cock and a clear yellow Plainhead hen, or a ticked buff Plainhead cock and a clear yellow Coppy hen. I prefer using the ticked bird on the cock side, and clear birds on the hen side. It has been said by many fanciers that the Lancashire birds are very sluggish in the feeding of their young. My experience, however, has been quite the reverse, as they have proved as good feeders as any variety that I have ever kept."

PAST AND PRESENT.

"Comparing the birds of former days with those of to-day," writes Mr. John Garner, of Hazel Grove, "I cannot see much difference. There were some grand birds in the old days, just as there are now, and I have some magnificent stuffed specimens as good as the present-day birds. But upon the whole they are better to-day in head, neck, copy and substance. The birds are very hardy, and some are good feeders. In breeding Lancashires you must not expect to breed all champions. Begin with good birds, even if you have less of them, and try to raise a strain of your own. If you only buy one or two pairs and are successful in breeding, you will be able to save a few hens and one or two cocks; and then by acquiring a fresh cock and one or two hens to mate up with these, you will be able to go on for some years without breeding too closely, and only introducing a fresh cross occasionally. By keeping a careful record of your breeding operations you will know how the birds are bred, and thereby be enabled to mate them up to greater advantage. If you breed some that are not quite so large as some others from the same nests, do not be afraid to breed from them. Blood will tell, and you are likely to breed good birds from them as well as their larger brothers and sisters."

FAULTS TO AVOID.

In mating up his breeding stock the Lancashire breeder must have a keen eye for points which are likely to be reproduced in a more fixed form, and often of an exaggerated type in the progeny. Any bird showing distinct traces of Norwich Plainhead blood should be avoided whenever possible. Indeed, as this type is held to be a disqualification on the show bench it would be best to rigorously bar it from the breeding cage. As a cross the Norwich Crest or Crest-bred has been resorted to, but it is a step in the wrong direction which puts one back several years whilst the cross is being bred out again. Split Coppies when they accrue from the mating of double Coppy birds or when one of the parents has had a similar defect, should also be avoided; as also should hollow backs; thin necks, with holes at back; narrow and pinched heads; and rough horny-headed birds. Squatty-shaped birds showing little or no thigh, or crouching across the perch, should only be mated with specimens excelling in these points and having a bold commanding appearance. In like manner with every minor fault which is tolerated in a breeding bird the principles of compensation must be fully recognised, and the bird's defective points correspond with superlative qualities possessed by its mate. As we cannot reasonably expect a stock of breeding birds to consist wholly of perfect or ideal specimens, it is only by the constant application of this principle that the general type of the breed is gradually improved, and the ideal bird slowly but surely evolved.

At the same time, to depend solely upon this doctrine and begin the Fancy with a stock of mediocre birds is the height of folly. The years of steady work and perseverance that must pass before one can hope to get in the front rank of

exhibitors have so many disappointments and annoyances, and so little to cheer and encourage one's hopes for the future, that only the most optimistic and plodding fancier is likely to persevere to the end. Far better, as all our best authorities consistently advise, begin with a very small stock of the best birds one can possibly obtain, than plunge into a large stock of mediocre specimens. Then, whilst still adhering to the principles of compensation, aim at breeding from stock which is the nearest approach to the ideal bird one can command.

THE LANCASHIRE IN CROSSING.

Probably no other breed, save the Belgian, has played so important a part in crossing to improve and evolve other breeds as the Lancashire. It is to this breed that we owe by far the greater portion of the modern Crest and Crest-bred, which prior to the introduction of Lancashire blood stagnated in a condition incomparably inferior to the type of the present day—small in body, and with small “daisy” crests not so very far removed from the “turn-crown” of olden times. Neat and trim though these birds were they rapidly disappeared before the new creation, which has evolved the massive, feathery, and immense crests we see to-day. In quite modern times it played a leading part in the production of the racy Yorkshire, which has become one of the most popular breeds we have, second in widespread popularity only to the Norwich, with no competitor likely to immediately assail its position, save, perhaps, the trim and hardy little Border Fancy. Indeed we might go farther, and say that the modern Yorkshire evolved directly from the Lancashire stock, and was ultimately perfected by the introduction of Norwich and Belgian blood to give colour and style respectively.

As we have already seen, it was doubtless also associated with the Continental frilled and allied varieties in former days, and later still with the Belgian, with which it may very probably have been interbred. Were the latter breed to wane to a dangerously low ebb when an introduction of alien blood was deemed essential to its revival, it would therefore appear most reasonable to turn to the Lancashire for the necessary material, selecting from among the Plainheads yellow birds of the thin, hollow-necked, fine-headed type for the purpose.

COLOUR AND MARKINGS.

Among the pure Lancashires there is plenty of room for breeders to exercise their skill in improving the quality and tone of colour in the yellows. But as markings are not looked upon with favour by the best breeders, and not encouraged on the show-bench, the indiscriminate mating of two ticked birds is undesirable. In this connection it appears to us most probable that the recognition and encouragement of some agreed type of markings would bear good fruit in extending the interest of the breed and increasing the number of its breeders, and thereby bring it out of its circumscribed area into more general distribution. That the desirability of this latter point is recognised by some of its leading breeders is evident from the appended notes for which we have to thank Mr. W. Adams, of Rochdale.

ITS OWN STRONGHOLD.

"Nothing looks better," he writes, "than a show with a few classes for Lancashires, such as are provided by the two Rochdale Societies, and at Manchester. It is a pity that other Societies do not cater for them more, but some allowance must be made from the fact that the large breeders are principally in a radius of twenty miles of Rochdale, which is not altogether in our interests. But during the last season enquiries have come from other parts for our birds, and we hope to hear of some Southern bred birds that can compete with us. In breeding I generally pair yellow to buff—clear buff Plainhead and ticked yellow Coppy, or *vice versa*, right through my stock. Sometimes the experiment of double-Copping is resorted to, but great care must be used in the selection of the birds to avoid split coppies, thin necks, horns behind, holes in neck, or nothing but wasters will be bred. But if paired right, a good result is often obtained, and if a Plainhead is bred from them it is generally a very good specimen either for show or stock. I have seen a very fine clear yellow Coppy bred from a yellow Coppy hen and a buff Coppy cock, which is one of the finest birds, and nothing could beat it had the owner been an exhibitor; but he rarely exhibits.

"We generally use German hens to sit the Lancashire eggs, but some allow the Lancashire to sit up to the night before hatching, then change the eggs. But as a rule, I let them rear their own young if they will, and with success, but I let the common ones rear their own also, so that if the Lancashire hen fails in her duty, the German takes over the young. The position of the Lancashire is that it should be well clear of the perch, plenty of thigh in view, and should be of good length, stout and bold looking."

SPLIT COPPY. ROUGH AT BACK.
Two Objectionable Features in the Lancashire Coppy.

THE GIANT IN THE WEST.

To Mr. T. R. Ind, of Bristol, our thanks are due for the following interesting recollections and experiences in breeding the Lancashire in the West country. To give his own words: "It takes a little doing to rake up all the ins and outs of a quarter of a century's experience with any one thing, and in breeding Canaries you are apt to forget to take notes from time to time respecting the results of the season's breeding. But when you breed a good specimen the fact so impresses you that you cannot easily forget, and to breed a good Lancashire, either Coppy or Plainhead, down West is something to be proud of.

"I commenced with this noble variety in the year 1884 or 1885, and bred a

good buff Plainhead cock. It was a grand bird, a giant in every sense of the word. This bird won two successive years in its native birthplace under the best Lancashire judge of the day. For many years I was the only breeder of Lancashires in the West for many miles around here, and as the variety was not catered for in this part of the country, I was obliged to exhibit in the A.O.V. classes. But for the past twelve years Bristol has given good classification, with good Specials, Challenge Bowls, &c., and by this means has induced other Western Societies to cater for them."

THE GOOD AND THE BAD.

"My experience has been very varied. Sometimes a good season as regards numbers with nothing specially of note; another season may perhaps turn out good specimens but not so many in numbers; and yet another may be wholly bad. I remember one season breeding two. This is when one may be termed a fancier. By sticking to your guns, plodding on and on, success is bound to be attained. My sole aim has been to stick to the pure, old-fashioned bird, keeping right away from anything to contaminate. If you dip into dark blood, you will certainly lose that length and giant-like carriage so essential in the ideal bird. If my birds begin to fail in head properties I keep to the pure blood to rectify this, selecting my very best buff cock bird (*i.e.* one of big frame and good length of body, perfectly-formed head and Coppy), and pair to a yellow Coppy hen of good length of body (not stout), with a Coppy of best finish and nice quality feathers. This has been my method of double-Coppying, and the result has been: large, stout birds, some perfect Coppies, large Plain heads, and 'mops.' Most of these are very useful birds, and if you are working with pure Lancashire blood, you may look for pleasing results from this stock."

TO GET LENGTH.

"To maintain the length of the Lancashire select two Plainheads having large heads. Pair the result with the 'mops' from double-Coppy parents. If you have to wait a season or two, your patience will be rewarded in the end. I have in my mind's eye a typical Plainhead yellow cock, with feather like satin, a long-sided bird, *i.e.* great length from shoulder to tip of wing, well up on legs (which means not crouched or squatty on perch) plenty of body and tight-fitting jacket. I paired this to its aunt, a fine buff Coppy, and the result was most pleasing.

"In breeding with this bird it is wise to be fully equipped with a good stock of feeders, or foster parents. These are mostly needed with young hens, as sometimes they are not reliable, especially with their first nest. A plan I have found satisfactory is to select your foster that may be ready to nest three or four days after your Lancashire has laid her last egg. Set your foster and most likely it will feed four days longer and get young ones strong before wanting to go to nest again."

"Our Canaries."

WILD CANARIES.

The progenitors of our domesticated varieties.

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MATING FOSTERS NOT ESSENTIAL.

"It is not necessary to pair these feeders with cocks. I find that they settle down better after laying the last egg, and are not so likely to want to nest again too soon. Their eggs I transfer to the Lancashire, and let both sit their full time, thus keeping the Lancashire hen broody and saving her strength. I keep these together all through the season.

"On the other hand, if the Lancashire hen takes to feeding her young, she, as a rule, makes the best of feeders, being a strong and powerful bird; and a nest of three or four Lancshires require a lot of feeding."

POINTS OF EXCELLENCE.

The points of the ideal bird are described in the Standard of Perfection issued by Lancashire and Lizard Fanciers' Association, here appended. As will be seen, no limit of length or size is imposed by the standard. Other points being proportionately equal, the larger and longer the bird the better. A good specimen will often measure fully eight inches in length, from tip of beak to end of tail.

THE LANCASHIRE.

<i>Head</i> —cobby	....	....	....	25
<i>Neck</i> —for fulness and thickness	....	....	....	10
<i>Back</i> —round, full, and long	....	....	....	10
<i>Wings</i> —meeting at tips	....	....	....	5
<i>Length of Bird</i>	...	....	....	20
<i>Quality of feather</i>	....	....	....	5
<i>Position</i> —upstanding	....	....	....	10
<i>Condition and Cleanliness</i>....	....	....	....	10
<i>Colour</i>	....	....	....	5
				100
				100

**"Never breed with a bird which has a
hole in the back of the neck."**

CHAPTER XVI.

THE CINNAMON CANARY.

ANOTHER of our old breeds, and one possessing unique properties all its own, the Cinnamon has descended to us from the days when records and pedigrees were neither valued by the breeder, nor deemed worthy of bequest to posterity as the birthright of his feathered creations. Whence! or where! or when! the Cinnamon, as we now know it, originated is therefore unknown to us, and must ever remain a matter of the purest speculation. That it in all probability first occurred as a sport from the green—just as much a freak of nature as the cinnamon-coloured specimens of Starlings, Greenfinches, and other species of our wild birds which are occasionally met with—scarcely admits of a doubt, so that the Cinnamon is of necessity a more recent creation than the Green, which latter is beyond all doubt the rock-bed and foundation of colour in the Canary race as a whole. We well remember these terse remarks of the late Mr. J. North, than whom no one was more deeply versed in knowledge and experience of the mysteries of cinnamon colour and its vagaries, in reply to an assertion that the Cinnamon was the elder colour: “The statement that Cinnamon-coloured Canaries existed before Green Canaries requires a lot of corroboration. Do you know any place in the world where Cinnamon-coloured Canaries can be found wild? or any birds of a cinnamon colour? There are several places where Green Canaries are found in a state of Nature, but no one has ever reported seeing a ‘brown one’ amongst them. You can breed Green Canaries from Cinnamons and from buff and yellow-marked birds that have Cinnamon blood in them, but you cannot breed Cinnamons from Greens or from any bird or birds that have not got the Cinnamon blood in them. The colour ultimately attained—the green—may be accepted as the natural or original colour.”

ITS NOMENCLATURE.

Although in modern times we have come to look upon the term Cinnamon as indicative of a specific and distinct breed of Canary, it was always Mr. North's contention that the word could only be properly applied as a qualifying adjective and not as a substantive or noun—that its unique colour properties were its only distinctive feature, and, in consequence, to speak of the Cinnamon Canary was no more definite or correct than if we spoke, or wrote, of the Yellow Canary. But as the bird of the Norwich type has always possessed these features in the highest degree, and in spite of the wide dissemination of the colour in other breeds, still retains its position as the fount and source of Cinnamon colour it is only reasonable to regard it now as *the* Cinnamon, and give it the same status as a specific breed. In the early days of our own historical times when the birds were most popular in their stronghold around Northampton and Nottingham they were known

as "Quakers," and subsequently as "Dun" and "Ash-coloured" Canaries, all terms referring to the quiet, sober, dove-coloured plumage of the birds of the day. Of these none was more expressive or conveyed a better impression of the appearance of the birds than the old Anglo-Saxon term *dun*, which invariably suggested a quiet brown colour and survives even to this day in the colour description of

"A Cinnamon with light feathers may be mated to a self green Norwich hen."

pigeons. What the Dun pigeon is to-day among pigeons, the "Dun Canary" was in those days among our feathered pets. Later on it was given the name it now bears from a fancied resemblance of its colour to the culinary spice of the same name. That fancy played a certain part in such a comparison is tolerably certain, and would give but a very poor idea of the true colour of our colour-fed Cinnamons of to-day. The old non-fed bird would, in our opinion, be much better likened to the colour of the shell of a clean, well-ripened walnut, whilst the modern-fed birds have a more chocolate tint, or a kind of compromise between a walnut and a chestnut.

CINNAMON PECULIARITIES.

This unique colouring is one of its chief peculiarities and is invariably associated with a pink eye, which is the hall-mark of cinnamon blood. Even if a bird exhibits not the slightest trace of cinnamon colour—be it wholly clear yellow, or buff—if it possesses the pink eye the Cinnamon trail is there, and the bird's pedigree will show the infusion of this cross at some time, even if its ancestry has to be traced back several generations to discover it.

This peculiarity was early recognised by its breeders, and such old writers as Brehm and Bechstein remark specially upon it, though it was believed in their days to indicate a weakness and delicacy of constitution which we do not find in the birds of our days. The pink-eyed bird, they declared in so many words, is a weak bird, and one old writer whose name we have not been able to discover, though his work remains, went still further and said they could not see to feed their young even if they should have any, from which we must infer that their powers of reproduction were believed in those times to be of a low order.

In this, as in other breeds, we have the two usual types—yellow and buff. In the yellow Cinnamon the prevailing colour is pale brown leaning more towards the chocolate hue, suffused with greenish-yellow. This, by the way, must not be interpreted to mean that the birds must show any greenish tinge which would probably be synonymous with a decidedly faulty feature known as "smokiness." An unfed rich yellow Norwich Canary may be taken as a type of what is termed a greenish-yellow, the same bird when colour-fed being an orange or reddish-yellow. The buff Cinnamon is of a softer and mellower tone, and of a more decided dun or dove-colour—in fact, more nearly approaching the hue of the shell of the clean, new, ripened walnut. The underflue is dark, the beak, the legs and feet usually clear, but inclined to be dark.

ONLY PROPAGATED THROUGH MALE.

This cinnamon colour and characteristics are intimately associated with sex, for it is a fact that they can only be propagated and perpetuated through the male, and that a cock which is quite free from Cinnamon blood will never produce Cinnamon young even though mated with the purest-blooded Cinnamon hen, whilst a pure Cinnamon cock mated with a hen quite free from Cinnamon blood will never produce a Cinnamon or Cinnamon-ticked cock, though he may, and does, produce females showing the Cinnamon colour. To perpetuate the Cinnamon colour in both sexes it is absolutely essential for Cinnamon blood to exist in *both* parents, and to produce any Cinnamon feathers at all Cinnamon blood *must* exist in the male parent. This is apt to give rise to most puzzling and interesting results when breeding Cinnamons and crossing them with non-Cinnamon breeds; results which become all the more mysterious in our days from the fact that the Cinnamon has been so largely and commonly infused in most of our popular breeds, and at one time or another has been more or less introduced into

nearly every breed we possess, and the unique potency of Cinnamon blood, which causes it to continue cropping up at intervals several generations after it has once been introduced, which, altogether, renders it exceedingly difficult, and often quite impossible in the absence of a certain knowledge of a bird's pedigree, to tell whether a given bird has any taint of Cinnamon blood in it or not. The definite results we have first named are what may be confidently expected when birds of undoubted Cinnamon or non-Cinnamon type are used. Whenever different results are obtained it will be proof-positive that the birds are not free from alien blood, and in all probability that the supposed non-Cinnamon bird is tintured with Cinnamon blood, although no trace of it may appear on the surface. The old axiom that the Cinnamon can be grafted on any stock, but no scion can be grafted on the Cinnamon is, given pure and uncontaminated blood, as true to-day as of yore.

ITS MYSTERIES AND VAGARIES.

On this subject the late Mr. J. North once said : " I have never seen any list of rules relative to Cinnamon crossing, and in many articles on the subject some indications are evident of the road that leads to nowhere. We will take the cocks first, and say that a Cinnamon-coloured cock, or a Cinnamon-bred pink-eyed cock, or a Cinnamon-bred Green cock, matched to a non-Cinnamon-bred hen will not produce any Cinnamon sons, but that any Cinnamon-feathered chick will prove to be a hen. The Green Cinnamon-bred cocks and pink-eyed hens with clear yellow, or buff plumage (or if ticked, then with Cinnamon-ticked feathers) may be bred from a Cinnamon cock and non-Cinnamon hen, but Cinnamon plumaged cocks and pink-eyed cocks cannot be so produced. Should, however, a Cinnamon son appear, it is proof positive that Cinnamon blood exists in the mother as well as the father.

" A Cinnamon-coloured hen, or a pink-eyed hen, or a Cinnamon-bred hen cannot reproduce a single Cinnamon-coloured chick unless paired to a Cinnamon-bred cock. But should a Cinnamon son or daughter appear from such a pair, in fact should they throw a single Cinnamon feather, or a single pink-eyed bird, it proves Cinnamon blood exists in both parents."

TO PRODUCE CINNAMON SONS.

" It is necessary to have a Cinnamon-coloured or pink-eyed or Cinnamon-bred Green cock paired to a similarly bred hen in order to obtain Cinnamon sons, but the Cinnamon daughters, as we have previously noted, may be got off a Cinnamon-blooded male parent only, and seeing how easy it is to obtain a Cinnamon daughter, and how much more difficult it is to get a Cinnamon son, one would have supposed that when a pair of birds possessed sufficient Cinnamon blood in them to produce a Cinnamon son that all the daughters would easily be Cinnamons. Yet such is not the case, as I have bred a Cinnamon cock and a Green hen in the same nest. To show you the intricacies of Cinnamon crossing,

I will give a few further examples. It is very easy to show that a Cinnamon-coloured bird may really possess very little Cinnamon blood, while one that is Green in colour of plumage may be cramful of it. I have shown that a Cinnamon cock paired to a non-Cinnamon hen throws Green sons, and the youngster would be half-bred Cinnamon, containing at most 50 per cent. of Cinnamon blood. You may pair him again with a non-Cinnamon hen, and still get Cinnamon daughters for many generations, until, to my knowledge, they can be produced of a Self Cinnamon colour down to the fifth year, when they would contain only 1-32nd part of real Cinnamon blood, or about three per cent., so that the knowledge of a Cinnamon hen's pedigree is of the highest importance, for such a Cinnamon hen with only about three per cent. of real Cinnamon blood is apt to throw too many Green youngsters, even when paired to a Cinnamon cock."

COLOUR HIS ESCUTCHEON.

"With a Cinnamon cock the matter of pedigree presents no such difficulties, for a cock bears evidence of its own pedigree in the mere fact of its Cinnamon colour, because you cannot produce such a bird except with a good percentage of genuine Cinnamon blood. It has been said that all the daughters of a Cinnamon cock and a non-Cinnamon hen, are cinnamon-coloured; but this is an error, for some are dark-eyed and green-marked, although it is quite true to say 'all the Cinnamons will prove to be hens.'"

THE CINNAMON-BRED GREENS.

"Now, if you take one of these Green or Green-marked hens containing 50 per cent. of Cinnamon blood, and pair it to a Cinnamon cock, the progeny would contain three-fourths or 75 per cent. of Cinnamon blood, yet some of the sons and daughters might be green; so here you have a green bird three-fourths full of Cinnamon blood, while just now I showed you the pedigree of a Cinnamon hen with only three per cent. You may pair a Cinnamon cock to one of the low percentaged Cinnamon hens, and from the two Cinnamon parents obtain Green sons and daughters, and so get Green birds that must, according to all appearances at least, be quite full of Cinnamon blood, containing, in fact, 100 per cent. of it. It is from such Green cocks as here described that when paired to Cinnamon hens you may breed Cinnamon and Green sons and daughters, although this has not been the experience of some breeders. These Green cocks that come from two Cinnamons are extremely valuable, being full of colour and useful for increasing the depth of real Cinnamon colour in some strains that seem only able to obtain size at the expense of colour, that is, as soon as they throw a big bird it is washy and pale in tone. It is very much a matter of pedigree and selection, and as we want to breed Cinnamons we must, as a rule, select those birds showing the colour we want. Such Green birds would throw Cinnamons the next generation if paired to Cinnamon mates that had been bred pure for at least two generations."

"OUR CANARIES."

BUFF GREEN-MARKED YORKSHIRE CANARY.

"A Bird with heavy pencilling should be avoided."

EXCEPTIONS THAT PROVE THE RULE.

"One would think that in a matter that admitted of so much variation the two fundamental rules that we have formulated—(1) That a Cinnamon or Cinnamon-bred cock paired to a non-Cinnamon-bred hen can throw only Cinnamon daughters, and (2) that a Cinnamon hen cannot throw any Cinnamon youngsters except when paired to a Cinnamon-bred cock—could not be in all cases rigidly maintained, and I have known several instances where No. 1 has appeared to lapse. I once looked, with the breeder, into a nest of young Crest stock, and found two birds with pink eyes and cinnamon variegation; one turned out to be a cock, and the breeder did not know of the existence of Cinnamon blood in either parent. The mother was a clear body with dark crest of known dark eye non-Cinnamon pedigree, and a great winner herself, and the father was a Green-marked and a green-eyed. One would conclude he was Cinnamon-bred. Another case was of a nearly self-Cinnamon cock and a winner of prizes at Crystal Palace and many other places; he was a big feathery bird, with a well-shaped but somewhat small crest; his father was a good Green, known to have some Cinnamon in him, but the mother's family had none that could be traced. A breeder in Essex bought a pair of dark-eyed, green-marked birds, and bred a clear body Cinnamon Crested cock from them, which was quite contrary to rule and to everyone's expectation. Another prize-winning cock, with good cinnamon crest and cinnamon wings, was thought by its breeder to be a hen. These instances are quite out of the usual course, and seeing the very great difficulties in the path of those who try to breed such cocks, and the poor success which has often attended their struggles of many years, are inexplicable, for even if they were entirely new "sports" one would expect them more likely to occur in hens than in cocks. Perhaps these are exceptions that prove the rule. But the second rule as to Cinnamon hens being unable to throw cinnamon-coloured chicks except when paired to a Cinnamon-bred cock, I have never known to vary, but why it should be so rigid I cannot explain, nor has any reason ever been offered so far as I know. I think it one of the greatest mysteries connected with Canary-breeding."

THE IDEAL BIRD.

To describe the Cinnamon as it should be apart from its colour properties, which must always have precedence over all other points, we want a stout, chubby, cobbily-built, and well-proportioned bird of the true Norwich type, rather larger in size, or about 7ins. over all. Though no actual limit of size is imposed by such standards as exist at the present time, a good-sized bird is generally preferred, given a good sound colour and other desirable features, in which points the large birds are most apt to fail, but if this size were universally adopted it would enable the birds to stand out sufficiently distinct as a class apart from the Norwich Plainhead without exceeding a reasonable limit to which colour and all other characteristics could eventually be added in as rich and typical a form as is more

usually found among the smaller specimens. The head should be large, bold, and free from flatness on the crown, smoothly featured, without the least suspicion of overhanging eye-brows; the beak in uniformity with the head, helping the outline to run harmoniously either way on to a nice full neck, and on to a deep round full chest beneath, and a broad and full back above, blending in with a smooth graceful waist, and on to a short, compact tail. The legs should be of moderate length, and wings proportionate with the body, neat, and well carried, just meeting at the tips, and there should be no depression on the back of the neck, or pinched appearance about the neck or throat. The plumage must be perfectly smooth, fine, and exceptionally rich and silky in texture, without any sign of coarseness, roughness, or loose open feather, and the bird standing well across the perch—in short, a slightly enlarged edition of the chubby, trim, close-feathered Norwich should form the ideal in shape and type of the Cinnamon breeder. Add to this combination of physical features the inevitable pink eye and a rich deep shade of pure Cinnamon colour throughout, as level as possible on back and sides, with just a trace of pencilling on the back, and the ideal Cinnamon stands revealed.

THE PINK EYE AND PENCILLING.

These features are often a stumbling block to the novice, who fails to recognise the one or understand what is meant by the other. He looks at his adult Cinnamons hopping about their cages, perhaps in none too good a light, and fails to see anything but the ordinary dark or black eye of all other Canaries, and wonders what claim they at any rate can have to the term pink-eyed. True, to the casual observer, on looking at them in this haphazard way, they are just black-eyed birds in appearance. But bring them into a good light and place them so that the light is reflected from the eyes at varying angles to the onlooker, or catch them and hold them so that you look at their eyes in a good light from different angles, and you will soon discover the ruddy pink of these organs, which fully merit the term. This difficulty, however, occurs only with adult birds. In the nestling stage the pink eye is more pronounced and quite unmistakable, and is easily seen even before the eyelids are opened. But as the birds grow up to maturity the eyes become darker in colour and the pink hue less easily recognised unless looked for in a good light in the way just described.

The pencilling consists of the darker streaks frequently found on the back and sides of the bird, which are formed by the shafts of the feathers and a narrow strip of web on each side the shaft being of a darker shade than the rest of the feathers, which form the narrow dark streaks or pencillings on the back and sides of the bird. This pencilling should be of the pure Cinnamon colour, which naturally means a faint trace of pencilling rather than a bold, dark impression.

FAULTS TO AVOID.

Any other colour but the true Cinnamon tint is naturally a prime cause for disqualification—a Cinnamon without Cinnamon colour being an unthinkable parody

on nomenclature. This colour, far from being sound and evenly distributed throughout, as its admirers wish to see it, has its weak spots and local areas where it lingers only on sufferance, as it were, and begins to fade and rapidly disappears the moment the breeder relaxes his efforts to keep it firmly fixed and sound in hue in these localities. The base of the under mandibles, the throat, and the region of the vent, are among the weakest of its colour strongholds. Around the waist, the thighs, on the under tail coverts, and the flights and tail are also weak spots, and any tendency to run light in colour in any of these places must be checked at once, and the specimens in which the tendency appears mated only to birds perfectly sound and deep in tone on these areas. White flue, or white shafts in the feathers, or wholly white feathers in body, wings, or tail, are fatal defects to the self-Cinnamon character. These foul Cinnamons, as birds showing white feather are termed, may be used successfully for stock, but those that show white or run very light in colour on the thighs, throat, and vent must be used with great caution, as these faults taken in the order given are about the worst the Cinnamon breeder has to contend with. Heavy dark pencilling, smoky colour, or any tinge of green should also be avoided.

TO STRENGTHEN COLOUR.

Whenever there is a pronounced inclination on the Cinnamon side to throw white feathers and run light in tone generally, it should be corrected by the introduction of fresh blood, from a pure self-Cinnamon strain if possible, which is unrelated, and as sound and rich in depth of colour as possible, and showing the least possible tendency to sport white feathers. But when this kind of material is not available, and one is compelled to resort to alien blood to restore the declining colour, a rich self-green Norwich hen mated with a compact yellow Cinnamon cock, bred from pure Cinnamons for at least two generations, is the simplest and best first cross to provide the necessary material, as it gives less trouble, and is not so likely to sport unexpectedly on the Cinnamon side in future years. From this cross self-Cinnamons, which would be hens, may be produced at once, and the soundest and most typical of these from the Cinnamon standpoint, should be used to mate back to pure Cinnamon cocks. The Green cocks which will be produced from this cross will be invaluable colour fountains to improve colour and quality of feather in the Norwich. But these Greens should not be thrown over indiscriminately. It will repay the breeder to test them before disposal, as some of them when mated with self-Cinnamon hens, bred pure for at least two generations, will produce self-Cinnamons of the first water, and full of high-class Cinnamon characteristics, and will breed both male and female Cinnamons. Not all these Green first-cross cocks will produce these results, and herein lies the value of testing them all with the proper kind of self-Cinnamon hens before discarding them for further Cinnamon breeding.

"The Crest-bred cross has the tendency to produce long rough feathers."

PRESERVING SHAPE AND TYPE.

Occasionally the birds may begin to get weak in chest and slender in waist. This is most likely to occur when one is endeavouring to work up a strain of his own, and, consequently, is probably in-breeding a little too closely. But whatever the cause care should be taken to check the fault in good time, without resorting to an alien cross. Unless the first failings are neglected and the faults allowed to become of a very aggravated type there will be plenty of suitable birds of the necessary stout and cobby description required to correct these faults to be found among pure bred Cinnamons, with an occasional double-buff mating, to make an alien cross easily avoidable. In selecting birds in such a case do not be misled by mere size or length. Remember it is a question of shape rather than size that is under consideration, and do not be afraid to mate a moderate sized bird of the necessary substance and fulness of chest or waist as the case may be with a bird failing in these points. If the moderate sized bird is bred from good sized parents it will be far better than introducing any alien blood, and may produce young quite up to standard size. When an outside cross is introduced to remedy these defects, a large yellow, and very chubby, and close-feathered Norwich hen, with stout tail, should be selected, and mated to the cobbiest buff self-Cinnamon cock available. Always remember that when introducing alien blood the Cinnamons employed should be of undoubted purity, and pure Cinnamon bred for not less than two generations. From this cross the stoutest and chubbiest birds in chest and waist should be selected, and the Cinnamon hens mated back to pure bred self-Cinnamon cocks, and the Green cocks tried with pure Cinnamon hens in the same way as recommended in our last paragraph in the cross to improve the colour. All the progeny that do not show the necessary improvement in substance where it is most desired may be dispensed with, as one does not wish to infuse alien blood with no specific object in view, and in this case the absence of the required substance in chest and waist stultifies any such object.

THE CREST-BRED CROSS.

To obtain this desired improvement in chest and waist when birds are running weak in these points, and also increase the size, a cross with the Crest-bred is sometimes advised, and many novices have doubtless resorted to this cross to their sorrow. In our opinion it is altogether unnecessary and mischievous, and the cross with the Norwich Plainhead will not only give infinitely less trouble in future years, but will accomplish all that is desired. It is quite true that one can select a Crest-bred hen, close, smooth, and short-feathered, with a short tail, and poorly furnished head, showing no eyebrow—a mere wastrel from the Crest fancier's point of view—which would be just the type of Crest-bred to use if this cross is resorted to, but in such a hen there exists the innate tendency to produce young with profuse, long, rough feathers, long tails, and densely feathered heads, with projecting eye-brows, all of which are most objectionable points in the Cinnamon, and will give endless

trouble to breed out once they get implanted. That the hen we specially select for the cross shows none of these features is no criterion whatever that she will not endow her children and grand-children with them. The inborn properties are there, and, although they lie passive and dormant in this particular hen, the hereditary principle will rouse them into activity, and bring out one or more of those objectionable features in the progeny and their descendants for years after she herself has been discarded. Briefly, it is playing a game with edged tools and risking the introduction of several features which are not wanted, any one of which

"White feathers in wings or tail are fatal defects."

may require several years of patient work to breed out again; whereas with the Plainhead cross we can get all we want with none of these difficulties to contend with, and only just the same amount of care and attention to keep control over the colour.

ADVICE FOR THE NOVICE.

The novice or young beginner in the fancy is frequently warned to leave crossing and experiments severely alone if he wants to aspire quickly to, or maintain, a position as a successful exhibitor, and in no breed is the advice more valuable or worthy of respect than in the Cinnamon. The vagaries, and apparently inexplicable freaks, that arise immediately a cross is introduced are apt to produce endless confusion in his mind, and bring about effects in his stock which will exhaust years of plodding perseverance to obliterate. Therefore, in the Cinnamon above all other breeds, the beginner should avoid outside crosses as he would a

pestilence, and until he has gained a knowledge and mastery over the peculiar working of Cinnamon blood adhere rigidly to the pure unadulterated article for all changes of blood and revival of failing properties, leaving the introduction of alien blood to the old experienced hands who, having a wider knowledge and experience to guide them, are better able to grapple with and control its peculiar wanderings and effects. How then, one may ask, is the novice to acquire practical experience? Easily enough: by setting apart a small stud of a few pairs among which to conduct experiments and acquire practical knowledge, after thoroughly digesting the theory and practice given in Mr. North's valuable contributions to the subject, and those of other old and successful breeders. But let him keep this stud wholly apart from his exhibition and pure stock birds. Experiments, for experiments' sake, so long as they are not introduced indiscriminately into the whole of one's breeding or exhibition stock, are highly commendable for the invaluable knowledge and experience they furnish to a methodical breeder and close student; but, even so, the novice is oft-times all too rash and eager to rush into alien blood crosses to improve his stock and win a higher place in the exhibition world, only to find when too late that his expected progress has been a retrogression, and he is several years behind the position he had already attained before the foreign blood was introduced. A sound and wise maxim for the beginner is to adhere rigidly to purity of breed, and when a change of blood is required select it from pure bred birds, and leave outside crosses severely alone until a good knowledge and understanding of the effect likely to be produced have been acquired—first by reading up the experience of others, then by theory, prudently tested by practical experiments on a limited scale, when, if warranted by results, they may be generally added to the scope of one's operations.

SOME REMINISCENCES.

That old breeder Mr. C. E. Silk, of Emsworth, kindly contributes the following notes and reminiscences:—"The Cinnamon is a very peculiar variety of Canary, and one I have bred and studied for many years. I have bred and sold some of the finest specimens ever seen; notably the Yellow with which Mr. T. Heath twice won first at the Crystal Palace, and numerous other prizes. I also sent two of my young birds to Liverpool Show, where they met all comers, with 20 entries in the class, and were awarded special, first and second, and sold for £15. So I can speak with some authority about this variety. The first honour ever gained by me was with a Cinnamon. When I first commenced to breed this variety the type was very different from what we had a few years later. We had what used to be called the Northampton and Derby type. Then the craze came for size, and we had some big ones imported from the North, and round about Birmingham. I sent to my old friend, John Thackrey, who at that time was foremost in almost every variety—one of the best fanciers England ever possessed—and he sent me a big buff which I named the "Old Champion," and he won from one end of England

CLEAR AND BROKEN CAP LIZARDS.

to the other seven consecutive firsts one season. I mated him to the hens I then possessed, and from him bred some wonderful Cinnamons, including the aforementioned Yellow."

NOTES ON BREEDING.

"When breeding Cinnamons you must be careful to get your birds sound in colour. White thighs strictly avoid, as nothing is much harder to breed out than white thighs. Also be careful about white throats. These are very prevalent, and when you get them they are difficult to get rid of. I do not mind a white tail feather or two, as these are no trouble to breed out. In fact I have bred some good specimens that won many prizes from a white tailed hen. I do not know why it is the Cinnamons seem to lose favour with the public, as they are a very interesting variety and command a good price. What is handsomer than a good Yellow Cinnamon when well moulted and properly staged? I find Cinnamon hens often valuable mothers for bringing up other varieties. In breeding, size is a great advantage, but do not run away from quality, as a big Cinnamon cannot win without quality. Colour and quality are the two first things sought after by me in a Cinnamon, and a big washy-green bird I reject at any price. I like good sound Cinnamon colour with good quality, and as big as I can get them."

MR. W. DORMER'S ADVICE.

We are also indebted to that practical breeder Mr. W. Dormer, of Rishton, for the following notes and experiences on this variety. "The Cinnamon," he writes, "is a bird of colour. The colour should be a bright bronze or burnished gold, with chocolate markings, which should run round the eye and right down the breast and sides, right through to the tail. The markings round the eye are what I call the eye cere. If any markings occur on the back they should be of the same chocolate colour. The most objectionable colour in Cinnamons is the "smoky," or green, as it gives the bird a grey washed-out appearance when colour fed. I recommend anyone to study the colour first and then type. The Club Standard is Norwich type.

HOW TO CROSS.

If one has not much material to work with I would advise him to get a good large Norwich hen and pair up to the best coloured Cinnamon cock he has, and some of the hens from this pair will be Cinnamons or Cinnamon-marked. The cocks will be Greens. The hens are what one wants to work with, and the cocks may be discarded as of no use for Cinnamon breeding. But they will be very useful for putting quality in the Norwich Plainhead. The most interesting phase of the Cinnamon is that you can graft it on to any of the Canary tribe, but you cannot graft any of the dark-eyed varieties on to the Cinnamon. All Cinnamons have pink eyes. One of its peculiarities is that if you cross it with any other variety it may not show itself for a few generations, and then crop up, and the Cinnamon or Cinnamon-marked young will be hens. I have never known of a

Cinnamon cock being bred unless you have crossed a second time, as you cannot get a self-Cinnamon cock with less than 75 per cent. of Cinnamon blood.

"I have bred winners from the second cross, that is, pairing self-Cinnamon cock to Norwich hen, and then pairing the hens with a good self cock—one that you know has been self-bred for a few generations. By crossing in this way you will be liable to get birds with light throats and vents, which are very objectionable in show birds, and a lot of trouble to breed out. I do not object to a good stock

"To improve shape a chubby, short tailed yellow Norwich hen should be selected."

bird with light wings or tail, as I think they are stronger than the self, and am looking forward to the time when show officials will make classes for fowl Cinnamons, as not until then will they make the headway they deserve to do."

TO MOULT CINNAMONS.

"As regards colour-feeding Cinnamons, I use 7lbs. of cold feed to 1lb. of hot feed. I am not a great believer in hot feed, but I think this proportion keeps the birds warm, and they eat it quite as well or better than all cold feed, and the "hot" brightens the colour and fixes it, so that it does not fade so quickly as it does when they are fed solely on cold feed. There is one thing I would like to impress upon all: that is, to start colour-feeding early if you wish to be successful

on the show bench. Another small item which is often overlooked is that when the birds are finishing the moult you get a little short of colour feed, or, perhaps, get tired, and the colour feed is discontinued before the birds are properly finished, and then you cannot understand why the small feathers around the eyes and face are of a different colour to the feathers on the neck and body." *Verb. sap.*

THE CINNAMON ALIENS.

We have already shown the virile potency of Cinnamon blood, and the ease with which it may be transplanted to any other breed, retaining its own peculiar characteristics and refusing to amalgamate with or yield to the Green blood in its forward march, so that its trail is to be met in the majority of our distinct and recognised breeds. Indeed, no greater testimony can be paid to the immense popularity and beauty, as well as the strength and potency of the Cinnamon colour, than the extent to which it has been infused into other breeds, and its rapid rise to a foremost position as soon as the colour is implanted, and it becomes, as it were, a native of its newly-acquired territory. Yet the spread of its influence goes forward, and shows a tendency to expand and break up fresh regions of activity, that it is no extraordinary flight of imagination to foresee a future when the Cinnamon colour will become as universal as the dark or green blood, and find a place in every breed where markings are cultivated.

CINNAMON STANDARD OF PERFECTION.

We conclude our remarks on the Cinnamon Canary with a standard of points adopted at a meeting of the Cinnamon Club held at the Crystal Palace Show of 1909. The points which form a good type of Cinnamon Canary are:—

Colour, which should be a sound Cinnamon colour, not showing any sign of green shades on body or wings, or light feather under the vent.

Size and Shape.—A good type of Norwich Plainhead, but rather larger, stouter in body, and well set up, but not leggy, and with a well-shaped head, but not showing any eyebrows, which is a very bad fault in Cinnamons.

<i>Colour</i> .—Depth and purity	....	....	....	....	....	....	....	35
<i>Feather</i> .—Quality of feather	....	....	....	....	....	....	{ 15 }	25
Good wing carriage and compactness of tail	....	....	....	....	....	....	{ 10 }	
<i>Shape and Type</i>	....	....	....	....	....	....	....	20
<i>Size</i>	....	....	....	....	....	....	....	10
<i>Condition</i> .—Health and cleanliness	....	....	....	....	....	....	....	10

100

Negative qualities for which points are to be deducted :—Any green tinge ; cloudy or smoky colour ; heavy dark pencilling ; overhanging eye-brows ; light throats, thighs or vent. White feathers in wings, tail or body to disqualify for self classes.

CHAPTER XVII.

THE LIZARD CANARY.

ITS HISTORICAL RECORD.

AN old ancestral line, the antiquity of the Lizard is beyond all fear of doubt, and laboured argument concerning its probable origin, long lost as it has been in obscurity, is so much useless and profitless speculation, that we take the bird as we find it in the earliest days of which we possess more reliable and definite records of its breeding as a distinct variety, and, in this place, leave its origin reposing in the oblivion of the past. True, certain attempts have been made to construct a definite origin for the variety on the strength of some remarks of an early writer, who described certain birds as spotted wild Canaries, which he declared bred freely in confinement when caught. But as these supposed wild spotted Canaries were in all probability some of the Continental Serins we have referred to in a previous chapter, and probably also a somewhat far-fetched description, we are left just as deeply enshrouded in the maze of speculation. For if the theory was correct, it implies that the Lizard was the direct descendant of a wild Canary possessing this spotted plumage (which in our days is termed spangled) in, of course, a more primitive form than we find it in our highly cultivated Lizards. This being so one is naturally constrained to ask: Where is this wild spotted Canary to be found now? or when did it become extinct?

Its earliest history in this country is closely associated with the Huguenot refugees, who, flying from persecution in their native land, sought sanctuary on our shores, and introduced their hobbies to the English people. Canary breeding being a popular pastime among them, and the Lizards one of their most popular breeds, it is not surprising that we find distinct records of the bird's appearance simultaneously with the Huguenot settlers in many places in the Eastern Counties and where the weaving industries were located. Thus it is that we find the Lizard established as early as the 16th century in such centres as Nottingham, Middlesbrough, Norwich, and Spitalfields in London, the latter a centre of the silk weaving industry in those days. From these places it gradually spread northwards, finally becoming settled in Lancashire, where, particularly around Rochdale and Oldham, it has to this day its principal stronghold.

ANCESTRY AND NOMENCLATURE.

With a variety of such unique and striking characteristics it is our intention to allow our most experienced practical breeders and expert judges of the bird as it is, and as it should be, to speak for themselves, and, as their generous assistance has far exceeded the limit of our space (a well-deserved tribute to the good-fellowship and freemasonry existing among them) we must introduce them to our readers without further preamble. "This charming variety," writes Mr. Barker

"OUR CANARIES"

YELLOW BELGIAN CANARY.

Clegg, of Manchester, "may well be termed the aristocrat of the Canary family, its ancestry dating back to a very remote time. It was known in this country 200 years ago, and we have authentic information that it has been bred in similar form and character over a century. Its name, doubtless from the spangling of its plumage, we may fairly assume was taken from the reptile of that name. Early in the last century they were bred in large numbers by the weavers of Spitalfields, and the birds found their way Northwards with the commerce to Nottingham, Derby, Leicester, Lancashire, Newcastle, and Durham. Forty years ago we found them well-established in many parts of the country, both North and South, and being exhibited with the same properties and characters as we see them to-day."

THE LIZARD CHARACTERISTICS.

"The ideal bird is the 'clear-cap.' We must have a large head, otherwise it is impossible to display what is termed a good thumb-nail cap; not narrow in front, but even width, no corners, and with a fine dark lash over the eye. Broken-Caps or Non-Caps were at one time discarded as exhibition specimens. Yet these birds have fought their way into recognition, for season after season we find the most distinct and profuse spangling of highest quality in the Broken Caps. Hence when the classification is left open we frequently see the Broken Cap beating the Clear-Cap."

"The spangling, work, mooning, rowing, or creeling, is formed by the lapping or folding of the feathers on the back. Here again it is necessary to have a good wide back that will show to advantage an abundance of work. The Silvers generally exhibit a much bolder mooning than the Golds, and the cocks more than the hens. The spangles should be clear and distinct, standing out well in clearness and definition, being largest in the centre of back, and gradually decreasing in size, but retaining all their clearness and distinct outline, right on to the butts of the wings, and down to the meeting of the wing tips above the tail. In the Non-Caps some beautiful work is shown, extending right from the beak, forming in a creel and developing into rows in lovely order."

THE BREAST WORK.

"This is the lacing, which sometimes is very profuse. Breeders now pay great attention to this necessary adornment, and the more you can get of it, well-defined, and extending down the breast, along the sides and waist and on to the thighs, the better your chance of winning. The wings and tail must be dark, the rib of the feathers being black right down to the base, and the webs shading in harmony with the coverts, and the general ground colour in both Golds and Silvers—the coverts and wings forming an artistic finish to the spangle. A good rich ground colour is a most desirable quality, and must be sound throughout, the feathers fine in texture, dense in volume, and fitting the bird like wax. The legs and beak should be dark: this is a point which may decide an award and is worth noting. Size is very desirable in a good bird, but it is not imperative.

"Many really good specimens are bred with slight defects which ruin their chances as show birds. A white face: very often on one side, occasionally on both; that is, when light feathers extend in front of the eye to the base of the beak. Over-capped: the cap spreading to, or just below the eye, or extending backwards below the base of the skull, and often in an irregular form. Light-sided below the wing, breast and waist. Void of lacing; white wing and tail feathers, or probably the outer webs are light. These imperfections put the birds out in keen competition, although their other qualifications may be excellent. Nevertheless these birds may make grand stock birds, and, with judicious mating, produce future winners."

MR. F. W. BAKER'S COMMENTS.

For the following valuable notes our thanks are due to that erstwhile skilled and successful breeder, Mr. F. W. Baker, of Shaw. "I am convinced after many years breeding of this, and many other varieties of Canaries, that the Lizard is the most interesting and beautiful of the Canary tribe. One's deepest interest is centred in the bird from the moment the pleasant 'chip-chip' is heard after its release from the shell until the time when the youngster shall have moulted its last feather, and solved the uncertainty as to whether the deep dark rowing shall bloom out into a nice bright distinct spangle, or whether it shall still remain a rowed or laced specimen only, or whether the rowing shall disappear, as it were, behind a cloud. It is only a one-year show bird, but this should be an extra incentive to the amateur to take up this variety. For, providing he procures birds of a reliable strain, in taking up this variety the amateur stands practically on the same ground at the commencement of the breeding season as the champion breeders and exhibitors of the previous season. Few birds have been known to moult out a second year fit to compete with the young stock. There are a few exceptions but they only prove the rule.

"In selecting stock for breeding purposes choose the largest and broadest backed birds, for without width of body it is impossible to get a sufficient quantity of those beautiful rows of spangles thereon, whilst only birds with a good ground colour, and nice bright black wings, tail and spangling, should be selected. Whatever you do, avoid birds with a 'grizzled,' or grey, wing and tail, and a dull muddy spangle."

COMPARATIVE VIRTUES AND FAILINGS.

"I would much rather breed from a bird with a white feather or two in the wing or tail—the remainder being black—than the above. Some breeders object to the latter: I would not; as it is far easier to breed out white feathers by using broken-capped stock than it is to breed out the 'grizzled' wing and tail. It is usual to pair a Silver cock to a Gold hen or a Gold cock to a Silver hen. Some breeders to obtain size pair two Silvers together. I have only tried this a few

times with the result that I did obtain size, but with it a great amount of feather. Consequently, I considered the experiment on each occasion a failure, and prefer the usual method of pairing Silvers to Golds, taking care always to select the largest birds to keep size up to the maximum. It is usual to pair a clear-cap bird to a broken-cap one, or if you had a bird that was over-capped it would be necessary to select as a mate for it one that was devoid of cap, or had very little light feather on the head. This would tend to balance matters and in almost every case you would produce both clear and broken-caps from such a union, and you will produce few, if any, white or bald faces, or white feathers in wings and tail.

"Through pairing all clear-capped birds you produce over-capped, bald-faced, and pied wings and tails."

"I should like to impress on the minds of intending fanciers of this variety, the fallacy of the craze for all clear-capped birds for stock purposes, for in pursuing this craze there is nothing but failure awaiting you. If you want to breed good Lizards you must use an abundance of broken-capped stock birds; otherwise you will obtain a superabundance of over-capped, bald-faced, and pied winged and tailed birds which will prove worse than a pest in your aviaries.

"Size is of much importance in the Lizard of to-day, but the difficulty of breeding good, big birds has yet to be overcome. In a big Lizard one difficulty seems always to appear, viz., great length of feather, and where you find great

length of feather you *don't* usually find the distinct spangle and rowing which should be the predominating feature."

BREEDING EXHIBITION SPECIMENS.

Mr. J. Hampshire, of Oldham, gives some dissimilar experience, notably in the results obtained from mating two Silvers together, which system is equivalent to double-buffing in other varieties, and, apart from its effect upon the all-important markings of the Lizard, must inevitably bring about similar results, the most pronounced of which consist of increased size and substance of body, together with longer and more profuse plumage. But as Mr. Hampshire has been most successful, and shown good, large, outstanding specimens, especially in Silvers, for some seasons past, his remarks must naturally carry weight. "I will explain my selections," he writes, "in the way I bred my 'Silver King.' This bird took all before him in his second year; had a good third moult, and was sire to the Champion Silver of last season [1909-10]. In mating my stock to produce a good exhibition Silver Lizard I choose the largest clear-cap Gold cock—what I term a bronze in ground colour—with good dark wings and tail, one that has some large mooning or spangling, and good dark covert feathers on butts of wings. I mate him with a large broken-capped Silver hen; one that has got a good back full of spots and creeling or spangling, which is inclined to be a little V-shaped—the darker these spots are the better, but they must be finished off with a nice silvery fringe, and rowing as near as possible in parallel lines down its back and sides of breast, etc. In trying to produce a Gold fit for the show bench, I mate a broken-cap Silver cock as large as possible, one that is inclined to be rather hard in colour, and has proved himself an exhibition specimen. This I mate to a Gold hen, which is in every respect a racy lady, but be careful always, if possible, to mate an old cock to a young hen, as I believe that we gain size from the cock, and quality of feather from the hen. I am not a believer in breeding with two Golds, as I think it means losing size, also causes the birds to throw out too much creeling; whereas we want good big spots on a large and bold-looking specimen."

BREEDING WITH TWO SILVERS.

"In reference to double Silver breeding I have made rather more headway by it than by double-Golding. The first time I tried it I gained a little more size, but they were very cloudy, scarcely any spangling visible, and had a few white feathers in tail, so I sold them for London Fancy breeding. However, I determined to try Silvers again, and was more successful, for I got a clear-cap Silver hen which was 3rd in an open class amongst the cocks, also from the same nest a good dark Silver cock which was completely devoid of cap; he got a card in same class. The first time this bird moulted through he was as clear a buff as ever you saw. There is not even the dark underflue to be seen. I have had two nests of

young from a wing-marked Norwich hen, and this clear buff Lizard cock. Some are marked on body with almost the Lizard wing markings, one of them is slightly ticked on side of head, with one pure Lizard wing, the remainder of the bird being almost clear."

THE LIZARD AS IT SHOULD BE.

As our expert collaborators naturally write of the bird in a somewhat technical manner where its principal features are concerned, we will, before proceeding further, give a brief summary of the points of the ideal Lizard. Owing to the extreme difficulty of combining the more essential features of colour and markings with large size, the breed has hitherto always kept on the small side, and is now but a trifle larger than the Border Fancy, and considerably smaller than the Norwich—a good specimen probably measuring not more than $5\frac{3}{4}$ ins. over all. The shape also is a compromise between the two breeds named, the Lizard being decidedly less stoutly built in proportion to its size than the Norwich, and a little more chubby than the Border Fancy. It is, however, a shapely and well-proportioned bird all over, and stands well across the perch, in an alert and graceful position. In the ground colour there are the two types common to all varieties—yellow and buff, which are here termed Golds and Silvers, respectively; which again are synonymous with the terms "jonque" and "mealy" of olden days, though these ancient terms are still much used in some Northern localities, and in some places the term "grey" is applied to the Silvers. Therefore the terms "yellow," "jonque," and "gold" mean one and the same thing, as also do the terms "buff," "mealy," "silver" and "grey."

COLOUR AND CAP.

The ground colour of the Gold Lizard should be a rich deep orange-yellow, or golden-bronze, free from any tinge of green or suspicion of cloudiness, smokiness, or mossiness. In the Silver it should be of a pure silvery grey, as silvery as possible in the grey, and as free from cloudiness or smoky hue as a typical Gold. The cap is the area of plumage covering the skull of the bird extending from the beak along the sides as low as, but not encroaching upon, the upper margin of the eye-lash, and ending in an easy sweep across the base of the skull. In the clear-capped bird this area must be a rich pure gold or silver, as the case may be, and perfectly free from the least speck of dark colour. The edges should be even and well-defined, and the whole cap somewhat similar in shape to the nail of a man's thumb—hence the appreciative, if somewhat technical, term, a "good thumb-nail cap." A broken-capped bird is one in which this area is more or less encroached upon by dark colour. If marked by the slightest speck of dark colour it will suffice to constitute a "broken-cap," whilst if there remains but a distinct trace of light colour it will still be relegated to the same class. But when the light colour is absent altogether, and the skull totally dark-hued, the bird will become a non-

capped specimen. Sometimes the light cap runs on to the lores—the space between eye and beak—when it is termed “bald-faced”—an extremely bad fault, and difficult to eradicate. In a bird marred with the fault of being “over-capped” the light colour may extend below the base of the skull, and spread more or less upon the neck, or it may spread downwards below the upper margin of the eye-lash on one or both sides. The eye-lash, or cere, must be dark, and the dark eye-lash over the eye should always form a streak of dark colour between the eye and the light colour of the cap. Legs, feet and beak should also be dark.

THE MARKINGS.

The spangling or “mooning,” as the old fanciers called it, consists of numerous small, black, somewhat triangular-shaped spots, as black as possible in colour, and standing out as sharp and clear in outline and definition as possible, and arranged in regular lines, commencing at the termination of the cap and running parallel right down the back to the commencement of the tail. The individual spots should be smallest at the top of the neck and gradually increase in size and boldness as they run downwards over the back. Each spot and each line should be separate and distinct, without fuzziness or divergence of the lines, to which is applied the terms “linable,” “rowing” and “creeling.” On the sides the spangling should commence on the butts of the wings, and be profuse, bold and large; and the large feathers of the wings and tail should be as black and lustrous as possible right down to the base of the quill, and fringed on the outer edges with gold or silver, as the case may be. This light fringe of colour on the wing butts and larger feathers is termed the lacing. The breast which must be full and broad should be sound and deep in ground colour, without any signs of running light at the throat or waist, and clearly and boldly spangled, the dark spangling running down the sides in distinct lines or rows, as on the back. The underflue, or that portion of the feather at the end nearest the root generally called the fluff or flue, should be as dark as possible, and of a dull blue-black shade. The general plumage in all respects as rich and lustrous in sheen, short and close-fitting as can be obtained.

ITS POPULARITY.

Such is the typical Lizard. Of its popularity and claims to greater attention we will let one of its enthusiastic breeders speak. “In asking ourselves why the Lizard is not so great a favourite as other varieties,” writes Mr. W. P. Barnes, of Grantham, “we are led to consider two main points:—(1) The period of its show dress; (2) the encouragement afforded it on the show bench. In considering the first of these, we know that after the first year’s moult its flights and tail feathers become fringed with a silver edging, and though it still retains its value in the breeding room, it can never be afforded a place on the show bench. With regard to the second point which, perhaps, is the more important one, as it does not affect

"Cage the young birds which have good wings and tails separately."

all Lizard lovers alike, I hope I shall not be considered presumptuous in expressing a hope that greater encouragement will be extended those who are compelled to live outside the cotton manufacturing area. In the county Palatine the shows are usually held every week-end during the season, and those happy dwellers in the neighbourhood can take their birds and be there at the close of the show, whereas exhibitors at a distance may have to send their birds on the Thursday, and probably do not see them again until the following Monday. It is unreasonable to suppose a bird will withstand the strain of this arduous travelling, or that a true

bird lover will care to run the risk of losing birds which have cost him so much care and attention. Then again, when we examine the provincial schedules we often find that the only class in which a Lizard may compete is the 'any other variety of Canary or Mule,' and what does this multitudinous variety embrace? — Belgians, Scotch Fancy, Cinnamons, Crests, Foul Greens, Border Fancy, Even-Marks, Foul Cinnamons, and several Hybrids, and if the judge has not had a wide experience in the various breeds he will find it extremely difficult to give credit where credit is due. This, I believe, is the reason the Lizard is not so popular as in former years, and I look for the day when it will become universally popular, and not restricted, as now, to one or two localities."

1. Broken-cap. 2. Over-capped. 3. Under-capped.
4. Bald-faced. 5. Patch-capped.

To the novice about to start in the Lizard fancy Mr. J. Dewsnap's advice is both terse and sound, and the outcome of much practical experience. In selecting a pair of stock birds to attempt to produce good winning specimens it does not necessarily follow that the most typical show specimens will give the best results. "Go to a reliable breeder," says Mr. Dewsnap, "and select the best ground colour it is possible to get, as it is no use having a good spangled back with a bad ground colour. Get a clear-cap Gold cock and a broken-cap Silver hen, or a broken-cap

Silver cock and a clear-cap Gold hen, as large as possible, but avoid a hard green tinge, as you cannot breed good Lizards from them. See that they have that soft silky feather which is so important in a good Lizard."

Equally pointed is the advice to the beginner given us by Mr. J. Rukin, of Rawtenstall. "The Lizard," he writes, "allows no crossing to increase size, or to obtain any other particular point. Cross it with any other variety and you lose at once practically every point worth consideration. The best way of mating Lizards is to pair Gold and Silver together—this fact cannot be too strongly insisted upon, as most beginners in this variety take a fancy to either the Golds or Silvers, and when buying stock insist upon having a pair of Golds or a pair of Silvers, as the case may be. A green tinge in the ground colour is a serious blemish. The spangling should commence well up in the neck, increasing in size to the wing coverts, each row of spangling being separate and distinct, and clear and linable down the back."

TO PRODUCE GOOD CAPS.

"In breeding for a good cap, the best way is to mate a clear-cap cock and a broken-cap hen together, as by doing this you stand a good chance of getting a good clear-capped bird or two, and at the same time avoid getting bald faces and over-capped birds. If a bird has a long cap, running well into the neck, mate it with a bird with a very short cap, or one without a cap. In case of a bird with a narrow skull mate it with the widest skulled bird you can get, as birds with a narrow or pinched skull are not much use on the show bench. Whilst on the subject of the cap, there is one fault in Lizards which requires close attention—*i.e.* being bald-faced, when the cap extends below the eye and gives the bird the appearance of wearing spectacles. This type of bird should never be bred from, as once this fault gets into a strain it is extremely difficult to get rid of. A white or 'bald' face in a Lizard should be a disqualification.

"Be very chary of breeding with birds that show a hollow in middle of the back, as they have a tendency to show a split, as it were, down the centre of the back and spoil an otherwise good bird. A fault in some strains of Lizards is throwing an occasional white feather in wing or tail, the remainder of the wing and tail feathers being good black. If such a bird is good in its black and spangling I should not reject it, but pair it with a non-capped bird, and this would rectify matters. I have mentioned the use of non-capped birds, as they are favourites of mine, and invaluable in a breeding room. Such birds often excel in spangle and ground colour, and are often good show birds. One Gold hen of mine, 'The Queen,' which won Championship Diploma for Best Lizard at the Crystal Palace, in 1908, was bred from two broken-capped birds."

REMINISCENCES OF OLD STRAINS.

For the following interesting paper on this breed and recollections of the past generation, we are indebted to Mr. Levi Butterworth. "When I was a youngster," he writes, "I often heard my grandfather speak about breeding Canaries when he was young. Had he been living now he would have been many years over a hundred. The variety he kept he called 'mooned 'uns,' which I found later were Lizards. For when I commenced to breed Lizards forty-three years ago I fetched him to look at my first nest of three young ones when ready for leaving the nest. The moment he saw them he said: 'Why, they are 'mooned 'uns' and grand 'uns' too.' I asked him why he called them 'mooned 'uns.' 'Why, when they moult,' he said, 'their backs will be full of 'moons.' I said, 'They call them Spangled Lizards now.' 'That may be,' he replied, 'but we called them 'mooned 'uns' in my Canary breeding days.' He further informed me that the cap was the chief property, and that it was very rare to see a 'mooned 'un' with a very good cap at the time he was breeding them. When I first commenced to breed Canaries there was a certain strain of Lizard known as the lemon-jonque on account of the pale yellow cap somewhat the colour of a lemon, and in its nest feathers had a back full of straight narrow rowing. After the first moult the colour of the cap and the edges of the small feathers were of the same pale yellow colour. The Spangle being not nearly so distinct as that of the orange-coloured variety breeders saw that it stood no chance on the show bench, and so refused to breed with it and the strain died out."

AN OLD AND ILL-FAVoured STRAIN.

"About the same time there was another strain known as the flat or hollow-backed Lizard. This bird had large distinct Spangling, or 'moons,' as we called them, distributed all over the back and not in straight rows as in the Lizard of to-day. This class of bird had very often a parting of the feathers, or split, down the centre of the back, and very rarely got 'in the money' at any show. The variety gradually became scarcer until it has now almost died out, like the lemon-jonque.

OLD-TIME EXHIBITING.

"There are many different shades of colour in Lizards, but I have had the best results from pairing a deep coloured Gold cock with a very light coloured Silver hen. By light coloured I do not mean cloudy, but that the light fringes on the feathers should be very white or silvery. Or I mate a light Silver hen to a very dark Gold cock. In either case the spangling should be as distinct and as large as possible.

"In the olden times Lizards were shown in the open-wire Lancashire show cage. At that time All-England Shows were few and far between, and it was only when All-England Shows became more common that the Lizard was

shown in the box-cage. The birds are much steadier in the box-cage and therefore easier to judge. When I first began to exhibit there were no classes for broken-capped Lizards. It was due in a great measure to the L. and L.F.A. that classes were provided for broken-capped birds at All-England Shows. I remember at some of the early meetings of this Society there were many heated discussions about providing classes for broken-caps, some arguing that many of the best birds were among the broken-caps, whilst others thought we should recognise only the perfect bird. But in the end classes were provided for broken-caps. At the time I am speaking of the broken-capped Lizards, even at local shows, were relegated to the variety class together with the Ticked Copsy, the Belgian, Scotch Fancy, and some others."

THE STANDARD OF PERFECTION.

We have already in the course of our remarks described in detail the negative properties of the Lizard, and points which disqualify a bird for show competition, and also explained the technical terms in common use for describing the several features of this highly-specialised and technical breed. We therefore close this chapter with the standard of perfection issued by the Lancashire and Lizard Fanciers' Association.

THE LIZARD.

Cap—for size and regularity	....	....	....	....	....	....	....	10
Ground Colour	....	....	....	....	....	....	....	15
Eye Lash	....	....	....	....	....	....	....	5
Spangle	....	....	....	....	....	....	....	30
Wings and Tail	....	....	....	....	....	....	....	10
Size	....	....	....	....	....	....	....	10
Lacing and Covert Feathers on Wings—for size and regularity	....	....	....	....	....	....	....	5
Breast—for rowing or lacing	....	....	....	....	....	....	....	5
Beaks, Legs, and Feet—for darkness	....	....	....	....	....	....	....	5
Condition—health, etc.	....	....	....	....	....	....	....	5
								<u>100</u>

EXHIBITION LONDON FANCY CANARIES OF THE PRESENT TIME.

CHAPTER XVIII.

THE LONDON FANCY.

ALAS! one might almost say a relic of the past—in no sense “a nameless wight,” but in many respects a name without an objective. For the name exists and is so often before the Fancy that like a treasured memory very few fanciers, even of the briefest experience, will be found who are not familiar with it, but of the bird itself, to whom it is a birthright, exceedingly few have a “nodding acquaintance” with it, and the vast majority have scarcely, if ever, set eyes upon the living reality; yet in the olden days, from fifty to a hundred years ago, it was so well known and commonly kept by Canary breeders as to be known simply by the name of “The Fancy Canary.” It is also found among the very earliest distinct varieties cultivated with a definite object. Thus, a very old work, published as long ago as 1779, gives a detailed description of what a Fancy Canary should be, which clearly applies to the London Fancy as we now term it. Indeed, the simple term Fancy Canary persisted right down to the middle of the nineteenth century, and is so described in a lengthy article on the subject which appeared in the *Illustrated London News* at the close of 1846. At this time the variety must have reached the zenith of its fame, and had no less than eight Societies in the Metropolis to foster its cultivation, and offer prizes for competition at their annual shows. Chief among these Societies seem to have been the “Royal,” “Friendly,” “Hand in Hand,” and “Amateurs”; the two principal shows of the year being held by the Royal Society at the Gray’s Inn Coffee House during the last week in November, and the Friendly at the British Coffee House in Cockspur Street during the first week in December, these annual events being invariably wound up by a dinner and social evening held by the members of the various Societies.

ITS SHROUDED ORIGIN.

We feel tempted to say that too much has already been written of vain probings and profitless speculations concerning its origin. That knowledge was never preserved for posterity; therefore neither will such speculations gratify our desire for light on the subject, nor probably assist our descendants to resuscitate the breed. That the early pioneers left the sheet of record so utterly blank, and, furthermore, that the numerous bodies of fanciers which, as we have just shown, existed in later times should have preserved no connected record of their transactions, or any account of the progressive changes which their efforts must have effected in the appearance of the birds; should indeed have left so trifling an account of the birds themselves and their methods of breeding them, is a matter for sincere regret. But we must not blame these pioneers lest we blame them unjustly. The days of education for the masses had not then dawned, and the person who could so much as make a decipherable hieroglyphic of his name was

"OUR CANARIES"

SELF GREEN CRESTED CANARY.

the rare exception, whilst the general rule was found to exist in the primitive stage of not being able, as the oldest rustics of to-day forcibly put it, to "tell a B from a Bull's foot." Had such unhappy conditions existed until our times we should in all probability have left as little imprint of our work for future generations as the old fanciers of other times have bequeathed to us. We have at least the satisfaction of knowing that these patient and skilful breeders systematically cultivated and brought to a high degree of perfection just those varieties which are now sadly neglected, and, it is to be feared, for no better reason than that they are commonly considered to be more difficult to breed in anything approaching an ideal type than the more popular varieties of to-day.

And yet the Lizard with which it is so obviously related by the closest ties of blood kinship (and the young of both varieties possess practically the same phenomena of development from hatching to maturity as to leave no reasonable doubt that both come from a common stock)

LONDON FANCY COCK & HEN.

From an old work published 1858.

still has a fair amount of popularity, and sufficient supporters to make its extinction appear as a remote contingency. Why this should be so is difficult to surmise when we reflect that the popularity of the Lizards obtains chiefly among the weavers of the Cottonopolis to whom the birds drifted in the old days, as we have already shown, from the silk weavers of the Western and Southern Counties, and as will presently be seen were looked upon as an inferior class of birds by the London breeders when the "Spangleback," as the London Fancy was frequently termed, was valued as the prime favourite for show purposes. In those days the perfectly clear-bodied London Fancy seems to have been quite the exception, and not the rule, as popular opinion is apt to aver. Most of the best birds showed more or less dark spangling which required the greatest care to keep under control, and eventually eradicate. This fact alone in conjunction with the comparatively little value attached to the

Lizards proper as show birds at the time offers a certain amount of circumstantial evidence that the London Fancy was in reality a more highly-bred and cultivated type emanating from the Lizard. The difficulty of obliterating the markings on the body, and the strongly-marked tendency of all light-plumaged varieties to revert back to the green or dark plumage as soon as the control and supervision of the breeder is relaxed, leaves us with no reasonable doubt that this was the case, and not, as some have suggested, that the reverse happened and the Lizard was nothing more than a degenerate type of the London Fancy.

SIMILARITY OF THE NESTLINGS.

That both these varieties, however, originated from a common stock is abundantly proved by the striking similarity of the young in their immature plumage, and another point in favour of the Lizard being the primitive type is found in the fact that when the London Fancy had reached its highest state of perfection a change was already beginning to come over the immature plumage, and it was no uncommon thing for the young to leave the nest with more or less light plumage upon the body; whereas tradition leads us to believe that it invariably left the nest in the olden days with wholly dark body feathers similar to the Lizard, the only difference, as the writer of the article in 1846 already referred to tells us, being that the young of the London Fancy were of a brownish hue, whilst the dark coat of the young Lizard was set off by a gloss of fine grey similar to the effect of light upon an antique bronze, the legs and beak also being dark coloured in both varieties. In common with the Lizard it also possesses the peculiarity of being "an annual," or retaining its correct show plumage for one year only—that is, between the time of its first and second moultings. When it leaves the nest the whole of the large wing and tail feathers should be as black as possible, and the smaller feathers all over the body—technically known as the contour feather—are of a greenish-bronze colour, though as we have already said in later times birds had begun to leave their nests with patches of light-coloured contour plumage. At the first moult which takes place when the birds are from eight to twelve weeks old the contour plumage only is shed and replaced by a rich yellow or buff plumage—more frequently termed "jonque" and "mealy" respectively, in this variety. Very frequently this plumage retained spots of dark colour scattered about the body, particularly upon the back, which gave rise to the term "Spangle-backs." The wing and tail feathers not being shed at the first moult remained in the original black colour, and formed the most important feature of the ideal show bird. But when the second moult occurs in the following Autumn the wing and tail feathers are shed with the others, and are now reproduced either wholly or very largely of a light colour, and the bird loses the one essential feature which constitutes it an exhibition specimen. It is no longer of any use as a show bird, but still retains its usefulness in the breeding cage, and produces the dark-

hued progeny so utterly dissimilar to itself in appearance which go through the same cycle of curious phenomena ere arriving at the stage occupied by the almost or entirely clear birds which have gone through their show career and been duly relegated to the breeding room.

THE IDEAL LONDON FANCY.

In size it is a small bird, about $5\frac{1}{2}$ ins. to $5\frac{3}{4}$ ins. in total length. It should possess some substance of body, but not be so thick-set and chubby as the Norwich; have a bold semi-erect position, standing slightly more upright than the Norwich, but in no sense approaching the upright carriage or slimness of the Yorkshire; the breast should be moderately full and broad; the back, broad; the legs, moderately short; the wings neatly carried and close to the body, the tips just meeting, but not crossing on the upper tail coverts; and the tail short and compact. In colour the wings and tail should be as black as possible, and the whole of the body from the top of the head which was often referred to as the cap, over the neck, breast, shoulders, saddle, and loins, a rich, deep orange, as free from spangling, or dark specks, as possible. In the mealies the rich yellow, or jonque, is given a frosted, or mealy, appearance by silvery white tips and margins to the feathers, the same as we find in the buff birds of other varieties. The feet, legs, and beak, should be dark. The underflue, or soft fluffy portion at the basal half of the feather, is an important feature in the London Fancy. It should be dark in all cases; that of the jonque being of blue-black hue, and a very dark slate-blue in the mealies.

POINTS FOR BREEDERS.

In the present condition of the London Fancy it would be invidious to write at length upon faults which should be avoided in mating up stock for breeding. Indeed, the prestige of the breed is in such a perilous condition that we must of necessity take it as we find it. It appeals to our sporting instincts no less than our æsthetic tastes, and if its silent plea must in substance be the simple "just as I am," let our response for the sake of its old associations be an equivalent of the disinterested term "with all thy faults I love thee still." Indeed, with such a dearth of material to work there is no room left for the rejection of any pure bred stock, and it may even be an absolute necessity to introduce alien blood to make suitable stock before the London Fancy can again become in any sense a numerically strong or a popular variety. That being the case, pure bred birds, even when they have rather serious faults, cannot be lightly dispensed with. On the contrary they must be taken at their true value, which will be found chiefly in a knowledge of their pedigree, and later on in a knowledge of their influence in the breeding room as to whether it goes in the direction of stamping their own failings persistently upon nearly the whole of their progeny, or reproduces it in an exaggerated form, or whether, as will be the case in many instances, the fault is more or less obliterated by the influence of the mate, which will, of course, be

specially selected as excelling as far as possible in the features in which the other bird fails. Only in cases where the fault is so serious as to approach the nature of a fatal blemish, and is propagated throughout the successive broods of young with any sort of mate, should a pure bred bird be wholly discarded until the breed once more reaches a stage when one can afford to reject specimens by having a much larger selection at command than obtains at the present day.

RESUSCITATING THE BREED.

In making new material to infuse fresh blood into the breed, the Lizard, which already possesses so much in common with it, undoubtedly affords the greatest chances of success. Here we already have the innate tendency to produce the

"They are good parents, attending well to their young."

most desirable feature—the black wings and tail—and also the "annual" characteristics, and although the spangling is a serious obstacle to contend with, that it could be bred out of the London Fancy again just as surely as our fore-fathers eradicated it in evolving the latest type of bird from the older Spangle-backs, admits of no

reasonable doubt. But the introduction of the Lizard should not be made direct. A clear yellow Norwich hen, or a lightly wing-marked, or dark-tailed bird which is light in flue, bred from an undoubted strain of Even-marks should be selected and mated to a Silver Lizard as sound as possible in wings and tail, and if it is over-capped, bald-faced, or moulted out very light in body, so much the better. The progeny of this pair will contain some more or less solid dark winged and tailed birds with more or less variegation on the body. From among them should be selected the soundest wing and tail coloured hens with the clearest bodies and the variegation broken up into the smallest patches, resembling more the spangles of the Lizard than the patches of variegation

"Many from the best blood are Spangled-backed."

common to the Norwich—in short, the specimens that come nearest in external appearance to the old Spangle-back London Fancies, are the birds that one requires for use. These should be mated with pure bred London Fancy cocks as free from ticking as possible, and sound in wings and tail. The progeny of the pair which come nearest to the London Fancy type must again be selected and mated back to pure bred London Fancies bred from pure parents. Both cocks and hens of this cross may be employed, and as there will for this reason probably be a greater number of birds to select from, one will be able to discard as useless for the work in hand all those showing distinct patches rather than spots or specks of variegation about the head, neck, breast or back.

THE SECOND CROSS.

In mating these first cross London Fancy—Lizard-Norwich back to the London Fancy, one should be careful to select only pure bred London Fancies for the purpose, and as clear in body as possible. One of the young hens might with every advantage be mated back to the London Fancy cock—its own male parent—as this will go far to give the London Fancy blood predominance in the progeny, and as there will be no question of prior relationship between these birds, this close breeding may on such a special occasion be entered into without the least fear of any physical degeneration. Under this regime, notwithstanding the weeding out of unsuitable and variegated birds in the first few seasons, Spangle-backs must be expected to re-appear in some numbers, and these must be kept under control, as far as possible, by mating them with the clearest bodied birds that are at one's disposal.

FIXING THE POINTS.

It will be quite possible to obtain the initial working material by the opposite colour mating—*i.e.*, a buff Norwich, of the description given above, to a Gold Lizard cock; but by the other method we shall get more size, which is needed in the London Fancy, and probably also have to encounter a less difficult task in subduing variegation and spangling in the first two or three seasons afterwards. When the birds have been bred back to a fairly constant type if the wings and tail begin to fail in colour an occasional mating of two birds with spangles or specks of colour on the back or shoulders should be resorted to, to correct the failing, or a second introduction of Lizard blood may become necessary, which is a much more tedious and troublesome method. Still, it is a method that may have to be resorted to more than once—or at least by a number of persons—before the breed again reaches that happy position when it would be practically independent of any alien blood.

One important point which cannot be too quickly recognised if the London Fancy is to regain its fallen laurels is that the imperfect type—if so we can justly term the specimen showing small ticks or spangles on the back—must be given a

The material suggested to resuscitate the London Fancy Canary.

greater amount of encouragement in the future than it appears to have met with when the last attempts were made to revive and popularise the breed. The perfect bird only was recognised as the ideal show specimen and when classes were provided at shows the spangled birds had to compete with the ideal type, with, consequently, the flimsiest chances of success so long as there were a sufficient number of pure clear-bodied birds to take the honours. Therefore the Spangles were so severely handicapped during the short show season that the clear-bodied type was perhaps far too energetically striven after by breeders. For it must be remembered that good sound coloured flue and wings and tail were invariably associated with the spangling, just as the highest degree of perfection in spangling may be looked for among the broken-capped or non-capped Lizards, and the craze for producing the greatest possible number of clear-bodied birds must inevitably cause a certain amount of deterioration of those essential features. This is a point to which breeders must pay heed, and although it may require some sacrifice at the beginning, classes must be guaranteed where the breed is catered for to enable the spangled birds to compete on equal terms in separate classes of their own.

VIEWS OF A MODERN BREEDER.

We append some interesting notes kindly contributed by Mr. A. G. Filby, of Ealing Common, one of the best known modern breeders of the London Fancy. "On the occasion of the Jubilee Show at the Crystal Palace in 1909," he writes, "*Cage Birds* published a group of winners of fifty years ago (1859) and to-day (1909). Among the group is a London Fancy and there appears but little difference in the two birds. The modern bird is perhaps a little stouter, and more upright on the perch, and not quite so clear in body. A very general idea is that the bird is not strong. That may have been correct 30 years ago, but it is far from being true to-day. Another idea is that unless a bird has *always* black wings and tail, and a clear body, it is not a pure London Fancy; yet a clear bird may be just as pure as a show specimen. For instance: A bird may be from the same nest as a perfect show specimen but have a white tail, and after its second moult is a clear bird.

STRANGE EXPERIENCES.

But the show specimen would also have moulted light; again another nest-mate may be dark and spangled, and never moult light at all, which some would call a half-bred Lizard, but it is in reality just as pure as the winner. Last year I bred a very heavily spangled hen in this way, and no Lizard blood had been used for 14 or 15 years. In 1892 there was a London Fancy club in existence, but unfortunately it went the way of predecessors. I remember about this time visiting an enthusiastic breeder's room and seeing his stock—he had a large one—but his birds were much more spangled and altogether darker than those of to-day, and more compact in build.

"Referring to various catalogues, including the Crystal Palace of 1892 up till 1900, I find the following exhibitors: Messrs. Attridge, Clarke, Cross, Filby,

Gloag, Lockney, Mann, Mather, Needham, Rainbow, Robson, Sawyer, Slater, Stokes, Verrell, and Vincent, who in the eight years exhibited something like 200 specimens between them, the greatest number in any one year being 33 in 1897.

DECLINING DAYS.

During this period many good ones were exhibited. Then followed a period of oblivion, no classes being provided till 1907, when the L.C.B.A. gave two classes and also in the two following years 1908 and 1909, and at the Jubilee Show under the L.P.O.S. at the Crystal Palace a class was provided, and the total in these classes was 26, owned by Miss Gibbons, Messrs. Barker Clegg, Filby, Tyson, and Rev. Wilton. The birds of the present day are much about where they were in 1899, with this important exception, that the bodies are much clearer, and they

Mr. Filby's Ideal London Fancy.

are certainly stronger. In the Spring of 1909, I sold a pair to a fancier in Leicester, who put them in an outdoor aviary where they reared young, and when writing to me the following year he said, 'All the birds have wintered well outside, in fact have done much better than my Norwich birds.' And a fancier in Dublin, to whom I sent a pair, says, 'They are evidently much stronger than those of about 25 years ago.'

"At the present time there must be about 100 specimens in existence, scat-

tered about in various districts :—London, Lancashire, Leicestershire, Gloucester, Lowestoft, Lincolnshire, Yorkshire, Dublin, and Ross-shire; the number of fanciers breeding them being so far as I can gather a dozen. It has never, during the last 30 or 40 years at any rate, been taken up by many breeders; the fact of its being essentially a fancier's bird, and a one season show bird, may be against it. Yet what interest there is almost from the time the egg chips; through the fledging and moulting time, watching the dark feathers go and the light ones come; until at last one sees the perfect picture of black and gold.

"In pairing I prefer to select for clear body first, as I find that more difficult to obtain than the dark wings and tail. It is more trouble to get the dark out than to increase it. I prefer jonque and mealy, but often pair two mealies. I ring all

birds as soon as possible. As soon as they leave the nest it is safest to remove into cages out of reach in case of plucking, and let the parents start another nest while finishing off the first lot. As soon as they can feed themselves cage the birds with good wings and tails separately, the others go into the flight, so that some of them get six months in it.

"I have crossed with the Lizard and find that it takes years to breed out the spangles owing to the dark blood being so persistent. I have had birds that have been bred pure for the last fifteen years throw as dark as a Lizard. I have also crossed London Fancy with Clear Norwich in 1905 and paired the young back to London Fancy in 1906, the result being some fit for exhibition. In 1896 London Fancy paired to Lizard; in 1897 the young paired back to London Fancy, and resulting young paired again in 1898 to pure London Fancy, gave me in 1899 a gem which proved a most successful show bird. I very seldom, if ever, have any trouble with them. They are very good parents, attending well to their duties. The only thing one has to be careful about is plucking their young."

STANDARD OF POINTS FOR JUDGING.

Appended we give a standard of perfection for the guidance of breeders of the London Fancy Canary.

THE LONDON FANCY.						Points.
Colour :	For richness and depth of Yellow	...	...	...	...	5
Clearness :	Clear throughout the body of the bird	...	...	...	...	20
Cap :	Clear and broad	...	...	...	...	5
Wings and Tail :	For depth of black home to the quill ; containing not less than 18 flight feathers in each wing and 12 in the tail	...	...	...	...	30
Pinions and Wing Coverts :	For blackness	...	...	...	...	15
Flue :	For blackness	...	...	...	...	5
Size :	For largeness in conjunction with type	...	...	...	...	5
Legs, Nails, and Beak :	(Two birds meeting of otherwise equal merit preference to be given to dark legs, nails and beak)	...	...	...	...	5
Condition	...	...	...	...	...	10
						<hr/> 100

If jonque and mealy be equal preference to be given to the jonque.

Negative Points : No bird shall be considered a fair show specimen that has a feather without black in mid-rib or web in flights or tail ; entire white feathers in wings or tail ; entire white feathers in wing coverts or pinions ; deficiency of wing or tail feathers ; crippled claws, twisted nails, or malformed beak ; cap broken ; or wings crossed at tips.

CHAPTER XIX.

THE CREST AND CREST-BRED.

THAT the Crested Canary is a bird of ancient lineage we have already amply shown by its inclusion in the list of known varieties published by Hervieux. But whether in those early days it was treated as a separate and distinct variety in combination with its ally the Crest-bred, complete and perfect all its points, is not known, and, indeed, is a matter that is exceedingly doubtful. In those days it was in all probability in the most embryonic stage of development, rare in occurrence, and the purest of freaks—a mere “top-knotted” sport which would occur from time to time from the ordinary type bred for singing. From an occasional sport of this kind in the early days have doubtless arisen all the crests we have since seen evolved, of which our present day Lancashire Coppies and Norwich Crests—or *the* Crest as we prefer to call it—are but a trifling portion. For crested specimens, or varieties, have been known at one period or another of the historical times of the Fancy amongst all the principal breeds we now cultivate. The Belgian, Scotch Fancy, Cinnamon, German, and the Border Fancy in the days when it was a simple nondescript known as the Common Canary, have all contributed more or less their quota of crested specimens. But if we go backward about half-a-century we find the Norwich type of Crested Canary standing apart from the Norwich Plainhead as a recognised distinct and separate breed, though inter-bred with its own plainheaded ally the Crest-bred as is now the rule. Even in those comparatively recent times the variety was vastly inferior to the present type—a small, compact, and tightly feathered bird, with a neat, daisy-shaped crest adorning its head. The resemblance in general shape and style of the crest to a well-blown flower of the old-fashioned double garden daisy was sufficiently pronounced to warrant the term “daisy” crests which was later applied to the old style of crest.

THE OLD TYPE.

Upon the rise and development of the present type we will let that experienced breeder of the bird, Mr. J. H. Scothern, of Nottingham, speak for himself. He writes:—“My experience with Crests dates back thirty years. At that time the majority of Crest fanciers were viewing the introduction of Lancashire blood with very grave concern, for, previous to this innovation, the crests that had held the field were of the small daisy pattern, thinly imbricated, small in area, neat and hairy, carried on a body not exceeding six inches in length, or even less, closely and shortly feathered, silky in texture, rich in colour, closely fitting garments, the body being moulded true to the best traditions of the Norwich type, which was much more diminutive, closer and harder feathered than is the accepted Norwich Plainhead of to-day. Even a whisper of an outside cross was *anathema*

to the old-time fancier. It is therefore easy to judge of the surprise and disgust these fanciers felt when they heard of the audacious enterprise of some daring breeders who had made a raid upon Lancashire blood, and had dared to *contaminate* the hitherto unsullied purity of the Norwich Crest. What indignation was aroused, what resentment was created, what prejudice was called into being, what active opposition was directed against the newly-introduced interloper and usurper for the new arrival was bidding strongly for the laurel wreaths that, up to that period, had been the undisputed trophy of the "*thoroughbreds*." There was a deep-rooted prejudice which the new comer had to encounter and overcome, but he was

fast clothing himself for the fray, he was making such rapid improvement in his personal equipment, and especially in the main point—*his headgear*—that his claims became undeniable, and it was early recognised that he was bound to win."

THE DAISY CREST WITH NEAT NORWICH BODY.

THE MODERN CREATION.

"He did win! He made such a triumphant march of progress within a comparatively few years that he conquered by leaps and bounds. His popularity became irresistible. His financial value increased by at least a hundred times its former value.

"What a difference since the 70's and 80's! It was about 1879 when two birds, the most advanced representatives of the new cross, were entered at Nottingham Show. Lovely buff light Crests they were, incomparably in advance of any that had previously been exhibited in Nottingham, but, alas, they were too much in advance of their time, and were therefore disqualified as being too much like Coppies. Their crests were perfectly clear in colour, smooth backs, correct centres, very long frontals, rather flat on top, and a shade nipped at back; but, oh! such beauties. They were entered by a Mr. Thompson, of Lancaster. So deep was the impression they created in my mind that I could never forget the name or the incident."

A TRAIN OF NOTABLES.

"About 1883, Mr. Bastock, of Birmingham, held the field with a lovely one called 'Sunshine,' and quickly following came a host of good ones. Mr. Pine's grand clear Crest-bred 'Devastation'; Messrs. Mackley's 'Prince of Wales', 'King of Champions'; Mr. Heath's 'Belgrave Hero'; Mr. Tranmer's 'Scarboro' King'; Mr. Toward's 'King of the Season'; and a whole list of champions bred by Mr. F. W. Barnett. I remember handling one of Mr. Barnett's winners at the Palace some years since. I think it was called 'Emperor of Champions.' The 'sweep' of its crest was marvellous, round and well dipped, thickly thatched, and oh! what a frontal; we measured the length of the frontal feathers with a decimal gauge, and they measured exactly thirteen-sixteenths of an inch in length from the centre of the crest to the end, which lay well over the tip of the beak.

"Some very beautiful yellow Crests have appeared. Occasional specimens have been endowed with an enormous wealth of feather, little inferior in length and density to the best buffs. Whilst the yellow Crest-breds have been truly gigantic for size of body, profusion of feather and general massiveness, visions of Mr. Bowyer's 'Moorland King' and many others flash across my mind. The memory of such birds prompts me to state, that had a more general system of matching yellow and buff together—instead of the too prevalent one of double-buffing—been adopted, the results would have been even happier than they have been."

"In the Crest-bred avoid a large beak also a flat head."

"The system of double-buffing has been responsible for the squeezing out of the yellows. The effect has been that fewer good yellow birds have been bred, fewer classes provided, and a gradual decadence of size and feather for a number of years. So keen was the desire for massive crests, and length of feather in buffs, that—clinging to the deep-rooted idea that only from buffs could this great length of feather be got—yellows became very much neglected, except in some few and rare cases, and yet some of the largest buff Crests that ever graced the show bench were obtained from parents of whom one was a yellow. It is also undeniable that progeny bred after this fashion almost invariably excelled in richness of colour and silkiness of feather."

THE TYPICAL BIRDS AND SOME FAILINGS.

In the course of an interesting paper the Rev. David Dickson in briefly describing the ideal bird incidentally mentions some of its commonest failings and their effects. In his own words the ideal type for the Crest is a bird:—"standing well on its legs on perch; deep round chest, with wings well set; tail medium length; head round, nicely arched, with crest radiating from a small centre over

VARIEGATED NORWICH PLAINHEADS.

the beak which should be short. Defects: Flat head; it is impossible to get a graceful radiation from this type. 'Horned,' that is feathers standing out and turning up at the back of the crest. Pinched front, crest narrow in front, widening backwards. Scarcity of feather at back of head and neck. Crest-bred should have same qualities of size and quality as Crest. The important feature in this bird is his head feather which should be as long as possible so that when turned over the beak it should reach well over the tip. It should have a good brow and width between the eyes. Defects: Flat head, pinched front, long beak. Much of the after-results will depend upon the selection of foundation stock. The massive Crests of to-day are largely the result of a wise intermixture with the Lancashire Coppy. But success can only be reached after several crosses. It takes time to eradicate the Coppy type and retain what is best for the attainment of a typical Norwich specimen. There is no need to start with the Coppy as there are plenty of really good birds which have been produced through inter-breeding and some of the initial and trying years may be avoided."

PRINCIPLES OF MATCHING.

"In Crest breeding it is necessary to pair Crest and Crest-bred—that is a Plainhead bred from parents one of which is a Crest—together. The Crest-bred is required in order to maintain formation and radiation of crest. To pair two Crests continuously together would result in deterioration of crest and reversion to type. Double-crests may be bred for one year with good results, but this could not be continued with advantage.

"In mating it should always be borne in mind that defects must be counter-balanced by excellencies. Where one bird is weak in crest, size, type or quality, the other should be strong in these, and so compensation will result. To pair two birds similarly defective will only aggravate the weakness. In Crests and Crest-breds it has been customary to breed double-buff. This gives quantity of feather, but Nature has her limits in this respect. I have found that the introduction of yellow has been most beneficial in quality of feather. Yellow has a refining influence, and when wisely used is productive of the most pleasing results."

IN-BREEDING.

"In-breeding is an important matter. There is no doubt that up to a point a certain amount of in-breeding may be found advantageous, but the breeder who wishes to build up a sound, strong, vigorous stock will resort to this sparingly. My own experience is that when birds have been mated for some time closely related there has been a distinct deterioration in stamina, and I believe this to be largely responsible for blindness and other defects which trouble fanciers. I have found in certain strains of my own stock which had been in-bred that several of the youngsters developed not only blindness but tumours. I have had some of these tumours removed as large as a small marble from head, neck and other parts. Close-in-breeding is followed by its natural nemesis."

IMPROVING LEADING FEATURES.

For the following notes our thanks are due to that enthusiastic Crest breeder, Mr. G. C. Ley, Nottingham. Taking these features in the order Mr. Ley puts them : (1) Length of feather and substance of body ; (2) breadth of feather ; (3) substance of crest feather ; and (4) quality of feather ; we give the salient points in his own words. "The novice," he writes, "will find the following methods instructive and interesting. To increase length of feather and substance of body double-buff twice from known pedigree stock with Crests and Crest-breds, the second time with *cousins*. This entails putting together two pairs, using two brothers or two sisters to obtain cousins for the second time of matching. When selecting avoid the Crest with thin hairy feather, and horny at the back of the head. In the Crest-bred avoid a bird with a large beak, also a flat head with no prominence above the root of the bill ; in other words select the Crest-bred with a forehead. You will now find the best young from the cousins have gained both length of feather and increased substance of body and head. Having now got these two added points you must also have an eye to the next point—breadth of feather. This is one of the most important items for an exhibition Crest, consequently the following particulars should be carefully noted. A wide crest feather with a beautiful vein and soft texture is obtained by matching together two greens. There are three classes of greens, jonque or yellow green, buff green, which is bred from jonque green and buff, and mealy green, which is bred from double-buffs and is of a dull colour showing a lot of meal. This is the class of green for matching together to obtain breadth, vein and soft texture of feather. Care must be taken at this stage not to match together green bred from yellow blood, and note my remarks on what to avoid in matching up for length of feather. Now we come to the

SUBSTANCE OF CREST FEATHER.

"This is a point of vital importance to the inexperienced breeder, and in many cases the end of his career as a Crest fancier through his young birds deteriorating in quality each season for want of substance of feather. This is produced by matching together and breeding from two Crests. Here we have one of the secrets of success or failure, and my foregoing remarks on length and breadth of feather should be carefully thought out before double-Crest breeding. The birds for this purpose must be as perfect in good points as it is possible to select them from your young stock. Neither of them must have the same failings or it will become intensified and consolidated in their progeny. For instance, two light Crests ; their young will for generations afterwards breed a preponderance of light Crests. By the same rule two large beaks, two with horns, or two with thin hairy feather will, when double-Crest breeding, perpetuate points good, bad or indifferent in their young for generations. You have now made your own strain, and must use care with new blood to get the next point—quality of feather.

"Bloom and richness of feather are added by next matching up with a yellow. The three foregoing stages will have taught the novice the value of true pedigree. To ensure the success of your efforts there must be no doubt about your yellow blood. One very important point to remember is that you have already by double-buffing and breeding from cousins and double-greens *been establishing small beaks*. This is one of the secrets of success in Crest breeding. The characteristics of the yellow are vigour, large beak, hardness of feather, and a great tendency to produce hairy crest feather, which is a fatal fault on the show bench. In selecting your yellow give away size of body for smallness of beak if you cannot obtain both good points together. You have already bred size in your buff. Be sure, above all things, of the pedigree, and if possible secure a clear yellow and match to a buff-green of your own strain. You should then produce some clear body dark Crests. The yellows from this cross will be invaluable to you for in-breeding your own yellow blood, but care should be taken not to overdo it; otherwise you will defeat your own object of breeding for breadth of feather; buff, bred from yellow and buff, should be matched with buff, bred from double buffs, for quality of feather, but two buffs from yellow will again reduce width of feather."

Avoid the Crest with thin hairy feathers, and horny at back.

DOUBLE-CREST BREEDING.

It is specially interesting to note here Mr. T. C. Heath's experience in double-Crest breeding. Writing upon the subject in *Cage Birds* in 1904, he says: "I do not think any leading Crest fancier of the present day can do without pairing Crest and Crest together every few generations. The frequency of this pairing two Crests together must be left to the judgment of the fancier. In pairing two Crests together judgment in pairing up goes a long way. The birds that you use for this purpose should have nice smooth crests, with good centre and formation, and the feather not too dense, bred from parents with corresponding good points; the better the frontal crest the more chance you have of producing good show Crests. You will not only improve your crested stock by pairing up in this way, but you will get a much larger number of Crests than you do Crest-breds, which should be a great advantage, as a Crest will always fetch three or four times as much as a Crest-bred."

"I will give one (out of many) instances of my breeding from double-Crests.

I PAIRED UP

Clear body dark crested buff cock,
bred from double Crests.

Heavily variegated Crest-bred hen, bred
from dark crested cock and Crest-
bred hen.

NEXT YEAR I PAIRED AS FOLLOWS.

The Crest-bred cock as above.

Dark crested buff hen, bred from a
Crest-bred cock and grey crested
hen (Show bird).

NEXT YEAR I PAIRED AS FOLLOWS.

Dark crested cock, not the best of the
two above mentioned, but a prize
winner at the Palace.

Dark crested buff hen, lightly marked.
She had a very neat, smooth round
crest, and won 1st in pair class at
Crystal Palace.

This bird had not been double
Crested for 4 or 5 years, as far as I
could go back.

RESULT.

Lightly marked Crest-bred buff cock.
This was not a show bird, but with long
head feather and narrow skull.

RESULT.

From this pair I bred 2 grand Dark
Crests, the best one of the two
winning at every Show it went to
both in England and Scotland, and
including Crystal Palace and Dundee.

RESULT.

From this pair, I had one nest of four
Crests, two clear bodies, and two
slightly marked on one wing; all
four grand show birds, and all of
them won on the bench in the
keenest competition. This nest
alone was in those days worth £70
to £80.

"I carried some of this double-Cresting on further, but I found I had gone far enough, as the birds commenced to get rough in head feather, with large centres and bare places at the back of head.

"Supposing a fancier has been breeding Crests for some time I should recommend him to pair two really good Crests together as previously described, and from this, select the best crested cock and pair him with a long feathered Crest-bred hen from a Crest and Crest-bred. After this one must use judgment, as it so much depends upon the results of the first cross—this will also mainly depend upon the stock they have been bred from; one must not expect to get good results from birds one has bought, unless you can *thoroughly rely* upon the fancier you have purchased from to give you the correct information as to how the birds have been bred, or have seen the parents."

ANOTHER VIEW OF IT.

Mr. J. S. Clarke, of Woodford Green, also contributes some remarks on this subject. "Double-cresting," he writes, "may be resorted to occasionally should your birds continue to produce an undue proportion of Crest-breds. Once is sufficient; there is no advantage to be gained by repeatedly double-cresting, and

the ill effects of so doing are many, chief amongst them being roughness of crest and loss of radiation, baldness at back of skull, and last and worst of all it tends to produce running sores or ulcers on the heads of the young birds so bred."

THE USE OF THE CREST-BRED.

"In pointing out the evils of double-cresting," he continues, "the use of the Crest-bred will be clearly appreciated. He, or she, as the case may be, is responsible for the close laying of the feather, its shape and radiation. Without him, or her, there would be no Crested Canaries. It is difficult at times to get *natural* smoothness of crest, more especially in the better-class birds, which have very dense and lengthy head feather, and whilst legitimate dressing and preparation is allowed, it is as well to try and breed your birds as near the Show standard as possible rather than to rely on the cleverness of your fingers. The Lancashire Coppy is most useful at times even to-day, these birds having very neat backs, good centres and neat radiation. It saves much time, however, if a first or second cross bird is obtained; you get your results much quicker in that way.

"To the beginner I would say most emphatically: Buy your birds from one breeder. Birds from different strains seldom 'hit.' Be sure the vendor has a well-established strain. If you purchase a pair of birds from a breeder who possesses an established strain, you commence where he leaves off. It is most unlikely that he has kept anything but his best birds for many years. Consequently the pair he elects to sell you may possibly produce as good or better young ones than those he keeps for himself."

ORTHODOXY FOR THE NOVICE.

We have thus shown a variety of opinions on the matter of departing from the usual method of mating Crest-bred with Crest in favour of putting together two crested birds. It must not, however, be taken as a universally safe rule to follow. In the vast majority of cases the inexperienced beginner must curb his inclinations to plunge into these experimental matings until he has gained knowledge and is fully conversant with his stock and their innate strong points or weaknesses. For although these matings cannot properly be termed of an experimental character in the hands of an experienced breeder, who knows to a nicety what to expect from them, in the hands of the novice with, perhaps, the minimum of knowledge of the pedigree of his stock, they become experimental in every sense of the word, and frequently of the most haphazard description. Even the most expert breeder would never dream of applying the rule of double-crest mating throughout his stock, nor of continuing it from year to year. Always there must be some definite purpose for it, as when the proportion of crested birds among the young shows a pronounced falling off from year to year. For all general purposes the orthodox method of mating Crest with Crest-bred should be adhered to. When it has been found necessary to breed with double-crests it must not be forgotten that the Crest-breds which will come of this mating are of even greater

value for stock purposes than the Crests. They will prove of the utmost value to mate back in the ordinary manner to crested birds. The typical Crest-bred should be a good large massively built bird, with the correct Bullfinch-shaped body, a short tail, and a wide, round, densely feathered head, a dome-shaped skull, and a short stout beak. Length and breadth of head feather is at once the first and most essential feature in the Crest-bred, and the breeder who wishes to produce those immense and shapely crests seen on the best birds of to-day cannot pay too much heed to the development of these features nor be too careful when he elects to depart from fundamental laws. Whilst fully appreciating and giving due weight to the value of double-crested he must never make it the Alpha and Omega of his operations. Judiciously carried out in certain circumstances, as we have shown, it is an invaluable auxiliary used in reaching the top rung of the ladder—a pinnacle, as it were, which adds the final touch of beauty to the structure, which yet owes all its real value and stability to the solid foundation which is built and must be chiefly upheld upon the combination of Crest and Crest-bred matings.

TYPES OF CRESTS.

Although the ideal crest of to-day is of the round daisy-shape, it must not be assumed that this is the only shape that occurs among good exhibition stock. On the contrary, there are at least two other shapes besides the circular one which are to be found on good well-bred birds and often full of quality in themselves. There is the oval-shaped crest, which shows a distinctly greater diameter from back to front than from side to side; and the shield-shape which runs off more or less flat and square-cut across the back of the head and narrow in front. Both these crests may often be found good enough to carry off honours on the show bench. But they must have good radiation and droop, and perfect centres, to enable them to hold their own in open competition, whereas in these types of crests such faults as narrow heads, pinched fronts, splits, and badly formed centres are very apt to ruin the bird's chances of ever being a show specimen.

The bird known as "mop" crest, never is a show bird, being often a mass of dense crest feathers without either shape, droop, or radiation, and scarcely a well-defined centre. Such birds will come from a mating of two Crests, and when paired up again with Crest-breds with plenty of broad, dense, and long head feather and nice smooth heads make eminently useful stock birds, and often produce young of the highest quality. A rather deceptive type of crest for the novice is one that is flat and spreading. It may possess a good centre and radiate well all round, and has the appearance of being much larger than is really the case. What may on first sight appear to be a crest of very fair proportions upon being compared with a very moderate sized crest which shows plenty of droop will be found decidedly smaller than the drooped crest when the feathers of the latter are spread out flat for fair comparison.

The usual method of pairing is a Crest to a Crest-bred.

COMPENSATORY MATINGS.

All these faults must be compensated by superlative merit when selecting a partner for any given bird in the breeding-cage. The mop-crest being, as a rule, brimful of Crest blood will make a good partner to compensate somewhat scanty head feather in an otherwise good, massive, and broad-skulled Crest-bred—such a bird as appears almost faultless, having a perfect shaped skull of large size and good wide entrance, with good lashing, but when handled is found to be a trifle lacking in density of feather on the skull. A flat expansive crest should be mated with a heavily-feathered and well-lashed Crest-bred having a massive dome-shaped skull, and as dense in head feather as possible. If such a Crest-bred is bred from two well drooped Crests so much the better. A Crest-bred showing a good wide entrance and a wide back making the outline of the skull as round as possible should be selected as a mate for the oval-shaped Crest, and will also prove a useful mate for the shield-crest. Such Crest-breds should possess a dense cushion of plumage on the skull sufficient to give a pronounced forehead or rise over the base of the beak.

A second cross from the Lancashire Coppy will frequently prove of the greatest value in correcting these faults when one is short of suitable material. This we say advisedly, for the breeder, and especially the beginner whose experience must necessarily be limited, must never lose sight of the fact that indiscriminate crossing is always to be deprecated, and that in these days the Lancashire has much less to give to the Crested Canary of to-day than was the case when it was first made use of. Indeed, there is growing up a strong feeling, and one that is not void of good reason and evidence to support it, that the Crest to-day, with its own ally the Crest-bred, contains within itself all the elements necessary for its breeding and to keep up its ideal qualities without any outside assistance. Consequently it is most injudicious to turn to an outside cross as a remedy for any or every failing. The initial steps should be to find suitable material from among pure bred Crests and Crest-breds. That every requisite may be thus found admits of no doubt, but if it should prove wholly unavailable by the particular breeder who desires it, then only should he fall back upon an external cross as a last resource. Even then he may discreetly save one or two seasons by getting ready-made material in the shape of first or second crosses, as may be required, provided he can make himself satisfied that the right sort of raw material was used in the making.

AVOIDING HEREDITARY FAULTS.

In all these cases of selecting suitable partners to correct faulty points it is of the utmost importance that the birds selected, which will naturally excel as much as possible in the points they are desired to improve, should be quite free from any inherited tendency to the same fault. Not only is it essential that they themselves should excel in certain features, but their parents also must have been quite

free from any fault in those particular points, and if the same condition can be carried back and equally apply to the grandparents on either side it will add enormously to the value of the selected bird, as there will be comparatively very little risk of its possessing any hereditary tendency to the fault in question, and its merits in that respect will prove of the greatest possible value, together with a corresponding increase in its powers of transmitting its own good points to its progeny. As a case in point we will suppose we have a Crest with a pinched frontal or an oval crest for which we wish to select a Crest-bred with a wide, full entrance, and stout short beak, densely feathered dome-shaped skull, well furnished with a thick cushion of feathers, and as round in outline as possible. Before deciding we should take care to see that it is not an exceptionally good bird which has turned up as a sport, or "throw-back," among a lot of mediocre brethren and sisters, and that its parents were both free from any tendency to pinched fronts, narrow skulls or entrance, or flat heads, long beaks, or thinly furnished heads at the front. They should in short be as strong in the points one wishes to correct as the bird itself which is selected for the purpose, and similarly with the grandparents on either side.

The growth of the modern Crest fancy and the perfecting of its Crest qualities are not quite without a note of sadness. For a great sacrifice has been made of colour and markings in the craze for other essential Crest qualities—a sacrifice which has hitherto appeared to be wholly disregarded or not appreciated by many, save the old breeders who knew all the charm of these vanished points in the old-time Norwich Crest before the craze for size and feather began. Markings have been almost entirely unheeded, and the strikingly handsome even-wing-marked dark Crests are practically visions of the past, and the yellows have lost all the charm of the rich deep orange yellow which was the birthright of the Norwich in its crested as well as its plainheaded variety. The clear-body dark Crest seems the only variety that, as a type of marking, has retained a hold on fanciers through all these changes. Happily there is an awakening in store for Crest fanciers. Already considerable interest is being displayed in the direction of improving the yellows, and this we are convinced is but a forerunner of a new desire to give the added charm of typical markings and a richer tone of colour to the beautiful feathery bodies and huge crests which are now so well established. The revival of these features in the present day type of Crests and Crest-breds must, and will, give a great impetus to the interest in, and popularity of, the Crest.

BREEDING YELLOW CRESTS.

We have to thank Mr. G. Colledge, of Derby, for the following notes of his experiences in breeding yellow Crests. "It is often said," he writes, "that the introduction of yellows once in three years is sufficient unless we wish to get thin, short, hairy feather, which is no use whatever in the production of a good yellow or buff Crest. The great majority avoid yellow blood as the greatest drawback to

the production of good Crests. The general idea is that to breed winners one must pair two buffs, until this mode of procedure has given the variety the appearance of being washed-out, or feathers as coarse as hempen yarn. But after experimenting with yellows for a number of years I can state from experience that champions can be produced from matings of yellow and buff year after year. The very best and largest buffs I have exhibited have been bred in this way. The late 'Daisy,' winner of 22 firsts, came from second year yellow and buff mating. 'Perfect Surprise,' which used to beat buffs, beating the late noted 'Eclipse,' was second cross from yellows and buffs. Seeing that it was possible by judicious selection to utilise the yellows and still maintain size, I tried again by pairing for the third season a very large clear buff Crest-bred cock, second cross from Coppy, to a jonque green Crest hen, second cross Lancashire. The result was beyond my expectations, as from this pair came some of the largest and most densely feathered birds I ever bred—real giants. In the fourth season I again mated a yellow; a Crest hen from this strain to a Crest-bred cock, bred from two Crests, with dense, broad, veiny head feather. From this pair came one with a thick, dense, heavy front, and good centre and back."

A COMMON FAILING.

"The one great difficulty is to keep a good back on yellow Crests. This can be done in two ways. Get a Coppy hen, double-coppy bred, and mate to a good green crested cock. Then utilise the Crest-bred hens from this cross to mate with yellow Crests. Another method, which has given me excellent results is mating a good buff Coppy to a good thick yellow Crest-bred hen. Then the following season mate those which come with the Coppy-Crest (yellows) to good buff crested cock. Remember always that if we mean to breed birds of exceptional merit in yellows we must mate the largest birds which possess the coarsest feather. By this method we can easily retain size and substance, which is essential to carry off the First and Special at Crest Club shows. The yellow Coppy-crested hens from first cross mated to a buff Crest cock have given me some grand exhibition birds. At this stage I feared I had gone far enough with yellow blood and decided to put up only one pair from the old strain of yellows. I mated a yellow-green cock to a large buff lightly marked hen. Every buff in this strain descended from yellows, and the hen mated to the yellow-green possessed as much 'meal' as most Norwich. From this pair I got only one bird to live, and this turned out to be the 1908 Bristol Bowl winner, First and Special Nottingham, etc., and this after five consecutive seasons with the use of yellow blood, and, owing to the frequent use of Lancashire blood, plenty of substance retained to the end."

Mr. W. Evins, of Evins Bros., of Exeter, gives us their methods of breeding out faults which occur more or less in every stud, and incidentally gives their experience and opinion on the question of breeding from yellows, which, by the way, are strongly confirmed by the systematic practical experiments of

Mr. Colledge as related above. Mr. Evins writes:—"To breed an ideal specimen of the Crested Canary is an achievement to be proud of. It is most difficult to produce a large, neat, well-radiating crest. The majority come imperfect, many being open at the back and tilted, or having bad centres, split fronts or running centres, whilst others are horned, have mop crests or running sores on the head, and very scant in feather.

"To improve the young from Crests which are bald at the back a cross with a Lancashire Plainhead would have good results. But the young are likely to be smaller in crest and short in frontal. It is better to pair with a Crest-bred that has been bred from stock possessing full back crests and has a broad skull, densely clothed at the back, with no suspicion of an open spot. Crests with bad centres if kept for stock should be mated with Crest-breds that have been bred from Crests with small neat centres. 'Horns' is a very bad fault, and usually found on heads which are long, flat on top, and narrow. They are caused by feathers growing awry from just below the ears towards and through the back of crest instead of down the sides of the neck. The Crest-bred to improve this fault must be short in head, which should be as round as possible, and the neck full and thickly feathered and as clean-cut as a Norwich Plainhead. Many fanciers strive after size of crest only, and in gaining this point lose formation. Birds with a lot of loose body feather, rough wings, and a generally ragged appearance, are prone to produce roughness in the crests of their progeny. Therefore the wings and tail should be short and compact, and a superabundance of loose body feather avoided.

VALUE OF THE YELLOWS.

"Much more attention should be given to yellows. They are of great value in toning down roughness of feather, and producing that dark mid-rib in the feathers of the crest which is so essential. The kind of yellow to use is a large, well-feathered, broad-chested, and big-boned bird. Small, thinly feathered yellows are not to be recommended, as the young from them will deteriorate in size and feather. Having secured a suitable yellow mate it with a buff with an excess of body feathers. If the yellow is a Crest-bred it will not matter if its crested mate is a trifle rough in crest feather if there is plenty of it. When you put together what you consider a first-rate pair (yellow and buff) do not be surprised if the majority of their young ones are disappointing and practically wasters in appearance. This is the interesting part of yellow breeding. Amongst these poor-looking specimens you are more than likely to have a gem of the first water. Always try to mate a yellow with a bird that has been double-buffed for four or five years. If more fanciers would breed for yellows there is no reason why the birds should not in time be as large in body and in crest as the buffs of to-day.

"As we have already said, the marked varieties of Crests and Crest-breds have long been out of favour and neglected, notwithstanding that the even-marked dark-crest was the very acme of beauty—the dark crest and markings giving, as it were,

the last touch of charm to an already noble and beautiful bird. The difficulty of breeding these birds is very great, and has given rise to a general belief among the modern school of fanciers that the one with which they are most familiar—the clear-body dark-crest—was merely a sport, and could not be bred by any known and reliable system—a wholly unfounded belief, though it must be admitted there is no royal road by which the goal may be reached with certainty. But we are as yet only at the beginning of the new era of re-establishing markings and variations upon the modern bird which has been evolved from the old type—markings which were judiciously, perhaps even necessarily, quite ignored during the up-building of the fabric upon which they must now be implanted anew. This disregard of a set type of markings has produced a bird with such variable traits that it is no uncommon thing to find every bird produced in a brood of a different class of marking. From a clear-body dark-crest mated to a clear Crest-bred we have had in a brood of four a clear Crest-bred, a dark-capped Crest-bred with one tick on body, a variegated dark-crest, and a clear-body yellow Crest, and this experience is by no means unique.”

HOW IT MAY BE DONE.

Writing on this subject Mr. H. Mills, of Northampton, says:—“ Breeding for such varieties as the clear-body dark-crest, wing-marked dark-crest, or dark-capped and clear-bodied Crest-bred, requires close observation to see how the birds ‘throw.’ Some will ‘throw’ lightly marked birds; others nearly all green. Green blood and clear blood are both required to produce the clear-body dark-crest. To begin pair a clear-crested cock with a green Crest-bred hen; or a grizzle-crested cock with a green Crest-bred hen; or a green-capped hen may be mated with a lightly marked cock. To breed a show specimen you must keep the length of head feather. I once paired a two-wing-marked dark-crested cock with a green Crest-bred hen that bred in one season a clear-body cock that won several prizes; a two-wing-marked dark-crest; two variegated birds; a grizzle-crest; and two green Crest-breds, that all won prizes for me. I once tried the experiment of pairing two Crest-breds—a dark-capped Crest-bred cock and a clear yellow Crest-bred hen. I had two clear hens from them—one yellow and the other buff. I paired the yellow with a green-crested cock, and in the first nest I had a clear-body dark-crest. In the next nest I had three clear body dark-crests, all hens, and not one of them fit for the show bench, but useful stock birds. I remember a fancier of our town buying a clear yellow Crest-bred hen that had been double-Crest-bred for years to pair with a good Crest cock, and he bred one of the finest crested hens I have ever seen—very thick crest and wonderfully neat. Therefore you will see that it is possible to breed a good bird in a number of ways.” This experience of breeding with two Crest-breds is at once novel and interesting, and scarcely to be recommended in a general way. Much of its success must depend upon the birds’ pedigree and an innate tendency to transmit certain desirable features to their progeny.

THE BANE OF THE CREST FANCY.

Undoubtedly the greatest evil Crest fanciers ever had to contend with was the susceptibility of the modern type of Crest and Crest-bred to blindness. We say *was* advisedly, because, although the evil is still present to some extent, we honestly believe that under a judicious and wise system of debarring all blind and partly blind birds from honours on the show bench, which also has an indirect effect in barring them from the breeding cage, it is rapidly and surely becoming less menacing every year, and, in all probability, a few more years hence will find the Crest and Crest-bred as free from this distressing malady as any other high-class breed, and this, too, without any material depreciation of feather, size or crest. The malady was unfortunately tolerated, and blind or partly blind specimens used in the breeding room as long as they were recognised and given the honours on the show bench, until it had acquired so strongly marked a hereditary effect that blindness became very general and gave just cause for concern for the

future, or the very existence of the breed. In 1905 the subject was taken in hand in a practical manner, and although a few prominent breeders opposed the idea so far as to agitate for the recognition of partly blind birds on the show bench, it was eventually decided that all blind or partly blind birds should be ineligible

"A flat Crest should be mated with a heavily feathered, well lashed Crest-bred, having a massive dome-shaped skull."

for competition. That was undoubtedly a wise step and did more to prevent the Crest from becoming extinct than any single step ever taken in the interest of any breed. At the same time a few public-spirited breeders, convinced of the hereditary taint, determined to weed out vigorously all afflicted specimens and forego breeding with them. That the sacrifice this entailed at the time has been amply rewarded is shown in the following notes which Mr. W. E. Greeves, of Wrentham, kindly favoured us with on two occasions.

Writing us in 1905 Mr. Greeves says:—"My experience has taught me that blindness is hereditary. I could give facts to prove it. It is increasing at an alarming rate and if something is not done, and that quickly, the Crest in a few

"OUR CANARIES"

CLEAR CAP SILVER LIZARD.

years to come will be a bird of the past. I believe blindness originally to be the result of breeding from immature and weakly specimens, and intensified by in-breeding injudiciously, and also from afflicted birds, and not from excess of feather. Prevention is better than cure, and the only effort I am now making is to keep the stock birds as healthy as possible, giving plenty of room for exercise; plenty of bathing, fresh air and light; and weeding out all unsound specimens."

Quite recently, Mr. Greeves again wrote us:—"I have ample evidence that the decision arrived at not to allow blind or partly blind birds to compete for prizes was a wise one. There has never been any doubt in my mind but that the disease was hereditary. In my own case (and I know of others) this has been verified by the absence of blindness since I adopted the drastic method of weeding out all blind specimens. To breed from birds affected was to perpetuate the disease. The method I adopted was, in my opinion, the only remedy, and I have now cause to rejoice that I had the courage to do it. Blind birds do crop up, but it is now quite a rarity for me to have one, and then it is an old bird. I have been able to work my stock up since I started weeding out, and to maintain the desired points in an equally good proportion. It was costly, and required unlimited patience; but effectual."

This happy result being the outcome of a very few years' weeding-out of all afflicted specimens speaks eloquently for the future under a similar regime, and must convince the most short-sighted fancier of the extreme folly of giving way to any temptation to use an afflicted specimen for breeding, though it be of the very highest quality. It must be admitted that it is most frequently the cream of one's stock that are thus afflicted. But in barring them from the breeding cage one can rest assured that the sacrifice will bring future gain.

Mr. W. Haysom writes us *inter alia*:—"I have found best results from a Crested cock with a big, heavy crest, and a good, round-headed Crest-bred hen, with not too much lash, but good length and thick feather on head. A hen with plenty of lash is likely to breed birds with splits and twists in crest. I like a nice round, daisy-shaped crest, not as if pasted on, but a lively crest that you can see move when you are looking at it."

STANDARD OF PERFECTION.

We close our remarks upon the breed with the modern Standard of Perfection drawn up by the Crested Canary Club, which fully describes what a perfect bird should be in the Crest and Crest-bred classes. No table of points is adopted for the standard of these birds.

THE CREST.

Size and formation shall be the first consideration. A crest cannot be too large. It should consist of an abundance of broad, long, and veiny feathers, evenly radiated from a small centre, well over eyes, beak and poll. A good crest may be flat if well filled in at back, and without splits, but a drooping and weeping crest shall have the preference.

Type and quality are of the next importance. The body should in shape resemble that of the Bullfinch, possessing substance in proportion to its length, with a broad back nicely arched, full and well-circled chest, tail short and narrow, wings not extending beyond root of tail, nor crossed at tips, but fitting close to the body. The neck should be full and the beak short. The bird should stand well across the perch on short legs, with thighs and hocks well set back.

THE CREST-BRED.

The Crest-bred should possess a body as above described. The head should be large and round, broad at every part, with a small beak, with an abundance of long, broad feather, commencing at entrance of beak, continuing over the crown and flowing well down the poll, and should be well browed. In a good Crest-bred the feathers on crown when turned over should reach to end of beak, and the heavy brows should give the bird a sulky appearance without brushing. When two or more birds are of equal merit in crest or head properties, the smaller bird should take precedence, if of the correct type.

OBJECTIONABLE PROPERTIES.

(1) *Crest and Head* : Crests should not be horned at back, nor open at poll, nor split at sides nor front ; nor should the centre be open or long, nor too near the beak, nor too near the back or sides, nor should the crest be tilted, nor should it consist of thin, scanty, hairy feather. The head of a Crest-bred should not be narrow in any part, nor pinched over beak, nor should it be flat nor covered with short, scanty feather, nor rough or "guttered," and no show bird should possess such an amount of loose fluff or body feather as to make it difficult to make out its shape. (2) *Body* : Crests and Crest-breds should not have long, thin, erect bodies with disproportionately long tails, should not be dipped in back, or frilled on breast, or cross their wings at tips, or carry themselves in a curved or slovenly manner, or stand on long legs.

"Horns are usually found on heads that are long, flat on top, and narrow."

CHAPTER XX.

GREEN CANARIES.

THAT the Green is the fountain-head of colour in our domestic Canaries is an axiom which every fancier becomes conversant with in his earliest days of Canary breeding. But it is not so generally known what the fountain-head really means. It is in fact a simple colloquialism meant to convey the knowledge that the green colour is the prototype from which all our domesticated Canaries are evolved, so that however obscure the exact species which formed the true ancestral stock, of its colour at least there can be no manner of doubt—it was green. Of this we still have ample proof in the tendency of all varieties, even at this enormous distance from the prototype, to revert back to the green colour immediately human control over the breeding and selection of mates is removed, or in crossing old-established and distinct varieties together. The Cinnamon, as we have shown, when crossed with another distinct variety almost invariably reverts at one step back to the green. But beyond the rapidity of this reversion the phenomenon is by no means singular. The crossing of any other distinct varieties—a Lizard and a Yorkshire, or a Border Fancy and a Belgian for example—will revert in the same direction, and, although the transition may be more gradual, will make rapid strides towards resuming the green plumage. More than this, the tendency to revert to the green type is very strongly marked in every variety without resorting to any outside cross at all, because if we put two ticked or lightly-marked birds together of the same variety, even if they come from clear stock, the light plumage straightway begins to vanish and the progeny make a decided and unmistakable step towards variegation, and these variegated progeny, if again mated together, will produce young that come very close to the green, self or broken type. It is indeed but a short step from the clear to the green at any time.

ITS NOMENCLATURE.

Our first intention was to inscribe this chapter to the Green Canary, but maturer thought convinces us of the probability of such a title becoming a misnomer in the near future, and induces us to select the more comprehensive title as the most correct and up-to-date appellation. In this case there is far less reason to-day for using the word "Green" in a substantive sense as indicative of a definite breed than there exists for using the word "Cinnamon" in such a manner. There is not the same unification of type. The old original Green of the Yorkshire persuasion, formerly known as the "Liverpool Green," is now supplanted by the Norwich and Border Fancy type, both standardised and accepted types with many adherents and enjoying a large share of popularity. We have therefore, decided to bring together these recognised standard types and deal with them collectively as Green Canaries.

THE GREEN OF THE PAST.

Writing of the Green Canary of former days, Mr. S. Hadwin, of Liverpool, says: "The original variety of the Green family was the Yorkshire, or, as it was known, the Liverpool Green, on account of the fact that it was almost entirely confined to the Liverpool District. It is some forty years ago since it began to take its place as a recognised exhibition specimen. At that time there was no standard of type, the bird being judged almost entirely for its colour. A Lancashire-cum-Yorkshire designation would best describe its appearance as it existed then. But what the birds lacked in type they made up in colour, which was of a rich, deep dark green, the best illustration being evergreens with the frost of winter on them, showing that bright polish without which specimens always have a washed-out appearance; the pencillings were clearly defined and full of rich pigments, dark, and by contrast throwing into full relief the lighter shade of the feather's web; the feet and beak, black and polished, giving a grand finish to an almost perfect colour scheme.

"Compared with the old Greens the Yorkshire Greens of to-day are lacking in colour. They have not that rich brightness; they have not the clearly defined distinction between the quill and the web of the feathers; they have not the jet black polished legs and beak of their ancestors; taking them all round they have that greyish, smoky, blurry appearance which is very undesirable in a bird of colour. But they have type almost equal to their clear brethren, and it is pleasing to note that several of the factors which made for the loss of colour are being eliminated, and it is now possible to imagine that at no distant date the old colour will be revived, and the present type kept."

THE TWO COLOUR TONES.

In Greens, as in light plumaged varieties, there exist the two fundamental tones of yellow and buff, and how to distinguish yellow-greens from buff-greens is often a difficult problem with the beginner. The difference is certainly more difficult to convey in writing than that existing between light plumaged birds, but a clean healthy holly leaf just reaching maturity will make the task easy. Look at the upper surface of the leaf, and, apart from its gloss and polish, which we need not take into account, we find a uniform tone of solid green without a suggestion of any suffusion by a foreign tone. Now turn over the leaf and study the colour of the under surface. The first thing that strikes you is that it is a decidedly lighter shade of green. But this is not all. The colour is certainly green, but even if we imagine it to be the same depth of tone as the upper surface there is a subtle difference, difficult to explain, which convinces us they would still stand apart as different shades of colour. The under surface is in fact suffused with a "bloom," so to speak, of grey, or ashen, and compared with the upper surface may be likened to a "bloomy" ashen-green. A similar distinction will be

found to exist between yellow-green and the buff-green birds, the former being represented by the upper and the latter by the under surface of the leaf. Once the difference is grasped in the appearance of the birds the novice will have little, if any, difficulty in recognising the two types.

For the following notes on how to make a strain of Greens our thanks are due to Mr. J. W. Metcalfe, of Liverpool. "For anyone taking up the Green Canary," he writes, "I should advise three pairs to commence with. No. 1 pair, a self yellow cock and self buff hen — get this pair as good as possible in type and colour. My idea of colour is a level shade of light green ground colour, running well to the vent. A great fault is running very light at the lower part of the body. The pencilling should be jet black, and not blurred into the ground colour, but to stand out distinctly, and extending down the sides. The wings should be black for halfway down the flights, not showing

"For double buff breeding, they must be snaky."

a bronze tinge on them, as this indicates bad colour. In an unflighted bird a brown tinge will show on the primary feathers, which disappears at the adult moult. But don't mistake bronze for brown; there is a big difference. For No. 2 pair get a self buff cock and foul yellow hen (foul in wing or tail only). No. 3 pair, both fousls or variegated. Get good typical birds,

especially the hens. You get type from the female side, and size and colour from the male ; so be sure you get good coloured cocks. From No. 1 pair you will breed a majority of selfs, and they should be a decent colour. From No. 2 pair you will get both selfs and fousls. No. 3 pair will throw all fousls. Pair up the offspring of No. 1 pair to the young from No. 2, either self or foul. You will have to be careful with the young from No. 3 pair. Discard all that are foul at the vent and lower part of the body. Pair the best coloured hens from this pair to the darkest coloured cocks from No. 1 pair. This method will prevent the youngsters getting too dark or too light. If you continually pair self to self the off-spring will get too dark, and the pencilling will get blurred with the ground colour. If your first stock is fairly good in colour and type you will not require fresh blood for three or four years."

Continuing Mr. Metcalfe says: "When attending a G.C.A. patronage show, compare the Yorkshire exhibits with the Liverpool birds. You will see the Yorkshire better in type, but a great difference in colour. This has been brought about by introducing green hens to clear cocks, and it is well-known that ninety per cent. of the clear Yorkshires have Cinnamon blood in them. Introducing Cinnamon blood to pure Green blood makes the off-spring bronzy on the flights, and a smoky black on the back. A pure Green will improve in colour with every moult, but Cinnamon-bred Greens go darker every year. If it is necessary to introduce clear blood get a hen from an even-mark breeder and pair with an extraordinary good coloured Green. Keep the hens and discard the cocks from this pair. You will then gradually graft the colour into the most typical birds you breed. Many believe the Cinnamon is the foundation of colour, but I have proved it otherwise. Sometimes you breed a so-called Cinnamon (generally a hen) from birds that you know are pure Green bred for eight or nine generations. They are a washed-out Cinnamon colour, but always have good type, and magnificent feather. This is a bird I advise anyone to breed with, because it has the pure Green pigment in its blood, and it carries that characteristic called *quality*, which Cinnamon blood imparts. You can, with confidence, pair such a hen to your best Green. But do not keep a Cinnamon you breed from the second or third generation. These you may be sure come from Cinnamons that the Greens were bred from."

A PECULIARITY OF FEATHER.

An unusual formation not infrequently occurs in the feather growth of Greens which is referred to in a note from Mr. P. Clayton, of Halifax, who writes: "One thing in breeding Greens which seems to puzzle all is the square-tipped feathers. How it occurs has not been discovered, but they come by natural means on birds when moulting. If you pull them out they grow all right a second time, then next natural moult they appear again—this I have proved. It is a natural growth, caused by a stagnation in moult, or through being unhealthy. Several

THE GREEN YORKSHIRE.

have been charged with cutting the feathers, but I defy anyone to cut them, as I have seen them on birds—they are not made by human hands. They are mostly found between the shoulders of birds, and can be readily seen. I have seen them on clear and marked Yorkshires, therefore I am satisfied that it is something that cannot be avoided."

That these remarks are justified we can testify and are fully convinced that whatever may be the cause in any particular case, these square-tipped feathers, which are sometimes remarkably similar to a mechanically cut feather, do very often occur quite naturally, and not only on Greens, but upon other colour birds, and have also found them upon British birds we have reared by hand. They are therefore, not peculiar to Green Canaries, although it must be admitted they seem to occur in this variety more

commonly than others. The true cause, we believe, will be discovered in some slight abnormality in the bursting of the quill when the feather is growing, the point of the quill drying up at the tip and preventing the tip of the feather forcing its way through. This is probably aided by the feather growing from a position where the bird

Square Feathers, with a normal one at top.

cannot easily preen it to assist in breaking the quill at the proper time, and later on when the feather has grown longer and the bird can easily preen it, the tip of the quill which has grown hard and become attached to the enclosed feather is broken off together with the extreme end of the web. We have seen this, as we have attempted to describe it, happen when rearing birds by hand, and in some cases the resulting feather will present a square tip as though cut across with a pair of scissors. The reason Greens are more often affected than other varieties is, we believe, readily explained by the texture of the feather being different, and lending itself more readily to damage of this kind. Still there is always a risk in exhibiting a bird badly affected with these square feathers, as it is generally an object of suspicion, and may, as has happened in recent times, get the owner disqualified for trimming.

BREEDING YORKSHIRE GREENS.

Mr. R. E. Helliwell, of Halifax, has kindly contributed the following notes on the breeding of Yorkshire Greens, in which the use of the Cinnamon sport is again commended. We mention this specially here in order to warn the novice of falling into the error of using a Cinnamon of the pure Cinnamon breed in this

cross. The Cinnamon that is indicated is the one that occasionally comes as a sport from pure Greens as is pointed out in Mr. Metcalfe's notes. "If you want a good start," writes Mr. Helliwell, "purchase two pairs of well-bred stock birds. No. 1 pair a self-yellow cock and a buff hen slightly foul in wings or tail. Both must be pure green bred, and the cock exceptionally good in colour, but a little allowance as regards colour may be given the hen. Have type in the hen, and good feather and pencilling, medium size and good position; and as much size as possible in the cock, with other Yorkshire properties. No. 2 pair a foul wing or tailed buff cock—or otherwise foul green to predominate—as big as possible, with all-round Yorkshire properties, and a good, big, yellow Cinnamon hen—self or foul will do, but it must be pure green and green-bred. This is to produce the ground colour. These hens we call sports, and it is not often they crop up in a stock of pure-bred Greens. Cinnamon cocks are of no use in Green breeding, the progeny being too bronzy and lacking in ground colour.

HENS FROM DOUBLE-BUFFING.

"I believe in double-buffing for hen breeding providing you have suitable buffs to pair together. The buff cocks from this mating are of no use. They must be very snaky birds to double-buff with, not short-barrelled, and with good flights and plenty of leg, and must both be selfs, or fowls bred from selfs, and short-feathered birds. If you can get a third pair at the beginning have Belgian blood in your room. As regards this get the pure Belgian cross. They will have good wing carriage and be very narrow birds—this is the type of bird you require. When infusing Belgian blood into your stock do it from $\frac{1}{2}$, $\frac{1}{4}$, or $\frac{1}{8}$ bred birds on the male side, using as big a bird as possible. Working from the hen's side I find they are too fine in bone to increase size which is what you require. Pair the Belgian cross to big bred birds with plenty of frame and well filled-in, and two years old. By this method I have produced some grand birds which have gained high honours at leading shows, including the Crystal Palace. I bred and exhibited the two Champion foul yellows of the season 1906-7. These were bred from $\frac{1}{4}$ bred birds from a variegated yellow cock, bred the same way as No. 3 pair, mated to a self-buff hen $\frac{1}{8}$ bred Green and Green and double-buffed."

BREEDING NORWICH GREENS.

Dealing with this variety Mr. V. H. Deacon, of Liverpool, says:—"In breeding Norwich Greens the first point is the question of colour, which, according to the Green Canary Association standard, counts 35 points. I have invariably found you will get good yellow-greens from one pair and good buff-greens from another, but very rarely will you get good yellows and good buffs from the same pair, so far as colour is concerned. All my winning yellow-greens have originated from a self-yellow and green cock which had been bred from a double-yellow Cinnamon cock, and a dark-eyed clear buff hen; and for colour properties I consider

him exceptionally good. All the yellows I get from him or his offspring are as good, if not better, than himself. In breeding for yellow-greens I prefer a self-yellow and green cock with a percentage of Cinnamon blood in him, and a variegated or self-buff hen; if the latter I do not like her too heavy in the pencillings. From this pair I invariably get extra good coloured yellows, a colour which a judge always looks at a second time, and that is what you want if you wish to get to the front on the show bench. The buffs you get from this pair are just the opposite to the above, being dull and smoky in feather, and the pencillings not at

The introduction of the Crest-bred makes the Norwich Green long and coarse in feather.

all distinct. I have paired these buffs back to yellow-green hens bred from the Cinnamons and still failed to get the right colour. But, curiously, if you pair one of these buffs to a clear yellow hen you will get extra good colour in the clear birds from this pair."

TO PRODUCE GOOD BUFF-GREENS.

"In breeding to get good coloured buffs I like a self-buff green cock, which I know as being bred dark for two or three generations, and to this I pair a variegated or marked yellow hen. From these I get buffs of a good colour, whereas if I breed two self-greens together I invariably get the buffs too heavy in the pencillings and markings which makes them have a smoky appearance, and from this pair the yellows are also too dark in feather. I often hear Green breeders say that it is the Cinnamon blood which is responsible for the heavy markings and smoky appearance in some of the Greens, but in chatting with them I find they are usually referring to buff-greens. As I have previously pointed out I have

found this myself in the buff-greens, but there is no denying the fact that a large percentage of the winning Norwich Greens have been bred from the Cinnamon. I have also known the smoky appearance in the Greens caused by the introduction of the green Crest-bred, which also makes the Norwich Green appear long and coarse in feather, and very slack at the thighs."

POINTS ABOUT MATING.

"I always get my best show birds from pairing together medium sized birds, but I carefully watch the bad points in one and see that the other excels in these points. I strongly favour the Norwich Plainhead for getting the type into them. Every season I buy a few clear or variegated Plainhead hens, getting the best type possible; hens that are short and thick in the neck, in fact showing hardly any neck at all, if I can get them; short in flights and tail, with a head full and round. These hens will not be got cheap, but they are the cheapest in the end. The Green cock I like as near a show specimen as possible; good head, body short and thick, chubby, well filled-in back, and deep full chest; the wings and tail to be short and compact and smartly carried. The colour a rich grass green, sound and level throughout, pencillings distinct, and beak and legs dark. I am not so particular about the latter, as I find if you get the legs and beak too dark you will also get the feather too dark, and the pencillings somewhat blurred."

THE GREEN BORDER FANCY.

Though smallest in size the Green Border Fancy is by no means the least either in popularity or quality. Indeed it is generally admitted to be the best coloured green of the three standard varieties, due in great measure to its superb quality and fineness of feather which lends itself readily to colour introduction. Its popularity has spread immensely in recent years so that to-day it bids fair to far outstep all the others in popular favour. It has always been exhibited under the auspices of the Border Clubs, but the Green Canary Association has now taken up the Borders, and so all the Greens are under one roof"—a consummation which should do much to foster and encourage the cultivation of the pure green colour in each variety in combination with the standards of type adopted by their respective specialist clubs. Apart from the necessary variations in mating and selection of mates to produce the best bird according to the recognised standard of each variety, the Green Border is subject to the same laws of colour production as the Yorkshire and Norwich Greens. It is, therefore, useless to re-iterate what has already been written, and we shall close our remarks on the Green Canaries with the Standards of Perfection issued by the Green Canary Club.

STANDARD FOR YORKSHIRE GREENS.

	Points
<i>Colour</i> : Rich, deep grass green, sound and level throughout; beak, legs	
and feet dark	35

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STANDARD FOR NORWICH GREENS.

N.B.—Light beak, legs, or feet are not a disqualification, but count against a bird according to their extent. A foul green is eligible to compete against self, unless otherwise stated.

<i>Colour</i> :	Rich deep grass green, sound and level throughout ; beak, legs, and feet dark							35
<i>Shape</i> :	Head—small, round and neat							4
	Neck—rather fine, proportionate to head and body							4
	Back—well filled and nicely rounded							4
	Chest—nicely rounded, neither heavy nor prominent, gradually tapering to vent							4
	Legs—medium length, fine, showing little or no thigh							4
	Wings and Tail—close, compact and well carried							5—25

<i>Position</i> :	Erect, with gay and jaunty carriage	....	....	...	....	15
<i>Feather</i> :	Close, fine in quality, with a glossy, silky appearance, free from frill and roughness	...	....	....	....	15
<i>Condition</i> :	Health, cleanliness, and general smartness	....	....	....	....	10
Total Points						<u>100</u>

The Green Border Fancy.

"OUR CANARIES"

FIRST-CROSS YORKSHIRE-BELGIAN.

CHAPTER XXI.

THE DUTCH FRILL.

THERE can be little doubt that the Dutch Frill is one of a series of undeveloped varieties which have long been bred in various places on the Continent, and which have occurred as sports from the common type of singing Canary. One of the best Continental authorities, Baron du Theil de la Rochere, clearly asserts that it originated from crossing birds with a certain natural waviness of plumage, called "Duvetés," which first attracted attention somewhere about 75 to 80 years ago. This sport is said to have occurred in Holland, from whence it gradually spread to several other centres of interest, in each of which its admirers seem to have set to work to develop the bird on lines in accordance with their own tastes and ideas. It was introduced into France in 1850 as a large type of "Malinois," or singing Canary. On reaching Belgium it was crossed with the high-shouldered Belgian, which later on found a large body of admirers in the north of France, who cultivated this type, whilst the first breeders remained true to the "Malinois" type, and Parisian breeders combined the two general types and cultivated the bird solely for its frilled and ruffled plumage. In France alone there were two distinct types in favour in different districts at the same time, besides which there were several more or less distinct variations being bred in other places. Thus the birds varied in size; in position, some being of a stilty, stylish Belgian type, and others of a curved type more resembling the Scotch Fancy; in plumage, some being bred solely for frilled feathers, whilst the frilling in others was of a somewhat primitive type; and also in name, for its various names are known in their respective localities as Dutch Frills, French Ruffles, Trumpeters and Parisians.

VARIOUS OPINIONS OF THE ORIGIN.

On the other hand, according to Mons. L. Van der Snickt, a Continental authority, the variety is practically unknown in Holland, whilst a French author, M. Jules Janin, in a work published in 1853, says that the Dutch Canary was first bred in Holland, and had only been introduced into France twenty years previously, or in 1833. However that might have been, the home of the breed would appear to be Belgium, and, later, France, in which place it seems to have been very popular for many years. It is still largely bred in Paris, where exhibitions are held every year, and the birds there are said to be larger, as a rule, than those bred round about Roubaix, whilst in the latter place crested specimens are found, which do not exist in Paris. For purpose of exhibition the birds are divided into eight classes, which correspond with our own classification of yellow cocks, buff cocks, yellow variegated cocks, and buff variegated cocks, with the same classes for hens. In size they are large, measuring 18 to 20cm. from point of beak to end

of the tail, the tail itself being $8\frac{1}{2}$ to $9\frac{1}{2}$ cm. in length, which, practically, is equivalent to 7 to $7\frac{3}{4}$ in. and $3\frac{1}{4}$ to $3\frac{3}{4}$ in. respectively. It poses itself elegantly, and stands well up on its legs. The plumage is fine, long, and silky, feathers on the breast being boldly curled, and the long plumage on the back is parted down the middle, and falls over the wings on each side, at the lower part meeting with the feathers which curl upwards from the thighs; the feathers at the back of the neck curl upwards, and sometimes end in a point at the back of the head, and the long feathers at the base of the tail fall loosely over on each side. The tail is forked at the end, and the wings meet, or may even cross over each other a little at the tips.

THEIR EARLY DISSEMINATION.

The recent introduction of the breed into this country, which dates from about 1899, when some specimens were shown at the Crystal Palace and attracted considerable attention as avian novelties, is by no means their first appearance in English Fancy circles, for they were being bred as long as 50 years ago in a desultory way in many parts of the country, and were also used in crossing with several other breeds. Where abundance of feather was wanted, the old Dutch was being used to implant it. It occupies much the same position in the West Indies as the common nondescript Canary does with us. If, as we may reasonably assume, the birds found their way to the far West by means of the Dutch trading vessels in the old days, it must naturally add some colour after all to the claims of Dutch breeders being the originators of the bird.

THE OLD FRILLS IN THE WEST.

Writing us on the breed, Mr. C. I. Young, of Frome, says:—"I have made enquiries in the West of England, and find that several old fanciers, about 50 years ago, kept what they called Dutch Canaries, something after the style of the present day bird, but without the elaborate frill seen on the birds exhibited to-day. This is confirmed by Mr. J. Reece, of Bristol, who well remembers them being bred in the city. It has been my experience that birds coming from the South of France require a lot of attention, as they seem very subject to bronchitis and asthma until acclimatised, but once they get over their trouble they are much the same as our English breeds. They are *not* so difficult to breed as high-class Crests, and do not require half the attention. It is not necessary to pay a big price for birds for breeding. I paired a nice yellow hen, with good frills, to a well-bred, but plain-backed, cock, and produced almost as good young from this pair, which would be worth about 70/-, as I did from my 1910 champion cock and 3rd Palace hen. I mention this to show that it is not essential to purchase show birds to produce good specimens. I would advise anyone taking up this variety to get feeders ready, as not a single hen of mine would bring up a young one. There is a peculiarity attached to Frills that I have not noticed in any other variety that I have kept. It is that in very dull weather, when resting, or when out of condition, the feather seems to lose its

THE DUTCH FRILL.

curl, and what has been in the sunshine a magnificent Frill becomes quite a plain bird in the evening, when at rest."

THE FRILL AND HOW TO BREED IT.

For the following notes upon the variety we have to thank Mr. W. J. Minty, of Frome, one of its most successful breeders. "The Dutch Frill," he writes, "is bred throughout the Netherlands, from which it derives its name, and is, in my opinion, one of the best exhibition birds of the present day. The principal recommendation of a bird of this description is its feathers overhanging the shoulders with a correct parting down the centre of the back between the shoulders, and known as the mantle; the feathers on the breast curl or twist inward, and intermix, forming a mass of little frills across the body: these are known as the breast frills; the bunch of feathers which project from the top of the thigh on each side, forming a downy substance, are called side fins. A good specimen of this particular breed should carry an abundance of long, soft, leafy feather, as well as being perfect in every frill; the flight and tail feathers should be very long; then the body must be large, with plenty of thigh.

"In France fanciers favour the green blood, and I quite agree with them, as the green or variegated bird shows itself off to the best advantage, and commands a much better appearance than the clear. It must not be taken by these remarks that an inferior variegated bird would be given preference over a good clear; but say you had two birds of equal merit, a clear and a variegated, and sent them out under a judge, in ten cases out of every twelve the variegated would take the lead. The Frills are very free breeders but unfortunately the majority of the hens refuse to feed their offspring, so that when you pair the Frills together you require at least two pairs of common Canaries for feeders. I like two pairs of feeders to every pair of Frills, and get them all in breeding condition at the same time if possible. The first week in April I pair the Frills; when the hens commence to build I pair the feeders, and as a rule they are very quick to nest. By pairing them in this way you will find they lay about the same time. When the full clutch is laid I transfer the Frill eggs to the feeders giving the Frill hen the common eggs. In this way you are not so likely to overwork the hens as would be the case if you let them go on nesting without a rest; the second pair of feeders you should have ready in case of emergency.

POINTS OF DETAIL.

"In breeding you will often produce birds that only show the breast frills and no mantle, being quite smooth on the shoulders, whilst others have only one side fin. Birds of this description should not be exhibited, but providing they are large they are very valuable to the breeder as stock birds. The most critical period is the moulting season. Frills being heavily feathered require a lot of attention during the moult. As far as my experience goes Frills require most liberal feeding. A good stock mixture consists of equal parts Spanish canary, hemp, linseed, millet,

and rape, with a pinch of inga and maw, three times a week; this will keep them in good health. A Frill can be washed with ease, providing it is healthy, and instead of spoiling the Frills, as many say, it will improve them. It is very rare that you have to wash the bird, as the Frill is passionately fond of bathing, but there are exceptions."

WHAT AN EXHIBITOR SAYS.

Mr. A. E. Brooks, a prominent exhibitor, kindly sends us some interesting notes. In his words: "A good specimen of a Dutch Frill is a large handsome bird, with a large, full, well-formed head; a long, straight, full neck; a well-shaped body of considerable length; good substantial shoulders, broad and massive, but not humped like a Belgian; a fine, deep, prominent chest; a good, stout waist; long, well-formed legs; a long, compact, sweeping tail, with a few fine feathers drooping each side of the rump; and a bold, erect, and noble carriage. In breeding I prefer the male bird to excel in the qualities which are the most highly esteemed, although good birds are sometimes obtained when the reverse of this is carried out. If you possess say a large, strong male bird with great length of body, good legs, a fine tail, long full neck, but somewhat narrow in shoulder, and perhaps not quite perfect in frill, you must pair him with a hen possessing large shoulders and perfect frills; never mind if she is somewhat shorter in the leg, or neck, she has the chief features that you require to make a suitable match for the male bird I have described. What I wish to point out very clearly is, never put two birds together possessing the same points of merit, unless they both possess in an equal degree all the good qualities desired. It is usual to pair a yellow and buff together; it will, however, be found very advantageous to breed from two buffs occasionally, as it helps materially to improve the size, constitution, and feathers of the birds. When selecting birds to breed from remember, two-year-old male birds are preferable to one-year-old, and their produce is much more robust. I have heard it said that Dutch Frill hens are bad feeders, but again I find they are no worse than other breeds.

TRAINING FOR SHOW.

"As soon as the young are able to feed themselves remove them to a large cage so that they have plenty of room for exercise which will be found very beneficial both to their health and well being. As soon as you have a Dutch Frill fit for competition you must commence to train it for show position. This is done in a variety of ways, and depends greatly upon the disposition of the bird. If the bird is at all nervous you will need to exercise great care especially at the commencement. You must approach it very leisurely, speaking to it and chirruping. You will by this means gain the confidence of your pupil. As soon as it appears on friendly terms with you, lift the cage and move it about, quietly at first, then more reely. Scrape your finger nail along the bottom, not too roughly; the noise will attract the bird's attention and it will immediately raise itself to full height,

stretching out its neck, and take up position. Be very careful and not overdo this; about five or six minutes every day for a week should be quite sufficient."

An open show cage similar to that used for Belgians or Lancashires is the most suitable for exhibiting the Dutch Frill.

FRILLS IN THE FAR WEST.

Responding to our request for information upon the history of the Dutch Frill in the West Indies, where it seems to have been very common for many years, Mr. Louis de Ganges, of Trinidad, writes us: "It is very difficult to say by what means the Canary was first introduced into the Island, but it probably owes its existence here to the many European colonists who have made this their Island home, and to the Portugese colonists from the Island of Madeira who are in a great measure responsible for its introduction. At one time the Portugese community held the best class of Frills in the Island, which were constantly strengthened by repeated importations from Madeira. But recently these birds have been entirely superseded by the regular importations of our breeders from Continental and English dealers, who have supplied us with very fine typical specimens. With us the Belgian type is most in favour, but with this difference, that the head should be a little more upright, as they generally seem to carry their heads a little too low. The kind of bird we strive after is one possessing large bone, plenty of frills, and having a fine pose, with a long, snaky neck, nice rounded head, bold looking eyes, with short and thick beaks. The colours preferred are cinnamon-marked or clears, the frilling in such birds being seen to better advantage than in darker birds." In the last named particular it will be seen that the taste of the Trinidadians differs from the English ideal.

STANDARD OF PERFECTION.

The following continental standard of points for judging Dutch Frills, translated and submitted by Baron du Theil de la Rochere, is the one approved by English breeders.

	Points.
<i>Size</i> : As large as possible	10
<i>Attitude</i> : Elegant, slightly curved, without a humpy appearance, and well elevated on the legs	10
<i>Feathers</i> : (1st) Long, fine, and silky. These should be parted, falling symmetrically down the back: called the mantle	8
(2nd) Those on the chest, undulating (or wavy like) converging to the centre in the shape of a shell, called the "craw"	10
(3rd) Those to the right and left, forming two very fine bunches of feathers in the region of the thigh-bone, well formed and frilled up: these are called fins. If these last frills exist on one side only, or if the feathers are flowing down, and not, as it were, affording a support for the wings, the bird is not a show bird.	12

YELLOW AND BUFF BORDER FANCY CANARIES.

<i>Tail</i> : The tail should be long, with a few fine feathers drooping each side of the rump, accompanying the large feathers of the tail: these are called cock-feathers								5
<i>Wings</i> : To cross slightly								5
<i>Head</i> : Size in proportion to the body, without any crest, but if the back of the head is slightly hooded, as in the case of a Jacobin pigeon, additional points are allowed; but this is not essential								10
<i>Legs</i> : Long and supple, without stiffness								5
<i>Colour</i> : Usual Canary colours, yellow, buff, or variegated, with bright plumage, not patchy in colour								10
<i>Condition</i> : Vigorous, showing nerve and action								10
<i>Cleanliness</i> :								5
Total								100

A Variegated Border Fancy, showing technical and other marks.

CHAPTER XXII.

THE BORDER FANCY.

IT is an axiom that facts are often stranger than fiction, and the story of the Border Fancy Canary, had we but space to go into it fully, would reveal a strange tale indeed. Little more than 20 years ago it was a plebian nondescript, unhonoured, yet not unknown, with no more distinguished patronymic than the Common Canary: to-day it is, so to speak, the pride and the joy of princes, with the aristocratic name of Border Fancy Canary, bestowed upon it by its devoted admirers in conclave assembled on the 5th July, 1890, and by which it has ever since been known. For some time previous to this the bird had been attracting attention, and the term of Common Canary has fallen into disrepute, and the bird was being exhibited under the name of Cumberland Fancy at some shows, and as the Common Canary at others. There was in fact some rivalry and jealousy betwixt breeders in different localities for the honour of giving the bird its fancy name. But, happily, wise counsels prevailed, and it was eventually agreed to sever the nomenclature from any limited locality, and adopt a name representative of all the Border counties of England and Scotland where the bird was extensively bred and kept. To-day it is one of the most widely distributed and popular varieties we possess.

ITS RISE AND PROGRESS.

That the future prospects of the bird were not generally recognised at this time is known by the notes contributed by Mr. J. S. Wilson, who writes us:—"The breed can never become popular."—So wrote an All-England judge to the writer many years ago, when the variety was unknown outside the Border counties. That was the honest opinion of the keen critic, but it only serves to show how hazardous it is to attempt to forecast future events.

"The Border should not be crossed with any other breed, as it contains within itself all the elements necessary for scientific development. It cannot be improved from outside sources as some other breeds. We remember in the old days certain fanciers taking a leap into the unknown by introducing Norwich blood with a view to improvement. The result was disastrous, the fusion producing objectionable features which would require a generation to eradicate. And so it was with the marked variety; the small Yorkshire was requisitioned on account of its tendency to reproduce the required markings. But the result was again unsatisfactory; what was gained in markings was more than counterbalanced by the loss in type and quality. The secret of markings lies in the Cinnamon blood. Given this and suitable selection, there is nothing in the way of marks that cannot be accomplished."

IN THE EARLY DAYS.

"Before the club was formed," Mr. Henry Bennet says, "the great and best gatherings of Common Canaries were held at Selkirk, Hawick, Langholm, and a few shows in and around Cumberland. The Langholm fanciers of that date bred chiefly for even-marks and greens. The Cumberland men also had some very finely marked birds in their possession. The Selkirk fanciers were well-nigh invincible with clears and fouts, and had a few good marks. In Hawick we had a good mixture of all varieties, and also in Dumfries, Jedburgh and Kelso. The type then exhibited was in many respects similar to our present day Border Fancy, although when I started I had to go in for two types to suit different judges, as there were those who preferred a neat and dainty bird, and others who were for a larger bird with more colour. Now, however, the type favoured by judges in England and Scotland is very similar, the only marked difference being that for a bird to win in most English shows a somewhat bolder head and fuller neck are required than we want in Scotland."

IN SOUTH AND WEST.

Concerning its popularity in the South and West of England we give a few extracts from a paper supplied by Dr. T. A. Bowes, who writes us: "Although the Border Fancy Canary did not have its origin in the south its popularity is increasing. It has spread south-west into Wales, and obtained a strong footing there, a large number of breeders having fallen victims to its charms. In and around London and in the South-East of England it is establishing a firm hold in the affections of fanciers."

INCREASING POPULARITY.

"In the season 1905-6 the English and Welsh Border Fancy Canary Club extended its patronage to four shows in the district, two in Wales and two in London, but the Northern exhibitors were successful in most instances, while the Welshmen hardly treated the exhibition of the variety in sufficient seriousness to adequately support the shows in Wales providing classes for it.

"In November, 1905, the Dover Fur and Feather Society gave a surprise start to the variety in the South-East by providing a class for Borders at their annual show. It was their first appearance on the show bench in Kent and ten creditable

A Border Fancy, showing the technical markings—eyes, wings and tail.

specimens faced the judge. In 1906-7, with five Shows under the patronage of the E. & W.B.F.C.C. (three in London), a greater response was made from Wales. In 1909-10 competition was increasingly keen, and two good gatherings were seen at the L.C.B.A. and the Palace; at the former about 80 in number including a very good unevenly marked class and a good green class; and at the Palace 161 in eight classes were a remarkable collection. Magnificent were the classes of yellow cocks, yellow hens and unevenly marked birds, numbering respectively 28, 21 and 30. It cannot be said that fanciers in the South and West have been unsuccessful; rather the reverse, and their success in recent years augurs well for the future."

THE IDEAL BIRD.

The general all-round qualities and hardihood of the "wee gem of the Fancy," as the Border is often termed, accounts for its rapid rise to the position of an almost universal favourite. In size it must not exceed 5½ ins. in total length, being therefore distinctly on the small side. Its hardihood and ease of management are beyond question. Its plumage is exceptionally fine and silky, and carries a beautiful natural bloom. Its colour should be perfectly natural and not enriched by colour food; its general appearance and carriage are those of an exceptionally smart, graceful and agile bird, with the least touch of that "nerve" or action which characterises such "birds of position" as the Belgian; and its range of colours and markings is of the most extensive description, and includes both green and cinnamon types. It should stand in a semi-erect position, and its whole make-up be that of a trim-built, neat bird, as closely feathered as if moulded in wax, with no suspicion of looseness or superfluous feathers anywhere, nor an atom of surplus muscle or tissue. Being also quite an accomplished singer, coming in this respect nearer to the pure Roller than any other purely fancy breed, the cocks that are wastrels from the exhibitor's point of view find a ready market as singing birds. Colour feeding is strictly forbidden, the general consensus of opinion being against it, a plebiscite of the total membership of the B.F.C. showing only 21 votes in favour of it against 111 against. Therefore birds showing signs of colour feeding are barred from competition on the show bench.

POINTS FOR BREEDERS.

The chief faults to guard against in stock birds are tersely detailed incidentally by Mr. J. Patterson, of Chirnside, in these words:—"Large heavy beak; large flat head; thick neck; frayed long flights; flights not meeting down the back; tail carried low or too high; fish-tailed; too thin in front, or *vice versa*; frilling in front or at thighs, or base of tail; long in legs; too high in thighs, or wide between; feet large and coarse; too large in body and side; too flat across perch; washed-out or uneven in colour; long and loose in feathers. All these faults should be avoided when mating up stock; never pairing two birds together when the fault is similar. Have every weak point strengthened in the mate, being guided by the

faults and prominent good points inherited from their parents. See that all the good points of last season are kept; bad ones discarded; and any weakness made strong.

"I prefer to mate yellow to buff," he continues, "and have no special liking for either colour to be in the cock or hen. All that I require is that the cock is sound in colour, tight in feather, ideal in size, and perfect in style and action. The hen must be typical and well-rounded, and her wing and tail carriage perfect. Type is derived more from the hen's side; therefore, if any fault, have it on the cock's side; the hen to be as perfect as possible.

DOUBLE YELLOW AND BUFF.

"Double-yellowing, or double-buffing, can be used to advantage, but one must know the sort of bird to use for each cross, otherwise it is dangerous. The former can be used to reduce the size of body, when the neck is too thick, and as a colour producer. Mate up a fine sound-coloured yellow cock to a nice lemon-coloured yellow hen. Select the most typical from this mating and pair back the usual way.

"Double - buffing has a tendency to make birds a shade stouter in body, thick and short in neck, and can be used to advantage to fix quality. In this mating I pay particular attention to the soundness of colour, the cock

Various forms of eye-marking.

having a nice small head, nice and fine in neck and quality of feather; the hen to be level in colour, perfect in type, and neither of them large—in fact both undersized and from a good strain. Nothing can bring up better colour in yellows. I prefer this to any green cross ever used as a colour producer. You get them far more level in colour and free from dark legs and thighs."

THE EVEN-MARKED BIRD.

No variety of marking is more difficult to produce and maintain than the even-marked. Unfortunately, in former years, when the variety was more eagerly sought after than has been the case in recent years, it had a very unenviable reputation for being more often the outcome of skilful manipulation than a natural production of the breeder's art. In consequence the variety lost ground and sank almost to vanishing point. In the Border Fancy it has been revived as a distinct class worthy of breeders' attention, and promises to become again popular. But what is an even-marked bird? For the uninitiated we may point

out that there are six definite "points" on which alone technical "marks" may exist. These are a small space around each eye, preferably of an elliptical shape, with the eye centrally placed; the inner secondaries in each wing; and the outer sides of the tail. Any dark colour on any of these points, isolated as it were by surrounding light colour is termed a "mark." Thus, with a bird quite clear in plumage all over excepting a small dark patch around each eye, four or five dark secondaries on the inner part of each wing, and one or two dark feathers on each outer side of the tail, we shall have an even-marked bird, and a six-pointed one, this being the acme of perfection in markings, beyond which it is impossible to go without falling somewhat heavily into the variegated type. But if the bird possesses two

Two-pointed Border Fancy.
May be shown in foul or ticked classes.

or two tail marks and two eye marks only, it will still be an even-marked specimen, but a four-pointed one, having marks on only four technical points. Two eye marks only, two wing marks only, or a mark on each side of the tail only, again constitute an even-marked bird, but a two-pointed one, which is the lowest type of even-marking and is allowed to compete in foul or ticked classes.

UNEVEN-MARKED BIRDS.

All the markings we have just described may be found on a bird in combination with other markings on various parts of the body, but when such markings occur the bird goes into the variegated class. When any particular mark on one side of the body is not reproduced on the opposite side the bird becomes an uneven-marked specimen. Thus an uneven-marked bird may have one eye mark, or one wing mark, or a mark on one side of the tail, making it a one-pointed bird, which usually ranks as a ticked specimen. A three-pointed specimen may have two eye marks and one

wing mark, two eye marks and one tail mark, two wing marks and one eye mark, two wing marks and one tail mark, two tail marks and one wing mark, two tail marks and one eye mark, or one eye, one wing and one tail mark, not necessarily on the same side. A five-pointed bird will have either two eye marks, two wing marks and one tail mark, two wing marks, two tail

“OUR CANARIES”

THE BORDER FANCY CANARY.

Clear Buff.

Clear Yellow.

Self Cinnamon and Cinnamon-marked Border Fancies.

marks and one eye mark, or two tail marks, two eye marks and one wing mark. Two-pointed and four-pointed birds may also be uneven-marked by having an eye and wing mark, an eye and tail mark, or a wing and tail mark for a two-pointed bird, whilst a four-pointed one may have two eye marks, one wing and one tail mark, or two wing marks, one eye and one tail mark, or two tail marks, and one wing and one eye mark. All this may appear confusing, but it becomes clear when one remembers that an even-marked bird must have both sides of its body to correspond in markings, whereas an uneven-marked, though it may be marked on both sides of its body, does not correspond on both sides, some one or more technical point being marked on one side and not on the other.

HOW TO BREED THEM.

The making of a reliable strain for breeding even-marks is a matter of years of patient toil and careful pedigree breeding. Even so, it is doubtful if any royal road to success exists. Uneven-marks, ticked, variegated, and clears predominate, but very frequently these bye-products, as they may be termed, are invaluable stock birds, and often of high merit, so that in breeding for even-marks one is usually producing birds suitable for competition in several different classes.

Mr. J. W. Bruce, of Coldstream, says: "In breeding for even-marks I prefer two eye-marked birds, or a variegated bred from even-marks and a clear bred from a green, as a pair. But I have bred some nice marks (one a noted winner) from no pedigree strain—a case of pure chance—and many more have been bred the same way to my knowledge."

Mr. G. Meekley, of Carlisle, writes: "I have generally had the best results from variegated birds on both sides. My well-known even-marked yellow's mother was an 85 per cent. variegated buff, and the father a three-pointed yellow—eyes and wing marked. You certainly get a good number of heavily marked birds in pairing this way, but you stand a chance of breeding a typical uneven-marked bird. I never hesitate in pairing my birds this way provided they possess the essential points which make a typical Border."

THE CINNAMON BORDER FANCY.

The introduction of the cinnamon colour into the Border Fancy has in recent years added immense interest to the breed, and the cinnamon and cinnamon-marked Borders have made rapid strides. One of the most successful breeders, Mr. Dan Hamilton, of Hamilton, N.B., says:—"It was in the year 1905 that I first tried for the cinnamon Border. There were a few cinnamon hens on the show bench at that time. I expect they were sports from the green as they were shown by green breeders. They were all pale in colour compared with cinnamon hens on the show bench to-day. I don't remember a cinnamon cock being shown that year, though one at least was shown the year following. It occurred to me that by careful mating with

suitable birds cinnamon Borders of both sexes could be bred in a few years' time. I got a heavily variegated green-marked cock that had cinnamon-marked sisters. I next procured two cinnamon hens—one self, and one foul-tailed. That trio, and the champion self-cinnamon cock I had in my mind's eye, seemed very far apart.

“When the breeding season came round I paired the cock to the self-hen. She laid three eggs, which I set, and then ran the cock with the foul hen. Only two of those eggs hatched and produced foul green hens. The foul hen laid three, which were duly hatched and reared, and produced two variegated cinnamon hens and a self-green hen. I got only this one nest off the foul hen. The self hen went to nest again, and again laid three eggs. These were duly hatched, and judge of my surprise when I saw they were all pink-eyed. I had a foul cinnamon cock among them, the other two being foul cinnamon hens. Before the next breeding season I had procured a mate for him in the shape of a foul-tailed cinnamon hen. This pair threw all cinnamon young of both sexes, but all were more or less foul. The young cocks in turn mated to self-cinnamon hens produced all cinnamon young of both sexes, fewer of them being foul. I always put in fresh blood on the female side and got the hens from breeders of greens, which were sports from the green. About that time other breeders had taken up the breeding of cinnamon Borders of both sexes, so that hens bred from double-cinnamons could be got when fresh blood was required, but to purchase a cinnamon Border cock was well-nigh impossible. The height of my ambition was reached in 1908—three years from the commencement. In that year I bred the self-yellow cinnamon cock, which turned out to be the best cinnamon Border of the season. He had marvellous colour, and some fanciers remarked that his colour was too good to be genuine—meaning I had been using colour feed, which I had not. I sold him to a South Wales exhibitor who showed him with varying success, and finished up the show season by winning first in a strong class at the Crystal Palace.”

POINTS FOR CINNAMON BREEDERS.

“In breeding cinnamons,” goes on Mr. Hamilton, “the main point, next to type and quality, is colour. Do not pair two birds failing in type simply because they have good colour. Never double-yellow unless you have suitable birds, as by double-yellowing you thin the web of the feathers. Do not double-yellow with leggy birds: let them be short in leg and stoutish in body. Some of you have no doubt seen yellow birds in which the feather resembles that of a buff bird, and it is advisable for at least one of a pair of double-yellows to be of that description. In double-buffing it is advisable to have good colour and tight feathers in both birds, and one of them at least to be feathered as a yellow, but yet a buff. However, unless one understands his stock it is advisable to pair yellow to buff. I have a liking for yellow cock to buff hen. This way of mating appeals to me most.

"In the cinnamon-marked we have the pinnacle of perfection in the Border Fancy. The lovely tight-fitting plumage, shining like satin, is characteristic of the pink-eyed bird. He is feathered like a Java. In breeding cinnamon-marks of both sexes it is well to run on much the same lines as when breeding green-marked, the difference being that you will have one bird clear pink-eyed and the other cinnamon-marked. In breeding for even-marked have one bird clear and the other as near even-marked as possible. A few ticks on body is not much objection, but on no account use a cap-marked bird for even-marked breeding. The clear must be even-marked bred—that is, bred from a clear and even-marked. From this mating you will get clears, ticks and marked birds. Those having the correct markings, viz :—eyes, and wings, and both sides of tail, can be paired to clears that have been bred the same way; the clears to marks so bred; and the lighter marks, such as ticks, fous, and three-pointed birds, can be paired to lightly marked birds. Eye marks being more difficult to maintain it is well to pay strict attention to them, and should they run light pair such a bird with a partner also marked on eyes. In breeding cinnamon-marks one may pair together two marked birds if they are inclined to be lightly marked without fear of getting the marks too heavy, owing to the pink-eyed birds having a greater tendency to run lighter than is the case with green marked birds. If it is desired to improve any weak point by grafting it from the green mark it should be done on the female side. Get the best marked hen you can lay hands on, and pair up to a clear pink-eyed cock, seeing they match in other points. From that mating you will get clears, ticks and marks, but all the pink-eyed young will be hens, which, when paired to pink-eyed cocks, will produce all pink-eyed birds of both sexes."

TRAINING AND SHOWING.

Although not purely a bird of position the Border Fancy, especially in and around its native birthplace, is usually shown in an open wire cage. This should be as clean and spick and span as the bird itself. The necessity for a proper arrangement of the perches and training of the bird is specially pointed out by Mr. Thos. Arnot. "A point of great importance," he writes, "is to see that the perches are properly placed, not too thick nor yet too thin, but just so as to enable the bird to grip comfortably, and travel across them in a free and easy style, whilst keeping its proper position and showing a jaunty appearance. This can only

Heavy beak and thick neck are bad faults.

be done by having the perches set right and made to suit the size of the bird's foot. The bird should be trained to remain on the perches, and not on the bottom of the cage or clinging to the wires. I always run my birds from one cage to another once or twice a week, and take care not to frighten them when letting down the door; I keep the fingers and thumb on the wood-work below the wires, turning the cage gently round and keeping it about the height of the chest. They very soon get to understand what is wanted of them. A well-trained bird competing against one as good in type and quality but not so well-trained will always win."

THE STANDARD OF PERFECTION.

Below we give the standard of perfection adopted by the Border Fancy Club, with a table of points drawn up by Mr. J. B. Evans, a recognised authority on the breed.

<i>Head and Neck.</i> —Small, round and neat looking; bill, fine; eyes, dark and bright; neck rather fine, and proportionate to head and body					10
<i>Body.</i> —Back, well filled and nicely rounded, running in almost a straight line from the gentle rise over the shoulders to the point of tail; chest also nicely rounded, but neither heavy nor prominent, the line gradually tapering away to vent					10
<i>Wings.</i> —Compact and carried close to the body, just meeting at the tips					10
<i>Legs.</i> —Of medium length, showing little or no thigh, fine, and in harmony with the other points; feet corresponding					5
<i>Tail.</i> —Close packed and narrow, being nicely rounded and filled in at the root					10
<i>Colour.</i> —Rich, soft and pure, as level in tint as possible throughout, but extreme depth or hardness, such as colour feeding gives, are objectionable in this breed and are debarred. Red fed birds distinctly barred					10
<i>Plumage.</i> —Close, firm and fine in quality, presenting a smooth, glossy, silky appearance, and free from frill or roughness					15
<i>Position.</i> —Semi-erect, standing at about an angle of 45 deg.					10
<i>Carriage.</i> —Gay and jaunty, with a fine free poise of the head....					10
<i>Health.</i> —Condition and cleanliness shall have due weight					10
Size not to exceed 5½ inches in length, measured in the usual way.					
Total					100

Birds marked on both eyes or both wings to be allowed to compete in foul or ticked classes. In judging marked birds "type and quality" should form the first consideration in these as in other classes, and no prize should be awarded for good marking alone when the type does not conform to the Club standard.

The grand essentials of a Border Fancy are type and quality. The general appearance is that of a clean-cut, lightly-made, compact, proportionable, sprightly, close-feathered, smallish-sized Canary, showing no tendency to heaviness, roughness, or dulness, but giving the impression of fine quality and symmetry throughout.

CHAPTER XXIII.

THE NORWICH PLAINHEAD.

PROBABLY no variety has gone through so many changes and vicissitudes and yet held its position as one of the most popular and widely cultivated breeds as the one which takes its name from the eastern city. Fifty years ago it was one of the, if not actually *the*, most widely kept breed, and to-day almost the same remark would apply, notwithstanding that during the interval it has been the subject of some of the fiercest controversies which have raged among fanciers at various times, and that more than one newly created fancy variety has sprung up in the meantime and pushed its way into the front rank of popular favourites. Yet through it all the Norwich Plainhead has lost none of its prestige, and its general type and quality have been steadily improved in the course of years—the Norwich of to-day being more thick-set, larger, and in most respects an improvement on the old type of former times. Where the old type scored most over the present was in colour, and short, tight, close-fitting plumage; points which were somewhat neglected for a time during the craze for size and the rage for the hottest possible colour, which it was sought to produce by colour feeding rather than by paying scrupulous attention to breeding for it. Now, however, these points are receiving much greater attention and the long, coarse feathered birds are seldom seen.

THE APPROVED TYPE.

The ideal Norwich Plainhead must be not more than $6\frac{1}{2}$ inches in length, of a thick-set, chubby, wedge-shaped type, somewhat favouring the Bullfinch in shape, with a round, full and neat head; a short, thick, chubby neck, merging gracefully into a broad, full chest, and a short, chubby body, with a wide and well filled in back; the wings and tail short, compact and well carried, the wings being well braced to the body and just meeting at the tips, but never crossing; the legs well set back, and both these and the feet free from coarseness and clear in colour; and the plumage short, close-fitting and perfectly free from any coarseness or roughness at the sides, thighs, or around base of tail. It should be of a soft and silky texture, with a brilliant sheen, and a rich, bright, deep, pure colour throughout. The rotundity of the head must be well finished off with a short stout beak, clear in colour, and the whole bird gracefully proportioned, free from any angularity, and although stoutly must not be clumsily built. The bird should stand well across the perch, a somewhat Robin-like attitude being the most typical poise, showing plenty of body and chest in front of its perch. Indeed, in looking for the ideal type it is a safe rule to endeavour to get as much of the bird as possible in front of the perch, and as little as possible behind it. Though one of our richest colour breeds too much importance must not be attached to colour in adjudging the

**"To improve depth of colour, mate a Clear bred from Double Yellows,
to a good Yellow Green Cock."**

merits of any given bird for stock purposes. In this connection only inherited natural colour will weigh, and therefore in estimating the colour value of a stock bird, unless something is known of its pedigree or its natural colour, allowance has to be made for the extent to which its colour may be due to colour feeding, and if this is not known the safest plan is to take no unnecessary risks but to treat it as one possessing only moderate natural colour.

COLOUR CONTENTIONS

Though richest in natural colour, the Norwich Plainhead has always been one of the deepest colour-fed breeds ever since the practice came into vogue, and some of the contentions on this point are casually alluded to in the following notes by Mr. H. Wright, of Norwich, one of the oldest breeders. "I started Canary breeding in 1868," he writes, "with two pairs of Norwich Plainheads. The birds were smaller, stood more upright, were narrower and slimmer, and showed more leg—half up the thighs—but they were tight in feather and of a good natural colour, which we used to improve by giving them marigolds and saffron in the water. Then if you bred a good coloured bird you got the credit for it. This was soon ended when Messrs. Bemrose and Orr exhibited the K.N. fed birds in St. Andrew's Hall, Norwich. (I made my debut at an exhibition at this show, and won H.C. for a 'cage of four.'). As time went on classes were provided for K.N. and non-K.N. fed birds, when a bird with good natural colour would be passed at one show, and, perhaps, get first at the next. Then schedules began to read 'natural colour,' but still the same thing went on—first at one show, passed for too much colour at the next—until the question of colour was left open. To get a good level colour you must start feeding three weeks before the moult begins. Many believe birds come patchy in colour because they are not fed regularly, but the real cause is not beginning to feed in time. I have fed birds once a week, and they came even in colour. In fact this is the way to feed them a good natural colour, or just a shade higher, but you must leave off giving the feed as soon as you see the new quills coming on the head, as there will be enough colour in the blood to finish them off level in colour."

POINTS FOR BREEDERS.

Upon the subject of mating and improving the general type of one's stock, Mr. J. C. Barnes has kindly contributed the following hints. "In pairing up I prefer a buff cock to yellow hen. In most cases the progeny come out with more bone, and are larger than when a yellow cock is paired to a buff hen. Should a cock bird be rather small in head, pair him to a broad, large-headed hen; if he appears a little too long, run him with an extra short hen. If you have a bird that is inclined to be browy, don't discard it if it is well-bred and silky in feather, but pair it to one that is perfectly free from browing. Always endeavour to keep thick necks in your Norwich—you cannot get a neck too thick. Double-buffing thickens the neck.

"I have proved over and over again that type is produced far more from a good shaped hen than from the male side, so my advice is, always endeavour to breed with good typical hens. Keeping good hens year after year and breeding with them judiciously will fix this feature in your strain. Quality of feather is gained by consistently selecting the best feathered birds for stock, and by a splash of cinnamon blood. Size is gained by double-buffing. The most suitable birds for this purpose are those that are of a good colour, and very short feathered; for preference, one clear and one marked. I cannot conscientiously advise the use of a Crest-bred hen. Too much feather, flat heads and brows, are produced by such crossing. Double-buffing is not so rapid in effect as the use of the Crest-bred, but it is much safer. Green blood is the fountain of colour. To obtain what is known as 'bronze green' (correct green for providing you with bright and deep colour), also quality of feather, pair a clear yellow cock to a buff Cinnamon hen. Keep the best shaped birds, and utilise another year. The progeny from these will be red hot in colour in most cases, and of rich silky texture of feather. In using green blood, your ambition should be to breed good clears and ticked specimens at the same time. In using heavy marked cocks to clear hens, most of the offspring will be rather on the heavy side; so pair ticked or clear cocks (clears for preference) to marked hens. The hens breed out the markings quicker than the cocks. In the course of time, you will be producing, by judicious pairing, more clears and ticked than heavy marks, and still have retained the dark blood. Many of the best clears of to-day are birds that possess a great amount of dark blood in their veins, and have come off marked parents; such birds when colour-fed, are ablaze in colour."

VALUE OF GREENS.

Another view of the value of green blood is given by Mr. W. Spillman, of Devonport, who writes:—"Colour, the once all-absorbing attraction for some judges, is to-day generally the last consideration. There are greens that will so improve colour that when colour-fed the birds will be "red hot," and there are greens that are simply useless for the purpose. I prefer using a green, or almost green, hen, a yellow for choice, especially if she is bred from double-yellow or variegated parents. You get almost as much colour from the green hen as you do from the cock, and a great deal less variegation. I have frequently had nests of almost clears from heavily marked hens. The question occurs to me sometimes: How much marked stock is it wise to have in our breeding rooms? I may say if I had about 30 per cent. I should always consider myself safe. Quality may be introduced by the Cinnamon, but it is a course I should never adopt. You are forfeiting type and stamina to a marked degree, and going a roundabout way for what you can get in your own variety. Show birds are often the finest producers of quality, and the hens from them should always be kept in preference to those coming from big coarse hens, and even the cocks from such

birds may turn out show specimens in their second season. Good bred Norwich grow more in the second moult than any other variety I know.

BREEDING FOR STOCK.

"It is essential to breed for stock birds as well as for winners, for breeding only from the latter soon lands you on the small side. Many present day winners have a tendency to run small in head on an otherwise good body; others carry a

"The roach back is generally terminated by a drop tail."

good broad head with the objectionable eyebrow; then there is the hollow neck which is an abomination, accompanied often by the arched or roach back; shoulders, too, are often prominent, and continued down side of body by objectionable outstanding flights. The roach back is generally terminated by a drooping tail. If better are to be had no one would think of keeping such stock birds in the room with any hope of producing good stock."

Mr. J. Trengove of Rishton, describes the type of hen which he finds produce the highest proportion of high class birds in the following notes, but it must be understood that to obtain certain results, even from such a hen as the one described, it is essential that the hen comes of a well-bred stock. "I like my hen," writes Mr. Trengove, "to be of medium size with plenty of type, sprightly, and full of life. She must have a good head, not over large, but a

good rise above the eye, the eye to be bold and well set, her neck full, chest nicely rounded with a good broad back not flat but inclined to be round, wings nicely tucked up, and as short in tail as possible, with no inclination to droop. I prefer to run one cock with two hens unless the cock is a good feeder and does not disturb the hen whilst sitting. When pairing up my birds, I pair a yellow cock to a buff hen, or *vice versa*, but I do not make this a hard and fast rule. If I find my birds inclined to run weak in head I resort to double-buffing by pairing a good sized cock, extra round in head and short in feather, to my most typical buff hen. In this way I get young of good size with plenty of head, showing an abundance of cheek, with good necks. In double-buffing, one has to be careful, and I like both cock and hen to be bred from yellow cocks. Birds bred by this method of pairing have won the highest honours on the show bench, and others have been the best stock birds I ever possessed."

CROSSES TO AVOID.

Of the many methods adopted to improve failing size and colour in the stock the consensus of opinion among the most experienced and successful breeders is that outside crosses are neither necessary nor advisable, and that the requisite material may always be discovered among pure bred birds. On this question Mr. J. Houghton, of Gloucester, remarks:—"If the birds were lacking in size I should introduce the offspring of double-buffs, as you get more size into the buffs and also increase the meal on the plumage, which is a great feature in buffs. I should not introduce a cross of the Lancashire or Crest-bred, as it takes three or four years of judicious mating to breed it out again, which is a roundabout way of reaching a result which could be attained in one season. But if they fail in colour I should double-yellow—one of the birds must be a green, and both should be soft in feather. I have double-yellowed and buffed with no small success. I should not introduce the Cinnamon or Lizard blood, as neither has more depth of colour than a good Norwich, and you are only losing size again." A useful tip to novice exhibitors is given in Mr. Houghton's closing sentences. "If you have a good bird you are going to exhibit," he says, "first see that the claws are short, as sometimes a bird gets over-grown claws and cannot travel the perches freely, and thereby loses a chance. Next see if the beak wants trimming, as sometimes the tip of the upper mandible gets overgrown, and gives the bird the appearance of being long in beak, which is a bad point in a Norwich."

THE LIZARD CROSS.

It is interesting to note here another view of the use of the Lizard cross for increasing colour, which is the experience of Mr. W. Bowyer, of Leek. He writes:—"The best colour in greens for crossing purposes is the bright green usually got from a cinnamon cross. But the best cross I ever experimented with was the Lizard. We used to cross with the Lizard years ago, when it was principally a matter of having colour, quality and condition to get to the front.

One heard very little of large heads and thick necks in those days. I remember Mr. John Williams, of Liverpool, paying me a visit in the 70's. I had bred that year a number of greens and broken greens, and he was so pleased with them that he bought all the hens I would let him have, and for several years afterwards applied for all the hens I could spare. Mr. Williams told me many a time that those hens had a great deal to do with building up what was known in the early 80's as the Liverpool and Prescot Norwich, and fanciers living to-day know what it was to rub against them. Every feather that Mr. Williams bought of me had Lizard blood in it, more or less." Thus it is evident that in those early days when the pure Norwich was a decidedly smaller and tighter feathered bird than the present type the Lizard was usefully employed by Norwich breeders. But with our present type it is doubtful whether the loss of size that must accrue would in any circumstances make the introduction worth attempting.

BREEDING FOR TYPE AND QUALITY.

"When mating up," writes Mr. Thos. Dixon, of Bedlington Station, "I like to have a medium sized hen, as I have found large, bulky, hens very bad layers and feeders. The cock must have plenty of size, good carriage, and be as full of Norwich character as possible. I invariably have one bird of each pair with marked blood. I am not partial to double-buffing or double-yellowing as I do not see any great advantage gained by so doing. The stock from double-buffs has a tendency to throw heavy feather about the thighs,—and with the increased size they often possess the fault of long wings and tail."

This is also pointed out in the following notes by Mr. A. G. Cameron, of Kelso. "Never pair together two birds," he says, "having long tails and long flights, or loose feathered specimens. Get them with wide chest, good shaped body, thick and chubby neck, a good wide round skull, and short all over—including feathers. The position of the legs is a great point to keep in view when mating. They should be placed as far behind as possible in one or both parents. Size and feather could be tolerated in male birds, provided you have suitable hens and that they are of good colour. Drop-tailed and narrow-headed cocks should be avoided, and also birds which crouch on the perch and will not stand up, as these faults are generally transmitted to the young."

Messrs. J. and J. Hopkins, of Bolton, contribute some pointed remarks upon the mating of birds with a view to improving type, quality and colour:—"Now-a-days the best breeders are fully aware of the fact that to breed a good even stamp of bird, type must be as far as possible on both sides, and consequently there is a corresponding increase in the number of real typical specimens seen on the show bench to-day. The principal method of gaining size is double-buffing. By double-buffing the size is increased without the length being affected and the birds are much thicker and heavier than by resorting to the Crest-bred cross, and are a great deal shorter and possess shorter and more compact feather. Extreme

care must be taken in mating for double-buffing. The cock should be full of colour and quality, medium size, and good type, and the hen ideal in every respect. The only disadvantage there is in double-buffing is that the young are liable to be paler in colour, but they are extremely valuable for maintaining and fixing type and keeping up the size. Quality is an absolute necessity. We have found that we always breed the best quality birds from yellow hens, and firmly advocate yellow hens for breeding quality, and buff hens for breeding type. It is a far easier matter to get birds to the requisite size if you should happen to lose a little in endeavouring to fix type and quality in your stock than to get rid of loose feather and bad type. The best and quickest way to improve quality is by breeding from two yellows. We are confident that this is the correct way to improve both quality and colour. If paired with the object of improving quality care should be taken to put together the shortest and thickest birds possible, as birds bred from two yellows have a tendency to run slim and long. The young bred this way should be paired with short thick birds (double-buffed preferred) to regain whatever has been lost in type by double-yellowing, taking care however to select only those of good quality. If paired with the object of improving colour the best coloured specimens should be used, and preferably those having dark blood in them, or marked birds themselves. This we consider much better than resorting either to the green or the Cinnamon blood. If you resort to the full green blood it will take some time before the birds throw anything like clear again."

COLOUR QUESTIONS.

One result of too frequent double-buff mating is a very decided diminution in the yellow stock. At one time it was held to be impossible to breed a yellow bird from two buffs, though buffs might be obtained with the greatest freedom from the yellows. But, like all others, this rule has its exceptions, and although it is of quite rare occurrence it is nevertheless a fact that a yellow is occasionally bred from two buffs, or a gold from two silvers as in the Lizards. Mr. Bowyer assures us that years ago he once bred two gold hens in one season from a pair of silver Lizards. But in the vast majority of cases yellows are *non est* among the progeny of two buffs mated together. Size is undoubtedly increased, and the colour and mealiness of the plumage are often extremely good, but the lack of yellow birds, and the not always desirable increase of feather, should make fanciers pause ere carrying the practice beyond reasonable limits. It is a sound principle to endeavour to keep a fair proportion of deep rich yellow birds among the stock without having to resort too frequently to the pure green blood to revive the vanishing stock of yellows. To accomplish such an object the breeder will quickly discover that he cannot afford to double-buff the bulk of his breeding stock more than one year before reverting to the yellow-and-buff matings to prevent his stock of yellows falling to a very low ebb. Typical yellows are

"OUR CANARIES"

FOUL-MARKED SCOTCH FANCY CANARY.

always in a minority, and a really stout, chubby, typical yellow hen is a bird to be treasured by the wise and prudent breeder. Such a hen, especially if bred from double-yellow mating, paired to a big, close-feathered buff cock rarely fails to produce something far above the average of typical excellence. In resorting to the pure green to improve depth of colour exceptionally good results will be gained by mating a moderate sized buff hen of good type, and preferably a clear bred from double-yellows, to a good yellow-green cock, with neat and clearly defined pencilling on back, and a bright clear ground colour and dark legs and beak.

"The Norwich Canary of to-day," writes Mr. C. E. Silk, of Emsworth, "is a bird more admired than any other variety. One particular point I would impress upon breeders in selecting their stock is that one can never breed a good bird from one with a pinched head. Never mind how good other points are, never breed from a bird having a bad head. Shape and quality are also essential in a good Norwich, for a Norwich without shape is not a Norwich, and a Norwich without quality cannot win. Size will come from a good-headed hen, but never from a pinched-faced bird. By sticking to quality colour comes with it. There is not half the trouble to get the colour into a good quality bird as there is in a coarse specimen. If you find the birds a bit too free in feather mate them once double-buff. This will often work wonders. I have many times crossed with a good buff Cinnamon cock. It is surprising what a lovely texture of feather this cross gives. It also improves size, and I find Norwich with Cinnamon blood take colour food much the best. I would not recommend double-yellowing, because my experience is that the young come very scant in feather and show too much nakedness about the thighs. I also find the young from the Cinnamon cross splendid birds for marked breeding. I got even-marks from the second cross."

THE EVEN-MARKED VARIETY.

The popularity of the even-marked for many years past has been, unfortunately, of a negative description. In former days it was one of the most popular, as it was also the most handsome variety of markings we possessed. But it lost its hold on fanciers generally from the same circumstances and at the same period as the even-marks in other breeds, and no serious attempt seems to have been made to revive it. That such a revival will occur there can be little doubt, as the continued growth of the Fancy must naturally open out new spheres of interest in the development of new, and the resuscitating of old, varieties, and the even-marks have only to be staged, so to speak, to bring down the house, and win a large body of new adherents. The Norwich with its plump and chubby shape and rich deep colour forms an ideal structure on which the technical marks are displayed to the greatest advantage. The definition of markings already given in our last chapter applies in every particular to the Norwich Plainhead. The full six-pointed bird, owing to the presence of dark underflue which almost invariably accompanies the

tail marks must be used with discretion in the breeding cage. It has been said that this bird is not a suitable stock bird at all for breeding even-marks—an assertion which, without some strong qualification, falls wide of the mark. It should, however, be mated to a clear, bred from even-marks, or if its eye-marks be of a very light description it should be mated to an eye-marked specimen, with good shaped but rather small eye-marks, and as free from dark flue about the thighs as possible. This bird must, of course, come from an even-marked strain.

MAKING A STRAIN.

Our thanks are due to Mr. J. H. Payne, of Gloucester, for the following notes on even-marks:—"To the breeder who wishes to revive the glories of an almost forgotten variety," he writes, "I say unhesitatingly, take up the breeding of evenly-marked Norwich. I remember the days when we had strong classes of even-marks, and have frequently seen 'cages of four,' and the birds in many instances equal to the clears and variegateds in shape, size and quality of feather. I would advise the prospective breeder of even-marks, when starting, to purchase his stock from a breeder who has a large and well-established stud. Here he will find the material he requires to build up a strain of even-marks. He should select any birds of good shape, size and feather that have technical marks of any sort, but are quite free from any marks on the body. He should have, say, six or eight birds, the markings of which in each pair, collectively, should represent an even-marked bird. In this way his foundation is laid upon what he desires to fix and perfect in his finished structure, viz., 'technical markings.' By selecting birds with substance, shape and quality, if they do not produce birds at first that are useful for even-marked breeding, they will still be of value in many other ways. He need not be particular in the initial stages about pairing in the orthodox way, and should not scruple to pair buff to buff, or yellow to yellow, providing he has in the pair of birds the full complement, of technical markings, as these are *the* points he must strive to fix.

"Coming, as these birds probably would, from variegated stock, young would be produced that, in addition to technical marks, would have some body markings. These should be eschewed. They would lead back again to the original stream of variegation. I do not say that one should not breed from a bird that has a body mark in addition to its technical marks, but I do say that such technical markings would have to be super-excellent to induce me to use it. Good eye marks are much more difficult to produce than wing marks. When I say good eye marks I mean eye marks that are both anterior and posterior—the former being nicely rounded and the latter gradually tapering away. Good eye marks should be greatly prized, and nothing should tempt the breeder who desires to produce a perfect even-mark to part with birds that have well-formed and evenly-balanced eye markings. In the course of the breeding season a bird or two will doubtless be produced that will be green, or nearly so; also some clears. These will be

useful and should be paired together, as there is every probability of their producing a good even-mark. One of the best I ever saw was bred this way. But should these birds in turn produce a green it should not be used, as it shows that the green blood has taken too firm a hold, and would, in all probability, produce only stock with what we wish to avoid, *i.e.* body markings, in addition to technical marks. There is some difference of opinion as to what constitutes a well marked pair of wings. Some fanciers prefer them on the heavy side, but I prefer the lighter side. I think they look much neater, and have a more finished appearance. My ideal of a pair of perfectly marked wings is from five to six feathers in each wing, and these must not have a break in them; that is, there should not be a light feather between the dark ones. In the breeding of even-marks in-breeding must be resorted to. Indeed, there can be no *strain* unless it is done. If I had two birds whose markings just 'hit' I should not hesitate to mate them together, no matter how close the relationship, provided only that they were both thoroughly healthy and strong. The breeder who wishes to found an evenly marked strain must have no scruples, but must thoroughly instil into his mind that markings he *must* have, even if he has to sacrifice something for the time being to obtain them."

STANDARD OF PERFECTION.

Below we give the standard of perfection, and scale of points adopted by the Norwich Plainhead Canary Club.

	Points.
<i>Head</i> : Round and neat, with short, stout and clear beak	15
<i>Neck</i> : Short and thick	10
<i>Chest</i> : Deep, broad and full	15
<i>Back</i> : Broad and well filled in	10
<i>Wings</i> : } Short, compact, and good carriage	{ 10
<i>Tail</i> : }	{ 5
<i>Feathers</i> : Soft and silky, with brilliancy and compactness	15
<i>Legs and Feet</i> : Legs well set back, and clear	5
<i>Colour</i> : Deep, bright, rich, pure and level throughout	15
<i>Condition</i> : health, cleanliness, and sound feathers essential.	
Total	100

Length: not to exceed $6\frac{1}{2}$ inches.

Streaked beak and marked legs not to be a disqualification, but to count against the bird according to their extent.

CHAPTER XXIV.

THE SCOTCH FANCY.

FEW breeds of our Canaries have raised so much controversy and diversity of opinion regarding a standard type as the Scotch Fancy, and none has shown a greater change in physical conformation than the modern type compared with the old semi-circular type of bird which was considered the correct thing in the early days when the bird was at the zenith of its popularity. In those days it was known generally as the "Glasgow Don," and a good type of bird possessed far greater claim to the popular term "a bird o' circle" which was applied to the breed than do our present-day high-shouldered and square-topped birds.

A good type of the Don would really possess in outline some close resemblance to a semi-circle or half-moon shape, which no stretch of imagination can justly apply to the square-topped modern type. It had, too, in our opinion, superior claims to artistic beauty and elegance; it was a bird of distinction, set apart by its agreeable and harmonious array of beautiful curves, in striking contrast with the modern type, which is apt to convey an impression of an unsuccessful attempt to blend a mixture of curves and angles to the detriment of both. Speaking for ourselves, we would gladly see a reversion to the original and graceful "bird o' circle" type, leaving the prominent shoulders and low carriage of head to the Belgian from which they have admittedly been borrowed.

CONFUSION OF TYPES.

That the blending of these two breeds has been fraught with evil results to the general welfare of both is now largely recognised. It has undoubtedly contributed in no small measure in various ways to the decline of both breeds in popularity, by bringing them into such close juxtaposition as to over-lap each other and bring about such a confusion of type as to leave little or no strongly marked dividing line to show where Belgian ends and Scotch Fancy commences. The confusion has been carried so far that crosses between the two breeds have at times been awarded the bulk of the honours on the show bench, and might also be found exhibited, as opportunities occurred, as either variety. Such an unsatisfactory state of affairs must, and will if allowed to continue, ultimately prove a fatal principle, and crush one or both breeds out of existence. It should therefore be the endeavour of all devoted breeders to encourage a fixed and pure type, and, above all, to make it distinct from the Belgian so that no confusion of type can reasonably exist. A bad Belgian can never be a Scotch Fancy, nor an indifferent Scotch Fancy a Belgian, and a first-cross should never be permitted to become either. Nothing, indeed, can be more insidiously dangerous than to bring two distinct breeds into such close juxtaposition that the essential points are lost in the confused elements which must prevail where the types meet and blend.

Sooner or later either one breed will go to the wall and be absorbed by the type which finds most supporters, or, worse still, both will lose their hold on the popular mind, and at best flicker weakly on the verge of extinction. These few remarks are worth the serious attention of all devoted lovers of the Scotch Fancy and the Belgian to prevent as far as possible any over-lapping or clashing of the vital interests of these two ancient and distinctive breeds.

THE EARLY TYPE.

Some recollections of the early days are sent us by Mr. Thos. Smith, of Glasgow; who writes: "Half a century ago breeders aimed at the production of what was known as the 'Glasgow Don,' which was of half-moon shape. Less attention was then devoted to prominence in shoulder: the leading feature aimed at was the production of as much circle as could be got, accompanied with smart, active movement. Naturally there was an inclination to lean over the perch, but the modern breeder of those days preferred the erect posture type, with abundance

A depression between the shoulders is a bad fault.

of reach, and a small snaky head. By and by the desire for heavy shoulders became very prevalent, and for the purpose of securing that quality the Belgian was closely affiliated with the Scotch Fancy to put the erect position and shoulder into the young, and produce the popular Scotch Fancy: erect, snaky head, fine reach in neck, heavy top, and rare depth throughout the chest, well cleaned out chest, long body, and the tail to the perch, or, preferably, the tail sweeping right under the perch.

Twenty to thirty years ago a good breeding Scotch Fancy was procurable for £2, or thereabouts, and was within the reach of any who had a liking for the bird. I believe that is one reason why it was for a long time immensely popular at Scottish exhibitions.

THE PRESENT DIFFICULTY.

"Passing on to the present time the chief difficulty in the breeding of the Scotch Fancy is the impossibility of getting a proper Belgian. It has become so reduced in size that it lacks the qualities so much sought after in the crossing, and now breeders have to fall back upon mating Scotch Fancy with prominent back to Scotch Fancy with heavy top to supply what the noble Belgian supplied in his time of popularity and usefulness in the breeding room. The Scotch Fancy, thanks to the wisdom of breeders, has retained the shoulder or heavy top so well, that it has not lost in that respect to the extent that was expected with the removal of the Belgian prop.

"But whilst there seems to be ample for the present it remains to be seen how the bird will fare in the future. The Scotch Fancy of to-day notwithstanding its disability from the Belgian support pretty well holds its own in point of size,

shape, and other qualities ; and whilst it is in fewer hands, principally owing to the high price it commands, there is every prospect of its becoming as popular as ever. It is regularly sought after at home and in the Colonies, in Canada and the United States of America, and breeders have only to secure a few pairs of the proper stamp to give the Scotch Fancy a footing it never had before."

FOR AND AGAINST.

One of our oldest Scotch Fancy enthusiasts, Mr. W. McClure, of Glasgow, sums up the Scotch-Belgian position in the course of the following remarks, which he has kindly sent us. "I have been a devotee of the bird o' circle since the seventies. When I commenced the 'Glasgow Don' was more a bird of circle than the present type. The Belgian was introduced before this time to give more prominence to the shoulder and droop of the head. In those days you required to have two or three crosses out from the Belgian before you had a bird fit for the show bench—large, long body, well filled-in back, tail under perch, and plenty of nerve or action. The Belgian has given the Scotch Fancy more top and a better droop of the head, but at the expense of size and length of body, and the birds are more tapered, or pear-shaped, now than in the old days,

"In mating, whenever possible put an upstanding square-topped bird to one with a good curve, and, as far as otherwise suitable always the best to the best. In starting the Fancy it is best to go to a reliable breeder and get a pair from his winning strain and ask him to match them for you. They may not be up to exhibition quality, but you have the breeder's expert knowledge in the selection and matching of the pair, and may breed something good. If possible get a second pair from another breeder, and you can cross these and their progeny the following year without getting fresh stock.

"To summarise the points of the Belgian cross we have in its favour : that it gives a nice low droop and snaky head to the Scotch Fancy, and more thickness through the top or shoulder. Against it : that it shortens the body and gives much more taper on the head ; has a tendency to openness between the shoulders, and loses the graceful movement for which the Scotch Fancy is famed."

The views of Mr. John Pringle, of Selkirk, upon the modern type and its requirements are thus briefly set forth : "You must have, to begin with, a bird well set back on legs, not stilty and straight as in the Belgian. It then shows the circle to full advantage. You must have plenty of both nerve and action, as a bird cannot show to advantage without them. A good bird should spring to attention as soon as the cage is lifted, and draw himself up, showing every point as fully as possible. The depth of bird through the chest is the most difficult to get, as there is always a tendency to run thin in that part. But a distinction must be drawn between feather and actual thickness. The craze for large birds has resulted in their running coarse in feather, and many a one is believed to be thick through the chest when it is only a case of coarse feathers hanging loose in

A Foul-Marked Scotch Fancy.

front. I would put the value of points as follows: fine and snaky head, 5; long and reachy neck, 10; depth of chest, 25; nicely rounded wings, just meeting, 5; length of leg, and well set back, 20; long tail, brought hard against perch, 10; circle, 10; nerve and action, 15; condition, 5. This, in my opinion, is about the value of the points in relation to one another.

"Much is written upon the evils and the merits of sib breeding. With careful sib breeding much can be gained in the Scotch Fancy. I find mating once 'in' and three times 'out' to be best, as you retain much more vigour in the birds than by breeding in more closely. I find the Scotch Fancy as free a breeder as any other variety."

A CREDITABLE PERFORMANCE.

"To breed a really good Scotch Fancy," writes Mr. R. Findlay, of Darvel, N.B., "marks one in the Fancy as the hero of the year. The procedure is much on the same lines as other Canaries, but it is better to keep feeders—either Border Fancies, or common Canaries which have been found good in the matter of the rearing of young. In mating Scotch Fancies get a cock with prominent shoulders, long neck, and small head, with a tendency to keep the head well down; if he does not keep his head below the line of the top of his shoulders when you handle the cage do not mate him. The hen should come as near the above description as possible, but the lower half should have a fine curve round from the turn of the shoulder right down the whole length to the tip of the tail, showing the tail in front of the perch, and when being handled the head must be well drawn forward, and well down. Sometimes a depression is shown between the shoulders. This is a very bad fault. The shoulders must be well filled-in, and show a good solid back. By careful selection you can work out this fault, and also stiffness of tail—a weakness inherited from the Belgian. To breed out the latter fault mate with a good free-tailed bird so that this stiffness will be modified. The cock exercises the greatest influence over the progeny.

"To improve the stock see that in introducing fresh blood you get a bird with plenty of thickness through the chest to the top of the shoulders; and see that it has a long neck, and small head, with a fine curve on the wings and tail. Beware of thin chested, thick necked birds, with stiff back and tail—better not have them. This type can ruin a good stock for years to come."

POINTS ABOUT COLOUR AND MARKING.

In the Scotch Fancy we have the two fundamental colour types—yellow and buff—and practically every degree of green variegation as seen in such breeds as the Norwich or Border Fancy, with the exception that technical markings such as are cultivated in even-marked varieties are absent, being but slightly appreciated, if at all, and never specially striven after. Self greens are also of common occurrence. It is noteworthy, however, that distinctive terms are commonly applied to the Scotch Fancy by breeders in Scotland and the Border Counties.

Clear birds are more generally described as "clean," whilst the terms "foul" and "pied" or "piebald," are commonly used as synonyms of the English terms ticked and variegated. The usual method is to mate yellows with buffs, and clear birds with green, foul, or pied specimens as the case may be, after due weight has been given to consideration of other points concerning size and general type. Double-buffing is resorted to to increase size and substance, but must be done with discretion lest coarse plumage and a frilled chest spoil the quality and contour of an otherwise good bird. The mating of the progeny of double-buffs back to yellows is frequently followed by the happiest results, and a good proportion of yellows are again bred of an excellent type. The leading characteristics of the buffs are size, substance, and good prominent shoulders, whereas the yellows are generally of a lighter build and excel in fineness of feather, but are more liable to run thin through the chest.

Writing upon the subject of improving shoulder, drive, and action, Mr. David Black, of Govan, says: "I will give you an example of the difficulty of introducing the Belgian into your stock. To put a square, as represented by the Belgian, into a circle, as typified by the Scotch Fancy, and yet retain the essentials of the circle is a thing that must be handled very warily. Our desire is to keep a clean cut-out front, and introducing the Belgian will straighten the front, and also give the body a leaning position, which is a very bad fault. Care must also be taken about the position of the head.

A Scotch Fancy must have the beak pointing direct outwards, whereas a Belgian has a drooping, inward curve on the head. Also the legs of the Belgian are set straight up on perch, whilst the Scotch Fancy must have them set well back, and able to take a good grip round the perch.

"So much of the bad points of setting the square into the circle. Its advantages are that it will give you at once a good top, and the leaning body, if properly mated, will give you a long body, or 'good rib,' as we call it. To keep a good back when you have got it you must keep in touch with people who are breeding another direct line of good birds, and co-operate and exchange when wanting an introduction of fresh blood. Do not mate together birds which have neither prominence of shoulder or wing, nor with thick necks. Birds so mated will never throw good shoulders, drive, nor action."

Beware of thin-chested, thick-necked birds, with stiff back and tail.

A BREEDER'S EXPERIENCE.

In writing us concerning his practical experience with this breed, Mr. J. Little, of Newcastle, says: "The remark one sometime hears that they are very delicate, and bad feeders, and require too much attention for any working man, does not agree with my experience, and I have bred them over 28 years. They are as easy to breed as any other variety, and will feed their own young, as the following result of my best year's breeding will prove. I had no feeders, the Scotch Fancies having to rear their own young, and from six pairs I reared 64 young birds, some of which took first prizes at some of the leading shows.

"It requires some skill in mating to produce show birds. Size goes a long way, but size without other good qualities has to take a back seat on the show bench. Double-buffing occasionally is a good way to get size. I prefer a small hen with fine head, long neck, and a pair of good legs, paired to a cock as large as possible, but not rough in feathers, good in top and length of side, and free tail. Be very careful in double-yellowing or you may get them on the small side, and they are apt to run too thin, but if the birds are getting too rough in feather it will reduce it."

ITS NERVE AND POSITION.

"The Scotch Fancy," writes Mr. John McLennan, of Edinburgh, "should be a bird of large and handsome proportions, showing massiveness without coarseness—a nervy grace and sprightly movement of nerve and jauntiness found in no other member of the race. Its position when in the show cage is perfectly perpendicular upon the perch; a drooping forward, or, as it is termed, 'over the perch' position cannot be tolerated. Many good birds are ruined as show specimens by this fault. The shoulder is the next great point striven after. This, in a show specimen, must be very prominent, stuck well up above the body, and in a yellow bird showing a distinctive and square formation on the top, with no hollow between shoulders and the feather inclined to be full instead of otherwise. A bird of high-strung nerve and temperament it must be handled with the greatest care and gentleness. Very little 'travelling' should be demanded of it in judging—one or two turns from perch to perch being sufficient to show the bird's soundness in feet and legs, and until steadied on one perch and gently coaxed into position the best qualities of the bird cannot be discovered."

POINTS ABOUT MATING AND TRAINING.

We have culled the following salient points upon the judicious mating and training for show of this variety from a paper contributed by Mr. R. G. Joliffe, of Glasgow. "Size is a great feature of the Scotch Fancy, and ordinary specimens should measure from 6 inches to $7\frac{1}{2}$ inches in length, or even 8 inches, from the point of bill to tip of the tail, but few may be found to exceed 7 inches, which may be accepted as the average size. In pairing for colour the usual way is to mate yellow with buff, but it is not unusual for two buffs to be mated together with the

object of improving size and constitution. If mated too often in this way roughness of feathers is the result. When variegated birds are desired some well-marked birds should be selected and paired with clears, and from the produce you can again pair with clear birds, bearing in mind the usual principles of correcting the faults of one by excellencies in the other in order to improve the contour and general excellence of your birds. Care should be taken not to match up two marked birds, as the produce may turn out too heavily marked, and the result of the re-crossing of marked birds would be greens almost entirely. The progeny of male birds two years old are generally stronger and more healthy in every way. Male birds in many cases fail to impregnate the eggs in their first season. I have very often met with this result. But bear in mind, a corresponding failure does not appear in hens during their first year.

"Having selected the most promising show birds at the end of the moult, they should be trained to the show cage. Indeed, it is well to begin their education as soon as they are seven or eight weeks old, or earlier. They should be put in the usual Scotch Fancy show cage, and taught to travel freely and gracefully from perch to perch. The greatest care and caution are required at this time as they are most timid and wild. By using a thin stick about a foot long, try to get them to action; train them to leap rapidly from perch to perch. You will then best observe their action and true form, and will, after a short time, be able to get them into position for the display of their true form by simply moving the cage in the hand, and with the aid of your hand or finger."

TERMS DEFINED.

Being an ancient breed and of somewhat localised distribution—its general popularity being mainly limited to Scotland, where it has ever been regarded as the National type of the Canary race—it is naturally the subject of many technical terms which may sound strange to English ears. The colour terms we have already referred to: *clean* being synonymous with clear; *foul* with ticked and very lightly variegated; *pied* or *piebald* with variegation of all degrees right on to broken greens, the latter being also referred to as foul greens, and occasionally as pied greens. *Action*, *gait* and *travelling*, are terms used to describe the bird's characteristic movements as it hops jauntily to and fro about the perches, which, by the way, our Scotch friends more generally term spars. *Style* and *position* mean the distinctive attitude adopted by the bird when posing to show off its

points. *Droop* refers to the low carriage of the head. *Nerve* is a kind of tremulous motion or suppressed excitement which is apparent when a good bird is showing off its points as though it were consciously striving to do its very best. *Reach* is the term applied to length of neck, a good reach—good length of neck—being a most desirable feature. *Drive* is a term used to describe the manner in which the bird thrusts forward its head when in position, the beak pointed directly forwards and the neck extended to its full length as though the bird were striving to reach something beyond the tip of its beak.

STANDARD OF PERFECTION.

	Points.
<i>Size</i> : Large and massive, without coarseness	10
<i>Shape</i> : Body, long and tapering ; good depth through chest to shoulders ; well cut out front and nicely circled back, tail well forward under perch ; head carried below line of top of shoulders ; legs well set back ; wings, long, slightly curved, carried well up, close to body, and just meeting at the tips	20
<i>Head</i> : Snaky, shade flat on crown, with well defined rounded cheeks	5
<i>Neck</i> : Long, thin, and nicely tapered....	5
<i>Shoulders</i> : High and prominent, nicely arched, well filled in	20
<i>Back</i> : Long and narrow, nicely filled in, well curved from shoulders to tail }	
<i>Tail</i> : Long, close fitting, well curved under perch	5
<i>Nerve, Style, and Travelling</i> : Bold, free, and jaunty carriage, with plenty of life and action	25
<i>Quality and condition</i> :	10
Total	<u>100</u>

CHAPTER XXV.

THE YORKSHIRE CANARY.

FOR more than half a century the "gentleman of the fancy" as the Yorkshire has often been termed has been holding its own on the show bench, and is undoubtedly one of the most stylish birds we possess. It combines in perfection all the naturalness of the plain and normally shaped and feathered breeds with the hypersensitiveness and nervy action and graceful poise of the typical "birds of position." From stem to stern, in nautical phrase, its whole appearance and bearing are those of a feathered aristocrat; clothed in plumage as smooth and trim as a boxwood model, in shape as straight as a pencil, in pose as upright as a good principle, for it is in such laudatory terms as these that its enthusiastic admirers love to speak of the Yorkshire.

Writing of the early history of the breed that popular judge Mr. W. Mundell says: "There is one vital point I would impress upon the beginner in the Fancy, viz:—that the Yorkshire is a made breed—a combination of crosses. I know many will differ from me, but the fact remains. The old fanciers in the 60's used to exhibit the longest bird they could lay hands upon and it used to catch the judge's eye and get first prize. They were called Common Canaries in those days. Some breeders, seeing that length was required, went off into Lancashire and selected some long slim plainheads and crossed in to produce length. This was a very wise cross, but it brought out the birds too stout, and with too much feather. To remedy this the boxy-feathered Norwich hen was introduced, which gave a better shape and produced many winners. Still, some of the more progressive fanciers had an eye for position, so Belgian blood was next introduced, which gave not only the desired position but also a smaller head, and brought back much of the former slimness, and shorter feathered birds. These three crosses are the foundation on which stands the Yorkshire Canary of the present day.

A JUDGE'S ADVICE TO BEGINNERS.

"The new beginner need not go this roundabout way to build up a strain. He should get of some respectable breeder a few of the finest hens, showing all Yorkshire properties, viz: nice round heads, good wing carriage, well folded tail, standing on neat legs, and full of quality. The cocks to pair with these hens should be of good length, long in wings and tail, standing on good legs, and with nice round heads. They may be a trifle stout, but never mind if you have got length in the birds. If the stock begins to run down, cross with a good quarter-bred Belgian, which will put shape and nerve into the hens, and also give them nice wing carriage. One should always have on hand a good variegated bronze or rich gold-coloured hen or two, which will not only enrich the colour but

"OUR CANARIES"

CINNAMON CRESTED CANARY.

add stamina to the stock. Birds with plenty of green blood in them are always the strongest. In breeding for marked Yorkshires use the grass green birds, from which you will get darker markings; and in breeding for cinnamon-marked birds you will always get the best results from a nicely marked bird paired with a clear, as you will not then be filling your room with a lot of variegated birds.

“A great question among fanciers is whether it is best to mate a yellow cock to a buff hen, or *vice versa*. I favour the buff cock and yellow hen, as I find the buff cock is more vigorous; he has more dash, is stronger and I find he produces finer young. The yellow hen is finer in quality as a rule, and I think she has a greater influence on quality of feather than the buff hen.”

ITS EARLY DAYS.

Concerning its rise and early progress that old breeder, Mr. J. Wilman, says: “Between the years 1860 and 1870 the Yorkshire was shown for the largest and best-feathered bird—the three cardinal points being length, quality and colour. Type and slimness were little thought about. The longest and best feathered bird won, but providing two birds met of equal merit except in colour the latter decided which won. In those days they were bred from the Common Canary, with a little blood borrowed from the Lancashire to produce length. Just before the 80’s an extra cross—the Norwich—was introduced to improve the colour and feather, and then the Belgian blood was put in to produce the type and leg. From this combination, before the end of the 80’s, as good specimens were produced and shown as we find to-day. In the early part of the 80’s I knew Yorkshire breeders to buy what were called little plainheads which had been brought to Yorkshire, washed, put on the show bench as Yorkshires, and won; not once but many times.

TWENTY YEARS AGO.

“I do not think there is a Yorkshire Canary to-day that is better in all points than specimens shown 20 years ago, but you will find 20 to-day where you would only find one 20 years ago. It has often been said that I was the proposer of the standard length limit of $6\frac{3}{4}$ inches, but this is not so. I was present at the meeting of the Yorkshire Union when the standard length was proposed and carried. The first proposition was $6\frac{1}{2}$ inches when Mr. Naylor, if I remember rightly, proposed as an amendment that it should be 7 inches, and expressed the opinion that we were making a mistake and did not seem to realise the natural length of the bird. It was then proposed that the length should be $6\frac{3}{4}$ inches, which I was in favour of, and which was put to the vote and carried. I had never, at that time, measured a bird, and voted in favour of the middle length proposed, as the happy medium, though Mr. Naylor said he had no doubt we should some day find we had made a mistake.”

ITS SPREAD IN THE NORTH.

It was not to be expected that a bird having such universally attractive features could long remain secluded in the county which gave it birth and name, and it no sooner became an established breed and a popular feature at bird shows than it began to win adherents among all classes in all parts of the country—a happy augury of the popularity it was destined to gain. The history of its progress in the northern counties is briefly told by Mr. G. W. Cuthbertson, of Heighington, from which we take the following extracts. “My connection with the variety as an exhibitor dates from the year 1899. At that date, except in Cumberland, I was practically the only exhibitor of Yorkshires in the counties of Durham, Northumberland, Westmoreland and Cumberland. Although having hosts of admirers the variety made practically no progress in the north. Breeders were increasing in number rapidly, but owing to lack of classes, and the strong competition from southern exhibitors, local exhibitors were few. All this was changed in 1906 by the formation of the Northern Yorkshire Canary Club, which was due entirely to the enthusiasm and energy of Mr. T. C. Crawhall. Our northern shows usually gave only two classes, but the club insisted in its first patronage year upon four classes, which were well filled at all the shows. The following season the patronage was divided into two sections, Champion and Novice, which had the effect of creating greater activity and enthusiasm among the new members, the novice classes averaging nearly 20 per class. In 1909 Dr. C. Duncan O’Neil gave a solid silver rose bowl for novice classes which further stimulated breeders to action, and the competition was very keen. That the N.Y.C.C. has done a great work in the north is proved by the number of members, but they are only a small part of those who breed the Yorkshire up here. Where breeders of this variety were counted in units four or five years ago they are now counted by tens and are still increasing, for no bird that graces the show bench is so captivating as the Yorkshire, and none needs more careful study both for showing and breeding.”

Above all try to avoid broad tailed birds.

YORKSHIRES IN THE GREEN ISLE.

The rapid spread of popularity of the Yorkshire in Ireland is well-shown in the following excerpts. Mr. C. J. Mulligan, of Sligo, says: “The Fancy in Ireland never looked better, and the future promises to be greater still as we all

now have something to look forward to winning. When I started we had only the prize money and a few 'specials,' but to-day we have between 15 and 20 challenge cups and gold medals. The Yorkshire has taken premier place on the show bench here. When you enter a showroom you might imagine you were in the county of broad acres to see such a display of Yorkshires—often 300 exhibits. And why should not this be so when real enthusiasm is put into the variety? We have two clubs to look after our interests and six cups for competition, and all the members send out their birds to the different shows held under club patronage. In connection with these two clubs the closed ring has been adopted, and two cups are provided for the competitor gaining most points at shows held under club rules, only three nominated birds of each competitor to compete. This gives the novice a fine opening."

A HAPPY INAUGURATION.

"The Yorkshire came into general favour in Ireland," writes Mr. C. A. O'Reilly, of Dublin, "with the advent of the Y.C.C. of Ireland, due in great measure to the able influence of Mr. F. W. Powell. Previous to this, in the year 1903, at a show held in Rathmines, Dublin, under the auspices of the Dublin P. and C.B. Society, three classes were given for Yorkshires. In the Autumn following, the Yorkshire Canary Club of Ireland was launched, and in November, 1904, held its first show under somewhat unique conditions. Only Yorkshire classes were provided, and about 400 birds were staged, being judged by Mr. W. Mundell. At this show no prize money was given—only prize cards and specials, of which there was a goodly number. A registration fee of 2d. each exhibit was charged, and this money was pooled, and out of it was paid the carriage of the country member's exhibits. Each succeeding year has seen a marked improvement in the quality of the birds. At the Y.C.C. of Ireland show in 1908 a Mr. Fleming, of Belfast, exhibited an unflighted yellow hen which I consider one of the best birds ever shown here. As a young bird I think it went right through the Irish shows without being beaten. In the same year I bred a clear yellow cock which created a sensation over here, and for which I refused an offer of £12 which I believe is a record as far as Ireland is concerned."

POINTS OF STOCK BIRDS.

The essential features to be looked for in stock birds are well shown in a few pointed sentences by Mr. Thos. Bennett, of Bradford, which we give in his own words: "An ideal stock bird," he writes, "should possess length—seven inches—good position, not too erect; short feather of a fine silky texture, carried very close to the body; should be well up on leg, but not stilty, showing a little of the thigh, which should be free from long fluffy down, yet not bare but neatly clothed; the head should be pear-shaped, round on top (not flat, which gives the bird a snaky appearance); should have good length of neck and narrow shoulders; the back well filled in, not spouty; the side appearance of the bird showing a well drawn

out tapering effect, not having that abrupt finish at the vent which gives a bad effect; wings should be of good length, well carried, meeting at the tips resting on a long tail, which should be so neatly folded as to have the appearance of a pencil. It should be free from any signs of a droop and be carried in a direct line with the body. The breast should be round, not too full, but free from any signs of a frill, and should taper gradually away to the vent. The bird should be full of action and nerve.

CLIMBING THE LADDER.

"To improve one's stock," he continues, "the fancier must be prepared to weed out unfeelingly any bird which consistently produces faulty young—his favourite hen, if she persistently produces young with drop tails, or an otherwise ideal stock cock whose progeny unfailingly show too strongly the bad effects of the Lancashire cross, viz:—those heavy headed, browy, sluggish birds; these must be discarded. Every breeder in selecting his stock should use the greatest care and knowledge as to the bird's ancestry. Many a good stock has been almost ruined from insufficient knowledge of the ancestry of even one bird. We not only want birds that are possessed of the good qualities I have enumerated in the ideal stock bird, but we want those good properties fixed in the birds by their progenitors. The bad faults I have just mentioned are the direct result of the Lancashire cross, and the breeder must at every opportunity use the only means in his possession to stamp out these eyesores in the Yorkshire bird by discarding all birds possessing such defects in a marked degree.

The flat skull of the Lancashire is hard to breed out.

"The breeder should not on any account put together a pair of birds each of which is possessed of the same faults. For instance, if the cock bird should be faulty in head properties by showing a tendency to be browy or flat on head, these faults should be counterbalanced by the good head properties of the hen. No matter how good your birds may be if they are small they are of little use at all, and are invariably hard to dispose of; therefore keep an eye on the big ones. This size has been given us by the Lancashire and is the only recompense for the many faults he has left in his train.

"In selecting the big ones, by all means do not sacrifice much quality of feather, for a Yorkshire without quality of feather is almost worthless no matter how big he may be. When pairing up keep your eye on those birds that are possessed of a nervy disposition and that are full of swaggering appearance. These are very good traits given us by the Belgian Canary and are a fine compensation for the snaky head and thin neck, both of which are blemishes in the Yorkshire bird."

A QUESTION OF MATING.

It is interesting to note the opinion of that successful Cardiff breeder, Mr. T. H. Melhuish, about mating to breed winners. "It is not necessary," he writes, "to pair winning show birds to breed winners, because in Yorkshires, as in other breeds, they do not always do so, but throw a very mixed lot of youngsters. I have bred a lot of my best young from opposites. I have heard strong arguments for and against Belgian crosses, and I have tried the pure Belgian, and also the three-quarter, half, and quarter-bred birds, and in my opinion unless one has a large stock and breeds extensively there is no need to go beyond a third or fourth cross. The bulk of the Yorkshires to-day have good 'position' and 'nerve.' It is in the head I have found most advantage to accrue from a good filbert-headed Belgian-cross bird, as the flat skull of the Lancashire is hard to breed out. On the other hand I have had good results from a hen showing a bit of Belgian, and a cock long and straight in the back, full-necked, showing decided Crest-bred or cinnamon-Norwich breeding, and from the young bred first-class specimens. Observation and experience will soon put one in the right way once the stock has been proved, and its characteristic traits are known. Always keep those proved to be mated correctly and producing the best young; don't let any price tempt you to part with them."

ANOTHER VIEW OF THE MATTER.

This system, which has been much discussed from time to time, has its opponents as well as its adherents, and with certain qualifications both are right in theory and in practice. The real crux is to be found in a perfect knowledge of the history of the stock in question. In the case of a breed, such as our present subject, which owes its origin to several widely differing types, it is quite probable that two exceptionally good show specimens if one (or both) of them happens to be a recently made bird would produce young very dissimilar to themselves, and, maybe, far below the average of mediocre exhibition stock; but on the other hand when a stock has been well established and bred systematically year after year, its external features become more and more a fixed and innate property of the individual members of the stock, and in that case it is quite reasonable to expect that the birds not in themselves first-rate shows specimens will produce progeny not only equal but much superior to themselves. Yet notwithstanding this rule the fact remains that the breeder who aspires to the highest place must also retain and utilise as far as possible in the breeding cage his most typical show specimens. To depend mainly on second-rate birds for stock, however good the pedigree may be, is a mistaken idea the effect of which will be to keep the stock at one average level of fair mediocrity, or at the best will greatly retard the development of a higher standard of general excellence.

The whole matter is tersely summed up by Mr. D. Mallinson, whose long years of practical experience have served to confirm the truth of this law:

"Pedigree is serviceable, but you must have the desired qualities there with it, or in the majority of cases you will be disappointed and find that the pedigree you are relying upon will lie dormant and the long line of pedigree end in breeding a room full of 'singers.' I know many breeders who have been tempted to sell their best birds for a good price thinking that because they had the same blood in a brother or sister it would serve their purpose as well in breeding more of the same quality as the bird sold. It is one of the greatest mistakes a breeder can make, as once he sells his very best birds he sells his one chance of raising his stock to a higher level. He may have a room full of brethren and sisters but the master key for improving type is gone."

VARIED EXPERIENCES.

"I am a firm believer in pedigree," writes Mr. J. Bailey, "and whenever I want a change of blood I always go where I have sold stock to get it, to avoid mixing up of strains. Every winner I have shown has either been bred by me, or bred from my stock. To start breeding I should advise a yellow or buff cock and two hens to match. The first essential feature of these birds should be type; secondly, quality; and thirdly, size. Some prefer $7\frac{1}{2}$ inch cocks and $6\frac{1}{4}$ inch hens, but I would much prefer $6\frac{3}{4}$ inch cocks and $6\frac{1}{2}$ inch hens. These birds are much easier to get than $7\frac{1}{2}$ inch cocks, and if you get $6\frac{3}{4}$ inch cocks and $6\frac{1}{2}$ inch hens you have both good position and quality. The longer the wings the better; but, above all, try to avoid broad-tailed birds. With regard to sexual influences, I find in most cases it all depends upon the condition or age of the birds. Thus, if I had a cock with bad wing carriage I should mate him with a young hen full of condition and extra good in wing carriage; and similarly with other points. I have proved this many times. Only last season I had a marked hen mated with a young cock, which produced all clears in the first nest. I worked him very hard, and allowed him to feed as well as run with two hens, and in the next nest three of the young were heavily marked. I have had many cases of this kind occur."

YORKSHIRE MARKINGS DEFINED.

A few words of explanation of the terms used to define the various markings of the Yorkshire Canary will be useful as a guide to the novice who frequently fails to grasp what it is that constitutes a ticked or uneven marked bird. It must be remembered that so far as the Yorkshire is concerned the popular terms "lightly" and "heavily variegated" are discarded and obsolete. Although every form of variegation, both in green and cinnamon colour, is to be found in the breed the whole range is covered by the terms clear, ticked, unevenly-marked, and even-marked. A clear bird needs no further description than that its plumage should be absolutely free from marking of any description, however small, and its underflue should also be quite clear. The latter point, however, is given some law provided no suspicion of colour is shown on the surface, but when all other points are equal the bird with the clearest flue will always win in a class for clears. The legs and

Belgian—Yorkshire, and Lancashire—Yorkshire Crosses.

beak should also be free from dark stains. The description of evenly marked birds given in Chapter XXII will apply equally to the Yorkshire, but in this case a bird marked only on both eyes or both wings, or both sides of tail—in other words an even-marked two-pointed bird—is classified as an uneven-marked and must be shown as such. It therefore follows that in the Yorkshire Fancy, for exhibition purposes, only four and six pointed specimens are regarded as evenly-marked birds.

TICKS AND UNEVEN MARKS.

In these classes we have the types which are frequently confused. A ticked bird is one which has only one technical mark either with or without any other

marking on the body. Thus a bird may have one eye, or wing, or tail mark and be perfectly clear on all other parts, or in addition to one such technical mark it may bear any other variegation on other parts of its body—back, breast, shoulders, head, etc.—excepting only the points where technical marks exist, and it is still a ticked bird, whether such additional variegation be much or little in quantity. An uneven-marked bird may possess two, three, or five technical marks either alone, or, as in the case of ticked birds, with any other variegation on other parts of the body. Even-marked four

Snakey heads and thin necks which come from the Belgian are serious blemishes in the Yorkshire.

and six pointed birds with variegation on other parts of the body are also classed as uneven-marked. Therefore an even-marked bird is either a four or a six pointed specimen with no other variegation at all; a ticked bird is one having only one technical mark; and an uneven-marked bird is one having more than one technical mark. The absence or existence of any other variegation has no effect at all so far as proper classification is concerned, save only in the case of even-marked four and six pointed specimens when the presence of any other variegation in addition to the marks relegates the bird to the uneven-marked class, whilst the complete absence of such other variegation constitutes it a recognised even-marked show specimen.

Besides the bad points we have already incidentally mentioned there are others worthy of special mention which one must seek to avoid when selecting stock for the breeding cage, or where it is not deemed politic on account of scarcity of stock to discard all decidedly faulty birds for breeding, to choose for them mates with corresponding excellencies to compensate these faulty points. A bad head, with a large thick beak, flat crown and browy eyes, should only be tolerated when stock is at a premium, and only then if it can be mated with a nice small round-

headed bird with an exceptionally neat beak, which has the least possible taint of these faults in its pedigree. A thin neck is a very common fault in Yorkshires, and may often be remedied by a double-buff mating, or by mating with a good stout-necked bird bred from double-buffs. Slovenly wing carriage and crossed wings should be mated with well-braced and neatly carried wings on a bird in which a dash of Belgian blood runs. Frilled breasts, and to a less degree also frills around thighs, are the result of a superfluity of feather, and should be mated with the shortest and neatest-feathered birds available. Short and tight feather should indeed be made a *sine qua non* of the Yorkshire breeder. Breast frills also are not infrequently very persistent in appearing in the progeny of a bird possessing them, so that this type of bird should be weeded out whenever circumstances will permit. Slight thigh frills may appear when a bird is merely a little out of condition, and are then much less objectionable than a breast frill. Albeit such birds should be mated with those having very neat waists, nicely tapered thighs and tail coverts, and short tight feather. Short legs, which give the bird a squat appearance, may also be corrected with specimens well up on leg and having a little Belgian blood.

THE VALUE OF LENGTH.

In stock birds, size—i.e. length, but not overmuch stoutness—should always be kept well up to the standard. It is bad policy to mate together two birds on the small side in practically any circumstances. Stock birds well up to the standard length, or even a little over it, will invariably give the best results, as it will be found easier to breed *down* to the standard size than to breed upwards to it from undersized birds.

MEASURING THE LENGTH.

This length question is by no means an easy one to ascertain in actual practice, as scarcely two persons would measure a bird to show precisely the same length. One person may measure a bird to be just about the proper length of $6\frac{3}{4}$ ins., and another immediately shows it to be well over 7 in. This uncertainty has more than once given rise to trouble in the exhibition world by causing birds to be passed for being over the standard length. In selecting stock birds it is, of course, quite unnecessary to go around and measure all the birds. A rough estimate of length from looking at the birds in their cages is sufficient, as a matter of a quarter or half an inch on the large side is quite immaterial except in being an invaluable aid in breeding show birds well up to standard length.

Still there are times when a breeder will wish to ascertain more closely the exact length of a given bird for various reasons, and for the benefit of such we are able to give, with the kind permission of Mr. Thos. Heath, the inventor, illustrations of a little machine designed by him in the 80's when exhibiting Yorkshires, which enables one to measure a bird with great ease and exactitude, and practically does away with the inconsistency of different persons obtaining different lengths

for the same bird. The machine is made on the principle of a shoe-maker's sliding rule, the rule being on a base, and the upright ends and carriage to hold the

The Heath Measuring Machine.

bird sliding along it on grooves. The second figure with the two ends actuated by fixed screws, shows a type of Mr. Heath's invention as improved by Mr. H. W. Naylor, who added these screws by which the measurement

once obtained is retained and cannot be lost by slipping or involuntary movement of the machine.

THE MACHINE AND ITS USE.

In some circumstances the increased stability of the moving ends obtained by Mr. Naylor's additions may be advantageous, but for ordinary home use the simpler type is all that is really necessary, and any handy man can easily construct either type to suit his own fancy. To measure a bird with this machine it is first rolled up in a strip of thin muslin or similar material, four or five inches wide, leaving the head and tail out ;

then lay bird on the carriage with its head lying in the slot at the left side, and slide carriage along the rule until the beak just touches the upright end, the other slide being then brought up to just touch the tip of the tail. The length of the bird may then be read off the rule. The same procedure applies when using the type of machine with Mr. Naylor's additions, save that the carriage and sliding end being held stationery by the screws are drawn into position by turning the heads of the screws.

The Improved Heath-Naylor Machine.

then lay bird on the carriage with its head lying in the slot at the left side, and slide carriage along the rule until the beak just touches the upright end, the other slide being then brought up to just touch the tip of the tail. The length of the bird may then be read off the rule. The same procedure applies when using the type of machine with Mr. Naylor's additions, save that the carriage and sliding end being held stationery by the screws are drawn into position by turning the heads of the screws.

MR. BATTYE ON MATING.

Writing upon this subject Mr. H. W. Battye, whose experience as breeder, exhibitor and judge are too well-known to need comment, says : "The proper way of pairing stock to breed Yorkshires is to mate yellow to buff. It is not of much importance whether the cock is yellow or buff. I do not favour the practice of breeding with double-yellow or double-buff, though in some rare instances it may be necessary. Double-buffing in Yorkshires will frequently produce a superabundance of long broad feather, which, if not of a superfine quality, will cause endless trouble in the way of eyelash, frilled breasts, and feathery thighs, whilst double-yellowing has a tendency to produce scanty feathered birds with thin pointed breasts and streaky looking feathers, especially in the region of the wing butts. If a buff bird is bred from double-yellows it is a valuable stock bird to pair again with a yellow. I have known birds bred in this way to produce birds

of very superior quality, but as a general practice I cannot recommend either double-yellowing or double-buffing. In breeding for colour I favour the system of pairing a clear and a ticked or marked bird together. I very rarely pair two clear birds together, and by the continual use of variegation on one or both sides I am able to obtain birds of good sound colour, and to maintain the colour without getting too many heavily variegated birds, which is a frequent result of the introduction of self-coloured birds, either green or cinnamon."

THE EVEN-MARKED YORKSHIRE.

We are indebted to Mr. J. Overend, of Ravensthorpe, for some racy notes on this captivating variety in the days of its popularity, from which we cull the following sentences. "It was in the 70's and early 80's that this bird received the attention of breeders. Of late it seems to have sunk into oblivion. The difficulty of breeding the even-marked bird, and the scant provision made for its exhibition doubtless accounted for its decline, though I am divulging no secret in asserting that it was a bird that proved to be a most enticing medium for manipulation at the hands of the 'trimmer' in his eagerness to pull off the coveted prize. The colour of the markings may be either green or cinnamon. Technical marks *must* be had, and undesirable ones, if present, must be eradicated. Well-formed, distinct eye-marks, encircling the eye and tapering to a point, also lightly and exact marked wings—which can be produced oftener than a good eye-mark—are necessary. Any body marks must be discarded, and should not under any circumstances be tolerated. Birds should be chosen at the start that are entirely free from body marks, because these are liable at any time to be reproduced in a provoking manner. Dark underflues, and dark legs and beaks are dangerous, too. These are quicksands to be avoided. I should not hesitate to breed from birds having one good eye-mark and one wing-mark provided there was an absence of those markings and splashings that we do not require. So long as I have good eye-marks, or wing-marks, I regard the birds as suitable material, and especially so when their ancestors were of the same type.

"Careful pairing is essential, and it must not be forgotten in the rage for markings that colour is not to be disregarded. A heavy marked hen should be paired with a clear cock, or *vice versa*, and birds with eye-marks only with those with wing marks. Odd wings are apt to be reproduced. When it is found that any particular pairing has fixed a point aimed at, pair the birds so bred amongst themselves methodically and so strengthen the current, and retain the tendency in the right course."

THE GREEN-MARK'S OLD POPULARITY.

"Up to 1890," writes Mr. A. Hirst, of Accrington, "in some districts you could scarcely find a fancier breeding for anything save even-marks. It was quite common to find in the East Lancashire district local shows with classes of thirty or more even-marked birds. Many can be, and have been, bred perfect, and I

venture to predict a great reward for the fancier who produces again an up-to-date Yorkshire of $6\frac{3}{4}$ inches, with eyes marked an eighth of an inch all round and the marks shot out straight at back with tapering points half an inch long, both wings marked with about six secondary flight feathers nearest the body and a few of the coverts, forming a nice V-shape on the back, and with one or two dark feathers on each side of the tail.

“To form a strain to breed green even-marks start with six birds—two trios—having good Yorkshire properties. For No. 1 trio have a dark-eyed yellow cock, green marked eyes and wings if possible, of full standard length, stylish, and well up on legs, and two clear or slightly ticked pink-eyed buff hens of good quality, and as long as possible, bred from a good cinnamon-marked strain. If you cannot get the cocks with marks described try to make up every mark he lacks in the hens, so that four marks—two eye and two wing—exist between each pair. For No. 2 trio get a dark-eyed buff cock either clear or eye-marked, and two yellow cinnamon-marked hens. Both cocks must come from a dark-eyed strain. Many green-marked cocks contain a large amount of pink-eyed blood, and if you use one of these you will get cinnamon-marked young, but if the cock contains no cinnamon blood you will get nothing but clear and green-marked birds.

MARKINGS TO AVOID.

“In selecting breeding stock keep good Yorkshire properties to the front. Keep the markings on the light side, and do not be tempted to buy a bird with a mark on top of head, even if it possesses all the other good points. Once you get that mark it never fails to be reproduced. Good eye-marked birds may be paired to wing-marked birds, and a full-marked bird to a clear; but two perfect wing-marked paired together will produce heavily marked or variegated birds. If you wish to produce tail marks you will have to use a bird with dark feathers in tail, but you will lose more by the dark thighs, rumps and vents (which are common in the six-pointed bird) than you will gain by the marks. You will have to do a fair amount of in-breeding. The first season pair the young of each trio together among themselves but from the different hens, and work the two sets together in the following year.”

Mr. Hirst's experience is largely corroborated by that of Mr. R. Sutcliffe, of Shipley, who writes: “In breeding cinnamon and green marked Yorkshires I prefer to use marked birds, and am careful to select as breeding stock birds of the best shape, good in feather, with extra nice style. I am also careful not to lose in length. An ideal pair for breeding cinnamon-marked is a yellow marked cock—marked eyes and wings—and a buff cinnamon ticked hen—ticked either on eye or wing. I try to keep away from the head mark as much as possible, and breed them more clear than heavy marked. I have bred clear birds in this way that have won special for best bird in show with 500 entries. They excel other varieties in colour and feather.”

EYE-MARKS AND UNDERFLUE.

Rather dissimilar are some of Mr. R. E. Helliwell's views, notably his opinion, on the question of dark underflue; yet his practical experience as a breeder entitles any opinion of his to every respect, and we therefore give it in his own words: "In building up a strain of even-marks," he writes, "I prefer the cinnamon-marked, as markings are bred in this variety considerably more than in the green-marked. Get one or two cinnamon-marked hens, either yellow or buff, with eye-marks—one or both eyes will do—and if rather heavy marked so much the better. But get the markings around the eyes, as they moult lighter each year, especially the cinnamon-marks. Get these hens with wing-marks also, but not too heavy. About one to three marked feathers in the secondary flights, and not up the middle of the bird's back, are sufficient. The latter, and those marked on the outside flights [primaries: C. St. J.] must be discarded, and also birds marked on chest, back, rump, neck and cap-marked. These marks are detrimental, but dark underflue at the top of the legs is no detriment at all. I have had good birds put out of the cards for this fault, but it has been a mistake on the judge's part. Get green-marked cocks marked lightly, and as nearly as possible similar to the hens. My conviction is you must pair up like to produce like in this respect. I prefer the green blood on the male side as you get denser markings in this way. But you must have eye ticks or marks on the female side. It is not so essential to have these marks on the male side. I do not object to putting two heavily marked birds together, provided they are technically marked and bred from a marked strain and not from greens. The best marked young from these pairs should be mated together. If they breed a clear cock, either green or pink eyed, keep it and mate it with the best marked hen you breed, but if it should be a hen discard it for marked breeding, but it will be a useful bird for breeding other varieties."

BREEDING CINNAMON-MARKS.

In kindly writing us on the subject of starting a strain of cinnamon-marks Messrs. Ogden Bros. of Bradford, say: "We advise starting with a cinnamon-marked—marked both eyes and both wings—and a clear pink-eyed or very slightly ticked. In mating two marked birds together they often throw young too heavily marked, and we have proved that it is better to be under rather than over marked. We have bred several self cinnamons from two well marked birds. One must not expect two perfectly marked birds to breed all perfectly marked young. It is quite possible to get clear, ticked, well marked, or self cinnamons. If you pair these self cinnamons next season to clear pink-eyed birds bred of well marked parents—if a bit related so much the better—you will be certain to breed good marked birds. We have bred birds on several occasions with self cinnamons in this way, and obtained some excellent marked birds—both eyes and both wings, as near even as possible. But you cannot do this with every self cinnamon. Herein

"OUR CANARIES"

THE LANCASHIRE PLAIN-HEAD CANARY.

lies the advantage of knowing how they are bred. If there is any time at which pedigree is of vital importance it is in marked breeding. You *must* know something of the birds ancestors to be successful. If you find your stock breeding too many clear pink-eyed birds, introduce a self cinnamon or a heavily marked bird occasionally to keep up the markings, but see that it comes from a good marked strain. A curious thing about cinnamon blood is its persistence once you have introduced it into a strain. It will lie dormant for years and then show itself quite unexpectedly. Our first prize buff cinnamon-marked hen at the Crystal Palace Jubilee Show is a case in point as she turned up unexpectedly in a strain into which we had not introduced cinnamon blood for ten or eleven years."

Show Cage for Yorkshire Canaries.

STANDARDS OF PERFECTION.

We close this chapter with the recognised standards of perfection for judging the various types of clear and marked Yorkshires.

THE YORKSHIRE CANARY.

(As drawn up by the Yorkshire C.C.).

CLEAR BIRDS.

	Points.
<i>Shape</i> : Head—small and round : skull, narrow	5
Neck—moderately long, straight	5
Shoulders—narrow, rounded, and well filled	5
Back—long, straight, well filled : wings, long and evenly carried...	5
Breast—round and smooth, the body long and gradually tapering to a neat waist	5
Legs—long, without being stilty, thighs well clothed	5
Tail—long, straight, and closely folded	5
<i>Size</i> : Length—6 $\frac{3}{4}$ inches, with corresponding symmetrical proportions...	10
<i>Position</i> : Attitude erect, with fearless carriage ; head, neck, back, and tail in straight line	20
<i>Feather</i> : Short, close, tight, compact body feather, and close carriage of wings and tail	20
<i>Colour</i> : Pure body colour ; beak, legs and feet clear	5
<i>Condition</i> : Health, cleanliness, and sound feather	10
	<hr/>
	100

EVENLY - MARKED YORKSHIRES.

	Points.
<i>Markings</i> : Eyes—for neatness and regularity of outline, and for distinctness	25
Wings—for exactness ; decreasing in value as the marking extends beyond the secondary flights	15
Tail—for exactness	5
	— 45
<i>Shape and Position</i> : For symmetrical proportions, fair size, and erect carriage	30
<i>Feather</i> : For short compact body feather, and close carriage of wings and tail	15
<i>Colour</i> : Pure body colour, and brilliance of markings	5
<i>Condition</i> : Specially for sound feather	5
	100

UNEVENLY - MARKED YORKSHIRES.

	Points.
<i>Shape</i> : Head—small and round, skull narrow	5
Neck—moderately long, straight	5
Shoulders—narrow, rounded and well filled	5
Back—long, straight and well filled in, wings long and evenly carried	5
Breast—round and smooth the body long and gradually tapering to a neat waist	5
Legs—long, without being stilty, thighs well clothed	5
Tail—long, straight and closely folded	5
	— 35
<i>Feather</i> : Short, close, tight, compact body feather, and close carriage of wings and tail	15
<i>Position</i> : Attitude erect, with fearless carriage ; head, neck, back, and tail in a straight line	20
<i>Markings</i> : For approximate excellence in markings and nearest approach to evenness....	15
<i>Colour</i> : Pure body colour and brilliance of markings	5
<i>Condition</i> : Health, cleanliness, and sound feather	10
	100

CHAPTER XXVI.

THE ROLLER AND SINGING CANARIES.

THE ROLLER TYPE.

THE early fortunes and probable origin of the domesticated Song Canary—the undoubted progenitor of what we now term collectively Roller Canaries—have already been fully dealt with and traced down to historical times in our first chapter. Of type or external characteristics for the breeder's guidance there is none pertaining to the Roller. Its vocal powers, quality of voice, purity of song and freedom and ease of delivery are the only points, apart from general robustness and stamina, which weigh with the breeder of pure Rollers. Consequently, in appearance the Roller is the most nondescript type of Canary we possess, or, indeed, it may be truly termed the Canary with no type at all. In size it is the smallest variety we possess, averaging from five to five-and-a-half inches in length over all; in shape it varies from a plump, cobby, well-proportioned bird to a lank, lean, leggy and long-tailed "slip of a thing"; and in colour practically every variety of variegation on a yellow or buff ground and self green may be found, but all of the most imperfect and washed-out kind, showing clearly the breeder's utter disregard for colour and markings. Its vocal abilities coupled with its comparative hardihood and ease of management have enabled it hitherto, and will probably continue to enable it, to command the admiration of a considerable army of devotees, to whom the cheery little songster is an indispensable part of the home life.

STRAINS OF ROLLERS.

In quite recent years the breeding and training of the Roller has become a large and growing portion of the Fancy in England, so that it is no flight of fancy to imagine a time in the not very distant future when the British workman will make as profitable a recreation of the hobby of rearing song Canaries as the peasantry of Germany and Switzerland have done for generations past.

An unfortunate phase of the Roller Fancy in England to-day, and one which gives rise to a great amount of error and confusion in the mind of the novice, is the multitude of meaningless, and sometimes misleading, names which are applied to these birds. This, naturally, has given rise to the impression in a large section of the Fancy that many varieties of Rollers exist; whereas, in practically every case, the varying names which cause such an impression have simply been tacked on to the ordinary German Singing Canary by dealers at various times in order to cope with increased trade competition. Twenty years ago, barely more than two such names would be met with—the Hartz Mountain, and the St. Andreasberg Canary or Roller—representing two classes of trained birds. But now-a-days we have in addition to these names such prefixes to the name Roller as Glucke, Seifert, Trüte, Erntjes, Edel, Koller, Hummel, Leipzig, and many others. For all practical purposes the fancier starting breeding Rollers may

utterly disregard distinctions of this order. In the few cases where the term was formerly of some value as indicating the particular strain of some noted breeder, the strain has long since disappeared, and in other cases no true strain ever existed to warrant the terms being so employed.

BREEDING THE ROLLER.

One of the greatest mistakes the would-be Roller breeder can make in the beginning is to suppose that any sort of Roller hen will do to mate with a good pure singing Roller cock. It is most essential that the utmost care be exercised in the selection of hens that come of a good pure singing strain, and also of a strain bred and trained specially for the type of song possessed by their intended mates. Thus, if the male birds one intends starting with are chiefly distinguished for the length, purity and depth of hollow rolls, the hens should be selected from a strain specially bred for and proficient in this type of song, and similarly if the cocks are of the so-called Seifert or St. Andreasberg type the hens should be chosen from the highest class songsters of this type. In the sense in which we apply the latter terms they may be regarded as synonymous, representing the class of birds which are trained to sing a greater number of different tours or "changes" in pleasing musical sequence rather than a repertoire consisting only of two or three immensely long and deep rolls. Hens coming from a room in which the cocks develop faulty, harsh, choppy notes should be avoided, and also hens which have themselves harsh, unpleasant call-notes, or which make attempts at singing, and give vent to harsh, ugly notes.

On the other hand there is no objection to breeding with a hen of the right strain which makes more or less successful efforts at singing, providing her voice is soft and sweet and free from choppy interjections. The Roller breeder's sole aim must be rigorously to weed out and suppress from breeding and training rooms every harsh, displeasing, and undesirable sound.

Do not imagine that the most successful contest winning singers will necessarily produce as good a type of song if mated with moderate hens. On the contrary hens that are bred from the highest class of singing cocks mated with only moderate cocks of the proper strain will produce better songsters than a first-class cock mated with a moderate hen. The hen may indeed be looked upon as the prime factor in producing the highest type of songster, yet, notwithstand-

A type of nest-box used in Germany when breeding Canaries in aviaries.

ing, the fancier who wishes to get in the front rank must not rely upon one parent's qualifications alone, but endeavour to mate the best with the best, and exercise the most scrupulous care in the introduction of fresh blood on the female side.

When introducing fresh blood on either side it is essential that the type of song of the bird introduced be not materially different from that of one's own birds. Slight variations are immaterial, and will have little or no effect, but any really fundamental difference in the song of the introduced birds will be reflected in a defective performance of the progeny. Herein lies the importance of exercising extreme care in introducing fresh hens. The song of the cocks, which is the criterion of their suitability to introduce into one's stock, may be quickly heard and gauged any time, but the effect of fresh hens cannot be estimated until progeny has been reared from them, when the mischief, if such it be, is already done; therefore one should only introduce fresh hens when one is thoroughly familiar with the performances of the strain whence they come or can rely implicitly upon the description of the breeder.

DIETARY OF ROLLERS.

The feeding of pure Rollers differs somewhat from that adopted for other varieties. German breeders, to whom we owe the extraordinary powers of song which have been developed in the Roller, are practically of one opinion on the point—that the only proper dietary for the singing Canary is a staple of good sound summer rape seed only, with a little egg-food, or egg-bread, two or three times a week, and occasionally, chiefly for backward songsters, a small quantity of a mixture of canary, hemp, and broken groats. In the creed of the German breeder the supply of mixed seed, or a regular supply of canary in the staple diet, is anathema, as being fatal to the vocal abilities of the birds, and giving rise to loud and harsh notes and a wild and excited manner of delivery. Frequent changes and a constant variety of tit-bits are also deprecated, and a consistently plain and wholesome regimen is adhered to. Albeit our own system of feeding ordinary singing Rollers has differed from the German method only in the supply of a mixture of two parts canary to one part summer rape as a staple—a system which has ever served us well, though we would not advise it indiscriminately for specially trained contest singers.

CROSS-BRED SONGSTERS.

Whenever the highest class of song is required, the pure-bred Roller is unapproachable by any other pure or crossed variety for supplying it. But its plebian appearance and garb are not always so well appreciated as its song, and one sometimes desires to improve the appearance of the bird and yet retain a good singing bird. By sacrificing a certain amount of the vocal abilities this may be easily accomplished. A cross with the Border Fancy will give the nearest approach to the pure Roller song, and a rather improved appearance, but the size

will remain about the same. A Yorkshire-Roller cross on the other hand gives a considerably improved appearance in size, shape and colour, but the song, though still good after proper tuition, will be of a decidedly lower order. A Norwich cross yields plump cobby birds of a greatly increased depth and richness of colour, but with a louder and harsher song than either of the two first-named crosses.

A type of English-bred Roller Canary.

In introducing either cross a selected Roller cock and hen of the same strain should be chosen as carefully as if they were for breeding pure Rollers, and mated with a hen and cock respectively of the breed chosen to cross with. The Roller hen should be left to hatch and rear her young alone in order to prevent as far as possible the young hearing any song but the Roller's. The following year one of the cross-bred cocks from the Roller cock should be mated with the Roller hen and a young hen from the Roller hen mated back to the Roller cock, and the remainder of the young from each pair mated together. Each year the young cross-breds should be trained under pure Rollers as systematically as pure-bred birds, and only the most satisfactory performers preserved for breeding stock.

Cross-Bred Canaries for Songsters.

Yorkshire and Roller.

Norwich and Roller.

CHAPTER XXVII.

TRAINING CANARIES TO SING.

THE ROLLER'S SONG.

THE song required of the pure Roller Canary being a wholly artificial melody it must not be expected that the young birds will acquire it without careful training and tuition, nor, indeed, given these necessary advantages, will all the youngsters become equally expert and proficient performers. In fact, there will be comparatively few of the highest-class performers of a pure and faultless type of song such as are required to carry off the laurels as contest singers, though the great majority of the young cocks may develop a very excellent style of song, with only trivial flaws of little moment to the average lover of a good pure singing Roller, but which materially reduce its chances of success in competition, where only the most faultless performers can be expected to come off victorious. The

PRODUCING THE SONG.

The common Canary (on left) opens its beak widely when singing, but the song of the high-class Roller Canary (on right) is given with the beak practically closed.

song of the high-class Roller should be as a continuous stream of soft, sweet, flowing melody, soothing and pleasing to the ear, free from any harsh, zit-zittering or kettledrum-like tatting upon the tympanum; as a German critic would put it, there should be only a sense of a smooth flowing or rolling with no indication of the hammering song of the ordinary type of singer. The first step is to get the necessary material to work upon; when this has been accomplished and the young cocks are well on a seed diet it becomes a question as to whether they should be caged separately for tuition or allowed to remain in the flights until the end of the moult. Each method has its special uses. If one desires to get his birds through a fair amount of training and placed upon the market early, it is of great advantage to cage them separately in the company of good tutors as soon as they are well on a seed diet. The early hatched young will then in many cases

be quite proficient singers before the later-hatched birds are through the moult, and, if required, will make useful additions to the stock of tutors for finishing the education of the younger birds.

THE COURSE OF TRAINING.

A good supply of tutors, or "schoolmasters," are essential to success, and one or two of these should be early moulted birds, which will have moulted and recommenced singing by the time the other old tutors are dropping into moult and consequently ceasing their song for a time. In this way the young birds have the advantage of hearing the song they are required to learn all through their own period of silence, which is of great importance in thoroughly instilling the melody into the pupils memories.

A type of mechanical bird-organ for teaching the song to Roller Canaries.

When a number of birds are being trained, or in any case when the stock of tutors is low or there is a risk of their going out of song for moulting just when their services are most required, a Roller Organ is of the utmost value in training them. This being mechanical and automatic in action may be kept going whenever desired, and may be used either as a substitute for, or as an adjunct to, schoolmasters, though one or two of the latter are always most desirable. It is essential also that these tutors should all sing the same type of song, and that this song should resemble that for which the youngsters have been specially bred.

Prior to caging the birds separately, careful observation should be made of the manner of the birds performances, and any that seem to put too much vigour and energy into their immature song, or sing with the beak distinctly open, should be treated with great caution. The latter as a rule are better discarded from the company of good-class performers, but the former may be cooled to some extent by giving a less stimulating diet and keeping them chiefly in closed song-boxes until their song is well fixed and rendered with sufficient softness.

THE TUTORING.

Having caged up the birds, arrange them in a group on one side of a room with the tutors in the centre, or, in a large stock, with one tutor in the centre of each row of cages. As soon as the young birds begin to "record" the song of

their tutors watch them carefully, and be always on the *qui vive* for harsh, faulty notes in order to remove the culprits if necessary before they corrupt the song of their companions. Birds that show promise of being soft, steady performers should be placed nearest the tutors, and those which show a tendency to sing loudly farthest away, where the song of the tutors will reach them in a more subdued tone. Blinds should be kept before the windows to subdue the light in the room; this helps to make the birds more steady and restful, and enables them to concentrate their attention on the tutors singing. Light linen covers may also have to be hung before the cages to prevent the youngsters becoming too loud or fast as they get in full song, and when this does not produce the desired effect the birds must be more closely covered or placed in closed song-boxes until well established in song. During all this period of training it is essential to keep them under the closest observation, and remove from the room at once any bird which develops and persists in a decidedly faulty note, and also incorrigibly loud singers whose notes cannot be sufficiently subdued by covering or keeping the cage in a closed song-box. In most cases the latter object may be fully achieved, but as the bird must be kept closed up most of its time it should be removed and relegated to the class of inferior performers, thus leaving the best and most faultless birds to continue their education under the most favourable conditions.

When producing cross-breeds "the Roller hen should be left to hatch and rear her young alone. . . ."

CHAPTER XXVIII.

SEEDS AND FOODS FOR CANARIES.

SEEDS AND THEIR USES.

BUT a very little space remains for our remarks upon the food substances most suited to the requirements of our Canary pets, and we can barely touch the fringe of this large subject. Being naturally a seed-eating species a diet of dry seeds necessarily forms the major portion of the Canary's food in captivity. In a wild state, however, it also probably partakes of a certain amount of small insectivorous food, as do all the Finch family to which it belongs, and consequently it is found useful to supply a small proportion of more moist foods occasionally.

To take the seeds in the order of usefulness *Canary* stands easily first. It is the Canary's "staff of life." A good, sound, sweet and clean seed should be selected, and a large plump grain is the most economical. Too much stress is laid upon so-called Spanish seed; given a good quality sample its place of growth is totally immaterial. *Rape*: The small reddish brown seed called summer rape is next in importance, and contains oils and fats which make it an excellent accompaniment of canary in the staple diet in the proportion of about one in four, or for Roller Canaries one in three. If used soon after harvesting it is apt to scour the birds, and should be kept properly stored for some months to "mellow" before use.

Winter, or *English Rape*, a much larger and blackish, acrid seed should only be used occasionally in very small quantities. It is useful to help to correct a tendency to undue constipation. *Hemp* is a very oily and fattening seed, and should be used very sparingly except when young are being reared, and for birds kept without heat in very cold rooms in winter, when it may be used more freely, but should never form a large proportion of the general diet. Always insist upon having this seed with a sweet, and milky-white, oily kernel. *Linseed*, or *Lint*, is useful in very small quantities at the end of moulting to add lustre and finish to the plumage. At all other times it should be almost entirely dropped. *Teazle* and *Thistle* are safe, stimulating appetisers for occasional use. *Niga*, or *Inga*, is also a very stimulating seed, but not quite so harmless for continued use.

Maw, *Gold of Pleasure*, and *Sesame*, are all useful tit-bits as appetisers, the first-named being specially useful for tempting sick birds and helping them over a crisis, and during the moult, and the two latter to stimulate backward birds into breeding condition. *Crushed Oats* and *Broken Groats* in small quantities occasionally are especially useful for helping the growth of large-framed breeds such as Crests and Lancashires, but are best withheld from small slim breeds such as Border Fancies and Yorkshires, for which a pinch of *Millet* occasionally would be more useful. A mixture of the ten last-named seeds, of which a little

is given one or two days a week, is the most convenient method of ordinary use for all medium and large-sized breeds, and for the smaller breeds a similar mixture, minus the oats and groats.

OTHER FOOD SUBSTANCES.

Egg-foods and egg-cakes we have already dealt with fully in Chapter V. Apart from the breeding and moulting seasons the supply of this food should be

Show Cage for Norwich Plain-head Canaries.

limited to once or twice a week. For weak or ailing birds bread-and-milk is the Yorkshireman's panacea, and he long forestalled the theory of a sour milk cure for human ills, as it is an article of faith with him that the virtues of his bread-and-milk porridge increase with its age. It is undoubtedly an excellent article of diet for invalid birds, but should not be given freely to healthy birds as it is apt to give rise to excessive *embonpoint*. Fruits and vegetables, which are usually regarded as green salads, but are in reality foods in the ordinary sense of the term, are banana (which

is a perfectly wholesome and much relished food) and carrot, raw or boiled (which is more relaxing if used in any material quantity). The last-named is most useful at the end of moult for the sake of its appreciably good effect on the plumage. Ripe sweet apple is by far the most frequently used substitute for green food during the winter and spring months. It is much appreciated by the birds, and so long as it is used in moderation is harmless; but observation leads us to believe that its too liberal or frequent use is objectionable. A small piece twice or at most thrice a week is sufficient. A small scrap of boiled mealy potato occasionally is also much relished, and forms a wholesome change, but must be used in the strictest moderation. A sweet water grape is one of the finest correctives of a constipated condition, and a little crushed dry plain biscuit is a remedy or looseness.

Show Cage for Crest and Crest-bred Canaries.

USEFUL GREEN FOODS.

As a rule the most convenient and accessible green salad for the town-dweller is watercress. This should always be well washed before use, and as far as possible one should make certain of using only that which is grown under sani-

tary and wholesome conditions. Then only is its use quite free from risks. In most large towns florists and those in touch with market gardeners can also supply fresh gathered, crisp young chickweed and groundsel daily, which is most excellent salad, whilst there is rarely an insuperable difficulty to the gathering on the outskirts of a great variety of wild saladings for use throughout the year as the seasons roll round.

Dandelion, plantain and shepherd's purse seed stalks, seed heads of grasses, and many common weeds such as speedwell, pimpernel, and veronica, in addition to the above, are to be obtained everywhere. Waste seeds from the cages sown in pots and stored in a cellar soon furnish cuttings of excellent green food, as also will crisp young lettuce leaves, the tender tops of the inner stalks of celery and crisp young chicory leaves—the latter is a very excellent all-the-year-round salad if a root is potted up and kept slightly moist in a cool cellar. The dweller in the country, or town suburb, will have no difficulty in selecting from the list of plants named, and will doubtless be able to add many more in the course of the year from the vast array which are spread broadcast around him by the prodigal hand of Nature.

A desirable cage for a Canary when kept as a pet in a living room.

"OUR CANARIES"

TYPES OF THE ENGLISH-BRED ROLLER CANARY.

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