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THE
ROSE GARDEN

EDINBURGH :
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THE ROSE GARDEN

IN TWO DIVISIONS.

DIVISION I.

Embracing the History and Poetry of the Rose, the Formation of the Rosarium, and a Detailed Account of the Various Practices adopted in the Successful Cultivation of this Popular Flower ; Illustrated with numerous Engravings.

DIVISION II.

Containing an Arrangement, in Natural Groups, of the most esteemed varieties of Roses recognised and cultivated in the various Rose Gardens, English and Foreign ; with full Descriptions and Remarks on their Origin and Mode of Culture ; illustrated with Twenty-one Full Page Engravings of representative varieties.

BY

WILLIAM PAUL, F.L.S., &c.

FOUNDER OF THE ROYAL NURSERIES, WALTHAM CROSS.

Ἡ Σαπφὼ τοῦ ῥόδου ἐρᾷ, καὶ στεφανοῖ αὐτὸ ἀεὶ τιμὴ ἐγκωμίων τὰς καλὰς τῶν παρθένων ἑκείνῳ ὁμοιοῦσα.

'SAPPHO LOVES THE ROSE, AND BESTOWS UPON IT ALWAYS SOME DISTINGUISHED PRAISE : SHE LIKENS IT TO THE MOST BEAUTIFUL OF MAIDENS."—*Philostratus, Ep. 73.*

TENTH EDITION.

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1903

TO THE

ROSE AMATEURS

OF

GREAT BRITAIN AND IRELAND

AND HIS MAJESTY'S DOMINIONS

BEYOND THE SEAS

THIS WORK

IS RESPECTFULLY INSCRIBED.

M363616

PREFACE TO THE TENTH EDITION.

IT is fifty-five years since the first edition of the "ROSE GARDEN" was published, and since that date many works on the subject have appeared in the English, French, and German languages.

Notwithstanding this fact, the yearly sale of the "ROSE GARDEN" has steadily increased. Gratified by this recognition, the Author feels prompted to further efforts in order to bring the information on the history and cultivation of the ROSE to the level of the times, and by adding to the illustrations he hopes to render the work still more acceptable to the public.

The present edition of the "ROSE GARDEN" has been most carefully and thoughtfully revised, and in part re-written. The articles in the Appendix on the Botany and Entomology of the Rose have also been revised. There is, indeed, the greatest change in the descriptive part of the work. Many of the varieties described, and even recommended at the time the First Edition was published, are now withdrawn, because surpassed in excellence by more modern varieties.

The original edition of the "ROSE GARDEN" has been translated into Danish,† and the Author's consent has been asked and granted for the publication of editions in German and French also; but as he has never met with the work in either of the latter languages he does not know if the translators' intentions have been carried out.

PAULS' ROYAL NURSERIES, WALTHAM CROSS,
May 1903.

† "Rosengartneren," &c. En Oversættelse af Pauls "Rosegarden" afpasset efter danske Forholde ved Bentzien og Skjoldager, Kjöbenhavn, 1855.

PREFACE TO THE FIRST EDITION.

IN submitting the present work to the public it is thought desirable to state that it contains an exposition of the principles followed in these Nurseries, where the ROSE has been extensively and successfully cultivated under the Author's superintendence for many years. A chief inducement to its publication was the writer's desire to improve the condition of a favourite flower. It had long appeared to him that a work entering into the detail of Rose-culture, elucidating the various practices by means of Engravings, and furnishing Coloured Plates of some of the choicest kinds, was a desideratum; and that the non-existence of such a work proved a formidable barrier to the agreeable and satisfactory prosecution of this branch of Floriculture.

Holding these views, it was his wish to publish in a form and at a price which would place the work within reach of the humblest cultivator; but the great expense attending the production of Coloured Plates in a highly finished style, and the knowledge that the circulation of a class-work must necessarily be limited, pointed out the impracticability of pursuing such a course, and the idea was ultimately, though with reluctance, abandoned.

The publication did not, however, appear unadvisable because it could not be made more generally accessible. On the contrary, it was evident from conversation with numerous Amateurs and professional Florists, who from time to time visited the Nurseries, that it was greatly required. It was argued that there were more lovers of flowers seeking amusement in the culture of the ROSE at the present time than at any previous period; that the most difficult and important branches of cultivation were nowhere fully and clearly treated of; and that although

other favourites had figured liberally in the Floricultural periodicals of the day, this had remained almost unnoticed, no series of Coloured Drawings having appeared later than 1820, since which period the Rose had undergone a thorough change. Into the causes of this it is needless to inquire. Suffice it to say that the neglect could not have originated in an indifference to the merits or a supposed unpopularity of the flower. We can scarcely enter any garden, however humble, which does not contain a Rose-tree; and many of the noted establishments in England have, like in Rome of old, places set apart expressly for their cultivation. And it is not a slavish obedience to fashion that has led to this. Although cherished alike by peer and peasant, the popularity of the ROSE rests on a surer foundation—its intrinsic merit. What other genus of plants embraces so great a variety of character, or gives forth such a number of delicious blossoms for so long a period? Moreover, it is easy of culture; suited to a great variety of soils; lives and blooms even when neglected; yet yields an abundant return for whatever labour may be bestowed upon it.

The “ROSE GARDEN” is arranged in Two Divisions. The First includes Chapters on the History of the Rose, the Formation of the Rosarium, and the various practices of Cultivation. The Chapters on Hybridising and Raising Seedlings are, it is believed, altogether new, and likely to prove interesting and useful at this particular era in Rose-culture. The Second Division embraces a natural arrangement of all the approved Roses known, with full descriptions of their colours, sizes, forms, degrees of fulness, habit, rates of growth, and purposes for which best suited. The descriptions are chiefly the result of close personal observation, having been taken from living specimens at a great cost of time and labour; which will be granted readily when it is stated that above 2000 varieties are described. Nevertheless, it was judged desirable to pursue this course in order to attain to that accuracy in the descriptive part of the work which should render it a safe and efficient guide in selecting varieties.

The execution of the Coloured Drawings has been entrusted to eminent artists, whose design has been not to fabricate a pleasing flower but to produce exact representations of Nature. This feature of the work presents the cultivator with *Roses at all seasons*;—alike when

the blasts of autumn scatter his favourites without doors to the winds of heaven, and the rigours of winter consign them to a state of temporary rest.

Before concluding, the writer would acknowledge his obligations to numerous correspondents for suggestions received from time to time during the period of publication. Such letters as contained hints on cultivation he has inserted in the Appendix as advertised ; and regrets that want of space should have compelled him to curtail some interesting communications. The article on the "Botany of the Rose," contained in the Appendix, will, he thinks, prove particularly interesting, and should be read by all who feel inclined to enter upon the pleasing task of raising Seedlings.

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Division I,

EMBRACING

The History of the Rose,

The Poetry of the Rose,

The Formation of the Rosarium,

AND

*A Detailed Account of the various practices adopted in the successful
cultivation of this popular Flower.*

The subject Illustrated with numerous Engravings.

CHAPTER I.

The History of the Rose, from the Earliest Times to the Fall of the Roman Empire.

THE ROSE, which is the leading flower of the day, the acknowledged favourite of the four greatest nations in the world, is to be found in a wild state very generally spread over the earth's surface.

As if too beautiful to be excluded from the natural Flora of any one of the ancient divisions of the world, it graces alike various countries of Asia, Africa, and North America, and extends over the whole of Europe, where, blooming in its native wildness and simplicity, it is universally prized and admired.

But although the geographical distribution of the various species makes the Rose an inhabitant of nearly the whole of the Northern Hemisphere, some species are far less plentiful than others, or, if plentiful in certain localities, have a less extended range. Here is one, confined to some particular and favoured spots; here another, not content with ranging one quarter of the globe;—the *ROSA CANINA*, for instance the one most commonly seen adorning our wilds and hedge-rows—is found also in Africa and Asia.

It is a remarkable fact that Australia has naturally no Roses, and none have yet been found wild very near to or south of the Equator. Humboldt, in his "Personal Narrative," remarks—"We did not find one indigenous Rose-tree in all South America, notwithstanding the analogy existing between the climates of the high mountains of the torrid zone and the climate of our temperate zone. It appears that this charming shrub is wanting in all the southern hemisphere within and beyond the tropics. It was only on the Mexican mountains that we were happy enough to discover in the nineteenth degree of latitude American Eglantines."—*Personal Narrative of Travels to the Equinoctial Region of the New Continent, &c.*, vol. iii., p. 487.

It is in the temperate regions of Asia, and throughout Europe generally, that those species abound from which nearly the whole of the present garden varieties have sprung. But if we extend our view, we find some growing on the mountains of North

America, whose tops are covered with eternal snow ; and others in the dreary wilds of Greenland, Kamtschatka, and Iceland ; while in Siberia there are several interesting species. On the other hand, if we turn to warmer climates, we discover that Mexico, Abyssinia, China, Persia, India, and Egypt have their Roses ; and even on the outskirts of the mighty Sahara one species is found, gladdening the approaches to the desert with its clusters of white flowers, though often

— Born to blush unseen,
And waste their sweetness on the desert air.

Who were the first people to bring this flower from its natural habitats, to be a dweller in cultivated grounds, must ever remain a matter of conjecture. Doubtless it attracted the notice of the virtuoso in plants at a very early date ; probably when they were valued for food only, or as objects of curiosity, or for their medicinal properties. We may follow in imagination the busy doings of the plant collector in the earliest times ; we may fancy him gathering and fixing in one spot the beautiful productions scattered around him, and it is natural to suppose that the most beautiful or the most useful would be first collected. This surely would give an early date to the civilisation of the Queen of Flowers. And doubtless the Rose has a claim to our regard as well for its high antiquity as for its beauty, variety, and fragrance.

In the sacred Scriptures we read of "Him who was to make the wilderness be glad, and the desert to blossom as the Rose ;" we read also of "the Rose of Sharon," and "the Rose of Jericho."

In the Book of Wisdom (chap. ii., ver. 7, 8) the following passage occurs :—" Let us fill ourselves with costly wine and ointment, and let no flower of the spring pass by us. Let us crown ourselves with Rosebuds before they be withered." Hence it is apparent that the practices so common with the Greeks and Romans of crowning themselves with flowers at their Bacchanalian feasts, and on various other occasions, were resorted to in these early times, and most probably were borrowed from the Jews. Again, in the Book of Ecclesiasticus (chap. xxxix., ver., 13) we find the following passage :—" Harken unto me, ye holy children, and bud forth as a Rose growing by the brook of the field."

It has been questioned whether the flowers met with in translations of the ancient writers are identical with those known under like names in the present day. Indeed, what is commonly known as the Rose of Jericho is a little cruciferous plant with white flowers very different from our Roses. I do not, however, judge it necessary to enter deeply into this question, indeed it would be out of place to do so here ; but I would remark in passing, that the non-existence of the wild forms in those countries at the present time is not conclusive evidence, to my mind, that they never flourished there ; or, even were it so, the productions of other countries might have been introduced to administer to the comforts and enjoyments of those who employed them alike in the ceremonies of their fêtes and in the splendid imagery of their writings.

The famous gardens of Babylon, which are supposed to have existed 2000 years before the Christian era, would probably number the Rose among their treasures. This, of course, can be but conjecture, though the probability is increased when we consider that the neighbouring country, Persia, has ever been famous for the Roses it naturally produces. Roses are also plentiful in Palestine. Hasselquist, the Swedish naturalist, a pupil of Linnæus, who travelled in the Holy Land, alludes to the Damask, the Double White, the Common Red, and the Cinnamon, as the principal varieties there.

Homer, the most ancient of all the profane writers, uses the Rose figuratively both in the *Iliad* and the *Odyssey*; and about 2000 years have rolled away since Sappho christened it the "Queen of Flowers." Philostratus (Epistle 73), writing of this lyric poet, says, "Sappho was enamoured of the Rose, and bestows upon it always some distinguished praise; she likens it to the most beautiful of maidens."

It were scarcely necessary to search the Greek authors for quotations to show in what esteem that people held our flower. Ancient history, by which their customs are handed down to us, bears sufficient evidence of its popularity. The Rose, with other flowers, was used by them in times of public rejoicings, in their religious ceremonies, and the youth of both sexes wore them in the fêtes. They consecrated it to Venus, Cupid, Aurora, and also to Harpocrates, the God of Silence. If it was dedicated to Venus as an emblem of beauty, and to Cupid as an emblem of love, we may conjecture wherefore it was also dedicated to the goddess of the morning; it was the symbol of youth. But beyond this, the Greeks doubtless were alive to the fact that the Rose is most beautiful at sunrise; then, newly expanded by the breath of morn, there is visible all that freshness in which consists so much of its peculiar beauty, and which soon vanishes before the radiance of a summer's sun. From its being consecrated to Harpocrates, the God of Silence, probably arose that custom practised in the north of Europe, but now almost fallen into desuetude, of suspending a Rose from the ceiling at convivial or other meetings, to signify that what transpired was of a confidential nature. "The White Rose has long been considered as sacred to silence; over whatever company it was suspended no secrets were ever revealed, for it hung only above the festal board of sworn friendship. No matter how deep they might drink, or how long the wine-cup might circulate round the table, so long as the White Rose hung over their heads every secret was considered inviolable; no matter how trivial or how important the trust, beneath that flower it was never betrayed, for around it was written the sentence—

He who doth secrets reveal
Beneath my roof shall never live.

What faith and what confidence must there have been between man and man in the olden time, when only the presence of a flower was needed to prevent the maligning

whisper—to freeze up slander's hateful slime—and destroy that venom which, when once circulated, proves so fatal to human happiness!"—*The Poetical Language of Flowers*, by Thomas Miller; Bogue, London.

It appears also that the Greeks used this flower medicinally, and cultivated it with the view of extracting the perfume from its petals. Theophrastus, who lived about 300 years before the Christian era, tells us, in the sixth book of his *History of Plants*, "There are many varieties of Roses. Most of them consist only of five leaves but some have twelve leaves, and some near Philippi have even as many as a hundred leaves. Men take up the plants from Mount Pangæum (and they are very numerous there) and plant them near the city. And the inner petals are very small, for the fashion in which the flowers put out their petals is that some form the outer rows and some the inner ones, but they have not much smell nor are they of any great size, and those with only five leaves are the most fragrant, and their lower parts are very thorny. But the most fragrant Roses are in Cyrena, on which account the perfumes made there are the sweetest."—*Athenæus, Bohn's Class. Lib.*, vol. iii., p. 1089.

Theophrastus also informs us that it was common to set fire to the Rose-trees in Greece; and that unless this practice was resorted to they would not produce any flowers. Is the writer in earnest? If so, this does not say much for the knowledge of the art of culture in those days. But although flowers were so much used on special occasions by the Greeks, it is generally admitted that gardening, considered as an art, was neglected by this people.

If the Greeks considered the Rose worthy of adoration, the Romans were by no means less lavish in the praises they bestowed on it. They regarded it with that veneration and enthusiasm which the high encomiums passed on it by a people they so much admired might be supposed to give rise to. It has been said by some writers that the Romans acquired their taste for these flowers from the Egyptians, who, during the early ages of the Republic, sent quantities of them to Rome every year. But it appears to me more probable that the taste was acquired from the Greeks although the Egyptians might have administered to and further developed it. It was customary with both Greeks and Romans to bring in flowers, Roses especially, at their Bacchanalian feasts, placing them on the tables, and ornamenting their persons with them, believing they preserved them from the intoxicating influences of wine. Virgil, "the prince of Latin poets," makes frequent mention of the Rose in his writings. In the opening of the Fifth Pastoral he contrasts the pale sallow to the blushing Rose:—

Puniceis humilis quantum saliunca rosetis;
Judicio nostro tantum tibi cedit Amyntas.—*Ecloga* 5, ver. 17, 18,

In the *Georgics* he speaks of "Pæstum Roses with their double spring":—

Forsitan et, pingues hortos quæ cura colendi
Ornaret, canerem, biferique rosaria Pæsti.—*Georg.* lib. 4, ver. 118, 119.

In reference to the latter quotation, botanists who have visited Pæstum have not been able to meet with Roses flowering in autumn, and some people have pronounced them creations of the poet's fancy. Be this as it may, it might be accounted for, I think, by presuming the adoption of a particular mode of culture. The culture of Roses was a trade at Pæstum, a town of Lucania colonised by the Sybarites about 500 years before the Christian era, and which, in the time of the Roman emperors, was principally famous for the beauty of its Roses. Now, it seems to me quite probable that the growers might have forced the plants to induce them to flower early in the spring. After this they might rest them for a period, and then by pruning and watering, backed by the influences of their climate, induce a new growth, and consequently a second development of flowers. I can readily conceive of the practicability of this, although no one who cared for the ultimate welfare of his plants might in these times be disposed to practice it. Or again, is it not probable that some of the Roses raised from seed were of this nature, though lost during the barbarous ages which succeeded the downfall of Rome?

Tarquin the Proud had beds of Roses and Lilies in his garden within the walls of the city. On the authority of Horace, also, it appears that Roses were grown in beds, while Theocritus, Cicero, Ovid, and Juvenal speak of them. Columella mentions a place being reserved expressly for the production of late Roses, and has also a chapter "Of the Violet and the Rose." "It is proper that the Rose-bush be set at the same time as the Violet (before the first of March), either in shrubs or suckers, or in shoots or cuttings, all along furrows of one foot dimension, but it must be dug every year before the first of March, and pruned here and there. When cultivated after this manner it lasts for many years."—*Columella*—"The Book concerning Trees," cap. 30.

Pliny, who wrote on gardening towards the close of the first century, devotes considerable space to Roses. In his "Natural History," the Rose is made the subject of a separate chapter—"The employment of the Rose in chaplets is, so to say, the least use that is made of it. The flower is steeped in oil, a practice that has prevailed from the time of the Trojan War, as Homer bears witness." And again—"For the Rose the ground is generally dug to a greater depth than it is for corn;" "it grows but very slowly from the seed, hence it is that the method of grafting is usually the one preferred;" "all Roses are improved by being pruned and cauterised, &c." (Book xxi., cap. 10). He speaks of twelve varieties; one kind, the "Græcula," with remarkably large petals, which always remained in the bud state, never expanding unless pressed in the hand, of which we have numerous examples among modern Roses. He tells us, further, that the genuine Rose is indebted for its qualities to the nature of the soil, and that Roses without smell he does not consider genuine Roses. Towards the close of the chapter he says the plant grows slowly from seed; so that the practice of raising seedlings was evidently resorted to in those early times. He mentions those of Carthage, and others of Miletus (supposed to be *R. GALLICA*), and

says there are thirty-two remedies derived from the Rose. He tells us they used to obtain Roses before the natural season by watering the plants with warm water so soon as the buds were visible. Whether such was the plan pursued by the Roman gardeners we are at perfect liberty to doubt, although it is certain they had, under the reign of Domitian, abundance of Roses in winter. Martial, the famous epigrammatic poet, ridicules the Egyptians for sending them Roses when they had already plenty, and asks them to send corn instead. Dr Deslongchamps relates, on the authority of Seneca, that the Roman gardeners had at this time found out the means of constructing hot-houses, which they heated with tubes filled with hot water, and thus induced Roses and Lilies to flower in December.—*La Rose, &c.*, par Dr Deslongchamps.

With regard to the culture of this flower in those times, M. Boitard says, "The cultivation of flowers, and particularly of Roses, was carried on upon a grand scale, both at Pæstum and in the environs of Rome. The sale of the flowers was ordinarily in the hands of the prettiest girls of the place, and the Latin Poets have immortalised the names of several of these charming flower-girls, and have even deified some of them. The divinity of Flora, the goddess of flowers, has no other origin."—*Manuel Complet de l'Amateur des Roses, &c.*, par M. Boitard ; Paris, 1836.

If there is any one period in the world's history when flowers engrossed too much the attention of a nation, it was under the reigns of Augustus and subsequent Emperors of Rome. The love of flowers was then carried to excess ; and the Rose seemed to bear away the palm from all. It was customary for the wealthy inhabitants to take their meals resting on Rose-leaves—a practice which Cicero loudly condemns. Roses were scattered upon the beds and floors of the chambers of their guests. At their festivals they put the flowers in their cups of wine. In times of public rejoicing the streets were strewed with flowers, and the statues of their deities were adorned with crowns and garlands of Roses. Cleopatra, in a feast given to Marc Antony, is said to have expended a talent in their purchase, and the room of entertainment was strewed with them to a considerable depth. Suetonius, the Latin historian, relates of the Emperor Nero that he spent four millions of sesterces, amounting to more than £30,000, in procuring Roses for one feast. Alas, that these gems of earth should have been so perverted from their just use ! Here, instead of opening up a source of pure and intellectual enjoyment, we see them debased, and administering to the vanity and lust of a luxurious people.

CHAPTER II.

The History of the Rose, from the Fall of the Roman Empire to the Present Day.

FROM the fall of the Roman Empire there exists a chasm in the history of gardening which cannot be filled up. The world, sunk in a state of barbarism, had neither inclination for nor opportunity of enjoying pursuits of this kind, the learning and amenities of Greece and Rome were temporarily obscured, and Roses share in the general oblivion. As however mankind emerged from this state—as wars became less frequent, and men felt the blessings of peace—they found time to attend to the comforts and enjoyments of life. Charlemagne, who flourished in the beginning of the ninth century, recognises the Rose among other flowers, and shows his appreciation of it by desiring it to be grown in his garden.

The Rose was the favourite flower with the Moors of Spain, and they paid considerable attention to its cultivation. They sowed the seeds; and it has been said they had blue Roses, which were obtained by watering the plants with indigo-water. That they had such cannot for a moment be supposed, and the means by which it has been said they obtained them are still more questionable. Nevertheless, a French writer (Marquis D'Orbessan, *Essai sur les Roses*) states that he saw them. I have heard persons unacquainted with Floriculture, maintain that they have seen pure yellow Moss Roses; a deception probably practised on them by some charlatan or jocular friend. Is it impossible that the same thing might happen with the Marquis D'Orbessan?

In the middle of the thirteenth century was written the famous *Roman de la Rose*, by Guillaume de Lorris and Jean de Meun. I have recently inspected a manuscript copy of this work, which was once the property of Horace Walpole—a small folio volume, written in the fourteenth century. This pleasing but wire-drawn allegory long found favour in France.

Pierre de Crescent or Crescentius, an Italian, who wrote early in the fourteenth century, mentions the Rose, and many of the Italian poets have sung its praises. Of the state of gardening at this period we read—"Crescentius dilates upon horticulture, and gives a pretty long list of herbs both esculent and medicinal. His notions about the ornamental department are rather beyond what we should expect, and I

do not know that his scheme of a flower garden could be much amended. His general arrangements, which are minutely detailed with evident fondness for the subject, would of course appear too formal at present, yet less so than those of subsequent times; and though acquainted with what is called the topiary art—that of training or cutting trees into regular figures—he does not seem to run into its extravagance.”—*Hallam's Middle Ages*, vol. iii. p. 444.

As is well known, it is now customary in Italy, as it was formerly in ancient Rome, to use flowers in times of rejoicing and in religious ceremonies, and the Rose is an especial favourite.

It has for some ages been a custom of the Roman Catholic Church for the Pope to consecrate a golden Rose and send it to the monarch of some state as a token of his particular esteem. “When the Rose is presented to any sovereign prince who is staying at Rome, he is summoned before the Pope, who delivers it to him as he kneels before him, saying, ‘Accept this Rose at our hands, who, albeit unworthy, hold the place of God on earth, by which Rose is typified the joy of the heavenly Jerusalem and of the Church Militant—by which to all the faithful in Christ is manifested that most beauteous flower which is the joy and crown of all saints. Receive this, thou dearly beloved son, who art, according to the age, noble, potent, and endowed with many virtues, that thou mayest be more fully ennobled with every virtue in Christ our Lord, as a Rose planted by the streams of many waters; this grace may He vouchsafe to grant unto thee, who is Trinity in Unity and Unity in Trinity for ever and ever.’ The origin of this wondrous custom is lost in the twilight of antiquity, and almost every man who has mentioned it in dictionary or encyclopædia has given a false or meretricious reading of it. Some form of the custom began soon after the death of the first Pope, St Peter, Keeper of the Keys. The present form of the custom began, I believe, with Gregory the Great, about 600. . . . The form of the Holy Rose has undergone considerable modifications. Formerly a single Rose, it is now several, and of the most superb make. It is probably worth £1000. The custom can lay claim to an erudite bibliography of at least eight volumes, but nothing in English.”—Extract from *Pall Mall Gazette*. In the Musée de Cluny at Paris may be seen the golden Rose of Bâle, presented by Pope Clement the Fifth to the Prince Bishop of Bâle early in the fourteenth century. Two of our kings received this mark of distinction—Henry VI. and Henry VIII. “They made,” says M. Boitard, “the delicate and ephemeral Rose emblematic of the frailty of the body and the short duration of human life; while the precious and unalterable metal in which it was modelled alludes to the immortality of the soul.”

But let us glance cursorily to the land of the East—Persia. The poets of that country idolise this flower, placing it in song in company with the nightingales. That it holds a high rank there may be gathered from the following fable:—“One day,” said Saadi, “I saw a tuft of grass which surrounded a Rose-tree. What! cried I,

is this vile plant, born to be trodden under foot, come to dwell in company with Roses? I stooped to pluck it out, when it modestly said to me, Spare me, I pray thee, I am not a Rose it is true, yet by the perfume which I exhale you may perceive at least that I have dwelt with Roses.”—*Manuel Complet de l'Amateur des Roses*, par M. Boitard ; Paris, 1836.

Sir R. K. Porter, writing of the garden of one of the royal palaces of Persia, says—“On my first entering this bower of fairy-land I was struck with the appearances of two Rose-trees, fourteen feet high, laden with thousands of flowers in every degree of expansion, and of a bloom and delicacy of scent that imbued the whole atmosphere with exquisite perfume. Indeed, I believe that in no country in the world does the Rose grow in such perfection as in Persia. In no country is it so cultivated and prized by the natives. Their gardens and courts are crowded by its plants, their rooms ornamented with vases filled with its gathered bunches, and every bath strewn with the full-blown flowers plucked with the ever replenished stems.”—*Persia in Miniature*, vol. iii.

In Persia, in Turkey, and throughout the East generally, Roses are grown in considerable quantities for the manufacture of Rose-water and the famed Attar of Roses, which has been sold for six times its weight in gold. The Musk Rose is, I believe, the variety cultivated. The Attar or Otto of Roses is manufactured chiefly at Ghazeepore, in Bengal, and in Turkey ; but it is also prepared in Persia, in all parts of India, Upper Egypt, and in Tunis. In the Bengal Dispensatory (*The Bengal Dispensatory*, by W. B. O'Shaughnessy, M.D., Calcutta, 1842) is a paper drawn up by Dr. Jackson, on the cultivation of Roses and the manufacture of Rose-water and Attar of Roses.

“Around the Station of Ghazeepore,” says this author, “there are about 300 beegahs, or about 150 acres, of ground laid out in small detached fields as Rose Gardens, most carefully protected on all sides by high mud-walls and prickly-pear fences to keep out the cattle. These lands, which belong to Zemindars, are planted with Rose-trees, and are annually let out at so much per beegah* for the ground, and so much additional for the Rose-plants ;—generally five rupees per beegah and twenty-five rupees for the Rose-trees, of which there are 1000 in each beegah. The additional expense for cultivation would be about rupees 8.8 ; so that for rupees 38.8, you have for the season one beegah of 1000 Rose-trees.

“If the season is good, this beegah of 1000 Rose-trees should yield one lac of Roses. Purchases of Roses are always made at so much per lac. The price of course varies according to the year, and will average from 40 to 70 rupees.

“The Rose-trees come into flower at the beginning of March, and continue so through April.

* A beegah is half an acre.

"In the morning early the flowers are plucked by numbers of men, women, and children, and are conveyed in large bags to the several contracting parties for distillation. The cultivators themselves very rarely manufacture.

"There is such a variety of Rose-water manufactured, and so much that bears the name which is nothing more than a mixture of sandal-oil, that it is impossible to lay down the plan which is adopted. The best Rose-water, however, may be computed as bearing the proportion of 1000 Roses to a seer (2 lbs. troy) of water; this, perhaps, may be considered as the best procurable. From 1000 Roses most generally a seer and a half of Rose-water is distilled; and perhaps from this even the Attar has been removed.

"To procure the Attar, the Roses are put into the still, and the water passes over gradually, as in the Rose-water process. After the whole has come over, the Rose-water is placed in a large metal basin, which is covered with wetted muslin tied over to prevent insects or dust getting into it; this vessel is let into the ground about two feet, which has been previously wetted with water, and it is allowed to remain quiet during the whole night. The Attar is always made at the beginning of the season, when the nights are cool; in the morning early the little film of Attar, which is formed upon the surface of the Rose-water during the night, is removed by means of a feather, and it is then carefully placed in a small phial; and day after day, as the collection is made, it is placed for a short period in the sun; and after a sufficient quantity has been procured it is poured off clear, and of the colour of amber, into small phials. Pure Attar when it has been removed only three or four days has a pale greenish hue; by keeping it soon loses this, and in a few weeks' time becomes of a pale yellow.

"From one lac of Roses it is generally calculated that 180 grains or one tolah (seven pennyweights) of Attar can be procured; more than this can be obtained if the Roses are full sized, and the nights cold to allow of the congelation.

"The Attar purchased in the bazaar is generally adulterated, mixed with sandal-oil or sweet-oil. Not even the richest native will give the price at which the purest Attar alone can be obtained; and the purest Attar that is made is sold to Europeans. During the past year it has been selling from 80 to 90 rupees the tolah; the year before it might have been purchased for 50 rupees.

"At the commencement of the Rose season people from all parts come to make their purchases, and very large quantities are prepared and sold. There are about thirty-six places in Ghazee-pore where Rose-water is distilled.

"The chief use the natives appear to make of the Rose-water is at the period of their festivals and weddings. It is then distributed largely to the guests as they arrive, and sprinkled with profusion in the apartments.

"I should consider that the value of the Roses sold for the manufacture of Rose-water may be estimated at 15,000 rupees a year, and from this to 20,000; and from

the usual price asked for the Rose-water, and for which it is sold, I should consider there is a profit of 40,000 rupees. The natives are very fond of using the Rose-water as a medicine or as a vehicle for other mixtures; and they consume a good deal of the petals for the Conserve of Roses."

But Roses are grown for the purpose of manufacturing Rose-water in other countries besides India, Persia, and Turkey. At Provins, a town forty-seven miles S.E. of Paris, which has long been celebrated for its Conserve of Roses, the French Rose has been cultivated; and in the environs of Paris, the Damask and other kinds. In some parts of Surrey and Kent, in our own country, they are grown in considerable quantities—the Provence, Damask, and French kinds, indiscriminately. In the process of distillation, six pounds of Rose-leaves are said to be enough to make a gallon of Rose-water; but much depends on the stage in which the flowers are gathered, the best stage being just before full-blown.

The Rose has been valued in medicine from the remotest times; it was so in the time of Hippocrates; and the Romans believed the root to be efficacious in cases of hydrophobia; hence probably the term "DOG-ROSE." Many writers have attributed to it virtues which it does not possess, though it is still used in medicine, and valued for its tonic and astringent properties. The hips of the Dog-Rose, when reduced to pulp, are also used in pharmacy, to give consistence to pills and electuaries.

But to return more immediately to the history of the Rose. This flower having been considered as the emblem of innocence and purity from remote times, seems so far to have influenced the early Christian writers as to induce them to place it in Paradise. It is well known, also, that the seal of the celebrated Luther was a Rose.

In Hungary our flower is held in great esteem. I am informed by a friend who has resided in that country that it is customary with ladies of rank and fashion to take bouquets of roses and go into the woods to bud the wild kinds which they may encounter in their rambles. It must be an agreeable and exhilarating task to go in search of these Roses during the flowering season of the following year; and I am assured it is no uncommon thing to meet with the finest varieties blooming in the most unfrequented places.

"In Lower Hungary, where the iron road traverses long stretches of flat country, akin in conformation and aspect to the Russian steppes or to the prairies of Western America, hedges of Rose trees, thick and tall, cover both flanks of the snow-beset metals, and repel the fiercest onslaughts of their fleecy foe. On the State railways of the Banat, on the outlying regions of Magyarland, a section of the line nearly a mile and a-half in length, which in former years invariably became blocked by the snow, has been kept clear during the abnormally heavy falls of the past winter by one of these double rose hedges averaging 6 feet 6 inches in height and about 3 feet in thickness. This stout bulwark—in summer time bisecting the dusky 'purzta' with twin streaks of gay green, aglow with rich colour and redolent of sweet fragrance—has

successfully withstood the fury of the snow-laden tempests which have of late repeatedly swept over Eastern Europe, enwrapping thousands of square miles of territory in a cold white mantle of such density and weight that whole villages and countless homesteads have vanished for the time being under its frozen folds."—*Daily Telegraph*, 31st March 1888.

Roses are cultivated extensively in the plains of Bulgaria for the purpose of extracting their perfume. A correspondent of *The Times*, writing from Sofia, 25th May 1888, says—"Prince Ferdinand has gone to visit Kezanlik, the Valley of Roses. The valley is at this season in full bloom, and with its countless thousands of rose bushes it constitutes a lovely scene."

In Holland the Rose seems to have made but little way, although that country possessed the richest collections in Europe down to 1815, and it was from that country that the most beautiful of the tribe, the Moss Rose, was first introduced to England, from whence it found its way to France. In the "*Florilegium*" of Emanuel Sweert, published at Amsterdam in 1612, ten Roses are figured, one of which, however, is a hibiscus. Dodoens, who wrote about the same time, tells us—"There be divers kinds of Roses, whereof some are of the garden, sweet smelling, and are set, planted, and favoured; the others are wild, growing of their own kind (without setting) about hedges and the borders of fields. The first kind of garden Rose is the white Rose, whose stalks or branches are long and of a woody nature or substance, ten, twelve, or twenty feet high, and sometimes longer if they be stayed up or succoured."—(*A New Herbal by Rembert Dodoens, translated by Henry Lyte*, edition 1619, p. 469). He also gives a list of ten kinds, and after describing them, and the habitats of the wild kinds and their season of flowering, he adds a new list of names, some of which are probably the same kinds as those in the first list. He finishes with remarks on the history and medicinal virtues of the plant.

The transactions which took place in Holland during the Florimania associate no unpleasant ideas with our flower. The Rose was without the pale. The Tulip, the Hyacinth, the Ranunculus, the Anemone, these, with a few of minor importance, were the pride of the seventeenth and eighteenth centuries—these were the flowers of Holland, and the enthusiasm with which they were cultivated there had rendered them popular in other European countries. Thus the Rose lay neglected. Its capabilities of improvement were not thought of or unknown. The unlocking of its treasures was reserved for another nationality and for more recent times. The skilful and persevering French florists, to whose labours we are indebted for the choicest ornaments of the Rose Garden, lived long to admire the productions of their genius, and to witness their favourite flower reigning without a rival in the floral world.

France is a country naturally rich in Roses. Mizault, who wrote the first book in France specially devoted to Horticulture (1535), mentions four species only, and Olivier de Serres, writing in 1600, does not recognise a larger number. La Quintinie

in 1680 enumerates twelve different kinds. According to Decandolle, France has no less than nineteen species growing spontaneously in her hedges, woods, and wilds. The chief among them is the *ROSA GALLICA* or French Rose, which has produced some of the most brilliant and regularly formed flowers of the genus.* France is rich in Rose-lore, scientific, practical, and poetical. Of the former branches, Guillemeau, Boitard, Leleur, Vibert, Redouté, and Thorry, Deslongchamps, Iver, Jamain, and Forney, occur to me as some of the most distinguished exponents.

The country abounding in Roses, we should expect its poets would not fail to notice them, and perhaps in no other language have so many beautiful comparisons been instituted, or so many verses written in their praise. But of these hereafter.

There exists at the present day in the village of Salency in France a custom which is of very ancient date. As early as the sixth century the Bishop of Noyon offered a prize of a crown of Roses to be given yearly to the maid of the village who should have earned the greatest reputation for modesty and virtue. The villagers have the power of appointing her who shall receive it, and it is awarded with much ceremony and rejoicing. This custom has also prevailed in other French towns, and has recently been adopted in England.

It is the opinion of some of the French authors on this flower that Roses were cultivated far more extensively in France in former times than at present, which they arrive at from the statements made by early authors of the great quantities which were used on particular occasions. I have sometimes thought it a matter of surprise that the Rose should have taken the precedence of all other flowers in France at an earlier period than in this country, especially when we consider that it is our national emblem, and that to the enterprise of English collectors Europe stands indebted for many species which were sent from this country to France and elsewhere. It was so with the Tea-scented, the Chinese Rose, the *Banksiæ*, the *Microphylla*, the *Macartney*, the *Multiflora*, &c., some of which were from 16 to 20 years in England before they found their way to France.

But it was fashion paved the way for the general reception of the Rose in that country. At the commencement of the last century, the Empress Josephine acknowledged it as her favourite flower, and caused varieties to be collected throughout Europe, and brought to her garden at Malmaison. The late Mr Kennedy, of Hammersmith was provided with a passport to go and come as he pleased during the war, in order that he might superintend the formation of that garden. The patronage of the Empress gave an impetus to Rose culture. Establishments were soon formed solely for the purpose, among the earliest of which were those of

* The French Rose crossed with the Chinese Rose produced the Hybrid Chinese; the latter again, crossed with the Bourbon and Damask Perpetual, produced the Hybrid Perpetual. The Hybrid Perpetual crossed with the Tea-scented, or vice versa, produced the Hybrid Tea-scented, and the late Mr Henry Bennett and Messrs Dickson & Sons played a distinguished part in the development of these beautiful Roses.

M. Descemet and M. Vibert, and the taste spread throughout Europe. It has been said that the collection of the former at St Denis was destroyed by the English troops in 1815, but I believe they were sold to M. Vibert and removed to Chenevières-sur-Marne on the approach of the allied troops.

Monsieur Vibert, of whom we have just spoken, was one of the most celebrated cultivators among the French. He founded his establishment at Chenevières-sur-Marne, in the vicinity of Paris, in 1815, at which time the only Moss Rose known in France was the Red or common one. He removed a few years later to Angers, where the climate is more favourable for the pursuance of that science to which he was entirely devoted. To him we owe the existence of those old favourites, Aimée Vibert, Cynthie, D'Aguesseau, Julie d'Etangés, Blanche fleur, La Ville de Londres, Madeline, Gloire des Mousseuses, Jacques Lafitte, General Brea, Ornement des Jardins, Pius IX., and a host of striped and spotted Roses. It is worthy of remark that the latter, though much admired and cultivated in France, have never been very popular in this country.

M. Laffay, another distinguished cultivator, owns a list of names no less worthy. Who, even among modern Rose cultivators, is not familiar with Archduc Charles, Fabvier, Brennus, William Jesse, Madame Laffay, Coup d'Hébé, La Reine, and Duchess of Sutherland; these and others of nearly equal merit were raised in his garden. His residence at Bellevue, near Paris, where these Roses were raised, was a most enviable one; he lived surrounded with Roses and Chestnut trees, and his garden, though not extensive, commanded a wide and most agreeable prospect. The soil was a stiff—I had almost said rank—clay, and never appeared to have had much labour bestowed on its amelioration.

Both M. Vibert and M. Laffay were engaged in the cultivation of Roses for many years, and their enterprise and industry brought them a full reward. In the Preface to his Catalogue, published towards the close of 1846, M. Vibert writes to this effect:—"My establishment, which I founded in 1815, and where Roses only are cultivated for sale, is the first of the kind which had existence in France. Thirty-five years' practice in this branch of Horticulture, with numerous and reiterated experiments made in every mode of cultivation; a long habit of seeing, studying, and of comparing the productions of this beautiful genus—such are at the least the claims I have to public confidence. But I know all the obligations under which I remain from the long and sustained kindness with which amateurs and the members of the profession have honoured me; and it is in reply to the honourable proofs of concern which have been so often addressed to me, that I am resolved not entirely to renounce my profession. To cover the expense of my garden, and to use my time sparingly, is the end which I propose to myself. Without seeking to extend my connections, I shall receive willingly orders from persons sufficiently reasonable to value what time and care it costs in the present day to obtain novelties really

decided. I shall always continue the cultivation of my seedlings ; I shall never renounce them ; I shall rather increase them, and shall propagate but few others."

M. Laffay wrote to me in the autumn of 1847 :—" It is my intention to cease cultivating the Rose, in a commercial sense. My project was to do so this autumn, and to instal myself in the south of France, in the land of orange and palm trees ; but my father, who is very aged, wished that we should not quit Paris this winter, which deranges a little our plans of emigration, although they are only retarded. But it is very possible that I may yet offer you some good Roses, especially of the Hybrid Moss, for I intend to make a sowing of several thousands of seeds of these varieties. Thus I presume that my seed-plot will be worth visiting for some years to come. I am persuaded that in future we shall see many beautiful Roses, which will efface all those that we admire now. The Mosses will soon play a grand part in Horticulture."

It is somewhat remarkable that while M. Vibert's operations produced chiefly French and Provence, and a few varieties of Moss and Hybrid Perpetual Roses, the results of M. Laffay's labours were chiefly visible among the Hybrid Chinese and Hybrid Perpetuals. We can only account for this by supposing each cultivator to have had his favourite group, which he strove to improve. I should think one-half of the Hybrid Perpetual Roses known up to the year 1850 originated with M. Laffay ; he may indeed be said to have originated this group, one of the earliest of which was the *Princesse Hélène*.

The trade of cultivating Roses in France is in the hands of many individuals ; and to visit that country with the view of improving a collection is (I speak from experience) a laborious undertaking. As far as my powers of observation serve me, I should think the establishments where they are grown for sale, in the neighbourhood of Paris, Suisnes, and Lyons, vary in extent from one to five acres, and there are others, situate in various parts of France, nearly all of like extent. It is thus that English amateurs who may chance to visit any of them are usually disappointed, owing to the contrast of their Rose Gardens with those of England, which are so much more extensive. Formerly the most splendid collection of Roses in France was that in the *Jardin du Luxembourg* at Paris, when under the superintendence of Monsieur Hardy. Most of the plants there were of some age, and flowered profusely in the season. They were seen from the public promenades. It is true they looked rather drawn, but when we consider their proximity to the heart of the city, it is surprising that they flourished so well.*

* Everyone who has visited Paris will not fail to have remarked the clean appearance of the buildings compared with those of London, which is due to the burning of wood instead of coal. It is the extensive use of the latter which exerts so injurious an influence on vegetation in or near London. I recollect upon one occasion seeing a Honeysuckle and a Rose growing up a house in a street in Paris, the name of which I do not remember, but it was not far from the *Hôtel de la Monnaie*. Both looked flourishing, and the Rose, which was of the *Semprevirens* kind, was in bloom. Independent of its appearing to thrive and bloom there, a second cause for surprise was the fact of its remaining untouched, which it apparently had done for a length of time, and did to my knowledge, for five or six days, although within reach of every passer-by.

M. Hardy was no stranger in the Rose world ; one of his varieties alone (Madame Hardy) would have sufficed to render his name popular ; but he was fortunate enough to raise many others of first-rate properties, some bearing the after-appellation of "Du Luxembourg." And how could it be otherwise, when he devoted so many years to the cultivation of this flower, and raised so many thousands of seedlings? He never practised selling his Roses, but exchanged with his friends for other plants. He retired from the superintendence of these gardens some thirty-five years ago, and was succeeded first by Monsieur Rivière, and afterwards by M. Jolebois, under whose charge the Roses we believe now are.

The Rose amateurs of France, who are exceedingly numerous, are enthusiastic in the cultivation of their favourite. So soon as they hear of any new variety possessed of merit, they cease not to importune the raiser till he places it within their reach.

While admitting France to have been more successful than England in the production of *new* Roses, it is yet worthy of remark that *the English cultivators produce plants more acceptable to the English taste*. Although I may be ranked among the former, I state this, not from prejudice, nor from interest, but from a thorough conviction of its truth. If proof be needed, it may be found in the large exports of the *French varieties, of English growth, to America and elsewhere*. It may not be generally known that some few of the finest and most esteemed Roses in France do not succeed well in this country. On the other hand, many kinds are developed in far greater perfection here than there. The flowers of Roses generally suffer from the drier air and scorching of the summer's sun in France ; even here it is during our cloudy days, or when refreshed with a soft shower or copious dew, that the buds expand in fullest beauty.

I cannot help mentioning the jealousies which exist among some of the "Cultivateurs de Rosiers" in France. I once visited the gardens of a noted grower, in company with a grower of less celebrity. I was surprised to see so little in these grounds, and to find the owner careless as to showing what he possessed. Although exceedingly polite and talkative on other subjects, he was disinclined to speak on Roses. The mystery was cleared up by a letter received soon afterwards. In it were words to this effect :—"If you visit my establishment again, which I beg of you to do, pray do not bring any French Rose-growers with you, for I cannot show them my rarities and beauties." This opened my eyes ; I concluded I had not seen "the lions ;" and an after visit proved this to be the case.

Very few of the French Rose-growers who were prominent at the time the first edition of this book was published remain amongst us. MM. Hardy, Vibert, Laffay, Portemer, J. B. Guillot, Guérin, Sylvain, and others have long since, and MM. Lacharme and Gonod more recently, departed. But we have still a numerous band no less skilful and no less worthy who remain to carry on the work of their predecessors. To mention the names of MM. P. Guillot, Bernaix, Pernet-Ducher,

Margottin, Leveque, Nabonnand—and there are many others—is sufficient to establish this. We have recently received many new Roses from Germany and America, some of high quality, but the majority have, as yet, hardly realised English expectations.

But let us trace the history of the Rose in our own land. It is again matter of surprise to me that the Rose should not have been more extensively cultivated in England at an earlier date, when it is considered that it must have been brought prominently before the eyes of our forefathers in the wars of the Houses of York and Lancaster, or, as they are often termed, the Wars of the Roses. But perhaps this was the very cause of its unpopularity. It might have been the remembrance of those sanguinary struggles which, casting a halo around this emblem of innocence and purity, made our forefathers shrink instinctively from cherishing a flower that recalled to mind scenes or tales of carnage and of woe—whose leaves were once saturated with the blood of England's bravest sons.

It may not be considered out of place to give an account here of the origin of the Red Rose in the arms of the House of Lancaster. About 1277, Guillaume Pentecôte, Mayor of Provins, was assassinated in a tumult; and the King of France sent Count Egmond, son of the King of England, who had assumed the title of Comte de Champagne, to that city to avenge his death. After staying some time there, he returned to England, and took for his device the Red Rose, which Thibaut, Comte de Brie, and de Champagne had brought from Syria some years before on his return from the Crusades. This Count Egmond was the head of the House of Lancaster, which preserved this flower in their arms.—(*L'Ancien Provins*, par Opoix).

The Damask Rose being the wild kind of Syria, it would hence appear that it was *this* gave rise to the Red Rose of the Lancastrians, and not the French Rose, as asserted by some. The White Rose was probably assumed by the Yorkists in contradistinction to the other.

Our old English manuscripts on Gardening are principally transcripts of the Greek and Roman authors, sometimes embellished by tradition and superstition. About the middle of the fifteenth century the learning of Greece and Rome became more generally accessible by the invention of printing, and the writings of Theophrastus, Dioscorides, Pliny, and others, were placed within the reach of a larger number of students who worked for the instruction and amusement of their fellow men.

Dr William Turner, the earliest reliable English writer on our subject, remarks in the second part of his "Herbal" (1568), "The Rose is so well known that it nedeth no description; Dioscorides maketh mention but of one kinde of Rose, but Mesue maketh two kindes, that is, of the whyte and rede; but since Mesue's tyme there are found divers other kinds, as Damaske Roses, Incarnation Roses, Muske Roses, with certain other kindes, whereof is no mention in any olde writer." Then follow extracts from Dioscorides and Mesue, which are medical rather than horticultural.

Lobel, who had a garden at Hackney, and was appointed Royal Botanist by James the First, published towards the close of the sixteenth century a work entitled "Plantarum seu Stirpium Icones." In this work he describes ten species of Roses. Didymus Mountain, who wrote about the same time, tells us that to have Roses every month you must new plant, dung, and water them often. Thomas Hyll, citizen of London, published in 1593 "The Profitable Art of Gardening," gathered, as he himself tells us, from earlier writers on the subject. In this work is a chapter (chap. 28, p. 84) "Of the ordering, care, and secrets of all Roses."

"In 1622, Sir Henry Wotton sent from Venice to the Earl of Holderness a double yellow Rose of no ordinary nature, which was expected to flower every month from May till almost Christmas, unless change of climate should change its properties." (Johnson's "History of Gardening.") This most probably was the old double yellow Rose, so notorious for refusing to unfold its blossoms in our less propitious climate. With regard to its *flowering from May till Christmas!*—this no doubt was an embellishment, to which an enthusiastic collector may be readily excused for giving ear.

Parkinson, an early English writer on Gardening and Botany, in his "Paradisi in sole Paradisus terrestris," published in 1629, speaks of the "white, the red, and the damask," as the most ancient in England. He enumerates twenty-four varieties, and speaks of others, but does not specify their names. He figures fourteen sorts, and treats in a separate chapter of the propagation of Roses by budding and by seed. The red Rose of which he here speaks was no doubt the Cabbage or Damask; and the white one an old variety of ROSA ALBA. In the "Theatrum Botanicum" of the same author, published in 1640, there is a chapter (chap. 26) on "Rosa sylvestris, Wild Roses or Bryer bushes." Six indifferent figures are given here, and there is a long dissertation on the names and medicinal virtues of Roses. This is, however, largely borrowed from Theophrastus, Pliny, and preceding authors or compilers of English and Foreign "Herbals." In some few old English gardens we still find trees of the apple-bearing Rose occupying a conspicuous position, and whose ancient appearance denotes them to have withstood the changes of many a by-gone year. Sometimes, indeed, the scathing hand of time has severely marked them, and they are hastening to decay.*

In the "Herbal" by John Gerard (Edition 1633) there are three chapters on ROSES—1. Of Roses; 2. Of the Musk Roses; 3. Of the Wild Roses. There are eighteen kinds figured, and the figures are capitally done. The first chapter opens thus:—"The plant of Roses though it be a shrub full of prickles, yet it had been

* I recollect meeting with two or three of this description in the gardens of Bruce Castle, Tottenham, a few years since; they were of prodigious height and size, resembling Apple-trees more than Roses. But alas; they are no longer there.

more fit and convenient to have placed it with the most glorious flowers of the world, than to insert the same here among base and thornie shrubs; for the Rose doth deserve the chiefest and most principal place among all flowers whatsoever." Following this is a description of the varieties then known and a detailed account of the preparations used in the alleviation of human ailments.

William Lawson, whose "New Orchard and Garden" was published in 1638, names "The Rose Red, Damask, Velvet, and Double Provence; the Sweet Musk Rose, Double and Single; the Double and Single White Rose." Sir Hugh Plat in the "Jewel House of Art and Nature" (1653) has a good deal to say (p. 175) on the distilling of Rose-water and the drying of Rose-leaves; and the same author in the "Garden of Eden" (1675) writes—"Cut your Roses after they have done bearing, so soon as the moon will give you leave, viz., the fourth, fifth, or sixth day after the change, and so you shall have store of Roses again about Michaelmas or after."

There is now before me a work published on Gardening in 1654, entitled "The Countryman's Recreation, or the Art of Planting, Graffing, and Gardening, in Three Books." In a work with such a title we might expect to find a variety of flowers treated of. But no! fruit trees seem then to have been the chief ornament of country gardens; the *utile* was preferred to the *dulce*; in truth, the attention of our forefathers seems to have been chiefly directed towards the "making of good cyder," and the "keeping of plummies!" In the above-mentioned work there is but one flower named, and that is the Rose! Here is the article as it appears in the original:—

"TO GRAFFE A ROSE ON THE HOLLY.—For to graffe the Rose, that his leaves shall keep all the year green, some do take and cleave the holly, and do graffe in a red or white Rose-bud; and then put clay or mosse to him, and let him grow. And some put the Rose-bud into a slit of the bark, and so put clay and mosse, and bind him feately therein, and let him grow, and he shall carry his leaf all the year."

This is a recipe for obtaining *Evergreen* Roses! *Satis superque*. Must we infer that practical men in those days held tenets such as these, or that they were merely the effusions of the brain of some would-be *savant* in horticultural matters? As gardening was then a practical art, we cannot suppose the former to have been the case, since the very first experiment would throw a doubt on such a proposition, which the failure of every subsequent attempt would confirm; and thus the most credulous would soon be undeceived. The latter would certainly seem the juster inference. Without wishing to be too severe against the early writers on Horticulture, we certainly were not aware that the sun of Horticultural science had reached the meridian so long since as 1654, and feel some concern, as well as humiliation, that more than two centuries should elapse without our profiting by so wonderful a discovery! We cannot forbear quoting certain lines of Virgil, met with in our school-days, and to which, perhaps, the above writer was indebted for his idea:—

Inseritur vero et iætu nucis arbutus horrida;
Et steriles platani malos gessere valentes:

Castaneæ fagus ornusque incanuit albo
Flore piri, glandemque sues fregere sub ulmis.

—*Georg.* lib. ii. ver. 69-72.*

* The thin-leaved arbuté hazel-graffs receives,
And planes huge apples bear, that bore but leaves.
Thus mastful beech the bristly chestnut bears,
And the wild ash is white with blooming pears,
And greedy swine from grafted elms are fed
With falling acorns that on oaks are bred.—*DRYDEN'S Virgil.*

Such are the workings of the imagination, that the black Roses produced by grafting on black-currant bushes, the blue Roses of the Moors, and the oft-talked-of yellow Moss, are already before our eyes! Could we but retain them there! But, alas! this were impossible. Creatures of the imagination, a moment's sober reflection dissipates you in thin air!

But to be serious. John Rea in "Ceres, Flora, and Pomona," 1675, devotes a chapter to Roses (chap. iv.) in which he names and describes thirty kinds. He tells us—"They are usually disposed up and down the garden in bushes, and under walls, and set in rows and hedges, supported and kept in on either side; the several coloured Roses intermixed and well placed blooming together will make a most gallant and glorious prospect."

In the "Historia Plantarum" of John Ray, published in 1686, thirty-seven species of Roses are enumerated and described.

John Worlidge in "Systema Horticulturæ" (second edition), 1683, has a section "Of Ordering Rose Trees." He says—"To have roses until Christmas you may plant the Monthly Rose in some niche of your south wall and you shall have Rosebuds fresh and fair in October, and in mild winters in November, which by shutters artificially made may be defended from the cold, sometimes admitting the sun, until Christmas."

Samuel Gilbert published the second edition of "The Florists' Vade Mecum" in 1683. He gives a full account of the varieties known at that time, with instructions for accelerating and retarding the period of flowering, and has something to say on budding, layering, and pruning. Near the conclusion of a pretty long article he bursts forth:—"These dew-empêrled musky fragrant perfuming flowers deserve the principal place among all others whatsoever, being not only esteemed for their beauty and virtues and odoriferous scents, but because they are the honour and ornament of our English sceptre."

London & Wise in "The Retired Gardener," 1706, give a chapter of eleven pages (pp. 719-729) to Roses, which includes the following history:—

"On a day when they were keeping Holy-day in Heaven, Flora summon'd all the deities that preside over gardens, and when they were met address'd herself to them in this manner:—'You, who have always been the shining ornaments of my court, I have now called together to consult in a matter of great importance. I know I am the sovereign of all the flow'ry kind, but for the more firm establishment of my empire I am thinking to chuse them a queen of a spotless and unblemish'd reputation, but will do nothing of this nature without your counsel and assistance.'

"To these words all the deities that were present, having first fill'd the court with murmurs, answer'd in this manner:—'Great Goddess, be pleas'd to reflect a little on the animosities such a choice may create among the rival flowers, even the worthless Thistle will pretend to deserve the crown, and if deny'd will perhaps grow factious, and disturb your peaceful reign.'

"'Your fears are groundless,' reply'd the Goddess, 'I apprehend no such consequence; my resolution is already fix'd; hear therefore what I have determin'd. In the deep recesses of a wood where formerly the Oaks were vocal and pronounc'd oracles to mortals, at the foot of a little hill is a grotto, whose structure is nature's masterpiece; there a wood-nymph pass'd her quiet days. She was extremely beautiful and charm'd all that beheld her, her looks, her mien, and her behaviour had something of more than human, and indeed she was the daughter of a Dryad and of a Sylvan god. Her chastity and devotion equal'd her beauty, she was perfectly resign'd to the will of heav'n, and never undertook anything without having first implor'd our assistance, her heart was pure and her hands undefil'd. This Nymph is dead and my intention is to raise a flower from her precious remains to be queen of all the flow'ry race.' The applauding gods strait prepar'd for the ceremony; Priapus put on a grave countenance; Vertumnus loaded himself with perfumes of an excellent scent; Pomona heap'd up canisters with all sorts of richest fruits; Venus was attended with a train of smiles and graces; Vesta promis'd wonders; and Bacchus suppli'd rivers of nectar, and crown'd vast goblets with that divine liquor. In this equipage they left their celestial mansions and repaired to the grotto, where they saw the dead body of the Nymph stretch'd along on a soft couch of turf, and approaching it with profound awe and silence prepar'd to pay the sacred rites; and Flora having thrice bow'd herself to the ground was heard to pronounce this prayer:—'Almighty Jupiter, great ruler of the Universe, exert thy creating power, and from the dead corps of this lovely Nymph let a plant arise and bear no less lovely flowers, to be queen of all thou hast already created.' Scarce had she made an end when behold a wondrous change—the Nymph's extended limbs were turned into branches, and her hair into leaves, a shrub sprang up adorn'd with sprouting buds, which strait unfolding disclos'd a fragrant and vermilion flower; a sudden light fill'd all the grotto, and the well pleas'd Goddess breathed thrice on the new-born babe to spread it into life, and give it an odorous soul. Then seeing the vegetable queen adorn'd with every grace she kiss'd her thrice, and breaking the general silence reveal'd her secret joy. 'Approach,' said she, 'at my command, O all ye flowers, and pay your grateful homage to your queen, the ROSE, for that's the name I give her.' Then taking a crown in her hand, that had been made on purpose in heav'n, she plac'd it on the head of the new-made majesty; while to compleat the ceremony, the attending gods sung joyful Io Pæans, amidst a symphony of flutes, harps, and all other tuneful instruments with which the air resounded, while Flora and her bright celestial train ascended back rejoicing into heav'n."

Salmon, in his "English Herbal," 1710, recognises and describes thirty-two kinds, and has a great deal to say on the "Planting and nursing up," and on "the Virtues" of Roses; he also gives a separate and additional chapter "of Rose-Wild or Briar Bush." He has the following note (p. 955) on the double yellow Rose (*R. SULPHUREA*) which it would appear was as difficult to deal with then as now:—"The best way that is known to cause this double yellow Rose to bring forth fair and kindly flowers is done thus: first in the stock of a Frankfort Rose, near the ground, put in a bud of the single yellow Rose, which will quickly shoot to a good length; then half-a-yard higher than the place where the same was budded, put into it a bud of the double yellow Rose, which growing, the suckers must be kept from the root, and all the buds rubbed off except those of the kind desired, which being grown big enough to bear (which will be in two years) it must in winter be pruned very near, cutting off all the small shoots, and only leaving the biggest, cutting off the tops of them also as far as they are small."

The "Dictionarium Rusticum" (1717) has an article on *Rosæ*, and in "The Lady's Recreation," by Charles Evelyn (1717), there is a very good notice of them. John Cowell, in "The Curious and Profitable Gardener" (1730), has "Particular Memorandums concerning the Management of Rose Trees."

"The Catalogue of Trees and Shrubs, by a Society of Gardeners," published in 1730, and attributed to Philip Miller, has forty-three species of Roses. In this author's "Gardeners' Dictionary" (1735) there are forty-six species and varieties, and there are brief but sound instructions given on propagating and cultivation—the latter being modified, extended, and improved in subsequent editions. Batty Langley published the second edition of "The New Principles of Gardening" in 1739, and has a section (p. 175) "Of Roses, their Culture," &c.

As late as 1762 Linnæus appears to have acknowledged only fourteen species; but in the "Species Plantarum" of this author, edited by Willdenow, and published in 1797, thirty-nine species are acknowledged with many additional varieties. In 1770 "A Complete Body of Planting and Gardening" was published by the Rev. William Hanbury, and in vol. i., p. 173, is a long chapter headed "Rosa, the Rose Tree." The Rose is also alluded to again and again in this work. Richard Weston, who brought out "The Universal Botanist and Nurseryman" from 1770 to 1777, arranges alphabetically a list of seventy-nine kinds, and says—"It is very difficult to ascertain which are the species and which the varieties of the Rose. Linnæus is inclined to think they are all only varieties of the Dog-Rose, but yet has divided them into fourteen distinct species." In the same author's "English Flora" (1775) he names eighty kinds, and says further—"A more copious catalogue of Roses really existing in the curious gardens of England could have been given, but all these are to be readily found in the different nurseries, although not in any one." John Abercrombie, the first edition of whose book, "Every Man his own Gardener," appeared in 1774, did not forget or overlook the Rose. The twenty-first edition of that work is now in my hands, and in it are instructions "for blowing Roses and other plants early," and for "Planting Roses." We are also told how to "inoculate and lay Roses," how to "propagate Roses and other shrubs by suckers," and how to obtain "early Roses in the hothouse."

In "Mawe and Abercrombie's Universal Gardener and Botanist" (second edition, 1797) eighteen species are enumerated and described, and many varieties in addition. We are here told that "they are of hardy growth, succeed in any common soil and situation, and flower annually in great abundance from May till October in different sorts, though the general flowering season for the principal part of them is June and July." In this work are also general instructions for planting, cultivation, forcing, and propagation.

It was only at the close of the 18th century and the dawning of the 19th that the species were multiplied, and the garden varieties of Roses were really recognised and esteemed. In 1789 the Chinese Rose was introduced; and in 1810 China furnished us with the Tea-scented also. At this period nearly all the varieties known bloomed in summer only. In 1812 came forth that exquisite variety the "Rose du Roi," or Crimson Perpetual, which, according to some, was raised in the Royal Gardens of St Cloud, then under the care of Le Comte Leleux.

In 1799 Miss Lawrence published "A Collection of Roses from Nature," which contained ninety-one coloured plates, including many of the most beautiful species and varieties then known. In 1820 the "Rosarum Monographia," by J. Lindley, appeared, in which many species besides sub-species are described, and thirteen of them figured. This work is of a scientific character, and the system there adopted has been followed more or less by many subsequent writers on the botany of the Rose. Lindley's species number seventy-six, or one hundred and one if we include doubtful species. About this time the types of the Bourbon and Noisette Roses appeared, and in a very short period the varieties were increased and improved beyond what the most sanguine could have anticipated. Loudon in the "Encyclopædia of Gardening," published in 1822, says, "The lists of the London and Paris Nurserymen contain upwards of 350 names." . . . "New varieties are raised in France and Italy annually. L. Villaresii, Royal Gardener at Monza, has raised upwards of fifty varieties of ROSA INDICA, not one of which has as far as we know reached this country. Some of them are quite black! others shaped like a Ranunculus; and many of them are highly odoriferous." With regard to those *quite black*, as none of them have *yet* reached this country, it may be presumed the writer made this statement on the authority of the Continental growers, whose vivid imaginations often lead them to portray in too glowing colours any new production.

In the Catalogue of Messrs Loddiges & Sons, 1826, no less than 1393 species and varieties of Roses are numbered as existing in their nursery at Hackney, and there is an additional list of 66 "Chinese with Varieties and Hybrids." Messrs Lee of Hammersmith had also about this time a large number of varieties, and a little later Hooker of Brenchley, and Rivers of Sawbridgeworth, had formed collections.

In Sweet's "Hortus Britannicus," published in 1827, there are 107 species given, and 1059 varieties, the greater portion of the latter being French or Gallica Roses.

In 1829 M. Desportes and M. Prevost each published in France a Catalogue of Roses. In the catalogue of the former cultivator above 2000 varieties are described. These catalogues, with others which appeared in England and in France both before and after this time, were calculated to infuse fresh ardour into the minds of the improvers of this charming race of plants, and at the same time to spread a taste for its cultivation.

At the end of this volume I will set down a list of works on the Rose which I possess, arranged according to their date of publication.—(See Appendix C.)

It may be thought reasonable that I should allude to the Nurseries in this parish which have been so long famous for Roses. They gained considerable renown in the time of my father, the late Mr. A. Paul, from the continual flowering of a plant of the old double yellow Rose (R. SULPHUREA), which had become established on a west wall about the close of the eighteenth century; flowers from which to draw were sought from various parts of the country. The plant produced them with such

regularity and in such gay profusion that an amateur eventually purchased it to transplant to his seat in Yorkshire; and he did this with considerable success, for although of great size it flourished, and continued to flower well.*

When the first edition of this work was published (1848) the Rose was judged by the Florists' rules of the shape and size of the flower, ignoring altogether the valuable qualities of habit and constitution. But as its devotees increased in number and intelligence, the novelties constantly arising from hybridising and cross-breeding had to pass many other tests—those of habit, constitution, freedom of growth, and flowering, &c. These qualities are now insisted on by our best gardeners, and it is owing to their possession that many of the old and neglected roses are coming to the front again.

The introduction of the Hybrid Perpetual Roses in the middle of the last century I regard as the greatest epoch in the history of the Rose. In addition to the many beautiful varieties of these successively introduced, from them have arisen a wealth of sterling novelties popularly known as Hybrid Tea-scented. More recently single Roses, and even the original species, have obtained a certain standing among cultivators, and the Moss, Multiflora, and Polyantha have been greatly varied and improved.

Towards the middle of the nineteenth century the Rose amateurs of England were becoming so numerous that it was almost impossible to enumerate even those who possessed collections of merit. A few, however, occur to me which have especial claims to notice as being the earliest of any extent, and they doubtless encouraged the rising taste for this flower.

At Dane End, near Munden, in Hertfordshire, formerly the seat of C. S. Chauncey, Esq., was formed one of the earliest and best collections, and to which this county is no doubt indebted in some degree for the celebrity she enjoys for Roses.

Mr Sabine formed a collection of the species and varieties many years back at North Mims, Herts. Lindley in the *Rosarum Monographia*, 1820, gives a list of no fewer than 184 double varieties to be found there, and a vast number of varieties and species were once growing in the Gardens of the Royal Horticultural Society at Chiswick.

About eighty years ago Mrs Gaussen formed a Rosarium at Brookmans, in Hertfordshire, which contained many varieties. The form of the ground it occupied was an oblong, walled in, the walls covered with climbing Roses and other plants. There was a variety of beds formed and planted with much taste; in the centre stood a temple covered with climbing Roses. The whole was blinded from distant view by a wide laurel bank; and the surprise created on suddenly entering was most agreeable,

* I may here state that the original firm of A. Paul & Son (1806-1860) no longer exists. I am the only surviving partner of that old firm.

and the effect magical. "Here," says an eminent cultivator with whom I was privileged to converse in the olden time, "I first saw the Rose Ruga, which was then recently introduced; and I remarked to Mr Murdoch, who was gardener there, that it was a hybrid of the Tea-scented. It was beautifully in bloom, and struck me at the time as a gem of the first water. I had not at this time met with any of the Sempervirens Roses, the first of which, the ALBA PLENA, I saw in flower soon afterwards on a wall at Dropmore, the seat of Lady Grenville."

The next collection which demands our notice was at Broxbournebury, the seat of H. Smith Bosanquet, Esq., where there is at the present time a great number of very fine specimens.

In addition to the above, there were, later on, superior collections of Roses at the following places:—Poles, near Ware, the seat of E. S. Hanbury, Esq.; High Trees, Redhill, the seat of W. B. Waterlow, Esq.; Bayfordbury, near Hertford, the seat of W. R. Baker, Esq.; Danesbury, near Welwyn, the seat of A. M. Blake, Esq.; Stockwood, Luton, the seat of J. S. Crawley, Esq.; Hatfield, Herts, the seat of the Marquis of Salisbury; Mentmore, Leighton Buzzard, the seat of the Earl of Rosebery; and this list might be considerably extended. It might have been foretold that the rare beauties which these and other gardens contained—whether viewed on the plants arrayed in the simple loveliness of nature, or when dressed for the tables of the Floral Fêtes—would captivate all lovers of flowers and spread a taste for their cultivation. And such was really the case. As they became known their beauty was appreciated and their possession was coveted and prized. Florists and amateurs vied with each other in the cultivation of their favourites, each desirous of producing them in the most perfect state. Their characters and capabilities were thus fairly developed; improvement followed on improvement; and they soon became universally popular. And why? Shall Anacreon answer? "*Ρόδον ὡς φέριστον ἄνθων*"—The Rose is the most beautiful of flowers."

CHAPTER III.

The Poetry of the Rose.

I N venturing to add to the earlier editions of this work a Chapter on "The Poetry of the Rose," I believe I have had the approval of the majority of my readers. It is scarcely necessary to say even to those who have only a moderate acquaintance with general literature that there is no lack of materials; the difficulty is to make a selection which will bring this part of our subject within reasonable compass; much indeed that is worthy of insertion is necessarily omitted. But my readers who may wish for fuller information on this subject will find it in an elegant and readable little book "Ros Rosarum ex Horto Poetarum," recently published by Mr Elliot Stock of London.

I have already alluded to the mention of the Rose in the Sacred Scriptures, and the most ancient of the Greek writers, Homer, Hesiod, and others, mention it.

Of the little that remains to us of the writings of Sappho, we have the following fragment on the Rose:—

Would Jove appoint some flower to reign
In matchless beauty on the plain,
The Rose (mankind will all agree),
The Rose the queen of flowers should be;
The pride of plants, the grace of bowers;
The blush of meads, the eye of flowers;
Its beauties charm the gods above;
Its fragrance is the breath of love;
Its foliage wantons in the air,
Luxuriant, like the flowing hair;
It shines in blooming splendour gay,
While zephyrs on its bosom play.

—Fragment 5. Translated by F. Fawkes.

Sappho having named the Rose the "Queen of Flowers," other of the Greek writers would naturally consider it a subject worthy of their attention. This was eminently the case. Theocritus, on account of its transitoriness, compares it to the course of human life. The gay Anacreon alludes to it in several of his Odes, calling it "the most beautiful of flowers," "the delight of the Gods," "the favourite of the muses," and says its leaves are full of charms. He speaks of it still more definitely

as useful in diseases. The Rose is made the particular subject of his Fifth and Fifty-third Odes. In the former we read :—

O, lovely Rose ! to thee I sing !
Thou sweetest, fairest child of spring !
O, thou art dear to all the gods,
The darling of their blest abodes.

—*From Ode 5. Translated by Thomas Bourne.*

In the Fifty-third Ode the poet considers it sacred, and accounts for its origin in a marvellous manner—

While spring with lavish flow'rets glows,
From the gay wreath I'll pluck the Rose,
The queen of fragrance will display.
Oh ! pour, my friend, th' accordant lay.
Dear to earth thy smiling bloom !
Dear to heav'n thy rich perfume !
Sacred to the sportive hour,
When the loves, from flower to flower,
Blithely trip ; the Graces fair
Bind thy treasures to their hair ;
By the Paphian queen caress'd,
Seated on her snowy breast.

Nymphs who haunt th' embow'ring shades
Poesy's enchanting maids,
Woo thee, Rose ; thy charms inspire
All the raptures of the lyre.
Cull me straight th' inviting Rose ;
Shielded by the thorn it grows.
Cull the Rose : what boots the smart ?
Boundless sweets regale the heart.

Pluck it not : the flow'ry gem
Unwilling quits its parent stem.
Round the feast of fragrance rove ;
But gently touch the Rose of love.
'Mid the sons of Comus spread,
Blossoms the Rose's living red ;
Chaplet for the thirsty soul,
Well it crowns the purple bowl.

Hark, the bard ! his numbers pour
Incense to the sacred flower.
The rosy-fingered beam of light
Undraws the curtain of the night.
Health's blushing Rose the virgin streaks,
And paints the down of Venus' cheeks.

Lovely Rose ! thy genial power
Sweetly soothes the sickly hour ;
O'er the grave thy fragrance shed ;
We sink in quiet to the dead.
When the envious hand of time
Nips the honours of thy prime,
Fresh in youth thy odours bear
Richness to the ambient air.

Say from whence the Rose divine
 Bids th' unrivalled lustre shine ?
 From the liquid caves of night
 When Cytherea waked to light—
 Waked from her Neptunian birth,
 To fill with love the circling earth :
 From the forehead of her sire,
 When Pallas sprang with martial fire,
 Nature gave the Queen of Flowers,
 Coeval sister of the Powers.

When th' immortals' frolic souls
 Glow'd with Nectar's copious bowls,
 By chance, upon a blooming thorn,
 Such as the heavenly seats adorn,
 Prolific fell the ethereal dew ;
 Consecrated Roses grew.
 The topers hail'd the plant divine,
 And gave it "To the God of Wine !"

—Anacreon, *Ode 53.* Translated by Green.

Other Greek writers attribute to the Rose a different origin. Bion, in his Epitaph on the death of Adonis, tells us it arose from the blood of this lovely youth, who was destroyed by a wild boar :—

Thus Venus mourned, and tears incessant shed,
 And all the loves bewailed Adonis dead ;
 Sighing, they cried, " Ah ! wretched queen, deplore
 Thy joys all fled, Adonis is no more."
 As many drops of blood as from the wound
 Of fair Adonis trickled on the ground,
 So many tears she shed in copious showers ;
 Both tears and drops of blood were turned to flowers,
 From these in crimson beauty sprung the Rose,
 Cærulean-bright Anemones from those.

—Bion. Translated by F. Fawkes.

Others, again, of the ancient writers, granting the existence of the White Rose say that the colour was merely changed from white to red by being stained with the blood of Venus, whose feet were lacerated by its thorns in her endeavour to save Adonis. Our own Spenser makes a beautiful allusion to this fancy in the *Daphnaida* :—

White as the native Rose before the change
 Which Venus' blood did on her leaves impress.

Among the Romans, Cicero, Lucretius, Virgil, Horace, Ovid, and Martial, introduce the Rose into their writings, the last-named author addressing one of his Epigrams "To Domitian on his Winter Roses":—

Some winter Roses, Cæsar, rarest flowers,
 The Nile had sent you, thankful for your care.
 But when th' Egyptian sailor saw your bowers,
 He could but scorn the present which he bare.
 So rich the fragrance your own Pæstum showers,
 So bright Italia's spring—her blooms so fair.

Fresh wreaths of roses from Rome's gardens torn
 Where'er the sailor turned his steps he knew.
 Bright with the blooms Italia's soil had borne.
 Where'er he turned his eyes, plants prosp'ring grew.
 "I see"—he cried—"we may send you our corn,
 But winter roses we must get from you."

—*Martial's Epigram, Book VI., p. 80.*

Translated by the Rev. F. C. Paul.

The poetry of Persia abounds in allusions to the Rose, which often figures in company with the Nightingale. We select the following :—

When Omar died the Rose did weep
 Its petals on his tomb,
 He would be laid where north winds keep
 The rose in freshest bloom.
 When Sadi came, the child of song,
 Each Rose flushed rosy red,
 He sang their beauty all day long ;
 With Roses crowned his head.
 They shed no tear when Sadi died,
 Aloft their scent they flung !
 "What matters Time or Death?" they cried,
 "Of us has Sadi sung!"

From Ros Rosarum, p. 43.

Anna Hills, 1884.

France, Spain, Portugal, Italy, Germany, and Russia have all their poetry of Roses. That of France is particularly varied and abundant. Rapin wrote a Latin poem on Gardens early in the eighteenth century, from which we make the following extract:—

But richest odours the soft air perfume,
 While now mild zephyrs blow and rose trees bloom,
 The garden's Queen in all her glory shows
 As the green trees their purple buds disclose.
 Withdraw your charms then all ye meaner train
 And yield where Majesty and beauty reign ;
 Compared with her the ruddy morn seems pale
 And conscious Cynthia's waning beauties fail.
 The rose that feared to trust the yester sun,
 But in close folds continued still unblown,
 Now no strong tie her swelling leaves restrains,
 Breaks through impatient of her former chains ;
 Wide o'er the garden now she sheds perfumes,
 Unrumples her swol'n buds and gaily blooms ;
 Her looks discover what she once has been,
 Her blushes show her chaste, her air a Queen.
 Common report mistook, which falsely said
 The rose was once an Amazonian maid ;
 She was a Grecian born, gave Corinth laws,
 And fame proclaimed her worth with such applause
 That youthful rivals for her favour strove,
 And high-born Kings were candidates for love.
 Valiant Halesus first her suitor came,
 Who, soldier-like, disclosed his bolder flame ;
 Then Brias, born near the seven beds of Nile,
 And Arcas, laden with rich Theban spoil ;

Trophies and laurels at her feet he laid,
 And hoped, who won a town, might win a maid.
 But haughty she (for beauty caused her pride),
 Provoked with their addresses, proudly cried,
 "From arm, and not entreaties seek a bride."
 Nor deigning to receive their vain replies,
 With armed attendants to the Temple flies;
 With her the young, the old, a numerous train
 Throng to Apollo's and Diana's fane;
 Suppliant the nymph before the altar bows
 And prays the goddess to preserve her vows,
 The Kings enraged, their numerous force unite,
 And breaking through the doors begin the fight;
 Encouraging her guards the Princess glows
 With martial ardour and repels her foes;
 But whether valour mixed with shame might add
 Force to her eyes, or that in armour clad
 Fairer she seemed, the multitude amazed
 With more than usual admiration gazed,
 Called her the Goddess, broke Diana's shrine,
 And placed their Princess there as more divine,
 When powerful Phœbus, warm in the defence
 Of his chaste sister, curbs their insolence;
 And while his blasting flames revengeful fly,
 The Queen repents she seemed a Deity.
 Fast in the shrine her foot takes hold and cleaves,
 Her arms stretched out are covered o'er with leaves,
 Tho' changed into a flower her pomp remains,
 And lovely still and still a Queen she reigns.
 The crowd for their offence this doom abide
 Shrunk into thorns to guard her beauty's pride;
 Thrice happy she had they not vainly strove }
 With rights divine her honour to improve, }
 Nor incense paid her for a subject's love.
 Brias a worm, Arcas a drone became,
 A butterfly Halesus; with like flame
 They felt at first, about her they resort
 Whole days, and still her charming fragrance court.

Rapin on Gardens. Translated by James Gardiner.

Delille exclaims:—"Mais qui peut refuser un hommage à la Rose?" And Bernard, Malherbe, St Victor, Roger, Ronsard, Leonard, and others too numerous to mention, have made it the subject of the most delightful strains.

As a specimen from the Spanish, we offer a poem to the Rose by Francisco de Rioja, who wrote about the middle of the seventeenth century:—

TO THE ROSE.

Pure fiery Rose,
 Rival of the flame,
 Thou that goest forth with the day,
 How art thou born so full of joy?
 If thou knowest that the age which the heaven gives thee
 Is but short and swift—flown through space,
 And neither the shoots of thy branch
 Nor thy purple loveliness
 Can avail to stay the hurrying
 Execution of fate for a moment,

The self-same winged circlet
Which wreathed in smiles I now behold
May be I fear already in death's grasp—
The sudden spoil of the burning flame.
For thy bosom's clustering petals,
Love from his wings soft plumes has granted,
And for thy forehead from his own locks gold,
O faithful image his work of wonder,
Bathe thyself in his colour blood divine
Of the deity given forth by the foam.
And this, O crimson flower, is this not able
To check the on-rush of the darting ray?
In one hour's space it despoils thee—
Its wanton burning—it robs thee
Of thy colour, of thy breath of life,
Scarcely canst thou stretch out thy petals
Ere they to the earth in fear return.
Thy life indeed to thy death is near,
What wonder then if with her tears
Thy birth and thy death bewails
The sorrowing morn.

Ros Rosarum, p. 55.

No less a name than that of Camoens, the author of *The Lusiad*, furnishes us with Portuguese poem on the Rose, which is thus translated by Lord Strangford:—

Just like love is yonder Rose,
Heavenly fragrance round it throws,
Yet tears its dewy leaves disclose,
And in the midst of briars it blows,
Just like Love.

Cull'd to bloom upon the breast,
Since rough thorns the stem invest,
They must be gathered with the rest,
And with it to the heart be prest,
Just like Love.

And when rude hands the twin buds sever,
They die and they shall blossom never,
Yet the thorns be sharpe as ever,
Just like Love.

Memoirs of the Rose, p. 77.

Turning to Italy we find in Tasso—

“Ah, see,” thus she sang, “the Rose spread to the morning
Her red virgin leaves, the coy pride of all plants!
Yet half open, half shut, midst the moss she was born in,
The less shows her beauty the more she enchants;
Lo, soon after, her sweet naked bosom more cheaply
She shows! Lo, soon after, she sickens and fades,
Nor seems the same flower late desired so deeply
By thousands of lovers and thousands of maids.

“So fleets with the day's passing footsteps of fleetness
The flower and the verdure of life's smiling scene;
Nor, though April returns with its sunshine and sweetness,
Again will it ever look blooming or green.

Then gather the Rose in its fresh morning beauty,
 The rose of a day too soon dimmed from above ;
 Whilst, beloved, we may love, let 'to love' be our duty,
 Now, now, whilst 'tis youth pluck the roses of love."

—The "*Jerusalem Delivered*" of *Torquato Tasso*, translated by *J. H. Wiffen*. *Canto xvi., vv. 14, 15.*

The following is from the German :—

The angel of the flowers one day
 Beneath a rose tree sleeping lay,—
 That spirit to whose charge is given
 To bathe young buds in dew from heaven.
 Awaking from his light repose,
 The Angel whispered to the Rose :
 "O fondest object of my care,
 Still fairest found where all are fair,
 For the sweet shade thou'st giv'n to me,
 Ask what thou wilt, 'tis granted thee."
 "Then," said the Rose, with deepened glow,
 "On me another grace bestow."
 The Spirit paused in silent thought,
 What grace was there that flower had not?
 'Twas but a moment—o'er the Rose
 A veil of moss the Spirit throws,
 And robed in nature's simplest weed,
 Could there a flower that Rose exceed?

—"Flora Domestica," by *Henry Phillips*.

To Goethe we are indebted for—

THE ROSEBUD.

Once a boy a rosebud saw—
 Rosebud in the heather !
 'Twas so young, and morning bright,
 Gazed he on it with delight,
 In the sunny weather.
 Rosy, rosy, rosy bud,
 Rosebud in the heather !
 Said the boy, "I'll pluck thee, Rose—
 Rosebud in the heather !"
 Said the rosebud, "'Ware the thorn ;
 Thou shalt rue it, scratched and torn,
 In the sunny weather !"
 Rosy, rosy, rosy bud,
 Rosebud in the heather !
 Wilful boy ! he pluck'd the Rose,
 Rose amid the heather !
 Rosebud tore his hand amain,
 Little helps his cry of pain,
 In the sunny weather.
 Rosy, rosy, rosy bud,
 Rose amid the heather.

—Translated by the *Rev. F. W. Farrar*.

This beautiful little poem reminds me of an anecdote of a living philosopher, who, walking with a lady in his garden in France, presented her with a rose, the thorns of which wounded her fingers. Irritated by the sudden pain, she exclaimed, "What a pity that the Creator should have given to so beautiful a flower so rude a

stem!" "Ah! madam," he replied, "how gracious and benevolent of the Creator to furnish so rough a plant with so lovely and sweet a flower!"

Russia also furnishes from the poet Kostrov—

THE VOW.

The Rose is my favourite flower,
On its tablets of crimson I swore
That up to my last living hour
I never would think of thee more.

I scarcely the record had made,
Ere Zephyr in frolicsome play,
On his light airy pinions conveyed
Both tablet and promise away.

—Bowring's "*Russian Anthology*."

Let us now turn to consider the poetry of our own land.

Chaucer, our first great English author, alludes in his early pieces to the poetical worship of the Rose and the Daisy, and others of our early poets were not unmindful of its charms. Harrington speaks of "cheeks that shamed the Rose;" Marlowe of "beds of Roses," &c.

In thilk mirror saw I tho
Among a thousand things mo,
A roser (rose-bush) charged full of Rosis,
That with an hedge about enclosis,
Tho had I such lust and enuie
That for Paris ne for Pauie
Nold I haue left to gone and see
There greatest hepe of Rosis be.
Whan I was with that rage hent
That caught hath many a man and shent,
Toward the roser gan I go,
And when I was not ferre therefro
The sauer of the Roses swote
Me smote right to the heart rote,
As I had all enbaumed be.

—Chaucer.

Spenser, whose genius sheds a brilliancy over the age in which he lived, makes frequent mention of it. Everyone is familiar with his fable of the Oak and the Briar, contained in the "Shepherd's Calendar." Of the latter he says—

It was embellished with blossoms fair,
And thereto aye wanted to repair
The shepherd's daughters to gather flowers
To paint their girlands with his colours.

The poet makes the "bragging Brere" vaunt his own praises to the disparagement of his neighbour the "goodly Oak."

Seest how fresh my flowers been spread,
Dyed in lily white and crimson red!

The mouldy moss which thee accloyeth,
My cinnamon smell too much annoyeth.

—"Shepherd's Calendar," *Eclogue 2*.

Again, in the "Shepherd's Calendar" (Eclogue 4), we meet with the following :—

See where she sits upon the grassy green
 (O seemly sight !)
 Yclad in scarlet, like a maiden queen,
 And ermines white ;
 Upon her head a crimson coronet,
 With damask Roses and Daffodillies set ;
 Bay leaves between
 And Primroses green
 Embellish the sweet Violet.

In the next verse he speaks of

The red Rose meddled with the white yfere.

In the "Fairy Queen," especially in the second Book, he makes several allusions to it, and also in the "Epithalamion."

Shakspeare often introduces the Rose in his writings.

I know a bank whereon the wild thyme blows,
 Where oxslips and the nodding violet grows,
 Quite over-canopied with luscious woodbine,
 With sweet musk Roses and with eglantine.

—"*Midsummer Night's Dream*," Act II., Scene 2.

In "Richard III." the lips of the murdered babes are compared to Roses—

. . . . girdling one another,
 Within their alabaster innocent arms ;
 Their lips were four red Roses on a stalk
 Which in their summer beauty kissed each other.

—Act IV., Scene 3.

In one of his sonnets the comparisons of the greatest English poet are obviously so much to the advantage of our favourite, that I cannot help inserting it—

O how much more doth beauty beauteous seem,
 By that sweet ornament which truth doth give !
 The Rose looks fair, but fairer we it deem
 For that sweet odour which doth in it live.
 The canker blooms have full as deep a dye
 As the perfumed tincture of the Roses ;
 Hang on such thorns, and play as wantonly,
 When summer's breath their masked buds discloses ;
 But, for their virtue only is their show
 They live unwooded, and unrespected fade—
 Die to themselves. Sweet Roses do not so ;
 Of their sweet deaths are sweetest odours made.
 And so of you, beauteous and lovely youth,
 When that shall fade, my verse distils your truth.

IN THE TEMPLE GARDEN.

Plantagenet—Let him that is a true-born gentleman,
 And stands upon the honour of his birth,
 If he suppose that I have pleaded truth,
 From off this briar pluck a white Rose with me.

Somerset—Let him that is no coward nor no flatterer,
But dare maintain the party of the truth,
Pluck a red Rose from off this thorn with me.

Warwick—I love no colours, and without all colour.
Of base insinuating flattery,
I pluck this white Rose with Plantagenet.

Suffolk—I pluck this red Rose with young Somerset,
And say withal, I think he held the right.

Vernon—Stay, lords and gentlemen, and pluck no more,
Till you conclude that he upon whose side
The fewest Roses are cropped from the tree
Shall yield the other in the right opinion.

Somerset—Good Master Vernon, it is well objected :
If I have fewest, I subscribe in silence.

Plantagenet—And I.

Vernon—Then for the truth and plainness of the case,
I pluck this pale and maiden blossom here,
Giving my verdict on the white Rose side.

Somerset—Prick not your finger as you pluck it off,
Lest, bleeding, you do paint the white Rose red,
And fall on my side so, against your will.

Vernon—If I, my lord, for my opinion bleed,
Opinion shall be surgeon to my hurt,
And keep me on the side where still I am.

—*Shakespeare (Henry VI., Act II., Scene 4).*

From the allusions of Chaucer, Spenser, Shakespeare, and others, it is evident the Rose was a favourite flower, at least among the poets in England some centuries since; and this I should have thought a sufficient passport to public favour. That they did not owe their love and respect for this flower to the existence of superior garden varieties, or to an interest displayed in their cultivation by their countrymen, is I think sufficiently evident. But the wild forms of Roses are beautiful, and they probably gave rise to these effusions. Or the poets might owe their veneration for them to the writings of the ancients, with which they were most probably familiar.

Were I to pursue the plan of quoting all the agreeable things which our poets have written on the Rose, that matter alone would fill a considerable volume. "In every love song roses bloom." I can therefore only make a selection from the time of Shakespeare.

Emil. Of all flowers,
Methinks the Rose is best.

Serv. Why, gentle madam?

Emil. It is the very emblem of a maid ;
For when the west wind courts her gently,
How modestly she blows and paints the sun
With her chaste blushes ; when the north comes near her,
Rude and impatient, then, like chastity,
She locks her beauties in her bud again,
And leaves him to base briars.

Baumont and Fletcher.

VIRTUE.

Sweet Day ! so cool, so calm, so bright,
 The bridal of the earth and sky,
 The dew shall weep thy fall to-night ;
 For thou must die.

Sweet Rose ! whose hue, angry and brave,
 Bids the rash gazer wipe his eye,
 Thy root is ever in its grave ;
 And thou must die.

Sweet Spring ! full of sweet days and Roses,
 A box where sweets compacted lie,
 Thy music shows ye have your closes ;
 And all must die.

Only a sweet and virtuous soul,
 Like season'd timber, never gives ;
 But though the whole world turn to coal,
 Then chiefly lives.

—*George Herbert.*

You violets that first appeare,
 By your pure purple mantles known,
 Like the proud virgins of the yeare,
 As if the spring were all your own ;
 What are you when the Rose is blown ?

—*Sir Henry Wotton.*

Thou blushing Rose, within whose virgin leaves
 The wanton wind to sport himself presumes,
 Whilst from their rifled wardrobe he receives
 For his wings purple, for his breath perfumes.

Blown in the morning, thou shalt fade ere noon ;
 What boots a life which in such haste forsakes thee ?
 Thou'rt wondrous frolic, being to die so soon,
 And passing proud a little colour makes thee.

If thee thy brittle beauty so deceives,
 Know then the thing that swells thee is thy bane ;
 For the same beauty doth in bloody leaves
 The sentence of thy early death contain.

Some clown's coarse lungs will poison thy sweet flow'r,
 If by the careless plough thou shalt be torn ;
 And many Herods lie in wait each hour
 To murder thee as soon as thou art born ;
 Nay, force thy bud to blow, their tyrant breath
 Anticipating life to hasten death.

—*Sir Richard Fanshawe.*

Some as they went the blue-eyed violets strew,
 Some spotless lilies in loose order threw,
 Some did the way with full-blown roses spread,
 Their smell divine, and colour strangely red ;
 Not such as our dull gardens proudly wear,
 Whom weathers taint, and winds rude kisses tear :
 Such, I believe, was the first Rose's hue,
 Which at God's word in beauteous Eden grew ;
 Queen of the flowers that made that orchard gay,
 The morning blushes of the spring's new day.

—*Cowley.*

Go, lovely Rose !
Tell her that wastes her time and me,
That now she knows,
When I resemble her to thee,
How sweet and fair she seemed to be.

Tell her that's young,
And shuns to have her graces spied,
That had'st thou sprung
In deserts where no men abide,
Thou must have uncommended died.

Small is the worth
Of beauty from the light retired :
Bid her come forth,
Suffer herself to be desired,
And not blush so to be admired.

Then die ! that she,
The common fate of all things rare,
May read in thee,
How small a part of time they share
That are so wondrous sweet and fair.

—*Edmund Waller.*

To this poem Henry Kirke White added the following stanza :—

Yet, though thou fade,
From thy dead leaves let fragrance rise ;
And teach the maid
That goodness time's rude hand defies ;
That virtue lives when beauty dies.

THE ROSE.

The Rose had been washed, just washed in a shower,
Which Mary to Anna conveyed ;
The plentiful moisture encumbered the flower,
And weighed down its beautiful head.

The cup was all filled, and the leaves were all wet,
And it seemed, to a fanciful view,
To weep for the buds it had left with regret
On the flourishing bush where it grew.

I hastily seized it, unfit as it was
For a nosegay, so dripping and drowned,
And swinging it rudely, too rudely, alas !
I snapped it—it fell to the ground.

And such, I exclaimed, is the pitiless part,
Some act by the delicate mind,
Regardless of wringing and breaking a heart
Already to sorrow resigned.

This elegant Rose, had I shaken it less,
Might have bloomed with its owner a while ;
And the tear that is wiped with a little address
May be followed, perhaps, with a smile.

—*Corwen.*

In the spring of 1827 Dr Raffles of Liverpool visited Weston-under-Wood, and procured from Cowper's garden some Rose bushes which had been cherished by the poet. On this occasion Dr Raffles composed the following lines, and writing to a friend observed—"These said Rose bushes are going by the coach immediately to Liverpool, and the gardener tells me he thinks they will survive the journey and flourish. If they do these lines shall be transcribed on a board, and placed in my garden near the spot where they stand :—

And will ye bloom with me so fair,
 Ye Roses plucked from Weston's bowers?
 Can ye withstand the northern air,
 Those bleak, those wintry blasts of ours?

Then will I prize your modest hue
 Beyond whate'er the eye surveys;
 Will linger oft to gaze on you,
 And think of COWPER while I gaze.

—From "*Cowper's Rose Bushes.*"

A Rosebud by my early walk,
 Adown a corn enclosed bawk,
 Sae gently bent its thorny stalk,
 All on a dewy morning.

Ere twice the shades o' dawn are fled,
 In a' its crimson glory spread,
 And drooping rich the dewy head,
 It scents the early morning.

—Burns.

TO MISS CRUIKSHANK, A VERY YOUNG LADY.

Beauteous Rosebud, young and gay,
 Blooming in thy early May,
 Never may'st thou, lovely flower,
 Chilly shrink in sleety shower;
 Never Boreas' hoary path,
 Never Eurus' poisonous breath,
 Never baleful stellar lights,
 Taint thee with untimely blights!
 Never, never reptile thief
 Riot on thy virgin leaf!
 Nor ever Sol too fiercely view
 Thy bosom blushing still with dew!
 May'st thou long, sweet crimson gem,
 Richly deck thy native stem;
 Till some evening, sober, calm,
 Drooping dews and breathing balm,
 While all around the woodland rings,
 And every bird thy requiem sings,
 Thou, amid the dirgeful sound,
 Shed thy dying honours round,
 And resign to parent earth
 The loveliest form she e'er gave birth.

—Burns.

The Rose is fairest when 'tis budding new,
And hope is brightest when it dawns from fears ;
The Rose is sweetest washed with morning dew,
And love is loveliest when embalmed in tears.
O, wilding Rose, whom fancy thus endears,
I bid your blossoms in my bonnet wave,
Emblem of hope and love through future years !

—*Sir Walter Scott* ("Lady of the Lake," Canto IV.)

The Rose, the sweetly blooming Rose,
Ere from the tree it's torn,
Is like the charm which beauty shows
In life's exulting morn !

But oh ! how soon its sweets are gone,
How soon it withering lies !
So when the eve of life comes on,
Sweet beauty fades and dies.

Then since the fairest form that's made
Soon withering we shall find ;
Let us possess what ne'er shall fade—
The beauties of the mind.

—*C. J. Fox.*

" Begone, thou fond presumptuous elf,"
Exclaimed a thundering voice,
" Nor dare to thrust thy foolish self
Between me and my choice !"
A small cascade fresh swoln with snows
Thus threatened a poor briar Rose,
That, all bespattered with his foam,
And dancing high, and dancing low,
Was living, as a child might know,
In an unhappy home.

—*Wordsworth.*

THE ROSE.

As late each flower that sweetest blows,
I pluck'd the garden's pride !
Within the petals of a Rose
A sleeping love I spied.

Around his brows a beaming wreath,
Of many a lucid hue ;
All purple glow'd his cheek beneath,
Inebriate with dew.

I softly seiz'd th' unguarded power,
Nor scar'd his balmy rest,
And plac'd him cag'd within the flower
On spotless Sarah's breast.

But when, unweening of the guile,
Awoke the pris'ner sweet,
He struggled to escape awhile,
And stamp'd his fairy feet.

Ah ! soon the soul-entrancing sight
 Subdued th' impatient boy ;
 He gaz'd, he thrill'd, with deep delight,
 Then clapp'd his wings for joy.

" And oh !" he cried, " of magic kind,
 What charms this throne endear !
 Some other love let Venus find,
 I'll fix my empire here."

—S. T. Coleridge.

There's a bower of Roses by Bendemeer's stream,
 And the nightingale sings round it all the day long ;
 In the days of my childhood 'twas like a sweet dream,
 To sit 'mid the Roses and hear the bird's song.

That bower and its music I never forget,
 But oft when alone, in the bloom of the year,
 I think, Is the nightingale singing there yet ?
 Are the Roses still bright by the calm Bendemeer ?

No, the Roses soon wither'd that hung o'er the wave,
 But some blossoms were gather'd while freshly they shone,
 And a dew was distill'd from their flowers that gave
 All the fragrance of summer when summer was gone.

Thus memory draws from delight, ere it dies,
 An essence that breathes of it many a year ;
 Thus bright to my soul, as 'twas then to my eyes,
 Is that bower on the banks of the calm Bendemeer.

—Moore.

'Tis the last Rose of Summer
 Left blooming alone,
 All her lovely companions
 Are faded and gone ;
 No flower of her kindred,
 No Rose-bud is nigh,
 To reflect back her blushes,
 Or give sigh for sigh !
 I'll not leave thee, thou lone one !
 To pine on the stem ;
 Since the lovely are sleeping,
 Go sleep thou with them.

Thus kindly I scatter
 Thy leaves o'er the bed,
 Where thy mates of the garden
 Lie scentless and dead ;
 So soon may I follow
 When friendships decay,
 And from love's shining circle
 The gems drop away.
 When true hearts lie wither'd,
 And fond ones are flown,
 Oh ! who would inhabit
 This bleak world alone ?

— Moore.

The Rose is red, the Rose is white,
The Rose it blooms in summer light,
But ah ! it clouds the heart's delight
 To muse upon its history.
It tells full many a woeful tale,
Of hearts made cold, of cheeks made pale,
Of love's sad sigh, the widow's wail,
 In days of strife and chivalry, —
Sweet Freedom, may the age prevail,
 That strife no more may be.

The Rose is red, the Rose is white,
The Rose is pleasant to the sight,
Now both its hues in one unite,
To crown the brows of loyalty !
Strife took the white Rose for its crest,
But concord placed it in her vest,
Where deep it blushed upon her breast,
 To wed the tree of liberty ;
And while it blooms as Freedom's guest,
 There let it ever be.

—*Clare.*

SONG OF THE ROSE.

If Zeus chose us a king of the flowers in his mirth,
He would call to the Rose and would royally crown it.
For the Rose, ho the Rose ! is the grace of the earth,
Is the light of the plants that are growing upon it.
For the Rose, ho, the Rose ! is the eye of the flowers,
Is the blush of the meadows that feel themselves fair,—
Is the lightning of beauty that strikes through the bowers,
On pale lovers who sit in the glow unaware.
Ho, the Rose breathes of love ! ho, the Rose lifts the cup
To the red lips of Cypris invoked for a guest !
Ho, the Rose, having curled its sweet leaves for the world,
Takes delight in the motion its petals keep up,
As they laugh to the wind as it laughs from the west !

—*Attributed to Sappho—from Achilles Tatius.*

Translated by E. B. Browning.

She pluck'd a wildwood Rose and fondly strove,
With pausing step and ever anxious care,
To carry home her dainty treasure-trove,
A butterfly perch'd on those petals fair ;
Soon the gay creature flutter'd off again,
And then her girlish fingers dropped the flower.
Ah ! little maid, when love asserts his power,
This lesson duly learnt may save thee pain ;
Why from the forest Rose thine hand unclasp,
Because, the fickle insect would not stay ?
Not all the tendance of thy sweet blue eye
And tiptoe heed secured the butterfly ;
The flower that needed but thy tender grasp
To hold it, thou hast lightly thrown away !

—*Charles Tennyson Turner.*

BALLAD.

I

I know the secret of the Rose. She blushes :
 I know the reason why--
 A hopeless passion in her heart she hushes
 For the bright beetle-fly.

2

He was a bold and brilliant cavalier ;
 He wooed her in the sweet time of the year,
 A livelong summer day :
 He woo'd her, and he won her, then betray'd her,
 And breaking all the vows that he had made her,
 Upon a sky-built sunbeam sail'd away.

3

Then the Rose wish't for wings to follow him,
 But all her wishings were of no avail.
 What she could do, she did. Thro' twilight pale,
 She climb'd and climb'd, and peep'd into the dim
 Nest of the Nightingale.

4

The Nightingale beheld her, and averr'd
 That she was the fairest of the fair. He said,
 "Fair crimson-winged creature, be a bird,
 And I with thee, and none but thee, will wed."
 His amorous song the Rose resentful heard,
 And shook her head.

5

Into that amorous song there slid a tear—
 The Rose was weeping—sad at heart was she.
 But still the Nightingale, with song sincere,
 Sang to her in the twilight from the tree—
 "O wert thou but a bird, thou art so dear,
 Thee would I mate with, and wed none but thee !"
 "Nay," sigh'd the Rose, "I have a cavalier,
 A noble lover, and of high degree ;
 My heart is sad because he is not here—
 Sir Scarabæus he !"

6

The evening wind pass'd by and heard her boast :
 "Poor Rose," he laugh'd, "thy lover thou hast lost !
 For he is faithless, and forsaken thou.
 But for his treachery he pays the cost :
 Dying he is, I know.
 I met him, on my travels, at the court
 Of Queen Spiræa of Ulmaria—
 The Meadow Queen is she. And, all amott,
 Sir Scarabæus, for her sake that day
 Had sworn to break a lance with Prince Carnation.

That oath he broke not. But the tilt was short ;
I left him lying wounded in the dust.
His fall at court occasion'd a sensation ;
They said thy knight had got a mortal thrust :
And all the common flowers, that many a year
Had envied thee because thou art so fair,
Were laughing at thee and thy cavalier.
But come with me, and I will guide thee where
His end draws near."

7

"Had I but wings!" the poor Rose sighed again.
"Thou hast them," that perfidious Wind replied,
"And I will show thee how to use them." Then
He breath'd upon the Rose, and undenied
Pluckt from her one by one her petals fair,
And stript her bare
Of all her beauty. Soon, dissatisfied
With his sweet theft, along the thankless air
He tost the stolen petals here and there,
And, fleeting, sigh'd.

—*The Earl of Lytton.*

THE GARLAND WEAVER.

Adapted from the Greek Anthology.

To-day when dawn was dim I went
Before the garland weaver's stall,
And saw a girl whose beauty sent,
Like stars of autumn when they fall,
An arrow of swift fire that left
Glory upon the gloom it cleft.

Roses she wove to make a wreath,
And roses were her cheeks and lips,
And faintly flushed the flowers beneath
The roses of her finger tips ;
She saw me stand in mute amaze,
And rosy blushes met my gaze.

"O flower that weavest flowers," I said,
"Fair wreath where myrtle blossoms white
Mingle with Cyprian petals red
For love's ineffable delight,
Tell me what god or hero blest
Shall bind thy blossoms to his breast !

Or can it be that even I,
Who am thy slave to save or slay,
With price of prayers or tears may buy
Thy Roses ere they fade away?"
She smiled, and deeper blushed, and laid
One finger on her lip, and said :

"Peace ! lest my father hear !" then drew
 One blossom from the wreath, and pressed
 Its perfume to the pinks that blew
 Upon the snow-wreaths of her breast,
 And kissed, and gave the Rose to be
 Sweet symbols of assent to me.

Roses and wreaths with shy pretence,
 As for a bridal feast, I bought ;
 And veiling all love's vehemence
 In langour, bade the flowers be brought
 To deck my chamber by the maid
 Whose lips on mine shall soon be laid.

—*J. A. Symonds.*

CHRISTMAS ROSES.

Roses blooming in December.
 Blooming on a cottage wall ;
 Lovely are these simple flowers,
 Nature's kindly gift to all.
 How they cheer in wintry weather,
 When the days are dark and drear,
 Often flowers soothe in sickness,
 And when sent by friends most dear,
 Bring a fragrant message with them ;
 Breathe of hope, or mem'ries past,—
 And altho' the flowers will wither,
 Yet their influence still will last.

—*M. A. Baines.*

ON THE SWEET BRIER.

The breeze of spring the summer's western wind
 Robs of its odours none so sweet a flower
 In all the blooming waste it leaves behind
 As that the Sweet Brier yields it ; and the shower
 Wets not a Rose that buds in beauty's bower
 One half so lovely ; yet it grows along
 The poor girl's pathway, by the poor man's door.
 Such are the simple folk it dwells among,
 And humble as the bud so humble be the song.

I love it for it takes its untouched stand
 Not in the vase that sculptors decorate ;
 Its sweetness all is of my native land,
 And e'en its fragrant leaf has not its mate
 Among the perfumes which the rich and great
 Buy from the odours of the spicy east.
 You love your flowers and plants, and will you hate
 The little five-leaved rose that I love best,
 That freshest will awake and sweetest go to rest.

—*From the "Little English Flora," by G. W. Francis.*

ON THE DOG-ROSE.

'Tis the Rose of the desert
So lonely and wild,
On the green leaf of freedom
Its infancy smiled.
In the languish of beauty
It buds o'er the thorn,
And its leaves are all wet
With the bright dews of morn.

Yet 'tis better thou fair one
To dwell thus alone.
Than recline on a bosom
Less pure than thine own.
Thy form is too lovely
To be torn from its stem,
And thy breath is too sweet
For the children of men.

Bloom on then in secret,
Sweet child of the waste !
Where no lip of profaner
Thy fragrance shall taste.
Bloom on where no footstep
Unhallowed hath trod,
And give all thy blushes
And sweets to thy god.

—From the "*Little English Flora*," by G. W. Francis.

CHAPTER IV.

*On Locality and Soils, and the Improvement or
Adaptation of Soils for Rose Culture.*

IF we were called upon to select a spot as best suited for the cultivation of Roses, we should seek one at a distance from large towns, that we might secure the advantages of a pure air. It should lie open to the south, and be so far removed from trees of every description that their roots could not reach the soil of our Rose-beds, or their tops overpower us with shade and prevent a free circulation of air. The climate should be moist rather than dry, especially if large stout-petalled flowers are looked for, which are indeed essential if growing for exhibition. If, in addition to this, we could choose our soil, that preferred would be a strong loam; if rich, so much the better; if poor, we would enrich it by the addition of manures. Whatever the subsoil may be, the surface soil should not be less than two feet, and if three or four feet deep before reaching the clay, sand, rock, or gravel, the cultivator is fortunate. The roots of Roses will often strike down almost perpendicularly to the depth of three feet when the soil is permeable to that depth. It is generally known that the Dog-Rose delights in a stiff holding soil; and it is on the Dog-Rose the choice garden varieties are largely budded. We do not intend by this to recommend soils commonly termed clayey, for in such there is often too great a deficiency of vegetable substances; lighter soils, too, are found better suited for such kinds as thrive best grown on their own roots; but this may be managed by the addition of a little light turfy loam, peat, or leaf-mould at the time of planting. An open airy situation and a stiff loamy soil are, we say, what we should prefer were our choice of locality and soil unlimited. With these at our command we should expect to carry Rose-culture to perfection. "But," says the amateur, "all gardens must have Roses, and how few are there thus favourably circumstanced! Many are close to large towns where the air is rendered impure by the clouds of smoke constantly streaming into them. Others are of small size, and are often hemmed in by trees on all sides—on this with a neighbour's favourite chestnuts; on that with a group of sombre-looking firs; and on another with a row of towering elms. And although we may think it not right that our less majestic

denizens should suffer at their hands, we have no help for it. They have their pets as we have ours. They find much pleasure in the blossoms of their chestnuts, in the agreeable shade of their elms during the sultry months of summer, or by the privacy afforded them by the impenetrable darkness of their fir-trees, as we do in the perfect form and varied tints of our Roses. We cannot rid ourselves of their shade. We have no right indeed to wish to do so. But we might not hesitate to dock their roots should they in their peregrinations enter our domain to gormandise on the provision made for our favourites. This, we think, would be justifiable. We are acting in self-defence. They are robbers and deserve punishment, although it must not be such as to do them permanent injury. Then, again, as to soils: some are sandy, others are clayey, wet, cold, and altogether unfavourable to vegetation. In a word, we cannot always suit our gardens to your Roses; your Roses must therefore be brought to suit our gardens."

Those who are free from all these annoyances may think themselves fortunate. The number of complaints of this kind received from amateurs possessing small gardens, which they make their chief source of relaxation and amusement, satisfy us they are great. It must be admitted that localities are often unfavourable, and hardly capable of improvement. This, then, we must endure, and seek the remedy in the choice of varieties, selecting such as our own experience, or that of our friends, points out as succeeding best under such circumstances. It is well known that some kinds of Roses will grow and flourish where others will scarcely exist. Were this fact taken advantage of by those who plant in unfavourable situations or unkindly soils doubtless less failures in Rose-culture would ensue. But it may be said—Some of the most delicate in habit are the most beautiful of Roses, and how can we dispense with such? That the varieties possessed of the most bewitching forms and tints are most difficult of culture is to a certain extent true; but we opine that a Rose which will flourish and blossom in a doubtful situation, or in an unfriendly soil, is greatly to be preferred for such to one which would only exist there as an unhealthy plant, though the latter were naturally its superior in point of beauty. I have known instances in which varieties of the most delicate growth have been selected, time after time, to occupy the most unfavourable situations, and this against all remonstrance, and the knowledge of the cultivator, *bought by experience*, that they will not succeed. Varieties are often chosen and planted without paying sufficient attention to their aptitude for the purpose or position they are wanted for,—they are chosen because admired most because they are *the most beautiful*. Now, what are the consequences? That which should yield pleasure produces by constant failure indifference or disgust, and their culture is abandoned. This is to be lamented, for if circumstances are unfavourable for the cultivation of particular varieties, others that are likely to succeed should be chosen. And the amateur need not be altogether without his favourite kinds. If unsuited for out-of-door culture in some places they may be grown to perfection

almost anywhere in pots under glass. In this manner, with due care, they always succeed well, and by the increased beauty of their foliage and flowers fully compensate for the additional attention paid to them. I here allude only to such as are very susceptible of frost, or of weak and delicate growth, confining the suggestion to no one group in particular, nor excluding varieties of such character from any group. If an illustration be needed we may instance Marquise de Mortmarte and Black Prince (Hybrid Perpetuals), Madame Margottin, Maréchal Niel, and several others of the Tea-scented. These and the like will not thrive in unfavourable situations or unkindly soils. And whatever the situation may be they assume a decidedly improved appearance when grown in a frame or greenhouse. An unfavourable locality or soil should never deter the lover of Roses from entering on their cultivation for such is the diversity of character of the varieties belonging to the genus that some may be found suited to, or capable of flourishing in, the least desirable localities, and soils may be improved or dug out, and the beds refilled with prepared soil. For the encouragement of those whose situation may be decidedly unfavourable, it may be stated that thousands of Roses grown at this establishment are sent annually into the neighbourhood of London and the large manufacturing towns in England and Scotland. And it is pleasing to see, in the perfect production of the flowers there, how far the art of culture can be brought to triumph over circumstances. In such situations the practice which seems to have been attended with the most marked success is that of syringing the plants frequently, alternately with soap-suds and clean water, which frees the leaves of the impurities which settle upon them. Thus it will be seen none need despair of securing a moderate share of success in, and of realising the pleasure afforded by, the cultivation of this richly varied flower.

Even at the sea-side Roses may be grown if only the proper sorts are chosen and good shelter afforded. Having given considerable attention to this matter during the last few years, I will venture to set down the results of my observations and conclusions. I have often lingered to admire the luxuriance of growth and foliage and the beauty of the flowers of Roses on the shores of the Mediterranean between Marseilles and Genoa, especially about Antibes, and these have been for the most part the varieties of Noisette, Chinese, Tea-scented, and Hybrid Perpetuals most prized and cultivated in England. This, it may be said, is a climate more favourable to growth than that of England. Granted; but then I have seen Roses flowering well near the sea in various parts of France and Great Britain in our own country as far north as Aberdeen. It is but recently that I met with the common China Rose, the Maiden's Blush, the old Cabbage Rose, and more than one sort of the French (*R. gallica*) and Scotch (*R. spinosissima*) at Herne Bay planted in gardens fully exposed to and within a few yards of the sea. They had plenty of decent flowers on them, and seemed to laugh at the fiercest frolics of Father Neptune. On looking into more than one garden, I found many of our best Hybrid Perpetuals

also the Gloire de Dijon and Noisette Ophirie and Aimée Vibert. These also had grown freely under the shelter of a wall or fence, and were now producing many fine flowers. In the garden of the vicarage at Herne, the residence of the Rev. J. R. Buchanan, is a collection large enough to include a great number of the best sorts of Hybrid Perpetuals and Tea-scented, and I never saw plants in better health or finer bloom. In this garden, one and a half miles from the sea, were La France, Etienne Levet, Charles Lefebvre, Dupuy Jamain, François Michelin, Baroness Rothschild, and others amongst the Hybrid Perpetuals. Perle des Jardins, Rubens, Madame Falcot, Anna Ollivier, Madame Lambard, Comtesse de Nadaillac, and other Tea-scented kinds, budded on dwarf standard Dog Rose, were beautiful in the extreme; two rows of these I had never seen surpassed. The soil was unquestionably good, but the cultivation was even better; not a plant but bore marks of thoughtful attention. Close to this vicarage is Strode Park, and here Roses were seen to flourish well under good gardening; the plants were in the rudest health, and covered with a wealth of handsome flowers. The standard Roses in beds on the lawn were most effective. Herne is only one of many sea-side places where I have searched for Roses during the last few years. I quote this because the most recently visited, and therefore the freshest in my memory. The conclusions I have drawn from these and other visits are:—

1. That the sea air is not prejudicial to the growth of Roses.
2. It is the fierce and cold blasts from off the sea that hinder growth and maul and spoil the flowers.
3. Given a good soil and shelter—under a hill, bank, belt of trees, or wall—and good cultivation, and Roses may be grown at the sea-side to produce flowers equal to the majority of those exhibited at the Rose shows.

We have said that soils are capable of improvement, and we take it for granted that everyone has his garden under his own control, so far as improvement goes. To this point let us now direct attention.

In the first place, if our soil be wet, it should be drained. Roses will never flourish well or long in a soil naturally wet. As few plants will, if a garden be of this nature, it would seem desirable, before attending to other improvements, to drain it wholly and thoroughly.

Let us suppose we have a piece of clayey undrained land, on which we are about to form a Rosarium. We defer planting the Roses till spring, availing ourselves of the autumn and winter for the amelioration of the soil, unless, indeed, there has been an opportunity of working it during the previous winter and summer, when autumn planting is preferable. There is not, however, often a chance of doing this; and we will suppose it taken in hand in October, just after a crop has been removed from it. Our first object is to secure a perfect drainage. This may be done by digging drains three feet deep, at about ten yards apart, and laying

draining-tiles in at the bottom. In digging the trenches, they may be cut sloping from eighteen inches at top to two inches at the bottom. We must find out the lowest ground, and secure a gentle fall from the higher ground, that the water may run away freely, or, if no outlet is available, dig a small pond and use the water where wanted in the garden.

If we do not choose to lay drain-tiles in the trenches, bushes may be put there, or stones, brick-bats, clinkers from furnaces, broken into moderate-sized pieces, or any description of rubble. These will accomplish the same end, if laid sufficiently deep, though not so perfectly, as the soil will find its way amongst them in course of time and choke up the passages through which the water should find egress. Having laid the soil dry, dig it two spits deep, exposing it as much as possible to the fertilising influences of the sun and air. Instead of laying it level at the surface, let it be thrown up in ridges in the roughest manner possible. In this state it may lie till near the end of winter, fully exposed to the action of sun, air, rain, and frost. The surface of the ridges will gradually crumble down, and the soil become pulverized. Now for the next step. What description of soils or manures can be brought to bear upon it with the greatest prospect of improvement? Chalk, lime, peat, sand, and burnt earth will improve it; and stable manure with any decayed vegetable substances, the refuse of the garden, may be added to advantage. And now is the time to apply these. First level the ground, and lay on the top a good dressing of any of the above soils that may be accessible, or thought most suitable. Having done this, in the next place dig the ground over again two spits deep, well mixing these foreign matters with the staple in the operation. The ground is laid level this time, and when finished the places where the Roses are to be planted should be marked out. From the end of February till the end of March is a good time for spring planting, choosing an opportunity when the ground works well.

But some gardens are so situated that it is not easy to drain them. A make-shift system may be adopted in such cases. The soil may be thrown out of the walks in the immediate vicinity of the plants, to a good depth, and loose stones, or rubble of any description, be placed at the bottom, covering with bushes, over which the soil may be restored. Among the substances mentioned above as calculated to improve wet or clayey soils is burnt earth. Of its value in the improvement of such for Rose culture I have been an eye-witness; and in a letter to the *Gardeners' Chronicle* of 1844 (p. 67), I gave an account of the results of its application to some dwarf Roses.* Subsequent experiments have increased my faith in it; and as the burning of earth is considered by many to be a difficult process, I shall give a succinct account of the plan pursued here.

Earth may be burnt at any season of the year. It has been the custom here

* Published also in "Lindley's Theory of Horticulture," second edition, p. 566.

for some years past, when the operations of pruning, grafting, &c., are ended, instead of suffering the rough branches to lie about, presenting an untidy appearance, to collect them in a heap. A wall of turf, about three feet high, of a semi-circular form, is then built round them. The branches are set on fire, and when about half burnt down, seed-weeds, and such rubbish as collects in every garden and will not readily decompose, are thrown on the top, and earth is gradually cast up as the fire breaks through.

During the first two or three days great care is requisite to keep the pile on fire. Here is the point where many fail. They allow the flame to break through and expend itself before the heap is thoroughly kindled. Constant watching is necessary at this juncture. As the fire breaks through, the heap should be opened and a layer of bushes and weeds should be added, and then a layer of earth. Follow up this plan, and the fire will spread through the whole heap; and any amount of earth may be burnt, by continually adding to those places where the fire appears the strongest. The soil burnt here is the stiffest loam that can be found within our limits, and which is of rather a clayey nature; also turf from the sides of ditches and roads, in itself naturally sour and full of rank weeds.

Burnt earth has been found beneficial in every instance where applied, and two or three successive annual dressings of it have worked wonders on moist heavy soils.

In the summer of 1842, six beds of Tea-scented Roses were manured with the following substances:—1, bone-dust; 2, burnt earth; 3, nitrate of soda; 4, guano; 5, pigeon-dung; and 6, stable manure thoroughly decomposed. The soil in which they grew was an alluvial loam. The adjacent fields, which are of the same nature, grow large crops of wheat and potatoes. The particles of the soil run together after rain, presenting a smooth cemented surface, the soil in dry weather becomes hard and harsh. But for the results. The guano produced the earliest visible effect, causing a vigorous growth which continued till late in the season; the foliage was large and of the darkest green, but the flowers on this bed were not very abundant; the shoots did not ripen well, and were consequently much injured by frost during the succeeding winter. The bed manured with burnt earth next forced itself into notice, the plants kept up a steadier rate of growth, producing an abundance of clean well-formed blossoms; the wood ripened well, and sustained little or no injury from the winter's frost. The results attending on the use of the other manures were not remarkable; they had acted as gentle stimulants, the nitrate of soda and bone-dust least visibly so, although they were applied in the quantities usually recommended by the vendors.

The beds of Roses were all planted at the same date and in the same soil, and there was no undue advantage given to any one kind of manure. The fertilising influences of the burnt earth were no doubt due partly to its drying and opening the soil, thus rendering it more permeable to the air, and partly to the power it possesses

of fixing the ammonia conveyed to the soil by rain. But further, earth is reduced by burning to its inorganic constituents, and thus becomes a concentrated inorganic manure from which many soils benefit largely; and the ashes of the wood and other substances used in burning, although of small amount, would add to its value under this point of view. A portion of the earth comes from the heap red and hard, and a portion black or dark brown. The latter, which may be more correctly called charred earth, is highly beneficial to most soils, and the best manure that can be applied to Roses in wet or adhesive soils, and I would advise all who cultivate such to use it. Frequent use of the hoe in what are called heavy soils is also highly beneficial.

Peat soils, although not of the best kind for Roses, are found to grow them tolerably well. For the improvement of such, if wet, the first effort should be to drain them. After this stiff loam, or pulverized clay and burnt earth, may be brought upon the surface, digging two spits deep, and well mixing the foreign substances with the natural soil, as advised in the improvement of clay soils.

The worst soils for Roses are those of a sandy or gravelly nature. In such they often suffer fearfully from red spider and the drought of summer, scorching up and dying. Soils of this kind are sometimes bad beyond remedy. The best plan to pursue under such circumstances is to remove the soil to the depth of about twenty inches, as the beds are marked out, loosening the bottom and filling up again with prepared soil. Two-thirds loam—the turf from a pasture if attainable—and one-third decomposed stable manure will make a good mixture. If a strong loam is within reach choose such in preference to others, and if thought too adhesive a little burnt earth or sand may be mixed with it. A good kind of manure for mixing with the loam is the remains of a hot-bed which have lain by for a year and become decomposed. Syringing the leaves and watering the roots should be often repeated on such soils, especially during the growing season.

Opoix, a French apothecary, whom we have previously quoted, attributes the superiority of the Roses grown for medicinal purposes in the neighbourhood of Provins to peculiar properties of the soil, which contains iron in considerable quantity. We are told that the selection of inorganic manures for plants may be fixed upon by an examination of the composition of their ashes.* We know by the research of chemists that the petals of the *ROSA GALICA* contain oxide of iron; and I have long thought that the iron which abounds in the soil of one of the nurseries here is an ingredient of importance in the culture of Roses. I would not say that it is indispensable but beneficial, and am almost confident that it heightens the colour of the flowers. On turning up the soil its ferruginous nature is in places distinctly seen. In an undrained field adjoining the Nursery the water frequently collects on the

* Liebig.

surface in the form of a thick brown liquid, like so much rust, which is covered here and there with a film on which the sky is distinctly mirrored. When the soil in this nursery is hoed or forked the rapid increase of growth of vegetation is striking beyond measure. This practice is known to promote growth in all soils, but the extent to which it does so here is, I think, due to the oxygen of the air changing the iron contained in the soil from a substance pernicious to vegetable life into one favourable to its development.

We have hitherto been speaking of the improvement of soils preparatory to the formation of the Rosarium or beds of Roses. But it is often desirable to improve the soil in beds already formed, and which probably have existed for a number of years. This is usually done by the addition of animal or vegetable manures, which are very good so far as they go, but are not in every case *all* that is required. Roses increase in bulk every year, and draw inorganic as well as organic matter from the soil. Although a portion of this may be returned by the fall of the leaf in autumn, and by the manures employed, yet a great deal is deposited in the branches and stem; and when we consider what a quantity of branches we cut from some Roses and carry away every pruning season, it will appear reasonable that we may, in the course of years, impoverish the soil as regards its inorganic constituents, and yet leave it rich in vegetable matter. Thus, we think, every three or four years a dressing of chalk, lime, soot, bones, or like substances, would prove highly beneficial to the beds of the Rosarium.

But let it be remembered that if the soil is wet manures are of little value. In all such cases, then, the first effort must be to lay the soil dry. After this add such manures as the character of the soil may point out as likely to prove most beneficial. Animal and vegetable manures of all kinds may be used, but not in a fresh state. They should be well decayed, for Roses, though delighting in a rich soil, dislike green manures more than most plants. In heavy soils a good dressing of chalk, peat, burnt earth, or sand may be used, not to the preclusion of, but in addition to, the animal or vegetable manures. In light soils, especially such as are of a gravelly or sandy nature, stiff loam may be applied to advantage. These substances may be thrown on the surface of the beds with the usual manures, and forked in at the same time.

We would remark here that stable manure, which is excellent in most cases, and the kind in general use for Roses, is not of the best description *for light soils*. Its tendency is to render them still lighter, and if it can be dispensed with on light soils we think it desirable to omit it. Manures should be applied here in a more concentrated form. Cow-dung is excellent, especially for the Tea-scented Roses; and pigeon-dung, rabbit-dung, and night-soil are all great improvers of light soils. The unpleasantness attending the preparation and use of night-soil may in a great measure be done away with by pursuing the following plan—A basin or reservoir should be formed on the ground to hold a given quantity. In the bottom of this loam may be

thrown, heavy or light, turfy or not, as may be at our command, or whichever is thought best suited to the character of the soil we wish to improve. Upon this the night-soil is lowered from the cart, and a sufficient quantity of loam thrown in to absorb the whole. The heap should then be covered over closely with a layer of earth about a foot thick, and remain closed for about six months. It may then be broken up, more or less, according to its state, mixing dry soil, or ashes, *or burnt earth* with it in the operation, and casting it up in ridges. About a month afterwards it may be turned over again, that the night-soil may be well mixed with the loam. In autumn it may be carried to the places where required, and forked in as other manures, or it may be scattered over the beds immediately after they are forked over in spring, when it will be washed down by the rains. We cannot conceive of any description of manure to surpass this, *applied to Roses on light soils*. By its use we administer at the same time a cool and rich fertiliser and a substance calculated to be of permanent benefit to the soil.

It may be thought that guano should be a good manure for Roses on cold and poor soils. It probably might prove so if used sparingly, and *in conjunction with vegetable manures*. I do not, however, think guano the best manure for Roses in the generality of soils. It certainly increases the vigour of the plant, but seems to act more favourably on the foliage than on the flowers. It may be said this is due to the use of it in excess. But this I am not disposed to grant. In the spring of 1846 I scattered guano *in variable quantities* over some newly-forked beds of Roses, just as the buds were pushing forth. The soil where this experiment was made is a dry loam, rather stiff, of excellent staple, but poor. The sub-soil, to the depth of twelve feet, is a yellow loam or brick earth. Below this is gravel. In every instance where the guano was applied the growth was more vigorous, and the foliage developed of extraordinary richness and beauty; *but the flowers were coarse and unsatisfactory*. Such were the consequences attending its use to plants in full health on one soil; on soils otherwise constituted the results might be different.

Roses should have manure applied to them at least once a year. It should be in a decayed state, and may be dug in, when the borders are dug, in spring; or laid on the surface afterwards, to be washed in by the rains. When manure is applied in such state as to be capable of yielding immediate nourishment to a plant, spring would seem the better season to apply it. The roots are then in full action, and every shower of rain places a supply of food within their reach. If manure is applied in autumn a great part of its nutritive properties may be carried beyond the reach of the roots by the frequent and heavy rains of winter.

CHAPTER V.

Remarks on the Formation of the Rosarium, and on the Introduction of Roses to the Flower Garden.

IN the formation of a Rosarium it appears to me that the simpler the forms of the beds the better. The plants of which it is composed are in part budded on stems, and decidedly artificial objects; and parallelograms, squares, circles, ovals, and other regular figures are in perfect harmony with the character of the plants; admit of the most complete arrangement; and display the Roses to greatest advantage.

There is, however, no reason why a Rose garden should not be fashioned according to the principles of the generally approved style of modern gardening. A series of beds of various forms and sizes, their outlines distinguished by curved or sweeping rather than straight lines, in which angles and points are almost absent—produce a charming effect. In the latter case the walks should be of grass, and sufficient space may be left between the beds to admit of single specimens of dwarf evergreens—Rhododendrons, Laurustinus, and the like. Such a garden may also be supported with belts or masses of evergreens, and be so constructed as to associate pleasantly with the surrounding objects; or if the proprietor should wish to enter the exhibition lists the one compartment may be set apart for show Roses and the other for garden or decorative Roses.

When the Rosarium is intended to be of large or even moderate size, there may be two compartments; the one for the summer kinds exclusively, the other to contain the autumnals. The boundary of each may be defined by planting a single row of Pillar-Roses at intervals of a yard apart. When they reach the height of five feet, each alternate plant may be removed, and small chains fixed from pillar to pillar, hanging in graceful curves the entire length of the line. Over these chains some of the branches may be trained to form elegant festoons, two or three shoots being allowed to ascend the pillar until they reach such height as circumstances or taste may point out as desirable.

If Pillar-Roses are not approved of to form the line of demarcation, the same end may be accomplished by a rustic fence, which should be covered with some particular

kind of Rose suited for the purpose. It should be a good free-flowering hardy variety, whether a summer or autumn bloomer; if the latter is preferred, the Hybrid Perpetual, Noisette, and Hybrid Tea-scented offer the best kinds. Or again, there would seem a fitting opportunity of introducing the Sweet-briar, which should abound in every Rosarium, for the delicious fragrance of its young leaves in the earliest spring, the delicacy of its blossoms in summer, and the gay appearance of the scarlet hips it produces in the autumn, must recommend it to every observer.

The walks of the Rosarium should be preferably of grass, which sets off the plants when in flower to much greater advantage than gravel. Grass walks are objected to by some because unpleasant to walk upon early in the morning, or after a shower of rain; but they give such a finish to the Rosarium, and lend such a freshness and brilliancy to the flowers, that it were a pity to forego these advantages solely on that account. And if the grass is kept closely mown, the force of this objection is greatly abated.

When the walks are of grass, it is perhaps not desirable to plant edgings to the beds. When they are of gravel it is decidedly necessary to do so, and Box or fancy tiles may be used. In many instances, too, the dwarf Polyantha, Pompon or Fair-bosch Roses may be introduced as edgings with a very happy effect, to form a complete edging about a foot in height; these are beautiful when covered with their miniature blossoms: the one variety blooming in summer only, the others throughout the autumn.

It is desirable that the Rosarium should have a raised spot in its vicinity, from which a bird's eye view of the whole may be obtained during the season of flowering. A mound of earth thrown up is the simplest plan; and some burrs and stones may be placed upon the surface. The sides of the mound may be planted with Ayrshire Sempervirens, Wichuraiana, and other running Roses or climbing plants of various kinds; on the top may be formed a Rose Temple, or a group of Pillar-Roses. From this spot we obtain in the flowering season a view of the Roses *en masse* as they lie beneath us, the effect of which is agreeable and striking; and, indeed, everyone can appreciate the beauty of the picture thus submitted to him. It needs neither the knowledge of the florist, nor the refined taste of the connoisseur; the beauty and effect of the *coup d'œil* thus obtained is acknowledged alike by the skilled and the unskilled in these matters. This we regard as one important point gained in the formation of the Rosarium; but there are others deserving of attention.

When *the amateur* forms a Rosarium, *he* does not usually plant for effect; he views his plants individually, rather than collectively. And we should suppose that to meet his approbation the Rosarium should be so formed that he may attend to and examine each plant without risking an injury to the rest. He may be delighted with viewing his collection as a whole, and, in addition to this, the knowledge that his friends, who may be less skilled in floriculture than himself would derive the

highest gratification from such a sight, would induce him not to neglect this point. But *he* finds greater pleasure in looking at his favourites individually. What would be tedious and uninteresting to them is to him highly gratifying. Each of his plants has a name by which he distinguishes it. He regards them as so many friends or acquaintances, every one of which has a claim upon his attention. He therefore wishes them so disposed that he may attend to each in turn without injuring the rest. How often have I seen, *in large beds of Roses*, the soil round a favourite tree trodden as hard as a gravel walk! I have also seen the adjoining trees, whose beauty was only dimmed by the presence of a brighter gem, seriously rubbed and broken, being altogether unheeded in the eager haste to inspect some more inviting specimen.* It would seem desirable, then, in amateur rose-growing that the beds be so formed that each plant may be seen from the walks. No one who really loves Roses will be content with viewing a plant placed in the back of a bed some yards from a walk. To fully appreciate its beauties—to be satisfied—one must have it directly under the eye, or how can he mark the exact colour, form, and various characters, and last, but not least, inhale its perfume? If the plant is so placed that we cannot do this from the walks, the beds will be trampled on; the temptation is too great; we cannot resist it.

When forming a Rosarium it is at the option of the cultivator to set apart a spot for growing plants from which to save seed. If he desire to raise seedlings this should be done, for the plants become impoverished by the ripening of the seeds, and therefore those from which he wishes to obtain large and perfect flowers should never be suffered to seed. He should select the sunniest spot in the garden in which to plant the seed-bearers, in order to secure every possible advantage for accelerating the period of maturity. Autumn pruning should also be adopted, as a means to this end, by inducing an early development of flowers. Our climate is not the most favourable for this branch of Rose-culture; we therefore must not waive even the slightest advantage which may be obtained either naturally or incidentally.

In preference to giving new plans only, we shall present our readers with some which already exist, and which have obtained the approval of those who have witnessed the effect they produce. For the reasons above stated, we believe the simpler the form of the Rosarium the better. It is therefore thought not necessary to give many plans, but, besides those given, we shall offer a description of certain places noted for Roses, or where the plants appear arranged with taste.

The most renowned Rosarium in Europe was formerly that of the Jardin du

* I have a vivid recollection of committing this error. I once stepped on a seedling in the garden of a Rose-grower in France, which was planted in a very injudicious position. A glimpse of *La Reine* for the first time was the cause of my misfortune. I was made acquainted with the real state of things by a very un-Frenchmanlike roar. Fortunately the plant was not seriously injured, but the flower-bud was destroyed, and the amount of mischief done was the keeping of the owner in a state of suspense for a month or two longer.

Luxembourg at Paris. The interest attached to these gardens arose principally from some of our finest varieties having originated and been nurtured there, and to its possessing some unusually large specimens. I remember seeing there, in the month of June, on my first visit to Paris, a Standard of the Tea Princesse Hélène de Luxembourg, of an immense size, with hundreds of its fine flowers in beautiful condition. The tree called to mind the large-headed Hybrid Roses occasionally met with in this country.

We shall proceed at once to describe these Gardens—Fig. 1, on the following page, is a ground-plan of the Rosarium, in which the entire collection of the Luxembourg was planted. It was situated on the right of the public walk leading from the Palais du Luxembourg.*

It was below the level of the public promenades, as shown at *e*.

In summer when the Roses were in flower they produced a splendid effect viewed from the public walks above and over the parapet wall *c, e*. If we descended to the walks *ff* we lost this effect, as the Roses were then brought on a level with the eye. The little round marks in our engraving show a line of fruit trees originally planted in the borders surrounding the Rose-beds, forming a sort of back-ground.

There were two other Rosariums, similar in design, situated on the same side between rows or groves of trees, *but they were on a level* with the public promenades. In consequence of this, and being surrounded by trees, the effect they produced was very inferior to that of the one just mentioned. Fig. 2 is an isometrical view of one of these; the other is so similar in design to Fig. 1 that we think it unnecessary to introduce it. The double lines here are intended to show the edgings of the beds which were of box. The vases in the centre was planted with Geraniums, Verbenas &c., during the summer months. It was wholly surrounded with trees, but they are shown here on two sides only in order that the plan of the Rosarium might not be interfered with. The presence of these trees could have been dispensed with to advantage. By excluding sunlight and a free circulation of air they produced most pernicious consequences, which the drawn and weakly state of some of the plants sufficiently proved.

These gardens were enclosed by a kind of fence made of light sticks, which are much used in France for similar purposes. The manner of planting adopted was this:—The beds were about seven feet wide, and contained two rows. Two plants of each variety, a standard and a dwarf, were planted side by side at distances of about three feet. They were so disposed that every standard had a dwarf behind it, and in consequence every dwarf was backed by a standard. The number of plants contained

* These plans, drawn for this work by my friend the late Mr F. Rauch, formerly amanuensis to Mr Loudon, and afterwards chief of the Imperial Gardens at Laxenburg, near Vienna, are retained although they have been replaced by others in the same garden but on another site. They have, however, a historic interest, and are very suitable for a school of roses.

Fig. 1.

in the Rosarium, of which Fig. 1 is a ground plan, was about 1800. The Roses in Fig. 1 were apparently planted without any design of keeping the respective groups together. In the other gardens, however, one was planted solely with Autumnals, and the other with the various groups of Summer Roses. The extreme simplicity in their formation renders them not very brilliant objects on paper, but although the design was simple the effect was good. Now, without holding these gardens up to view as perfection, I do think two principal points in the formation of the Rosarium were perfectly wrought out. Here was a terrace from which we could look down upon the plants; view them as a whole (which was indeed a grand sight); and they were so arranged that we could look closely at each by descending to the walks. The greatest objection to this plan appears to me to exist in the non-arrangement of the varieties in separate groups according to their external characters, and which might have been done without lessening the effect produced as a whole.

The Roses existing at the present time in the Jardin du Luxembourg are near what was formerly the Orangery, now called the New Museum.

There is a very good collection of Roses at the National School of Horticulture of Versailles, and the Duchesse de Galliera has a very complete collection at Fleury Meudon.

The most interesting collection of Roses we have recently met with in France is that of M. Gravereaux at L'Haÿ, near Paris.

We shall now present our readers with two original plans designed expressly for this work by Messrs Major & Son, the late eminent landscape gardeners of Knosthorpe, near Leeds, and on which they make the following remarks:—

“In grounds sufficiently extensive for the introduction of various scenes, the Rosarium is one calculated to produce considerable interest; and being formal, and a separate scene, it is necessary that it should be masked out from the general pleasure-ground by shrubs and *low* ornamental trees blending with the adjoining ground in the natural or English style. In situations where the ground is too limited for the introduction of a Rosarium we prefer assembling the Dwarf Roses in groups or small masses in front of the shrubberies, and arranging the Standards irregularly here and there just behind some of the lower shrubs, so that the stems for the most part may be covered. The heads appearing above the shrubs have a highly interesting effect.

“In the designs for the Rosariums we have arranged the whole of the beds and Standard Roses as near each other as they should be placed, even in the most limited grounds; but in situations where a little more space of lawn can be allowed it will be better to keep them further apart, the same principles of design being adhered to.

“If an extensive Rosarium is required it is only necessary to increase the number of beds and standards, and to preserve the same proportions in the beds and lawns as

Fig. 2.

a to b, Arcade of Trellis-work.

Fig. 3.

cc Covered Seats.

shown in the plans fig. 3 and fig. 4 it would only be required to throw the shrubbery farther back, and form another range of round beds between it and the Standards; and if necessary the shrubberies enclosing the Rosarium may be fronted both with Standard and Dwarf Roses. We adopted this plan a few years ago in arranging a Rosarium, the area of which was nearly half-an-acre in extent, but the collection

Fig. 4.—*a*, Circular arcade of trellis-work. *b*, Aviary or Sun-dial. *c*, Covered seats. *d d d d*, Weeping Roses.

being very extensive we found it necessary to front the whole of the shrubbery enclosing the compartment both with Standards and Dwarfs; and during the blooming season it presented a scene truly magnificent, surpassing the assemblage of any other family of plants we ever saw, even a splendid collection of Rhododendrons which composed another scene in the same grounds.

"The arcades in both designs are for exhibiting Climbing Roses, which we need not say will produce a very imposing effect. They should be formed of latticed pilasters twelve inches wide, and about six feet high to the spring of the arches, each pilaster having four uprights one and a quarter inch square, placed two and two, an inch apart, with balls between them at proper distances, and filled up in the middle with lattice-work, showing five-eighths of an inch in front. The openings between the pilasters may be from four to five feet, according to the height. The arch over the walk should be of lattice-work. Some of the round beds may be of basket-work twelve or fifteen inches deep, especially those shown with a varied outline

Fig. 5—ROSE GARDEN AT HATFIELD HOUSE.

"In order to make the Rosarium as interesting as possible, the beds might be planted with patches of early-flowering bulbs to precede the general bloom of Roses which bulbs, after flowering, might be lifted, and their places supplied by different kinds of Annuals, to succeed the general Rose-bloom. So that there would first be a show of early bulbous flowers, then the grand display of Roses, and lastly, the show of Annuals."

Some few years ago we furnished a Rose garden for the Marquis of Salisbury at Hatfield House, Hatfield, Herts (*see* Fig. 5, for which I am indebted to Mr Norman the present gardener).

1, 2, 3, are beds of Standard Roses; 4, beds of Dwarf Roses; 5, Gloire de Dijon trained on iron chains; 6, grassy slope; 7, the old Palace, now the stables; 8, the natural ground level.

The site was originally the Palace yard, and it is sheltered on one side (the west)

by a lofty wall of the old Palace. It is six feet lower than the natural ground, and is reached by steps formed on a slope of turf. The effect of these Roses when in flower, viewed from the walks on the higher ground, is beautiful beyond conception.

In the winter of 1878 we furnished a Rose garden for the late Countess of Rosebery at Mentmore, near Leighton-Buzzard, from a design by Mr Smith (*see* Fig. 6). Each bed was filled with one colour only although composed of several varieties. For instance, beds 1, 2, 3, and 4 were crimson; 5 and 6 pale pink; 7 and 8 very dark; 9, 10, 11, and 12 white; 13, 14, 15, and 16 crimson; 17, 18, 19, and 20 rose colour. These are all dwarfs. The central bed alone is filled with standards of mixed colours. The space occupied is 130 feet by 88 feet on grass, a gravel walk, over which climbing roses are trained, surrounding the whole. The level of the beds is slightly below

Fig. 6.—ROSE GARDEN AT MENTMORE.

this walk, and the spot is well sheltered from the north and east. The success of this effort was complete, the plants growing and flowering well six months after they were planted.

In the Autumn of 1881 we supplied 2000 Rose Trees to an order of H.R.H. The Comte de Paris for a Rose Garden at the Chateau d'Eu in France. Eight hundred of these were standard Tea-scented Roses, and they grew and flowered well.

Fig. 7 is a design of a Rose Garden for the late Madame Pommery at Chigny-les-Roses, near Rheims, which we supplied plants for in the year 1881. I have never seen this garden, but have been told that the effect is all that could be wished.

Fig. 8 is a plan sent to us to fill for the Dowager Queen of Denmark at Sorgenfri. These were mostly "Standard" Roses of various heights, and hardy varieties suitable for that northern climate. The shaded part is grass and the walks gravel.

But it may not suit everyone's inclination or convenience to form a Rosarium, how-

ever desirous he may be of cultivating a few choice specimens of Roses. In small gardens it often happens that there is little room, or the proprietor's favourite may be another flower. He may wish not to exclude Roses altogether, although he has not space to cultivate many.

It is therefore necessary that we should consider how they may be introduced to form an agreeable feature in the Flower Garden.

Various methods have been suggested, and many carried out with good effect. With regard to Standards, they have been grouped in beds on lawns, planted in continuous lines running parallel with walks; in square beds or parallelograms, and they are also not unfrequently planted singly on lawns. Dwarfs are planted in single beds, or groups of beds, sometimes a single variety to each bed, to obtain masses of well-

Fig. 7.—ROSE GARDEN AT CHIGNY-LES-ROSES.

contrasted colours; sometimes the varieties are mixed and the colours blended. Each of these plans is good under particular circumstances, for we have not always the exact plot of ground at our disposal necessary to carry out certain forms, and besides which our tastes vary.

Perhaps the best mode of introducing Roses to the Flower Garden is by a group of beds thrown together on a lawn. In these, if the proprietor be a Rose amateur, he would most likely be desirous of obtaining as great a variety as possible, and a bed should be set apart for each group, or for a certain number of his favourite groups. There was a very elegant arrangement of clumps on the lawn at Southgate House, near London. The ground they occupied was a strip taken in from the park, about 130 yards long and eight yards wide; it was open to the east. There were fifteen clumps formed in a single row, some two and some four yards apart, excepting the sixth and seventh clumps, between which there was a clear space of sixteen yards.

Their forms were circles, segments of circles, ovals, parallelograms, octagons, and the like. In front of the lawn was a broad gravel walk, and at the back a wire fence separating the lawn from the park. The clumps were originally planted with the following groups in the order in which we place them, commencing with that nearest the dwelling-house:—1, Bourbon; 2, French; 3, Provence; 4, Damask Perpetual; 5, French; 6, Moss; 7, Noisette; 8, Bourbon Perpetual; 9, Hybrid Provence; 10, Hybrid Perpetual; 11, Hybrid Chinese; 12, Damask and Alba, mixed; 13, Bourbon; 14, Sweet Briar and its hybrids; 15, Hybrid Perpetual. The varieties being mostly destroyed by the winter of 1860-61 the beds have been re-shaped and planted with

Fig. 8.—ROSE GARDEN AT SORGENFRI.

miscellaneous Roses. It is situate on the right-hand side of the gravel-walk when proceeding from the house. To the left are walks leading to the Flower Garden, some fine horse-chestnut trees, and a few clumps to contain Geraniums, Verbenas, and various other plants. Behind these is a wall on which fruit trees are planted. At the further end of the Rose clumps is a group of ornamental trees, opposite to which is a summer house. With regard to the arrangement, the plants intended for the centre or centre rows were selected on stems about three and a half feet high, the others gradually decreasing in height as they approach the edges of the beds. The greatest distance from plant to plant was three feet, and the smaller growers, which have place towards the circumference of the beds, were planted nearer to each other.

The natural soil here is clay upon gravel. In preparing the ground to receive the

Roses, the soil was removed from the beds to the depth of two feet, and replaced with leaf-mould and loam. This was taking a great deal of pains with a soil not irremediably bad—with a soil *which might have been rendered suitable for Rose-culture* with less labour and cost than that bestowed on it. But the additional painstaking was more than repaid by the complete success attendant on the transplantation of the trees. Of 319 specimens transferred from the Nurseries here, not one died! The greater part, too, flowered beautifully the first season after transplantation. They were planted with great care, and no doubt received the strictest attention during the spring and summer.

When Roses are planted in the manner of which we are now speaking, if the proprietor of the garden be a lover of flowers in general, without caring to enter into the detail of the matter, planting in masses of colour will probably suit his taste better than making-up each clump with mixed varieties. In this case the beds should be of smaller dimensions than when filled with various kinds, or there is an appearance of too much sameness. *We here plant for effect*; and if the plants are Dwarfs, full scope may be allowed for the exercise of taste and ingenuity in the construction of the beds; the simple forms recommended to the amateur for Roses on stems may be cast aside. The effect of planting masses of colour is truly splendid, and such as cannot be accomplished simply by a mixture of varieties.

Let us suppose a group of beds formed on a lawn within sight of the drawing-room, and filled with the freest flowering Roses. Let Chinese Fabvier (scarlet) fill one bed; Bourbon Queen (salmon) another; General Jacqueminot (crimson) a third; Madame Falcot (yellow) a fourth; and, in continuation, selecting kinds to introduce as agreeable a contrast or association of colour as possible, and of as nearly equal growth, as the form of the series of beds may require. If we prefer Summer Roses, there are kinds among them quite as suitable for the purpose, and although with these the flowering season is not so prolonged, the effect of the greater quantity of flowers produced at one time, in June and July, presents a more dazzling display. Can we doubt the effect of this mode of planting? Could we introduce a more agreeable feature to the Flower Garden? If formed of the Autumnals, we have flowers springing forth in the earliest of summer, and continuing to blossom till November; bidding defiance to the slight frosts of autumn, which check or destroy the less hardy races of plants that contribute so much to the adornment of the garden.

In small gardens, where variety is desirable, a bed of moderate, or large size, produces probably a more agreeable effect than numerous small beds; the latter are, however, better, if *masses of colour* are desired.

The *Pergola* so frequently met with in Italy has become popular in England and affords a shady and cool retreat in the garden. It should, however, be introduced only where it will be in harmony with the surrounding objects. The most elaborate and substantial example of this we have met with is at Shipley Hall, Derby, the seat

of E. Miller Mundy, Esq. It is 83 yards long. The piers are 8 feet apart (measured across the 6 feet 6 inch flagged path), and vary in width (measured lengthways with the path) from 11 feet 2 inches to 5 feet, these varying measurements being made to suit the buildings and cross paths. The piers are bright red thin brick, the woodwork English Oak (see fig. 9).

The Roses and other plants used for the clothing of this handsome structure were selected and planted by Mr Tallack, and it does not require any great effort of the imagination to anticipate the splendour of the ultimate issue. A less elaborate and less costly structure may be contrived to suit the views of individual proprietors. Simple rustic adornments of this kind may be erected with a few larch or oak poles with cross pieces at the top.

Standard Roses, planted in lines running parallel with garden-walks, are shown to

Fig. 9.—PERGOLA AT SHIPLEY HALL, DERBYSHIRE.

great advantage, and this method is in many cases desirable; the borders beneath being planted sparingly with bulbs, herbaceous plants, annuals, or others of humble growth.

There is one practice which has been too frequently adopted in planting Roses singly on lawns—that of placing the turf close up to and around the stems immediately after planting; this cannot be too highly deprecated. The starved and unhealthy appearance the plants usually present shows unmistakably their dislike of such treatment. Why, then, should they be subjected to it? Were they allowed to become thoroughly established, the turf might then be laid on without producing such injurious consequences. But it is desirable to avoid even this; for of what avail can the soft genial showers of spring, or even the heavier rains of summer, be to the roots of a tree, when they have first to pass through the thirsty turf and give sustenance to the blades composing it? And again, the turfing of the ground prevents in

some measure the air from permeating the soil, which proves so beneficial to the growth of plants. It may be said that an open space round a plant on a lawn is objectionable; but this may be overcome by placing a few flints or burs on the soil; or sowing it with annuals of small growth, which will diversify and add to the beauty of the garden.

Some varieties of Roses, which form large heads when grown as Standards, look well planted singly or in avenues.

In small gardens, Standards of various kinds may be planted completely round the outside of the lawn, at equal or various distances.

One or two writers on floriculture have recently written disparagingly of Standard Roses, but there are very few gardens in which their absence would not create a void on account of the *elevated* masses of brilliant colouring they introduce. Many sorts of Roses, however, are not suitable for Standards, and we need hardly say such should not be grown in that way.

Weeping Roses form beautiful objects when planted singly on lawns; and it is surprising that they are not more generally cultivated. Are they so rare that few have yet witnessed them in complete beauty? It may be so. There is a letter now before me, from an amateur in Devonshire, who purchased from here some years since a plant of the Ayrshire Ruga with a stem eight feet high. It has been trained as a Weeper, and the tips of its branches now rest upon the grass below: an arbour is formed by it, and there is a seat within. The branches are, in the flowering season, covered with blossoms from the head to the ground, and the sight is described as magnificent.

There are but few kinds *naturally suited* for this mode of growth; although many may, by a course of pruning and training, be brought to form handsome specimens. Of natural Weepers, the Ayrshire, Evergreen, Multiflora, and Wichuraiana are the best. Of others, such of the Austrian, the Boursault, the Hybrid Chinese, the Hybrid Noisette, the Noisette, Hybrid Perpetual, Tea-scented, and Hybrid Tea-scented, as are of pendulous growth, should be chosen. The latter groups introduce a pleasing variety of character and colour, points well worth gaining, especially if many Weepers are desired.*

We should fancy that Roses of pendulous growth, worked on short stems, and planted in vases, would have a pretty effect. Again, if the same kinds were planted as Dwarfs, in raised baskets, on lawns or elsewhere, and their shoots allowed to hang down on all sides, the effect of the masses of flower they produce, if equalled, could not be surpassed.

We occasionally see varieties of vigorous and straggling growth formed as plain

* Where any particular mode of growing Roses is recommended, a list of a select few suited for the purpose will be given at the end of Div. I.

Standard or Bush Roses. We must confess we do not admire them as such, and think them better fitted to form Pergolas, Climbers, Pillars, or Weepers. If the Rose is more beautiful under one form than another, it is perhaps when fashioned as a Pillar Rose. Every Rosarium, and, indeed, every Flower Garden, should include some of them. We have previously stated that they may be introduced to the Rosarium to form the boundary-line of the summer and autumn gardens. In the Flower Garden they may be planted to form temples, avenues, single specimens on lawns, or in groups of three, five, or more. If planted in a ring round a circular clump on a lawn, at some distance from its circumference, we should conceive the effect to be good. The best kinds are the Ayrshire, Sempervirens, Boursault, Hybrid Chinese,

Fig. 9.* RUSTIC FENCE COVERED WITH ROSES.

Noisette, Hybrid Perpetual and Hybrid Tea-scented, some of which show themselves better suited for the purpose than others, and which we shall point out when we come to speak of Pillar Roses.

Climbing Roses may be introduced to the Flower Garden to advantage as a cover for fences, or to hide any object disagreeable to the eye. Fig. 9* is an example of this taken from actual life. The Roses are leafless and partially pruned, so that the fence is shown, but this is entirely hidden by the ample foliage and blossoms during summer and autumn. When it is wished to cover a high fence or building quickly, some of the strongest growers should be chosen, budded on tall stems; the space left beneath may be covered with kinds of less rampant growth. Climbing Roses may be planted to cover arbours, rustic seats, or to form arcades or arches over walks. I have seen them trained on arches *by the sides of walks*, a line of arches

on either side running their entire length, not stretching over them. Such may be admitted, in certain positions in the Flower Garden, with charming effect, although they are not always in harmony with surrounding objects or in good taste. When this arrangement may seem suitable, the arches should not be placed at too great a distance from each other; and the effect may be sometimes heightened by running chains, in curved lines, from arch to arch, covering them with the spare branches of the Roses. This will probably be understood on reference to Fig. 10, arches being supposed to spring from each end of the chain. For this purpose the Evergreen Roses are perhaps the best, as they are very hardy, and hold their leaves longer in winter than any other Climbers.

The Evergreen, Ayrshire, and Wichuraiana may also be planted in rough places in large gardens and parks to trail over waste ground, hillocks, or the like; they may

Fig. 10.—PILLAR ROSES WITH CHAINS.

also be made to climb old trees, in which way they present a very rustic appearance, and produce a pleasing effect. It appears to us better to plant in such situations own-root rather than budded plants, as the latter are most in character in dressed grounds.

A bank of Roses produces a very agreeable effect, especially when seen from the windows of the house. The Evergreen and the Hybrid Chinese, owing to their vigour and density of growth, and the immense trusses of flowers they produce, are the best kinds for this purpose. They may be planted two or three yards apart, according to the quality of the soil. They will need only just so much training as to induce them to cover regularly and thickly the whole surface of the ground.* As to pruning, the less the better, but we must of course keep the form of the bank elegant, and the plants in health and vigour.

* Their branches may sometimes be encouraged to dip and root into the soil.

If these same kinds were planted at the base of trees in the most open spot near the confines, or within sight of the walks in shrubberies, we think they would introduce a pleasing feature there. In such places how often does the gloomy and desolate triumph over the cheerful and beautiful! The trees are often bare, or dead branches only seen for some distance from the ground, and the beauty of their tops is not appreciable as we walk beneath. Who has not sometimes rambled in such walks where the wild Honeysuckles have presented the most pleasing feature, if not the only one, to tempt him to pursue his walk? And beautiful indeed *they* are, creeping over the rugged branches of the trees, their tortuous stems showing here and there, and their beautiful flowers and leaves glistening among the boughs above. And why should not Roses be brought to fill like positions? Let the Ayrshire and other free-growing climbers be planted in spots where they obtain a *little light*, and

Fig. 11.—HEDGE OF ROSES.

they will do. But it will be well to give them every encouragement at the outset. Remove the soil at the root of the tree to the depth of eighteen inches, and for two or three feet square, filling up the opening with two-thirds good turfy loam, well intermixed with one-third manure, rich but not too fresh.

In this they may be planted. Train them for the first year or two until they get good hold of the trees, then manure them annually. Prune very little; and there is no doubt they will flower well, and lend additional interest and beauty to the shrubbery walks by the relief and variety they give.

Hedges of Roses are very beautiful in a garden when the varieties composing them are properly chosen. In dressed grounds, neat sturdy-growing free-flowering kinds are the most suitable. For a dwarf hedge (2 to 3 feet) nothing can surpass in beauty and fragrance the Scotch Roses. For a taller hedge varieties of neat growth may be chosen from among the Hybrid Bourbons or Hybrid Perpetuals. As an illustration of this see Fig. 11, which is taken from a Rose hedge in Winter, the

plants having been partially pruned ; in the Summer they produce an unbroken mass of foliage and flowers.

In some places where the shrubbery walks are extensive we have seen groups of Roses introduced with good effect. For this purpose, varieties of free and careless growth should be chosen.

It is probably the best plan here to have the arrangement as simple as possible that it may be comprehended at a glance. It should be entirely concealed from distant view, to the end that some little surprise may be created by finding ourselves unexpectedly greeted in our course with a mass of these lovely flowers. Planting irregularly in rows about four deep appears an excellent method, and the plants may be arranged to slope gradually from the back to the front. The entrance at each end might be arched over with wire-work, or even two or three rustic poles fixed upright on either side of the walk and arched over would be in perfect harmony with the design. Round and over these poles and arches Climbing Roses may be induced to grow, mingling the colours, or not, as taste may suggest, but taking care that the varieties be abundant bloomers and of similar growth. If the arches are too deep the light is excluded from the interior and the flowers all draw to the top, in which position they are not seen. If it is wished to have an arched Rose-walk, the arches should not exceed two feet in depth, and they should be placed about a yard apart. The effect produced in viewing the walk from either end is the same as if the arches covered the whole space of ground, and when passing under them the flowers hang drooping from the sides and top, and are then seen to advantage.

But to return. In this situation (the Shrubbery) the rare and perfect kinds of Roses will not be looked for ; the beholder will very probably not stay long enough to examine them critically, and the aim should be to produce an impression at first sight. This may be done by choosing the showy free-flowering kinds, such as are famed for the quantity of flowers they produce, for beauty *en masse* and brilliancy of colour in preference to those possessed of great symmetry of form or exactitude of habit. Many of the Tea-scented, Hybrid Chinese, Hybrid Perpetual, and Noisette Roses are of this kind.

Such a plantation as that just described once existed at Ponsbourne Park, Herts, now the seat of J. W. Carlile, Esq. The entrance on either side was arched over with rustic poles for a distance of a few yards, the arch was so curved that the plantation was entirely concealed from view till you were within it. The walk, which was simply a continuation of the shrubbery walk, was of gravel, the beds edged with the pretty Lawrenceana Roses. We can imagine the effect of such an encounter upon the mind of a visitor who may have chosen to spend his early hours in the shrubbery walks.

There was a very pretty arrangement of Roses introduced into the walks of the shrubbery in the gardens of the late Mrs Warner, at "the Woodlands," Hoddesdon.

Fig. 12 is a ground plan of the beds in which they were planted. The earth in the four beds which compose the inner circle was raised about four feet above the level of that which surrounds it; and upon this was built a temple, the frame-work being formed with iron rods. It was covered with Climbing Roses of various kinds. There are eight plants planted in each bed. Fig. 13 is a sketch taken of this temple when the Roses were pruned. Although they cover it entirely, we have thought it desirable to omit them, in order that the construction of the frame-work might be clearly seen. The temple, to which there are four entrances, has at its circumference twelve Gothic arches, the outer standards of which are seven feet three inches high, and six feet three inches apart. There are other iron supports between the outer standards and the centre one; the latter, which is placed on the top of the mound, stands ten feet clear of the ground. In the outer ranges of beds are planted a Standard and Dwarf Rose

Fig 12.—GROUND PLAN FOR ROSES IN SHRUBBERY.

alternately. The diameter of the first circle is twenty-six feet, that of the whole forty-eight feet.

When in the temple, looking down the walks, we see three rustic figures, modelled in lead, and mounted on pedestals, which vary and add to the beauty of the design. The fourth figure, which would seem required to give grace and uniformity to the scene, is wanting, a brook running on one side of the circle occupying the ground where it should have place. A hedge of Scotch Roses is planted round the outside, over which we look upon an extensive lawn, with Pinuses and various plants showing in the distance. Forming a part of the Shrubbery, we may suppose it is not entirely free from trees, but it lies open on one side; and to this, united with skilful management, may be attributed the healthy and vigorous condition of the plants.

Of the Rose gardens of the present day we may mention as known to us:—The Royal Gardens, Sandringham; Shiplake Court, Henley-on-Thames (R. H. C. Harrison,

Esq.); Lowther Castle, Penrith (The Right Honourable The Earl of Lonsdale); Sherfield Manor, Basingstoke (J. B. Taylor, Esq.); North Mymms Park, Hatfield, Herts (Mrs Burns); St James', West Malvern (Honourable E. Ellis); Childwickbury, St Albans (Sir J. B. Maple, Bart.); and Hutton Rudby, Yarm (The Misses Blair).

Fig. 13.—GROUP OF ROSES IN SHRUBBERY

CHAPTER VI.

*On the Choice and Arrangement of Varieties, and
Remarks on Planting.*

HAVING formed the Rosarium, it may be well, before proceeding further, to ask ourselves this question—Are the soil and locality sufficiently favourable to admit of the successful cultivation of all kinds indiscriminately? If so we are indeed fortunate, for variation in character is certainly desirable, and each group possesses some particular feature to recommend it. There are the Noisette and Tea-scented, justly celebrated for their fragrance. The Hybrid Perpetual and Hybrids of the Chinese have a strong claim on account of their finely-shaped flowers and great variation in colour, besides which, they are the hardiest of Roses, thriving in less favourable situations than most others. Then there are the Chinese, remarkable for great regularity of growth, and whose flowers are produced in gay profusion in spring, summer, and autumn, and which only cease to blow when the chill breath of winter strikes them, heralding the approach of the season of repose. In addition to these there are the Austrian, the Provence, the Moss, the Damask, the Alba, and the Bourbon—the latter blooming almost as constantly and as long as the Chinese—and many other groups as interesting if not so extensive or so generally known. Can we, in planting the Rosarium, wholly dispense with any group? We think not. To render the design complete a few varieties from each should be chosen. The cultivator may have his favourite groups, and introduce *them* in greater quantity, but if the soil and situation are good he should not wholly exclude any. Formerly the Florists' artificial standard of a good Rose was admitted as sufficient for the introduction of a new variety, and this kept Roses out of the bedding lists in general gardening, but now constitution, continuous flowering, and attractive habit of growth presents a wider claim, and with these in the ascendant the Rose becomes pre-eminent for the purposes of general decoration.

We now intend to note the number of varieties we should draw from each group were we about to plant a Rosarium for ourselves; this, we believe, will prove useful to

some of our readers. And in order to do justice to so difficult a task, I have carefully considered the varieties separately, and in many instances weighed them the one against the other. Let us suppose a Rosarium to require from four to five hundred plants, and as all have not precisely the same objects in view in planting, it may be well to offer two arrangements.

1. Where the design is to introduce as great a variety as possible, without sacrificing desirable qualities or beauty :—

SUMMER ROSES—†The Boursault, 2. The Scotch, 12. The Damask, 4. The Provence, 3. The Pompon, 2. †The Moss, 18. The French, 10. †The Hybrid Chinese, 10. †The Hybrid Bourbon, 4. †The Hybrid Noisette, 2. The Alba, 4. The Austrian Briar, 4. *The Ayrshire, 4. *The Evergreen, 6. *The Banksia Rose, 2. *Wichuraiana, 6.

AUTUMNAL ROSES—*The Macartney, 2. The Microphylla, 2. †The Hybrid Perpetual, 160. The Bourbon Perpetual, 12. *The Rose de Rosomane, 4. The Perpetual Moss, 4. Polyantha, 12. The Crimson Chinese, 6. The Chinese, 6. The Fairy Rose, 4. The Tea-scented and Hybrids, 100. †The Bourbon, 12. *The Musk, 3. *The Noisette, 20.

From the groups marked thus (†) the best Pillar or Pole Roses may be drawn ; from those marked (*) the best Climbing and Weeping Roses.

2. Where a principal view in the culture of Roses is to compete for prizes at the horticultural exhibitions :—

AUTUMNAL ROSES—Hybrid Perpetual, 160. Noisette, 6. Tea-scented and Hybrids, 60.

When cultivating for exhibition we think it advisable to reduce the number of varieties, and plant two or three specimens of each. It is not often that we can cut three fine trusses of flowers (which are often required under the present mode of exhibiting round London) from a single plant at the same point of time ; and from a glance at the rules of several provincial societies I should say two or three plants of each of a less number of varieties offer advantages over double the number of which only single plants are grown. In addition to the reason given above, I would remark that by reducing the number of varieties we improve the quality of our Collection, and although it may be difficult to cull the choicest where all are choice, yet he who has a thorough knowledge of the varieties, whose eye has been long practised among them, will discern slight differences and know the true value of each.

But sometimes circumstances are adverse to the cultivation of all kinds, and what must be done then? This materially alters the aspect of affairs. The cultivator should then consider what proportion may be planted to advantage, and make up his plans with such. We have previously stated that it is unnecessary to plant delicate Roses in unfavourable situations or unkindly soils, as there are plenty of a nature and character adapted for all such circumstances.

Let us, before we leave this part of the subject, offer a classification of the groups, with the view of aiding the tyro in selecting for himself.

1. THE HARDIEST GROUPS—The varieties thriving in localities and soils the least favourable to vegetation. *Summer Roses*—Boursault, Damask, Hybrid Chinese, Hybrid Bourbon, Ayrshire, Evergreen. *Autumnal Roses*—some of the Hybrid Perpetual, some of the Bourbon, some of the Noisette. The plants here, whether dwarfs or standards, should be budded, and not on their own roots.

2. HARDY GROUPS—The varieties thriving in ordinary soils and situations under common treatment. In addition to all the groups mentioned in No. 1, the following may be classed here—*Summer Roses*—The Scotch Rose, the Provence, the Pompon, the Moss (budded), the French, the Hybrid French, the Hybrid Noisette, the Alba. *Autumnal Roses*—The Bourbon Perpetual, the Perpetual Scotch, the Perpetual Moss, the Chinese or Monthly, the Bourbon, the Musk, and some of the Tea-scented.

3. HARDY GROUPS as regards soil, but requiring an airy locality, and slight protection against frost if the weather be severe in winter. *Summer Roses*—The Multiflora, the Banksiæ. *Autumnal Roses*—The Macartney, the Microphylla, the Rose de Rosomane, the Crimson Chinese, the Fairy Rose, the Tea-scented, some varieties of the Noisette.

4. GROUPS NOT LIABLE TO INJURY FROM FROST, but which require a pure air. *Summer Roses*—The Double Yellow, the Austrian Briar.

5. GROUPS REQUIRING A WALL TO DEVELOP THEIR FLOWERS IN FULL BEAUTY. *Summer Roses*—The Banksiæ. *Autumnal Roses*—The Macartney, the Microphylla, also varieties from various groups, whose flowers do not expand well under ordinary treatment.

6. GROUPS BEST ADAPTED FOR THE HEAVIEST SOILS. *Summer Roses*—The Boursault, the Damask, the Hybrids of the Provence, the French, the Hybrid French, the Hybrid Chinese, the Hybrid Bourbon, the Evergreen, the Multiflora. *Autumnal Roses*—the Hybrid Perpetual, the Chinese or Monthly, some of the Bourbons, the Musk, some of the Noisette. For such soils as these the plants should be budded, and not on their own roots.

7. GROUPS SUITED FOR THE LIGHTEST SOILS. *Summer Roses*—The Scotch Rose, the Provence, the Pompon, the Moss, the French, the Hybrid Noisette, the Alba, the Ayrshire. *Autumnal Roses*, some of the Hybrid Perpetual, the Bourbon Perpetual, the Perpetual Scotch, the Crimson Chinese, the Fairy, the Tea-scented and hybrids, some of the Bourbon, some of the Noisette. In soils of the above description the plants should, so far as attainable, be grown on their own roots; such as are not so cultivated in the nurseries should be chosen budded on very short stems.

8. GROUPS BEST SUITED FOR POT CULTURE, many kinds improving greatly in beauty when grown under glass. *Summer Roses*—some of the Hybrid Chinese, some of the Hybrid Bourbon. *Autumnal Roses*—The Hybrid Perpetual, the Bourbon

Perpetual, the Crimson Chinese, the Chinese or Monthly, the Fairy Rose, the Tea-scented and hybrids, *some* of the Bourbon, *some* of the Noisette. The plants may be budded or on their own roots at the option of the cultivator.

9. GROUPS BEST SUITED FOR FORCING—The same as recommended for pot culture in No. 8; and the plants should be budded on the Dog-Rose, the Manetti, or some free stock.

10. GROUPS WHICH FURNISH THE BEST CLIMBING ROSES. *Summer Roses*—The Boursault, the Ayrshire, the Evergreen, the Multiflora, the Banksiæ Rose. *Autumnal Roses*—the Macartney, the Rose de Rosomane, the Musk, *some* of the Noisette and Tea-scented.

11. GROUPS WHICH FURNISH THE BEST PILLAR OR POLE ROSES. *Summer Roses*—The Damask, the Moss, the Hybrid Chinese, the Hybrid Bourbon, the Hybrid Noisette, the Alba Rose. *Autumnal Roses*—The Hybrid Perpetual, the Bourbon, the Noisette, and the Hybrid Tea. *The "vigorous" growers from these groups must be selected*, and the plants usually preferred are dwarfs on their own roots. These remarks are applicable to No. 10 also.

In selecting varieties to plant in the Rosarium or to ornament the Flower Garden, if the purchaser have not a thorough knowledge of Roses the better plan for him to pursue is to make known his plans to a skilled Rose grower. Let him first name his soil and situation; then the particular object he has in view in cultivating Roses, whether he desires to compete for prizes at the horticultural exhibitions or merely seeks in Rose culture a quiet recreation; or whether, again, his object be to produce effect from some particular spot, or to obtain large handsome flowers in quantity for indoor decoration. He should state whether he would wish Summer or Autumnal Roses to preponderate, and if he has some knowledge of the groups, let him name those which are most pleasing to his taste. In addition to this he should state whether standards or dwarfs, &c., are most admired, the colours preferred, and give either the number of plants wanted or the quality he requires, and the sum he wishes to expend.

This is undoubtedly the most advantageous plan for the purchaser. If the tyro select his own varieties from the catalogues, the chances are that he will be taken with one or two points in a Rose, and fix upon it without giving other points the due weight, and thus disappointment may ensue. For example, the Rose Eugène Appert (Hybrid Perpetual) is exquisite in colour; it is large, and very double. These qualities would recommend it, but it is a poor grower, and the arrangement of the petals is indescribably irregular. The flowers of Comtesse de Nadaillac (Tea-scented) are perfect in form; the habit of the plant is also unique; but the variety is in most places a shy grower. The Rose amateur will usually discover these points, but not so the tyro; and no sale catalogue can afford space to describe in full all the good and bad points of each variety. But if the purchaser give the information above

stated, and apply to a respectable firm, his objects may be fully attained. Let it be further remarked, that this plan of dealing is also advantageous to the vendor, and he compensates for the accommodation afforded him by sending a number of plants free of charge, or prices the whole at a lower rate than he could have done had the amateur selected them individually. The efforts of the Rose-growers are, or should be, directed towards obtaining the greatest possible quantity of the finest varieties; and, independent of feeling it a duty to serve, in the best manner, those who confide in them, it is their interest in two ways to supply only the choicest varieties. In the first place, they have usually the largest stock of such, and then, it is these which will do them the most credit, and recommend them to further transactions. It is no advantage to them to send bad growers or second-rate kinds; it is the reverse. The bad growers are *always* most difficult to propagate and bring to a saleable condition, for which the trifling addition in price does not compensate; and it is easier to grow four or five thousand of a first-rate variety than to grow a like number of plants divided into fifty different kinds. We need not speak of the disadvantage the vendor suffers from the sale of any but the best kinds; and I believe he does this, even though the purchaser select them himself. But beyond the advantages already mentioned as derived on both sides from this method of dealing, the purchaser obtains better plants. In a collection of a thousand varieties there is a greater number of *first-rate* kinds than the most ardent cultivator of Roses would be likely to purchase at one time; and if the plants of any particular variety are small or weakly at the time the order is received, they are avoided, and can be added to the collection at subsequent periods.

Let us now proceed to make a few remarks on planting. We will suppose the beds ready formed and prepared, and the order of planting arranged. There is a sufficient number of plants at hand of the required height and kinds to fill them. If it be a Rosarium or a series of beds we are about to plant, we may suppose that each group will have a bed or beds to itself; or if our plans are not sufficiently extensive to admit of this, each bed should be planted with a combination of such as resemble each other in external characters. We are speaking now of planting the Rosarium or a series of beds; in a single bed or clump it is allowable to mix the groups.

The disposing of the plants will vary so much, according to the plan of the Rosarium or the taste of the individual, and is withal so simple, that it does not appear necessary to enlarge on this particular point. One thing in planting should be borne in mind—Never suffer the roots to lie exposed to the sun and wind, not even for an hour. I fancy I hear, as I have heard some say, "Nonsense! the Dog Rose is so hardy that you may expose it for a month to all weathers, wind, frost, or sunshine, without fear of injuring it." I have often heard this asserted, and have tried experiments, which it is not necessary to record here, to convince myself of a simple fact, which it may be said no one ought to have doubted. One fact I will relate. In planting some French Roses, two plants of the same kind were overlooked and left

out of the ground for two days and two nights in December. They were budded on the Dog Rose. The days were sunny, the nights were frosty, the mercury falling to about 28° Fahrenheit. Numerous other plants, whose roots were kept covered, and which were planted at the same time, grew and *flourished* without one exception. And these two *did not die*; but for three years they maintained a miserable existence, neither growing as the others grew nor producing any creditable flowers; and yet they were originally as robust and vigorous by nature as any, if indeed not more so.

If there are two employed in planting, the one may dig the holes at proper distances, mixing the soil taken out with some well-pulverised manure, and laying it on the sides of the holes ready for use in planting. If the soil be light, he may notwithstanding the dressing it may have previously received, add a few spadefuls of loam for any very choice kind; if the soil be heavy, he may add a few spadefuls of leaf-mould. This latter substance is an excellent addition to heavy soils, and almost indispensable when the Tea-scented Roses are planted there; it tempts them to root vigorously, and strong well-flowered plants are the result.

If Standards only are planted, two and a-half to three feet apart is a good distance; and if there is no objection on the part of the cultivator to planting Dwarf among the Standards, let it be so. If, however, this is considered objectionable, and it is still thought desirable to cover the ground below during summer, this may be accomplished by sowing Annuals, such as Mignonette, *Viscaria oculata*, *Dianthus Heddevegii*, and any others of slender growth. These cannot injure the Roses; in hot dry seasons we believe they prove beneficial by the partial shade they afford, but they should be sown very thinly, and those kinds chosen which are of the most slender growth. When Dwarf Roses only are planted, from one and a-half to two and a-half feet, according to the vigour of the kinds, is the distance usually chosen.

A few words on arranging plants in single beds may not be misplaced here. We first take the centre of the bed, where we place the tallest plant, and which should be a robust grower, an abundant bloomer, and an attractive Rose. In reference to this plant, whatever may be the size or shape of the bed, the others are disposed. They should incline gently from it in any or every direction, till the plants at the edge be on very short stems or perfect dwarfs. An inclination of one foot and a half from one row to another admits of a very pretty arrangement. Supposing the centre plant to be five feet, the next row may be three feet and a-half, the next two feet, and so on. Let it be borne in mind that the strongest grower should be planted nearest to the centre; and in consequence of their more vigorous growth, greater space should be allowed from plant to plant there than at the circumference of the bed, where the smaller growers are planted. When the holes are opened for planting, throw a little manure at the bottom, and mix it with the soil there; then place the plant in the hole, filling in with the manure and soil laid

ready above, *treading them firmly* about the roots. After planting tie each Standard to a stake, to secure it from the action of the wind, and the operation is finished. Be it remarked that planting deep causes Roses to throw suckers; if the top of the roots is from four to six inches under the ground in strong moist soils it is quite enough; they should be set two or three inches deeper in light dry soils.

The tender varieties of Tea-scented, Chinese, Noisette, and Lawrenceana Roses should never be planted in the autumn. Let the beds or places which they are intended to fill remain open till spring, putting the plants carefully away for the winter under a north or west wall or hedge. The plants of these groups are sometimes small and delicate, and if put into the ground in autumn they often suffer greatly from the winter's frost. But plant them in spring: if they are a year old, in April; if younger, in May or June; and they have the growing season before them: they get a firm hold of the ground by winter, and are more gradually hardened to, and better capable of supporting, the changes and severities of that season.

It is important that the ground be in good working order at the time of planting, for on this depends greatly the measure of success. If it be wet, it hangs to the spade and to the heels of the operator, and prevents him from doing his work well. But worse than this, the moving of ground when wet causes the particles to combine too closely; the soil becomes close and dead, and if thrown about the roots of a tree in this state is unfavourable to early and vigorous rooting. Choose, then, a dry time, when the earth bounds clean and free from the spade; and if subsequent dry weather points out the necessity of using the watering-pot, by all means do so: far better this, than to plant when the ground is in bad order.

It seems desirable here to say a few words with regard to EVER-BLOOMING ROSES for general garden decoration. There has arisen recently a new race of Roses between the Chinese, Tea-scented, and Hybrid Perpetual, variously hybridised, two of the most important of which (*Corallina* and *Sulphurea*) originated at Waltham Cross. These may be had constantly in bloom. If a judicious selection of varieties be made (see page 86) it is only necessary to keep them growing and you keep them blooming, for every eye or leaf-bud that pushes into a branch produces a flower or flowers. In the cultivation of Ever-blooming Roses it is a point of the first importance to avoid drought. Absence of moisture in the soil arrests growth, and without growth there can be no flowers. Watering in dry weather is therefore indispensable.

The Riviera Roses stand in the opinion of some as the truest representatives of these Ever-blooming varieties, but the profusion and constancy of the Riviera Roses is due to the climate, soil, and system of cultivation rather than to the varieties. I have seen the Roses there at their best more than once, and could find very few differing from the sorts grown in England, and while the profusion of branches and flowers is overwhelming in its appeal to the eye and mind, I conceive that we could only realise the same conditions in England by bringing the "Riviera" soil and

climate with the "Riviera" roses. Further, never have I seen the individual flowers gifted with the freshness and bewitching beauty they derive from the cooler and moister climate of our "island home."

Ever-blooming Roses may be advantageously introduced into the system of miscellaneous bedding and general decoration in all gardens, large or small, but especially in those where for want of space or numerous other reasons a separate "Rose Garden" cannot be realised.

At the present date I should recommend as twenty-four Ever-blooming Roses:—Corallina, Sulphurea, Enchantress, G. Nabonnand, Mme. C. P. Strassheim, Queen Mab, Mme. Laurette Messimy, Camoens, Papa Gontier, Gloire des Polyantha, Comtesse Festetics Hamilton, Mme. Abel Chatenay, Safrano, Mrs Bosanquet, Dainty, Fairy Queen, Morning Glow, Salmonea, Chameleon, Marie Van Houtte, Madame Pernet-Ducher, Augustine Guinoisseau, Marquise de Salisbury, La France.

Of course, in speaking of Ever-blooming Roses for garden decoration I do not mean to imply that they will bloom all the year round in this climate *out-of-doors*, but they will bloom continually if removed at the end of the Rose season to the warmth and shelter of glass-houses.

Now, there are thousands of English people who see but little of their gardens except at the short period when in residence at their country seats, which is with many the late summer or early autumn, and at that season these Roses may be had in fullest beauty. If the prospective position of these Roses is defined when clearing away the remnants of the summer grouping plants (Geraniums, &c.) in October they may be made to take their place from other out-of-door positions in the garden, or they may be obtained by purchase. When planting leave the earth rising well up among the lower branches, placing small branches of evergreens among them for shelter from the frosts and cold winds of winter and early spring.

Here, however, is another and a safer, although I could not say altogether a better plan. Purchase the plants in small pots in May, re-pot them in June, and grow them either under glass or in the open, planting them out with the bedding plants in the May following. Under this management if the early flowers (June) are not wanted it is a good plan to pinch out the flower buds when about the size of a small pea, taking care not to remove or injure any of the leaves. Dig them up after the summer and autumn blooming, re-pot and remove to shelter, re-introducing them to any position in the flower garden in the following spring.

CHAPTER VII.

Pruning.

I BELIEVE pruning to be the most important operation in Rose-culture, and, at the same time, the most difficult to obtain the mastery over and to apply with success.

The difficulty arises chiefly from the extensiveness of the genus, which is made up of varieties differing so much from each other in habit and character. What a striking contrast does the tiny Lawrenceana, seldom exceeding eighteen inches in height, present to the other extreme of the genus, the Ayrshire and Sempervirens, which will form shoots fifteen feet long in a single year. And there are kinds of every intermediate degree of vigour and character, and hence the difficulty—the great variation of practice required in the application of pruning.

But, beyond this, the manner of pruning is partly determined by the object the operator has in view or by the condition and health of the plant. A rose intended to form a Standard would require different pruning to one wanted to form a Pillar Rose, although the variety were the same. When flowers are desired of the largest size, as for exhibition, the plan should differ from that pursued to obtain broad masses of flowers. Again, a Rose in vigorous condition, when healthy and full of sap, requires *less* pruning than when, owing to soil, situation, age, or other causes, it is of moderate or weakly growth. *The same degree of pruning applied to each condition would produce opposite results.* Close pruning would be the means of improving the health and flowering of a weak tree; it would induce a vigorous one to form wood-shoots only, producing few or no flowers.

From the above remarks it will be seen that after the fullest and most careful examination of the subject, pruning depending so much on circumstances, a great deal must be left to the judgment of the operator; *a certain degree of practice is necessary* before any great attainment in this art *can be arrived at*, and I would not advise the uninitiated to trust himself too far before he has well marked the manœuvres of some skilful friend or practitioner.

I know many instances in which amateurs, who take delight in attending to their own Roses mar the beauty of their trees for want of considering the principles of Rose-pruning. Many trees from too much pruning grow most luxuriantly, but show

little disposition to flower ; others from too little pruning produce abundance of flowers but they are poor in quality. These are known facts of every-day occurrence, and what are the consequences ? Probably the varieties are condemned as worthless though of first-rate merit and, other conditions being favourable, only require a skilful application of the knife to ensure perfect flowers in rich abundance.

But it is not a question of flowers only. On pruning depends the formation of the trees ; whether they be handsome or irregular and misshapen. Regarding this branch of cultivation, then, as one of primary importance, I shall give myself full scope in discussing and illustrating it.

There are two seasons of the year at which pruning is usually performed ; November, which is termed Autumn pruning, and March or Spring pruning. Winter pruning cannot be recommended, as there is a risk of the trees being injured by the action of wet and frost upon the fresh wounds. Thinning in summer is advocated by some, and of this we shall have occasion to speak by and bye.

Which is the better season for pruning, Spring or Autumn, is a point concerning which rose-cultivators are not altogether agreed. To enable our readers to judge for themselves it may be well to state the condition of the trees at each season.

In November Roses may be said to be at rest, for although there is always a circulation of the sap, at this particular time it is less active than in Spring or Summer.

As a proof of this, if we remove a Rose in Autumn the roots are then to all appearance inactive ; but if we remove the same in March, or often indeed earlier, we shall find numerous white rootlets which have been newly formed, and which, sponge-like, are continually sucking moisture from the earth, thereby favouring the circulation of the sap, and promoting growth. Hence the different state of a tree in Autumn and Spring is, that at the former period it is sinking into or at rest, and in the latter rising into life and action. Now, it is evident that the greater quantity of nutritive matter that can be collected in the immediate vicinity of the buds intended to remain for bloom the more vigorous will the growth be and the larger the flowers. Autumn-pruning favours this storing of the juices of the plants ; for by thinning-out the superfluous shoots in Autumn, and shortening the others, the buds on those left behind are placed in contact with a greater supply of food by the shortening of the channels through which the sap has to pass, the buds increase in size, become plump, and when Spring arrives vegetate with great vigour. By this practice an earlier bloom is also produced than when pruning is deferred till Spring, the shoots are formed with more regularity, and the flowers developed in greater abundance.

It may be said that many of the Summer kinds being more disposed to produce growing than flowering shoots, Autumn pruning is calculated to favour this tendency. True, and to counteract this the operation should be performed with less rigour at that season than when deferred till Spring

But Autumn-pruning has its disadvantages, the greatest of which is this :—A few mild days in Winter often excite the buds of Autumn-pruned Roses, and they push forth ; severe weather follows, the young shoots are frosted, and the bloom injured. This is more particularly the case with the Chinese, Noisette, Bourbon, Tea-scented, and the Hybrids of these kinds, which we shall term *excitable* because they are quickly excited to growth. The Provence, Moss, French, Alba, and others, rarely suffer from this cause as they are not so readily affected by the state of the weather. Be it remarked, however, that the quickness with which buds are roused into action depends much upon how far the shoots were matured the previous Autumn ; the less matured the more excitable. It will be perceived, then, that there is a difficulty in the way of Autumn pruning, when applied to the excitable kinds, which can hardly be remedied by affording them protection from frost should a mild December or January be succeeded by severe weather. But this protection if afforded would entail great additional trouble, and cannot always be done. Let us now turn to the other season.

The chief advantage gained by deferring pruning till Spring is, that the coming flower-shoots are placed beyond the reach of injury by frost. If during winter any buds push forth in unpruned Roses, it is those at the end of the branches, and they will be removed by pruning. But there is an evil attendant on this apparent advantage. When pruning is put off till Spring, the buds placed at the extremities of the shoots are often found in leaf, and in the operation we cut off some inches from a shoot in this state. The tree is denuded of its leaves, and thereby receives a check. The sap, being in active motion, exudes from the fresh wounds. The lower buds find themselves suddenly in contact with a great supply of food, by the cutting away of the buds beyond them. There is a pause. Soon one or two buds at the extremity of the pruned shoots take up the work : they swell, are developed apace, but all below remain dormant ! Thus Spring-pruning is unfavourable to an abundant and regular development of branches and flowers, and, consequently, to the well forming of a tree. The flowers are also usually produced later in the season, and of less size.

Thus it may be said that each season has its advantages and disadvantages. But is it impossible to draw from both ? We think not ; and would strongly recommend that *all but the excitable kinds be pruned in Autumn ; thin out the excitable at the same time, but leave the shortening of their shoots till spring.*

For pruning Roses two instruments are necessary, a knife and a saw. The knife I use is one with a straight blade : the saw is a double-toothed one, small, with a handle about a foot long and a blade of rather less length ; the point is narrow, to admit of its being easily worked among the close branches. Armed with these we are ready for action ; and it is necessary to bear in mind that they should be kept very sharp in order that the work may be well done.

In France it was formerly the practice to clip the heads of the Standard Roses with shears; but this practice is now abandoned there, and scissors are used in their stead. I have tried the latter, but find, in my hands, the knife executes the work better, and more expeditiously; although, as to the latter point, something may depend on use. The scissors are, however, very convenient for gathering flowers, and for cutting off the flower-stalks when they grow shabby, or begin to decay.

There are three principal ends sought in Rose-pruning, each of which should be kept distinctly in view; and let it be borne in mind, that on the judicious use of the pruning-knife their perfect accomplishment more or less depends: they are—

1. To maintain a plant or tree in full health and vigour.
2. To induce it to assume a form at once agreeable to the eye and advantageous for the development and display of its blossoms.
3. To secure an abundance of good flowers.

1. *To maintain a plant or tree in full health and vigour.*

We are told that the extraordinary vigour and beauty of some plants on which goats had been browsing first gave the ancients the idea of pruning. Certainly no one in the present day would dispute the advantages of it. Cultivators can only be at variance as to the mode of action, and the season at which the operation should be performed. If we leave a Rose-tree unpruned for one year, a great number of buds will burst forth, producing a vast quantity of blossoms, but both shoots and flowers will be comparatively thin and puny. If such tree be left unpruned for two or three successive years, it will become greatly enfeebled; the ends of the yearling shoots will die back for want of nourishment, and thus are reduced the number of buds capable of development during the subsequent year. Here we see one end of pruning naturally accomplished. But it is not sufficiently so. The flowers continue to degenerate till at length they can scarcely be recognised; the tree dwindles, presents an unhealthy appearance, and pruning must be the first means applied for its restoration.

2. *To induce a plant or tree to assume a form at once agreeable to the eye and advantageous for the development and display of its flowers.*

The formation of a tree is a point deserving of the closest attention; for if the form is inelegant it cannot but displease, however healthy and vigorous the tree may be, or whatever the degree of beauty of the flowers it produces. Should the latter be forming small, their size may be increased by lessening their number, or by a timely application of manure-water; but for the improvement of the form of the tree there is no such ready remedy. The flowers, too, are but transitory, the shape of the tree is lasting; it remains to view after they are gone. To form a handsome tree it is necessary to take it in hand when young: it is then easy to fashion, as taste or a view to its permanent welfare may require. But if it has become straggling from unskilful management or other causes, it is often difficult to remodel, sometimes

requiring the patience and skill of two or even three seasons. Before we commence the pruning of a Rose, whether it be a bush or a tree, it is therefore well to determine the shape it shall assume, and then frame all our operations with a view to its accomplishment. Perhaps a form at the same time pleasing and advantageous is that of a pyramid or half-oval; for in such all the shoots and branches get a good portion of air and sunlight, and the under ones are not excluded from view, which they often are in round-headed trees. The varieties of spreading growth are most easily brought into this form, but the principle is applicable to all.

The next aim in Rose-pruning should be:—

3. *To secure an abundance of good flowers.*

If the health and vigour of a tree are affected by pruning, the flowers, depending so much on these conditions, must also be affected by the same operations.

When about to prune a Rose I first look to the name that I may know the habit and character of the variety I have to deal with. I must know whether it is a summer or perpetual bloomer; a strong or weakly grower; and whether fine flowers are produced from low, middle, and top eyes indiscriminately or not. I then study the condition of the shoots. It is only by knowing and considering these points that we can prune with accuracy and ensure full success.

It is an axiom in Rose-pruning, that the more vigorous in habit a plant is the greater number of shoots should be cut out at the base, and the less should those which are left be shortened. This has in view, in particular, the production of flowers in the most perfect condition. The eyes near the base of those kinds which form short shoots (especially the Autumnals), usually produce the best flowers; and in the vigorous growers we prefer, for the same reason, the eyes about the middle of the shoot. But there is a question arising here which it may be well to glance at before proceeding further. Nearly all Roses make two growths in the year—first in Spring, and again in Summer shortly after they have flowered. Some of the Autumnals start afresh at short intervals throughout Summer and Autumn; but we wish at the present time to speak of the Spring and Summer's growth only, and to ask which we should look to as calculated to produce the best flowers.

When the shoots formed in Summer are well ripened we should sometimes prefer them, and for these reasons. The growth at that season is generally more rapid, and the shoots, although usually of less strength, are freer in the bark; the eyes are more plump and prominent, and well stored with the juices required to supply nourishment and promote growth.* Nevertheless, it is only a question of neat perfect flowers that would induce us to prefer the Summer wood; for when we desire large flowers, or to keep the form of the tree elegant, we shall find it necessary in most cases to prune back to the growth of Spring. Still it is well to bear in mind that the wood grown

* Hence the flowers, if not so large, are less coarse and more perfect.

during Summer, if well ripened, usually produces the most refined flowers, that we may make the best of the materials beneath our hand ; for it does sometimes happen that we may prune to the Summer's growth with advantage to the shape of the tree, and it is often a matter of indifference whether we do so or not.

With these remarks on Pruning in general, we proceed to consider it in its special application under the following heads, as applied to Standards and Dwarfs indiscriminately:—1. Long Pruning, suited to varieties of vigorous growth. 2. Close Pruning, suited to kinds of small growth.

1. LONG PRUNING.—This must be applied to the strongest growers : such are the greater part of the Hybrid Chinese, the *vigorous* in the groups Moss, Damask, Hybrid Perpetual, Noisette, Bourbon, and Tea-scented, which form large heads of rather loose but not always inelegant growth.

If we remove many shoots from a strong-growing Rose, and shorten the remaining shoots in very closely, the result, as previously stated, will be a vigorous growth, but few or no flowers ; and the shoots *may be* developed so grossly as to destroy the balance of the tree, and render the flowering for the subsequent year partial or void. This is more to be feared when dealing with Summer Roses and established plants than with the Autumnal or newly planted ones. To what endless disappointment have those fine old Roses, *Brennus*, *Chenedole*, and the like, given rise from not blooming freely. I have heard them branded as shy, bad bloomers, not worthy of place in any garden. "Grow they do," says the cultivator, "and that most vigorously, but refuse to shadow forth a single blossom." Now, we would ask—Should the blame, if blame there be, be attached to the varieties? *Is it natural for them not to flower?* Or does this state of things arise from the system of cultivation? We sometimes see them produce abundance of flowers, and pronounce them perfect ; then surely the former is not the case. They, and numerous others of like habit—*vigorous growers*—require *long pruning* ; that is, a sufficient portion of the shoots should be cut away at their base, which is called thinning-out, to allow a free admission of air and light into the heart of the tree, then the shoots which remain after thinning should be left long. If they are cut close the remaining eyes are developed as wood-shoots and not as flower-shoots, and this is the cause of their not blooming.

The treatment of plants from the bud will be alluded to elsewhere (see Budding), and as few comparatively have to deal with them in this early stage I shall commence here with one-year budded plants, such as are usually purchased at the grounds of the Rose-growers. Of such Fig. 14 is a representation. Let us look closely at it, and while doing so bear in mind that it is a *young plant*. Now what is the object of paramount importance *this year?* Let us assume the first effort to be to establish the plant, and to put it in a right course of formation. With this end in view we prune more closely the first year after transplanting than at any subsequent period. Let us suppose the specimen before us required to take the shape of a half-oval. What is

the first step? It has been budded in two places, and has seven shoots. This is too many; we must therefore remove some. In this stage of a tree pruning is not complicated—the number of shoots is few, and we see our way pretty clearly. Three shoots are thought sufficient to remain here, and let us select any three which may seem most advantageously situated, and imagine the others absent. We may try this experiment on different shoots if we are not satisfied with our first choice. To us the shoots shown by the thick dark lines seem best placed, and our first step is to cut out close to the base those shown by the thin lines. This renders the object clear, and if it be one of the excitable kinds finishes Autumn pruning. In Spring we shorten the shoots that remain at the termination of the dark shadowing (a). The plant is pruned, and it may be said with truth its appearance is not improved. But the question is not, *How does it look* when newly pruned? for when properly pruned it

Fig. 14.—LONG PRUNING, Stage 1.

often presents a very sorry appearance. The question is, *How will it look* when each of the shoots left triples or quadruples itself? Many cultivators spoil their trees by pruning in fear. It is well to be cautious, but it is seldom that the novice errs by pruning too much. But what considerations have guided us in our operations here? Seven shoots is the *greatest* number that should be suffered to remain on a young plant, and in general a less number (in this case three) is preferable. One or two should rise perpendicularly about the centre of the tree, and round this or these all others should be regularly disposed, and the more equal and greater distances that can be contrived from shoot to shoot the better. The shoots, wherever they arise, should have a tendency to grow *from* the centre, for if they grow *towards* it they will eventually cross each other, forming a confused and crowded head. In our illustration it will be seen that the shoots have this tendency.

The aim in thinning should be to leave those shoots which are firmest and healthiest provided they are placed at nearly equal distances. Care should be taken when thinning out to cut the shoots close to their base; the wounds then heal over in Summer, and the trees develop clean and perfect. If the cut is not made quite close an eye at the base may burst forth and grow with extraordinary vigour at a point where not wanted, and rob the other branches of their food, and produce an uneven plant. Or should it not be so the wood will die back, leaving ugly stumps, and sometimes introducing decay into the heart of the tree. Sear snags and stumps, which are sometimes met with in old specimens, are due to the slovenly practice of leaving an inch or so on the bottom of shoots which should have been cut clean out.

Fig. 15.—LONG PRUNING, Stage 2.

When shortening in, the lowest shoots should, where practicable, be left the longest, and the others may be shortened in closer and closer as we rise towards the summit of the tree (Fig. 16). The centre branch will, from its position, command a free supply of sap, and it is likely that it will maintain the ascendancy even if of weaker growth than its congeners, which as a rule we should wish it to be. Now the shoots shortened closest will, *cæteris paribus*, produce the strongest growth, with the greatest tendency to rise perpendicularly, and thus the head is formed as desired. In shortening the branches we should insert the knife at *b* (Fig. 14), on the opposite side of the shoot to that on which the bud next below is placed, and we should cut in a direction slanting upwards about the eighth of an inch above the bud. While writing on pruning I am reminded by a friend that in pruning, the last eye (that at the end of the shoot) should point outwards, away from the root, and be preferably *underneath* the shoot. Care should also be taken to prune back to a good bold eye, and no part of the sloping cut

should be below the eye, or the coming shoot will suffer. But here it will be found in practice there are often conflicting interests which must be duly weighed while operating.

But let us turn to the next stage of the above plant, Fig. 15. We left it pruned for growth, and the additional shoots now seen are the product of the past Summer. Pruning is now more complicated: there are more shoots to dispose of. The operator should examine the tree thoroughly before he commences. He should look not only at it, *but through it*, and this from two or three points of view. He should picture to himself this and that shoot removed, and what will be the comparative advantages to

Fig. 16.—LONG PRUNING, Complete.

the tree. He thus studies the position and relative bearing of the shoots, and will soon discover which should be thinned out.

In Fig. 15 it is thought best to remove those shown by the single lines, and the others are shortened in at the termination of the dark shadowing. It will be observed, some of the shoots are left of greater length than in the previous year's pruning, for which we give two reasons: first, the plant being established, will have a greater command of food from the soil; its growth is therefore likely to be more vigorous; secondly, having been put in the right course of formation last year, in this pruning we are looking closer after the production of flowers. For this reason, and in order to perfect the shape of the tree, *all* the last eyes do not point outwards.

It may appear to the looker-on that it would have been better to have removed the shoot between *c c*, and shortened in that shown by the double line at *d*. This would have made the art appear more simple, and simplicity in gardening operations (and indeed where not?) is a desideratum. But there was a cause for not doing this

which the tree before us serves well to explain. The shoot marked *d* had been produced late in the year, and, to use the technical phrase, was not well ripened—was little more than pith and bark. Such was not fitted to produce either shoots or flowers in good condition, and therefore it was cut in closely at the lower letter *c*. The best shoots having in this instance arisen from the base of the head, we do this to decided advantage. We follow on this system through subsequent seasons, continuing to thin and shorten the shoots, the tree, if properly managed, increasing in size for several years.

Fig. 16 is a fair illustration of a full-grown tree to which long pruning has been applied.

Fig. 17.—CLOSE PRUNING, Stage 1.

Fig. 18.—CLOSE PRUNING, Stage 2.

2. CLOSE PRUNING.—We have been speaking of pruning hitherto in its application to the most vigorous growing Roses; let us now turn to another class, and consider pruning as applied to the small kinds. Such are the *small* and *moderate-growing* Hybrid Perpetual, Chinese, Tea-scented, French, Bourbon, &c., which make compact and neat but rather formal heads.

Fig. 17 represents a young plant of this description. Here we have a crowded head the first year; the shoots generally are of less length than in our former specimen, but more numerous. We proceed to thin as before, but sometimes less severely. The shoots may stand closer to each other here, because those they give birth to will be less robust and produce smaller foliage. The shoots shown by the

single lines *are not in this instance all removed because disadvantageously situated!* some are thin, weakly, and indifferently ripened, wholly unfitted to remain. If such exist *in a favourable position*, it must be an extreme case to justify us in leaving them. Rather would we go a little out of the way to secure a good sound hard shoot, as such offers a better chance of perfecting our plan. Be it observed, the shoots left after thinning are shortened in closer here than in Fig. 14. This tree looks a complete stump, and, as a Summer Rose, will probably not bloom the first year. But supposing it to be an Autumnal, *it will then assuredly bloom the first Autumn*, and most probably during summer.

Fig. 18 represents a tree two years older, as it appears after being pruned. Here, as in long pruning, we see the addition of branches has been great, and we thin out

Fig. 19—CLOSE PRUNING, Complete.

in autumn the shoots shown by the single lines, and shorten the others in spring as before. This we do on the supposition that it is an excitable kind; if not so, we complete the operation at once by shortening in Autumn.

Fig. 19 shows a full-grown plant to which close pruning has been applied.

Most persons prefer plants budded in two places; we have therefore given examples of such. For my own part I like a plant with a single bud best. It is enough for every purpose, and the head is more easily fashioned. Fig. 17 is an example of such; Figs. 14 and 18 have each two buds, and to know how to prune a plant properly with two buds renders the dealing with a single bud (Fig. 17) extremely simple.

It would seem well to mention here that a modification of long and close pruning, which we call moderate pruning, is necessary for certain varieties. Practice alone can inform us correctly which they are; and we give the result of our practice with

some varieties in the Second Division of this work.* But it should be remembered that the plan of pruning must be regulated in some measure by the object sought. We have been treating of it with the view of forming handsome plants and producing flowers in the greatest degree of beauty. But where the object is merely to enrich and ornament the garden by a great display; where the aim is to have a mass of bloom, and the individual size and form of the flowers are of secondary consideration, a less rigorous system should be adopted. Prune, *then*, only just so much as seems necessary to keep the trees in health and shape.

But there are particular forms which Roses are capable of taking, and these are in a great measure brought about by pruning and training. Such are Pillar, Pyramid, and Weeping Roses.

PILLAR OR POLE ROSES.—Most kinds may be formed into pillars, short or tall; but the kinds usually understood by this term are such as will grow *at least* to the height of six feet. There are many beautiful Roses which will do this; and some kinds, when established, grow as if there would be no end to them.

It is in this instance thought unnecessary to show the plant in its first year's growth.

Fig. 20 is a representation of a young plant possessed of five shoots. It had three only last year, and these were cut off nearly level with the ground soon after it was planted, to induce a vigorous growth. We now cut out the three shoots shown by thin lines, and shorten the others to about one-half their natural length. After pruning, the branches should lie at full length on the ground, and be fastened down with some little pegs to keep the wind from blowing them about. Owing to their recumbent position, the buds will break regularly their whole length, and by the end of April they may be tied up to the pole, either in an erect position, or made to entwine around it as shown in our drawing. We have introduced the poles here from the first stage, but this is a matter of indifference: a good stake will answer every purpose for the first two years.

In Fig. 21 we see the same plant as it appears the following year, before it is pruned. It has grown well, and there is the prospect of a complete Rose pillar being speedily formed.

We commence pruning at the bottom of the pillar by thinning out the over vigorous unripened shoots formed there. Two are cut off within a foot of the ground, and left to fill the base. This must be our first aim; for it is easy at any time *to extend the growth* and thus increase its height. We ascend the pillar, thinning as we proceed, till we reach the top. Here we select one or two of the strongest and best-placed shoots, *g h*, to continue the ascent, and tie them up. From their position an

* The terms "robust," "vigorous," "moderate," and "dwarf," attached to the varieties in the descriptive part of this work will be found generally a correct guide in pruning.

abundant flow of the sap furnishes them with means of free growth, and favours the rise of the plant. The small lateral or side shoots are now cut back to three or four eyes. If in any spot, as at *i*, the pillar is thin, we cut a shoot back to one or two eyes, and thus get a strong shoot or two, by which we fill the vacuity the next season. We do not reckon much on flowers the second year if desirous of perfecting the pillars quickly; but the third Spring after planting we find them of considerable height, and in every condition to produce an abundant bloom. Another year, and they blaze forth in full magnificence.

Fig. 20.—PILLAR OR POLE ROSE, Stage 1.

Fig. 21.—PILLAR OR POLE ROSE, Stage 2.

We continue to follow this method of procedure from time to time, tying up the leading shoots till the pillar is covered the desired height, which perhaps should *not exceed* twelve feet. The lateral shoots of short growth with well-ripened wood are those which produce flowers with the greatest certainty: they may be shortened in, to four or six eyes.

Pillar Roses send up almost invariably strong shoots from the base of the plant during Summer and Autumn. These, if not wanted, may be cut out as soon as discovered: but it is well to leave one or two, as they may often be made use of to keep the pillar in a vigorous state when perfected, or to renovate it when decaying; *by keeping up a constant supply of young shoots the old hide-bound stems may be removed as they exhibit symptoms of debility, without marring the beauty or deteriorating*

from the effect of the pillar. The branches of Pillar Roses in general do not maintain their vigour for many years, which is probably owing to the little pruning they undergo; and these strong shoots arising from their base offer the means of their perfect restoration.

It is more difficult to prune a Pillar Rose than any other form; it requires closer attention, and thoroughly tests the skill and judgment of the operator. A pillar when properly managed, and of full size, should be well and regularly clothed with branches, and in the flowering season with flowers from the summit to the base.

Fig. 22.—PILLAR or POLE ROSE, Complete.

When the tree is once formed, masses of flower being the object sought, and not individual size, it is necessary to guard the unpractised hand against over-pruning; it is on this side that he is most likely to err here.

Every year, immediately after pruning, it is well to look to the poles, to see that they are in sound condition; and at the same time tie the Roses afresh with small willows, tar-twine, or twisted bast. The plants should also be manured annually.

The above Fig. 22 represents a Pillar Rose of full size just pruned. Its main branches have not been twined round the pole as in the previous illustrations, but that practice is a good one, for it favours a moderate and regular growth.

It must be observed here that Pyramid Roses are not exactly the same as Pillar

or Climbing Roses, although some varieties may be trained to assume any one of the three forms. But while there is a host of varieties that may be easily fashioned into Pillar and Climbing Roses, there are very few that are easily formed into Pyramids. For the latter purpose *Madame Plantier* (white), *Paul Perras* (rose colour), and *Magna Charta* (red), are three of the best. Fig. 23 represents a full grown Pyramid

Fig. 23.—PYRAMID ROSE, Complete.

newly pruned for masses of flowers. If quality of flower is preferred to quantity one-fourth of these shoots may be removed. From the earliest stages of the plant up to the present the lower shoots have been left long when pruning to secure a wide base, and the upper shoots have been kept bent down after pruning as nearly as possible into a horizontal position till such time as the lower ones have pushed into leaf. The encouragement thus given to the lower shoots preserves the symmetry of the plant. The training and pruning, with this exception, is the same as for Pillar Roses.

I would say a few words here in reference to Climbing Roses, which are considered by many as identical with Pillar Roses. I wish we could make a distinction that would be generally acknowledged. By Pillar Roses we would understand the erect-growing vigorous kinds; by Climbing Roses, those of twining and pendulous growth, which usually produce *longer* shoots than the former. The latter do not make the best Pillar Roses, nor do the former make the best Climbers, though each is often planted to fill the place of the other.

Climbing Roses are usually required for covering walls, fences, arbours, rustic arches, and the like. The first object sought is to cover well and quickly a given space. To effect this, pruning and training are directed. The system of pruning is but a slight modification of that described for Pillar Roses. Climbing Roses require,

Fig. 24.—WEEPING ROSE, Stage 1.

perhaps, rather less of it. The first season that they are placed in the situation they are intended to occupy, each shoot should be shortened back to two or three eyes. The result will be a few vigorous shoots, sometimes extending to an extraordinary length, which will depend much on the season, the situation, soil, and attention paid to them; also on the habit of the variety. Thus the plant becomes established. With regard to covering the space, remember, close pruning will produce a few vigorous shoots: long pruning a greater number of less vigour. Which are wanted? However the case may be, prune accordingly. When a Climbing Rose is full grown close pruning is not advisable, for the object here, as in Pillar Roses, is masses of bloom.

WEEPING ROSES.—Weeping Roses are the kinds of vigorous and pendulous growth worked on stems of five feet or upwards.

Fig. 24 gives a fair specimen of one of these the first year after budding. As with Pillar and Climbing, so with Weeping Roses, the shoots may be cut in closely the first time of pruning, to induce a vigorous growth, or we may cut out at the base the shoots shown by the single lines, and shorten the others to the dark shadowing. Hence, new shoots push vigorously, and the habit of the variety being pendulous, the shoots soon reach the ground.

Fig. 25 shows the growth of a tree the second year after it has been pruned with the view of forming a Weeping Rose. We continue the operation. We here find it advisable to shorten closer *a a*, shoots which have shown a tendency to rise. In the next place, we cut out the shoots shown by the single lines, and shorten the others a few inches only. From their drooping position the flow of the sap is equalised, and

Fig. 25.—WEEPING ROSE, Stage 2.

the eyes will break regularly nearly their whole length. Flowers will occasionally be produced from them, and the following year these short bloom-bearing branches may be spurred; that is, pruned to about two eyes. Henceforth there is but little difficulty in bringing the tree to perfection: the main shoots should not be shortened till they reach the ground; prune the lateral shoots only; when flowers will be produced all along the branches from the head of the tree to the ground, forming a beautiful half-globe one mass of flower.

About the second or third year it is well to attach a hoop to the heads of the Weeping Rose, as shown in Fig. 26, to keep the branches free from injury by the action of the wind, and to assist in arranging them properly. I have sometimes seen wire-work, in the form of an umbrella, placed under the head of a tree intended to be trained as a Weeper. The shoots are drawn through this and tied down, and thus a

drooping form is given to the tree. Sometimes, also, the shoots are tied in to the stem with bast or tar-twine, or fastened down to pegs driven into the ground.

Fig. 26 shows a Weeping Rose of full size, pruned and trained.

TRAILING ROSES.—In many gardens there are banks and odd corners where trailing roses may be effectively planted, and the Wichuraiana are most effective for this purpose. They, however, require very little pruning, merely the removal of any over rampant or superabundant branches.

After a Rose tree, of whatever form or kind, is put into the desired shape, supposing it to be healthy and vigorous, we prune so as to increase its size every successive year. This *must be done* with the vigorous growing kinds, or they are over-pruned. It should be done with the moderate growers; for, as the roots extend their growth

Fig. 26.—WEEPING ROSE, Complete.

and the stem increases in size the plant is capable of supporting a larger head and perfecting a greater quantity of flowers. This increase of size must be accomplished by thinning. Thin out well then, *leaving shoots at the farthest limit of the plant that you can, to allow of its being well furnished from base to summit.*

In pruning Roses that have attained to some age, it may be necessary to remove an old branch or two occasionally to keep the head from becoming straggling or misshapen. As soon as any branch shows symptoms of decline it should be cut out. The saw will be found useful here, as well as in removing small shoots which from their position it may be difficult to reach with the pruning-knife; also for cutting away dead branches, which should never be done with the knife, because it takes away the edge. In all cases where the saw is used for cutting live wood the cut should be made nearly close and afterwards pared down with the pruning-knife.

A few remarks on old plants which have been neglected in the early stages or

growth may not be misplaced here. Such are often met with. Usually the fault has been the fear of pruning too much; the branches have consequently become straggling and the tree unsightly. To deal with these the best plan is to cut back some of the branches almost close to the base of the head, either main branches or yearling shoots, one here and there in different places. These will produce shoots near home, and by pruning such close the following year and removing some of the older shoots the head is brought into a more compact form.

We have here a plant (Fig. 27), the form of which, we think, none will be bold enough to advocate. The flowers are produced just at the top of the branches, and numerous naked, weak, unsightly branches appear near the base of the head. We must remodel this tree, and in attempting this we first cut the main branches off

Fig. 27.—ATTEMPT TO RECOVER AN OLD PLANT THAT HAS SUFFERED FROM NEGLECT, OR TOO LITTLE PRUNING.

at *a a*. But, says the tyro, there are no buds left visible on the stumps. True; but the practised hand knows well that they exist there although not visible. It is our business to develop them. If we shorten in the surrounding branches tolerably close, leaving only that part of the tree which is shown by the dark shading, we shall succeed in doing this; the eyes, too, will most likely shoot forth with uncommon vigour. We view this as we should a young tree; our first aim is to form it aright. This we may often do in one year by the help of disbudding, without it two years will be required.

Trees that have become weakly are generally much improved by close pruning, so are those small-growing kinds which flower so constantly that it is rare to see a shoot not terminated with flowers at whatever season it may be developed. Of these we may give *Boule de Neige* and *Duke of Wellington* as examples, and be it remarked that a rich soil is found as indispensable a condition for their well-doing as close pruning.

Close pruning when applied to trees in a weakly condition has great renovating power. I recollect well, when pruning some Roses in pots, noticing a plant of Archduke Charles (Chinese) in a very bad state. It had produced such puny flowers that during the flowering season I more than once failed to identify it. The stock was hide-bound—*i.e.*, had ceased to swell—and the shoots were stunted and scrubby. The latter were all thinned out to three, two of which were shortened into three eyes. The remaining one, which was the strongest, was shortened in to one eye. The plant was afterwards treated as the others. The single eye on the strong shoot was developed with surprising vigour, and in the ensuing Autumn I found the hide-bound bark was burst asunder by the swelling of the stock, and beneath a new bark was forming. The plant gradually improved and became as healthy as any in the collection.

To do justice to the Autumnal Roses, the Summer flowers should be cut off just after flowering, removing as few leaves as possible in the operation; or, if these flowers are for any reason not much valued, remove them just before flowering, by which the vigour and beauty of the later flowers will be increased.

The tender kinds, such as the Chinese and Tea-scented, are not unfrequently severely injured by frost. When this is the case, all the dead wood should be cut away; I have, under such circumstances, pruned level with the ground and obtained an abundant flowering. Necessity, however, urged this, rather than prudence. A too vigorous growth not unfrequently arises from it, followed by its evil consequences of late flowering only, unripened wood, and great susceptibility of frost.

There are some Roses which, although at times very beautiful, do not in general expand their flowers. From some cause, which has been said to be too great a degree of fulness, the buds remain sealed at the top till they drop from decay. Examples of such are *La Reine*, *Pierre Notting*, and *Monplaisir*. In France many of this nature take rank among the finest of Roses; they are also excellent with us when grown in the forcing house. Too much moisture combined with cold favours this tendency, and thus the seasons have a great influence over these kinds. But another favouring circumstance is too great a degree of vigour in the plant. The first causes are evident. Let us illustrate the last. In the Spring of 1844 a few plants of the *Duchesse de Nemours* (Hybrid Perpetual) were neglected; the soil in which they grew was neither manured nor forked; the plants were not pruned, the variety being counted worthless. They grew, but their vigour was greatly diminished; and what were the consequences? The flowers were produced in surprising beauty, the novelty and richness of the colour attracting everyone's attention, and all who beheld admired them. But mark: a plant that had been treated well, in common with other Roses, dropped every bud before expanding.

Pruning, in the light in which we have hitherto considered it, may be said to consist of thinning and shortening; but it has long appeared to me that thinning might

be in part done away with by practising disbudding, *i.e.*, rubbing or cutting out some of the buds when swelling in spring. The Rose when in robust health throws forth a great number of shoots during the season of growth, and the merciless havoc that is made with them in the pruning season must, by the waste it creates, and by the wounding of the plant, prove highly injurious. True, it is necessary some should be removed when such numbers are there ; but why are so many suffered to grow ? It is questionable whether the theory of branches and leaves elaborating the crude sap, and thereby fitting for assimilation a greater quantity of food, is in favour of their development. A few vigorous branches with healthy well-developed leaves must, I think, better accomplish this end than a great number crowded together, the leaves becoming puny and sickly through the exclusion of air and light. Now, by rubbing out a portion of the buds when swelling, and others at any season when they may sprout forth in a position where shoots are not wanted, the remaining buds form stronger shoots ; and thus, perhaps, a larger—certainly a healthier—surface of foliage is the result. Further, if the nutritive matter which has been supplied in the development and sustenance of numerous branches is confined to a lesser number these will be more powerfully developed, and the loss by removal and the injury the tree suffers by thinning will be avoided. *I believe disbudding to be the system best calculated to produce flowers in the finest possible condition, to keep a plant in full health and vigour, and to bring it to the highest pitch of beauty.* It has been successfully applied in the cultivation of other trees, and why should it not answer when applied to Roses. But it does answer, and, as one fact is said to be of more weight than a load of argument, I will relate an experiment commenced in the spring of 1844. I marked at that season from 50 to 100 Dwarf plants, which were budded in the previous Summer ; consequently they were what is termed in bud. My object was to test the efficiency of disbudding. They were intended to be grown in pots for exhibition, and each plant possessed two sound healthy buds formed closely together. Two buds were in this instance preferred, because the aim was to get large plants in a short space of time. So soon as these buds had shot forth about six inches they were stopped, and in due course of time, two, three, or four laterals were produced from each. These were drawn out to sticks stuck in the ground a good distance apart, that the shoots might receive the full advantage of the sun and air. The surface of the soil was once or twice loosened with a Vernon hoe. The Summer Roses, as was expected, did not flower ; but the Autumnals showed their first flower-buds about June. Eyes continued to push forth both from the laterals and the base of the first shoots during the whole of summer. Now was the time to form the plants. Wherever an eye was seen to break in a position where thought superfluous or ill-placed, it was at once rubbed out, and the eyes bursting late in summer were invariably served the same. By October I had the satisfaction of seeing plants with from six to ten well-balanced shoots, vigorous, yet well matured. The leaves were larger, and retained on the plants

longer than on others of the same kinds ; the flowers were pronounced by competent judges to be superior to any of the same kinds they had previously seen. In October the plants were taken up and potted. When pruning, I found very little work for the knife. The shoots were so adjusted that I had, with few exceptions, only to shorten them ; thinning out, in which consists so much of the mutilation above complained of, was unnecessary. In the following summer they made nice round plants some producing from six to twelve excellent flowers, and such were actually shown at the Metropolitan exhibitions the first year. It is no exaggeration to say that they were superior to others a year older which had been treated in the ordinary way. In disbudding especially, it is advisable to commence upon a plant when quite young. It may be made to assume the same form as recommended in general pruning, or any other the cultivator may desire. When a plant is first purchased it may be necessary to practice thinning ; but after this time the same end may be accomplished by the better means.

*When disbudding, it is evident that the more vigorous in habit a plant is, other things being equal, the greater space must be left clear from bud to bud, to allow the vigorous shoots room for development.**

This, we say, is evident, and the converse is no less so ; but, be it remarked, with regard to the small-growers, that they often produce buds so thickly on the shoot that it is necessary to remove a greater number in a given length than from the strong-growers.

We will exemplify this by the aid of the following engravings. Fig. 28 was sketched from a plant of Coupe d'Hébé (Hybrid Bourbon) ; Fig. 29 from a plant of Persian Yellow (Austrian).

These are both young plants, and we commence by thinning and shortening, as previously explained, which is shown by the thin and thick lines, as before.

The habit of the Coupe d'Hébé (Fig. 28) is erect, its growth vigorous, and the buds are formed at long intervals. The habit of the Persian Yellow (Fig. 29) is branching, its growth vigorous, and it is remarkable for the proximity of the buds to each other. I have now before me a shoot of the Persian Yellow, about a foot long on which there are twenty buds ; whereas one of Coupe d'Hébé, of the same length has only six buds. But the Persian Yellow does not develop its branches so strongly as the latter, and the foliage is not so large ; therefore the buds may be allowed to remain closer together. On the Persian Yellow I rub out two or sometimes three buds together, as shown by the open buds in Fig. 29, and leave one, as shown by the

* In the Nurseries, where Roses are cultivated not by hundreds but by hundreds of thousands, it would not pay at present prices to apply disbudding, on account of the great additional labour it would impose. In the general system of pruning we have to look through our plants once only during the year ; in disbudding they will require looking through several times. This is the only objection I can see to the general adoption of the practice. Surely to the amateur it is none. It should be remembered that although scarcely any plant will flourish under so little care and attention as the Rose, yet assuredly none will repay more bountifully whatever may be bestowed on it.

shaded buds. On the *Coupe d'Hébé* (Fig. 28) every other bud is removed. By the accompanying illustrations it will be seen that we remove seven or eight buds from a branch of the Persian Yellow of equal length with one of the *Coupe d'Hébé*, from which we remove two or three buds only. But disbudding is not the work of spring only; it must be attended to all through the growing season. The plants should be looked through at least twice before the time of flowering, and again soon after the flowering is over. The remains of the flowers should be cut off, unless seed is sought and only so many eyes be allowed to develop in the second or summer's growth as the state of the tree and the considerations before mentioned may render advisable.

In rubbing out the buds it is sometimes difficult to decide which to remove. The tendency of a bud should be almost invariably outwards; and in buds, as in shoots,

Fig. 28.—DISBUDDING.—*Coupe d'Hébé*.

Fig. 29.—DISBUDDING.—*Persian Yellow*.

the greater distance, in moderation, they are from each other the better. Should two buds threaten when developed to cross or crowd each other, the one taking the least favourable course of growth should be removed.

I have often heard amateurs, when admiring some of the large specimens in the Nurseries here, express astonishment at their prodigious size, which they attribute to great age and good soil. But it must be told that the system of pruning has as much to do in this matter as the age of the trees or the soil in which they grow. The oldest of the large trees here cannot number more than forty years, though there are others much older not half the size. Often have I seen old Rose trees full of shoots, nearly all proceeding from the base of the head, owing principally to injudicious pruning. When the knife is applied, whether in autumn or in spring, the greater part of these must be removed, for there is not room enough for the whole to be

developed. There are, perhaps, not more shoots than the tree can advantageously carry, but they are badly placed. Why should they not have been obtained in such positions as to be of permanent benefit to the tree—be made to extend its size, and render less thinning necessary? This may be done.

A few years ago, after having pruned a number of *large specimens* in which I had observed this error, I watched for the bursting of the buds, with the view of practising disbudding. When they had shot forth about half an inch I took a knife with a sharp point and commenced my search at the heart of the tree. From here I cut off, close to the bark, a great number of buds, leaving only such as, from their position, promised to increase the size or improve the *contour* of the head. If a bud was pushing where there was a gap, such was left; the others were thinned, leaving those which took a lateral and outward course of growth. Proceeding upwards I cleared the centre of the tree pretty freely, leaving only just so many buds as seemed necessary to preserve it from becoming straggling. Towards the top and circumference, also, the buds where crowded or likely to cross each other were removed. A month after the first looking over fresh buds had broken, and thus was opened a prospect of more gaps being filled, the outlines of the head being still improved and the size extended. Several trees were thus treated and they were looked over again and again, and the same plan followed out. The growth was in consequence more vigorous than that of the previous year, and the flowers finer. On the fall of the leaf in Autumn the succeeding course of action was apparent. The trees were pruned as usual, and there was little mind exercised in the operation—little thinning required—no necessity to look at the tree for some minutes before one could determine where to begin, which, in my early attempts, I must confess I have often done, owing to the interminable interlacings of the shoots. The second and third year the same plan was followed; and the trees are now of handsome form, large and healthy, producing an abundance of good flowers. It should be stated that the first year they were taken in hand they were watered once a week for two months with liquid manure. The sole reason for this was that the soil in which they grew had become impoverished.

We apply the plan of disbudding to Pillar, Pyramid, and Weeping Roses; as to others, by rubbing out any buds that may appear disadvantageously situated. In the youngest stage of the tree the buds left to produce flowers and flowering shoots for the subsequent year should stand from four to six inches apart on the main branches; intermediate buds should be rubbed out. The laterals produced in after stages may also be disbudded; but masses of flower being the object sought here, the practice should not be too freely resorted to.

A few words on Summer Pruning, or Thinning, seem called for before closing this chapter. If disbudding can be carried out there is no need of Summer Thinning; but if it cannot, then the latter practice may be followed to advantage. So soon as the plants have done flowering look them carefully over, thinning out the weak unhealthy

shoots, and even some of the stout and healthy ones where they approach each other too nearly; each shoot left should stand free and exposed on every side. It is surprising to see how stout and firm the shoots become, and how the leaves increase in size after summer thinning.

The Summer kinds submitted to this treatment *usually* continue their growth by the elongation of the main shoots, the buds in the axils of the leaves remaining dormant; but with the Autumnals the buds push forth the entire length of the shoots, and the second flowering is complete. The trees are improved in both cases, and the shoots of Autumnals grown at this period of the year if well ripened will produce an abundance of perfect flowers in the subsequent season.

CHAPTER VIII.

On Hybridizing.

GARDENING, especially that branch of it termed Floriculture, is acknowledged to be replete with interesting details ; and if one department is more fascinating than another it is perhaps that of Hybridizing and Cross-breeding with the view of raising Seedlings.

By Hybridizing is understood the bringing together of individuals of different species ; by Cross-breeding, individuals of the same species ; with the view of raising up new beings, differing from and superior to those already existing.

How different, how far less interesting to us, would be the forms which compose the Vegetable Kingdom had the Creator made them incapable of variation ! Not that we despise the wild flowers scattered over the earth's surface, decking mountain and meadow, met with in every hedge-row and valley : their beauty is cheerfully acknowledged. But Nature's plants are prone to improvement : by cultivation they increase in size ; the flowers assume new forms, new tints ; the fruits acquire new flavours.

“ The earth was made so various, that the mind
Of desultory man, studious of change
And pleased with novelty, might be indulged.”

And what a kind dispensation of Providence is this ! how it strengthens the inducements to labour ! What a charm it throws around the toilsome duties of a rural life, cheering on the labourer with higher prospects than those of mere pecuniary reward ! Compare the present breeds of corn with the wild forms of the cereal plants from which they are descended ; or the Pinks, Pansies, Dahlias, and Roses of our gardens with their types growing naturally in various countries ; and, while struck with the contrast, we wonder at the inexhaustible treasures of Nature and admire the improved races, we need not withhold from man his humble due, remembering that these alterations are not the work of Nature unaided and alone, but are in greater part owing to the untiring perseverance and assiduous care of the plant-cultivator.

The raising of seedling plants is indeed a delightful occupation. The work is varied ; there is such a wide field for speculation and experiment ; and the pleasing

state of expectancy in which the operator is kept as to the results of the turn he gives to the workings of Nature surrounds it with more than ordinary interest.

The improver of plants is, so to speak, moving continually amid ideal scenes; he works in an enchanted sphere; he is striving to raise up new forms, knowing what he wishes, what he works for, but not what he will obtain. The seeds ripen beneath his care, and he sows them; but as to the issue of events he remains in profound ignorance until by the flowering of his pets the magic wand of Nature dissolves the spell and realises or dissipates his hopes. And is it unworthy of the chief actor in these terrestrial scenes to employ his hours of relaxation in striving to diversify and increase the beauty of the natural objects scattered around him, thereby holding up to view the wonders of the Infinite, and administering to the necessities and enjoyments of his fellow-man? As a recreation, who can object to it? Its tendency is useful. It is harmless, healthful, and exhilarating, and calculated to soften down the asperities and ills of life. There is philosophy in striving to vary and improve the simple Pansy, counted as a weed in our corn fields, as well as in turning the attention towards the amelioration of those more valuable plants which constitute the food and raiment of man.

But it is with the Rose we have to deal at present, and let us turn immediately to the subject.

The improvement of this flower by cultivation has been wrought out chiefly by foreign growers. But why seedling Roses should not be raised in England is a question I could never yet determine. I know it has been said by some, "We do not understand the business;" by others, "Our soil is not suitable;" and, again, "The climate of England will not admit of the seed ripening perfectly." But these are seeming objections—mere obstacles of the imagination, the semblance of which is greater than the reality.* For if our soil is not naturally suitable we can render it artificially so; if we do not understand the business surely we can learn. We are not isolated from our fellow-labourers; we cannot be so satisfied with our own doings as to refuse to learn a lesson from them; or, even were it so, the great book of Nature is open to us all, in which "we may read, and read,

" And read again, and still find something new :
Something to please, and something to instruct."

To me the difference between the climates of England and France seems the only point worthy of consideration; and that difference, although great, is not of such magnitude as to raise an insuperable barrier against the successful prosecution of the art.

* This was written in 1848, since which time English Florists have done much to improve and vary the Rose by raising seedlings. Mr Bennett's recent acquisitions, notably Heinrich Schultheis, Grace Darling, Her Majesty, and Mrs John Laing, are in advance of any French improvements.

If we compare the climate of London with that of Paris, where some of our best modern Roses have been originated, it will be found that rain is less frequent in Paris during summer and autumn; there is also a greater intensity and duration of sunlight there, which increases the temperature of the atmosphere and soil, and thus accelerates the period of maturity.

The above is also true as regards the climate of Angers and the South of France, only in a still greater degree; and who would doubt those districts being eminently more favourable than Paris for the pursuit? No one. But suppose the Parisian growers had rested contented with these reflections, what position would the Rose now hold in the floral world? And if English cultivators had joined ardently in the pursuit, who can say to what pitch of beauty the Queen of Flowers might have attained?

What country ranks equal with England in the art of Gardening? yet how many are there more favourably circumstanced. This, it may be said, is partly due to the great liberality of its patrons, and to the admirable contrivance of its plant structures. But still the English cultivator has great disadvantages to contend with, especially in the maturation of seeds. His skill and perseverance, however, overcome them all, and obstacles surmounted encourage him to go on; he continues to battle with the elements, and his intellectual powers seem to brighten in the contest. He produces grapes superior to those brought from the Land of the Vine, and pine apples infinitely so to those of West Indian production. These are facts known to everyone, and will it yet be maintained that he cannot raise seedling Roses!*

But, it may be said, Hybridizing and Cross-breeding are not the work of the gardener. It requires an uninterrupted course of study to enable anyone to carry them out with success; and his multifarious duties render it next to impossible that he should pursue these. There is much truth in this assertion, and the nurseryman may certainly put forward a similar plea. The weight of the burden, then, would seem to rest with the amateur. And it has always appeared to me that his is the proper sphere for the raising of seedlings, and that greater objects are accomplished in this line when pursued as a recreation rather than as a profession. If the amateur has had less experience in gardening matters, this seems compensated for by a less divided attention and greater assiduity.

If the Tea-scented and Chinese be the kinds the operator prefers seeding from, it will be necessary to grow them under glass to flower in April or May, as they are longer in bringing their seeds to maturity than most other kinds. The majority of

* So was it said, not many years ago, that Standard Roses could not be grown in England—that the climate of France was essential for their development. Thus prejudice for a time triumphed over reason, and they were imported from that country for years. And the reason why so few seedling Roses have been originated in England is doubtless this—nurserymen have found sufficient occupation in multiplying the kinds put into their hands; amateurs in admiring and attending to the varied wants of their favourites.

seed-bearers, however, need no such protection, although it must be considered to forward rather than retard our aims.*

It is now many years since I first took up this branch of culture; I have reaped some reward, and am still sanguine of greater success. I started a tyro with little knowledge in store, and had to pay for learning by the way. The first and second years of my practice I gathered the seeds promiscuously during winter, seizing every pod that appeared large and plump, whether ripe or green. The production of these sowings was a motley group, among them some good double Roses, and many very brilliant-coloured single and semi-double ones; but nothing worth bringing before the public—no star of the first magnitude.

The subsequent year I took one step farther and kept the seeds of each group separate, to ascertain to what extent the offspring departed from the parent in external characters. This was done for two years, and enough of the plants raised from these flowered to afford a little insight into the probable results.

According to the statements of M. Boitard, there is scarcely any limit to the variation of Roses produced from seed. He affirms that M. Noisette, a French cultivator, has never sown seeds of the Chinese Roses (*R. INDICA*) without raising some Scotch Roses (*R. SPINOSISSIMA*) from them. He states—"This fact is not supported by a solitary occurrence, but has been frequently observed by that cultivator, and is further attested by the evidence of M. Laffay, who has raised seedlings on an extensive scale, often as many as 200,000 in a single year."

It were easy to conceive a mistake occurring in the gathering, storing, or sowing of the seeds; but when the facts have been noticed repeatedly, and by different individuals of known probity and great horticultural attainments, the evidence, we think, must be deemed conclusive.

Thousands of seedlings have been raised here, and I have been searching them through to see if anything corroborative of the above statement can be brought forward. I find the variation of character greater than I had expected, and many of the seedling plants approach nearer to the wild forms than to those from which the seeds were gathered. The offspring of all kinds does not vary in the same degree. The plants raised from seeds of the Chinese and Tea-scented are generally Chinese or Tea-scented; but twice from separate sowings have I found among them a single plant resembling in every particular of leaf and growth the Dog-rose, but which unfortunately has in both cases been destroyed by my workmen before flowering. Seedlings from the Bourbons seem to be Bourbons, Hybrid Bourbons, and Hybrid

* Since penning these remarks, I have raised from one sowing Moss Princess Alice and Hybrid Bourbon Vivid, both superior varieties in their day. From another sowing I also raised Beauty of Waltham and Duke of Edinburgh, in every respect first-class Roses, Princess of Wales, Red Rover, Lord Clyde, and many other sorts useful for garden decoration. My most recent efforts have produced Crown Prince, Duke of Albany, Ella Gordon, Florence Paul, Lord Bacon, Magna Charta, and several other promising varieties which are looked forward to by many with great interest.

Chinese ; and while the French Roses (*R. GALLICA*) appear true to their kind, the Hybrid Perpetuals have given birth to Hybrid Chinese and Hybrids of other Summer Roses, very few having proved Autumnal bloomers.

Since observing and penning the above I have met with a remark of M. Desprez, the celebrated Rose amateur at Yebles,* that he has sown thousands of seeds of Du Roi (Crimson Perpetual), and never obtained a Perpetual Rose. In all the characters of *Rosa Gallica* were visible. But we must remember this variety partakes largely of the nature of the *Gallica* or French Rose.

In examining my seedlings I found a seedling of the Moss du Luxembourg had produced a French Rose (*R. GALLICA*) ; a seed of William Jesse (Hybrid Perpetual) a blush Hybrid Chinese ; a seed of Mrs Bosanquet (Chinese), a pink Chinese, resembling its parent in every respect save colour ; Chénédolé (Hybrid Chinese) had produced a brilliant-coloured Hybrid Perpetual, and a numerous progeny of Great Western retained exactly the foliage and habit of that variety. Tea Goubault crossed with Bourbon Souchet produced two Summer Roses, the one having the characters of the Hybrid Chinese, the other those of the Hybrid Bourbon.

My friend M. Laffay once told me that he raised many of his splendid Hybrid Perpetual Roses from Athelin and Celine (Hybrid Bourbons), crossing them with the free-flowering varieties of Damask Perpetual and Bourbon. A few years since he took up a new idea—that of obtaining Hybrid Moss and Perpetual Moss Roses by crossing the Moss with the Hybrid Bourbon and Damask Perpetual. He has since raised several seedlings, some Perpetual Moss and some Hybrid Moss, the latter possessing the foliage and vigour of the Hybrid Bourbon Roses. The Princess Adelaide (Moss) was obtained in this manner. On the success of these and the like unions some of the French raisers are very sanguine, and say, much as they have done with Roses, they anticipate doing far more, and raising up such hybridisations and novelties as shall astonish the floral world. As they have already done so much, their intentions and prophecies deserve our respect. But why should France labour alone in this field ? why should she have all the fame, reap all the profit ? Cannot we assist her ? Time is short. Some of the French growers are already past the meridian of life, and the raising of seedling Roses is a tedious operation.

If the Hybrid Bourbon crossed with the Moss produce perfect seeds, we may presume that the intermixing of the pollen grains of other species will be productive of like results. This, it will be seen, demolishes the idea of the necessity of restricting ourselves to the crossing of individuals of the same group. Not only may we choose the parents from different groups but from different species. Where, indeed, is the

* M. Desprez was one of the earliest and most successful Rose amateurs in France. He raised many beautiful Bourbon and Perpetual Roses some sixty or more years ago. Noisette Desprez, Madame Desprez, and Baronne Prevost were raised by him. He died in 1848, and in his last moments asked for one of his established seedlings that he might look upon it once again.

line of demarcation? There appears no limit to the field of labour. We have to learn by actual experiment what can and what cannot be done.

It should be known, in choosing varieties for this purpose, that the least double kinds do not always perfect their seeds best. Such, upon less mature consideration, might appear to be the case and has been asserted to be so, which error must have arisen from the want of close observation. It does not depend so much on the degree of fulness in a Rose as upon some other cause to me altogether inexplicable, and not to be interpreted even by the acknowledged laws of the effects of hybridization, for some Hybrids seed freely whereas others are sterile, although of the same origin and apparently similarly constituted. That the power of producing perfect seeds does not depend on the degree of fulness may be established by the fact that Pourpre Fafait, a mongrel-bred Bourbon Rose, and others, too full to open their flowers at all times, ripen their seeds, although very many semi-double varieties rarely form a seed-pod. That it does not depend on their being Hybrids may be inferred from the fact that many of the Hybrid Chinese Roses, which are decided Hybrids, seed freely.

I have by the aid of the microscope examined numerous flowers with the view of solving this difficulty. I have arrived at certain conclusions which may be considered sufficient for practical purposes, or, what will prove still more important, may induce others interested in the matter to push on the inquiry.

The flowers were divided into three classes. The first class examined was that which showed no disposition to seed, where the seed-vessels did not increase in size after the falling of the petals. In this case I found the pistils huddled together, if I may so express myself, and apparently sterile; or, if not so, petals usurped the place of the pistils and stamens, extending into the ovaria or seed-vessels. It was evident, then, that such *could not* seed.

In examining the next class, where there was a disposition to seed, where the seed-vessels increased in size after the falling of the flowers but withered before arriving at maturity, I found the pistils placed separately, and they appeared perfect and healthy, but the stamens were either so few or so encased within the petals that the pollen could not escape, and thus the flowers remained unfertilised. In some cases the flowers were pendent, owing to which position and the relative length of the pistils and stamens, the latter rising above the former, the pollen fell away from rather than upon the pistils. In other cases, where the flowers stood erect, the pistils often rose above the stamens, when the same consequences were likely to ensue. Flowers of this kind will occasionally produce a pod of perfect seeds, which may be attributed to accidental fertilisation, the conveying of the pollen by the insect tribe, or other causes.

The next class taken in hand was that which ripened its seeds freely.

The flowers here were found to have both stamens and pistils perfectly developed, the former abounding in pollen, which, in a more advanced stage of the flower, was

seen plentifully scattered over the stigmas, whose cup-shaped summits were distinctly visible.

From these facts I draw the following conclusions :—1st. That certain varieties are sterile, incapable of forming perfect seed under any circumstances. Of these I find such kinds predominate as roll the petals inward, the centre of the flower being quartered in the manner of a crown. In others the pistils are weak or imperfect.

2nd. That many kinds, where the pistils are perfect, which in their natural state form seed-pods that wither before arriving at maturity may be induced to perfect their seeds by artificial impregnation. This class of Roses is the best for him who intends raising seedlings to choose his female parents from, because there is little here to interfere with, mar, or counteract his plans. Be it remarked, however, that there are certain kinds which the raiser of seedlings must not confound with the above—

Fig. 30.—PLAN OF SEED PLOT.

kinds which, owing to the length of time the seed-vessels are in arriving at maturity, never ripen their seeds in this country.

3rd. That those kinds which we find seeding abundantly in their natural state are self-fertilised, and that their abundant production of seeds is due to this point mainly, the more perfect development of the sexual organs, especially the polleniferous parts of fructification.

Without special reference to the distinctions above shown, I shall now offer the names of a few kinds collected from observation which ripen their seeds perfectly in this country in ordinary seasons :—*Hybrid Perpetuals*, Alfred Colomb, Alphonse Soupert, Antoine Ducher, Baron de Bonstetten, Beauty of Waltham, Crown Prince, Charles Lefebvre, Dr Andry, Duke of Edinburgh, Dupuy Jamain, Fisher Holmes, General Jacqueminot, Glory of Waltham, Heinrich Schultheis, Jean Cherpin, Jules Margottin, Madame Charles Wood, Madame Gabriel Luizet, Madame Victor Verdier, Mdlle. Annie Wood, Marie Baumann, Pierre Notting, Prince Camille de Rohan, Victor Verdier. *Hybrid Chinese*, Chenédolé. *Hybrid Bourbon*, Coupe d'Hébé. *Moss*, Baronne de Wassenaer, Celina, Luxembourg. *Austrian Briar*, Harrisonii. *Ayrshire*, Splendens. *Scotch*, nearly all the varieties.

In addition to the above the following *Tea and Hybrid Tea-scented* may be named, but these should be grown under glass:—*Germaine Trochon*, *Madame Berard*, *Waltham Climber No. 1*, *Anna Olivier*, *Corallina*, *Madame Hoste*, *Madame Lambard*, *Papa Gontier*, *Safrano*, *Souvenir de Madame Sableyrolles*, *Alice Furon*, *Antoine Rivoire*, *Belle Siebrecht*, *Caroline Testout*, *Gruss an Teplitz*, *La Fraicheur*, *Lady Mary Fitzwilliam*, *Liberty*, *Madame Abel Chatenay*, *Madame Ravary*, *Marie Louise Poret*, *Souvenir de Madame Eugène Verdier*, *Marquise Litta*, *White Lady*.

These varieties are chosen because easy to deal with, and with them, or any portion of them, the operator may commence. He will see quickly the effects of his labour, and is thus encouraged to go on. He may then add the less certain and more

Fig. 31.—IDEAL ROSE, form globular.

desirable seed-bearers at subsequent periods, when he has acquired by practice more knowledge of the art.

It must be well known to those who have attempted to raise seedling Roses that with most varieties there is a difficulty in ripening the seed sufficiently out of doors to ensure germination, owing to our short summers and cloudy skies. Seed-bearers should therefore be planted in the sunniest spot in the garden, and every inducement should be offered to obtain an early development of flowers. My seed-plot (Fig. 30) is composed of 13 beds, edged with box, the walks of gravel. It faces and is open to the south, and is surrounded on the north and east sides with a lofty wall, and on the west with a hedge of *Maiden's Blush* Roses. The wall is covered with *Tea-scented* Roses. The plants are in flower a fortnight earlier than those in the open borders, and owing to this early flowering and the warm situation the autumn usually brings a fair crop of well-ripened seed.

Having chosen the varieties, if planted out of doors they should be planted in a rich soil. In pruning the branches should not be shortened in very closely. Long pruning is most suitable here.

But the planting season has passed away, and a glance at our seed-bearers satisfies us they will soon be in flower. It will be but fair to suppose that they have had more, rather than less, attention paid to them than plants in common, for they are more than usually interesting. The soil ought to have been hoed occasionally during Spring, and watered during dry weather. The caterpillar should have been closely sought for by hand, and the aphid got rid of by syringing repeatedly with soot-water or tobacco-water.

It is seldom that all the flower-buds can be developed to advantage, and as they increase in size it will be seen which had better be removed. Secure a good portion of the earliest and boldest buds, but not all of such; leave a few in different stages of

Fig. 32.—IDEAL ROSE, form cupped.

forwardness, that the work may be spread over a convenient extent of time. Wherever buds are seen forming imperfectly or in an unfavourable position—where they do not obtain the full sun—remove them at once.

Before we commence hybridizing, it is necessary that we should have fixed ideas of what we are going to do: we should have certain objects distinctly before us, and for the realisation of these objects we must work. Without this we cannot expect to obtain a full measure of success.*

As a first step towards the attainment of these ends let us consider what constitutes a good Rose, and fix the results of this inquiry firmly on the memory.

* I crossed one year more than a thousand flowers. The adjustment of parentage and manipulation kept me very fully occupied for a period of six weeks.

Those properties of the Rose to which we attach the greatest importance are—1, Habit and constitution; 2, Form of the flower; 3, Colour; 4, Freedom, constancy, and duration of flowering; 5, Scent.

1. Habit, &c.—The growth of a tree should be free, not dwindling or delicate. It may be considered immaterial whether it be pendulous, branching, or erect, as each growth is desirable for certain purposes. Handsome foliage is important, and should be kept in view under this head. The offspring of the tender Roses may also be rendered less susceptible of frost by intermixing them with the hardiest varieties of the same or kindred groups.

2. Form.—A Rose may be good whether globular, cupped, compact, or expanded. But of whichever form it may be, the petals should be thick and smooth, and the outline circular.

Fig. 33.—IDEAL ROSE, form compact.

Annexed are representations of four Roses which may be considered models of their respective forms, which are explained in Division II. Nearly all Roses may be brought under one or other of these forms; there are some few whose petals reflex in the full-blown and decaying stage of the flower, but we think the reflexed form undesirable for a *young* bloom. The types or models offered in the first edition of this work (1848) have been surpassed by the industry and skill of cultivators, and in the new models now submitted it will be seen that our Ideals have advanced.

The pointed bud where too prominent is in my judgment a departure from the highest lines of beauty, and has a narrow and mean appearance hardly desirable even for the sake of variety.

3. Colour.—This, of whatever shade or tint, should be clear and solid. The thick-petalled Roses usually present us with the richest tints, owing, I presume, to the greater body of colour: such are therefore desirable for this reason, as well as on account of holding their flowers perfect a longer time than others. Need we add the desirableness of varying the colours of the groups?

4. Freedom, constancy, and duration of flowering.—Some Roses are most profuse bloomers, presenting a splendid effect on the tree, but when viewed separately they are poor and flimsy. Others produce a less quantity of flowers at one time, but a regular succession, from which a good Rose may be gathered at almost any time in the season of flowering. Then the flowers of some are very transient, lasting but a

Fig. 34.—IDEAL ROSE, form expanded.

day, although others will retain their form and colour for a week. These properties are inherent, for all kinds are not influenced alike by the state of the weather.

5. Scent.—All Roses should be sweet; we cannot dissociate fragrance and the Rose.

“The Rose of brilliant hue, and perfumed breath,
Buds, blossoms, dies, and still is sweet in death.”

There are indeed few kinds altogether scentless, although the degree of fragrance varies remarkably.

The above, then, are a few broad principles, which, duly considered and acted upon, seem likely to lead to the further improvement of our flower. When hybridizing

we should seek to combine those kinds which possess the desired properties in the most eminent degree.

The question next arising is,—Do certain properties proceed more from the one parent than from the other? and if so, which and what are they? If we could ascertain this we might then work by rule. It is the opinion of some Vegetable Physiologists that the offspring assumes the foliage and habit of the male while the flowers are influenced more by the female parent. These may be the rules, but there are exceptions to them; and it would appear that there is nothing yet made known that can be taken as an absolute guide in the matter. But if in hybridizing the operator follow the dictates of his own reason, and closely watch the results of his labour, he will in all probability not absolutely fail, and be at length enabled to build up a theory of his own. This it is most desirable to do, but until he has done this he must be content to work by the light of others or grope his way in darkness.

That certain cultivators have acquired by practice sufficient knowledge in hybridizing to enable them to attain sometimes to a given object is my firm belief; and this is founded on the frequent appearance of the kind of plant, or an approach to it, that has been pronounced a *desideratum*. A case occurs to me which will serve to illustrate this remark. Within my memory we had no dark or very light Bourbon Roses. Nearly all were of a rose or lilac hue. But there was a cry raised for dark ones. Proserpine first arose, and her beauty captivated every beholder. Next came Paul Joseph, darker still, and still more beautiful. Then one raiser was fortunate enough to obtain several very dark varieties, and some pale coloured ones also appeared about the same time. Now, what inference can we draw from these facts, when we consider that similar varieties proceeded from different quarters, unless it be that the skill of the hybridizer was directed, and that successfully, towards originating them.

The dark Bourbon Roses of which we have just spoken are those introduced to England in 1843 under the names of Souchet, Charles Souchet, Dumont du Courset, Gloire de Paris, Princess Clémentine, Souvenir du Dumont D'Urville, and Comte de Rambuteau. These were all raised from seed by one individual. I remember visiting the establishment of M. Souchet, at Paris, where alone these Roses were to be seen, in the Summer of 1842; and although a violent thunderstorm had just passed over the city, producing the usual consequences to the denizens of the garden, I could see from the wreck that they were a splendid lot of Roses. There were at that time twelve varieties, the one a light-coloured one (Madame Souchet), but nine only were introduced to England. What became of the other three I could never learn. But other dark and light Bourbon Roses were also obtained by other raisers about the same time.

Now, with such an example as this before us, need we pause over the improbabilities of improving or extending the range of colour in any other class of Roses?

Surely not. Will not the same skill which produced dark and light Bourbon Roses prove adequate to any future reasonable demand?

But the plants are in flower, and we are now called upon to act. Keeping in mind the points recently advanced, let us next inquire—What is there desirable among Roses that we do not already possess? The answer to this question will be the things we should endeavour to obtain. But shall we be satisfied with merely crossing the varieties, and gathering and sowing the seeds indiscriminately; or do we wish to know the results of the turn we are seeking to give to the workings of Nature? I think this knowledge is desirable, and it certainly heightens the interest of the work. To carry it out with little trouble it is a good plan to obtain some thin sheet-lead, and cut it into strips an inch long and a quarter of an inch wide. On these may be stamped figures from one to an indefinite number, and as each flower is crossed, one of these numbered leads is wound round the flower-stalk. The number is then set down in a book, and the names of each parent, with the object in view, are entered opposite the number.

Here is an extract from my note-book :—

NUMBER.	OBJECT IN VIEW.	MALE PARENT OR FERTILISER.	FEMALE PARENT OR SEED BEARER
8	Dark Red Autumnal Climbing Roses.	Madame Berard.	Crown Prince.
13	Blush Hybrid Perpetual Roses.	Victor Verdier.	Maiden's Blush.
28	Crimson Moss Roses.	Luxembourg Moss.	Duke of Edinburgh.

No. 8. Before the Waltham Climbers appeared we had really no good red climbing Autumnal Roses, and we are still in want of darker varieties of such.

No. 13. Queen of Queens was the first Hybrid Perpetual with pink centre and blush edges in the way of the old Maiden's Blush, and there is still room for more varieties in this style.

No. 28. There is yet no really handsome globular-shaped crimson Moss Rose, for Luxembourg is weak and Laneii is dull and confused. A Duke of Edinburgh with a thick mossy envelope, would, we think, be deemed an acceptable flower.*

It may interest our readers to have an example of the results of individual crosses.

Baroness Rothschild crossed with Madame Falcot produced four seedlings as follows :—No 1, a single pink *Tea-scented* Rose with smooth wood and of dwarf habit. Nos. 2 and 3, single pink *Bourbon* Roses of climbing habit. No. 4, a semi-double *Tea-scented* Rose, flowers almost white, with a yellow tinge at the base of the

* Since this was written I have obtained the beautiful Moss Rose "Crimson Globe."

petals; the habit of this plant was erect, similar to that of the Baroness Rothschild, although the wood resembled that of a Tea-scented Rose.

President (Tea-scented) crossed with Antoine Rivoire produced a fine large Tea-scented pink Rose of good form.

Antoine Rivoire crossed with General Jacqueminot produced a large finely-shaped pink Hybrid Tea-scented.

Princess of Wales (Tea-scented) crossed with Robert Duncan (Hybrid Perpetual) produced a finely-shaped blush Hybrid Tea-scented.

Madame Hoste (Tea-scented) crossed with Caroline Testout (Hybrid Tea) produced a fine pink Hybrid Tea-scented.

Madame Jules Finger crossed with Caroline Testout produced a large nearly white Hybrid Tea-scented.

Caroline Testout crossed with White Lady produced a single white, with fine large petals, Hybrid Tea-scented.

Madame Cadeau Ramey crossed with Antoine Rivoire produced a beautiful free-flowering clear pink Hybrid Tea-scented.

Madame Jules Finger crossed with Caroline Testout produced a large, finely formed, rosy blush, growing and flowering very freely, a gem.

Marie Van Houtte crossed with Antoine Rivoire produced a large salmon-coloured flower, beautiful in bud, apparently free and hardy.

The Queen crossed with Belle Siebrecht produced a pink with blush edges, very free, and of fine habit, a gem.

The Queen crossed with Belle Siebrecht produced a blush, a handsome flower.

Princess Bonnie crossed with Enchantress produced a pure white handsome Tea.

Muriel Grahame crossed with General Jacqueminot produced a large globular handsome pink Hybrid Tea.

Madame Lambard crossed with Caroline Testout produced a handsome pink Hybrid Tea with fine large petals.

Marquise de Vivens crossed with Gloire de Margottin produced a fine large pink.

Madame Jules Finger crossed with Caroline Testout produced a very fine blush Hybrid Tea.

But we may proceed from individuals to classes. Two very desirable classes of Roses in prospect are Hybrid Moss and Perpetual Moss; but I look more to the hybridizing of the species for future variations of the Rose than to mere cross-breeding. The latter has already been pushed so far that fresh sources must be opened before any *very* wide variations can be hoped for. Thus it is, that while we view as doubtful certain things talked of, we hail with delight the prototypes of the Hybrid Moss and the Perpetual Moss, which already appear in the horizon. We have some; and what appears the most reasonable means to pursue to increase their number? The Hybrid Moss, it would seem, may be obtained by hybridizing the

Hybrid Chinese and Hybrid Bourbon with the Moss kinds, or *vice versâ*; the more double and mossy the parent Moss is the better, that the offspring may produce full flowers, and not lose the mossy characteristics.

The Perpetual Moss would appear easiest obtainable by hybridizing the Hybrid Perpetual with the varieties of Moss, or *vice versâ*, using the Perpetual Moss kinds already obtained, on either side, according to whether they produce seeds or pollen.

Of other Roses wanted may be instanced striped Hybrid Perpetuals, which may probably be obtained by bringing the most constant flowering varieties of that group in union with the Rosa Mundi, or any of the striped French Roses.* Then there are no striped Hybrid Chinese or Hybrid Bourbon Roses, which we would expect to obtain from the union of the striped French with the varieties of Bourbon or Chinese. There is no striped Moss Rose worthy of the name. Might not such be obtained by working various of the Moss kinds with the Rosa Mundi? There are few autumnals of growth sufficiently rapid to form high pillars. Here is a field for experiment! Is there not a fair chance of obtaining these from between the most vigorous growers of summer and autumn Roses? We hear talked of Yellow Moss and Yellow Bourbon. As *an attempt* to obtain the former, cross the palest Moss Roses with Emerance (Provence); for the latter unite the yellowest tints of the Tea-scented with the buff and most colourless Bourbons. But we have not space to pursue these remarks further. We need not confine ourselves to the instances above quoted: they are merely given as examples. The work may be varied *ad infinitum*: anything that the mind may suggest the head and hands may work for.

It is desirable, before crossing or hybridizing, to see if the flowers about to be crossed have any stamens. If so, they should be cut away with a pair of round pointed scissors, opening the flowers just before they expand. It is not known for certain whether superfoetation can occur in plants, but it is generally admitted that self-fertilisation can, and it is well to provide against both, especially where this can be done with little trouble. The plan I adopt when crossing is to bring a flower of the male parent to the seed-bearing tree. If the weather be calm, I cut away the petals of the former, holding a finger over a flower of the latter, upon which I strike the flower deprived of its petals. The sudden shock drives the pollen into the other flower, and the work is done. But if the wind be high this plan will not do. It is better then to collect the pollen on the end of a camel-hair pencil, and convey it thus to the styles of the other flower.

* Since the first edition of this work was published we have obtained several striped "Hybrid Perpetual" Roses, and some valuable "Perpetual Moss." The greatest improvement, however, has taken place among the "Hybrid Perpetuals" and "Hybrid Tea-scented," although even here there are many wants still unsupplied which the lover of Roses may reasonably look for. Unless, however, new ground is broken, he must not expect, in the present state of these groups, to meet with the broadly-marked improvements of former years, but rest satisfied with the more gradual development usual among plants which have been long cultivated.

When the flowers have passed away we shall soon have the satisfaction of seeing the seed-pods swell. Remove from time to time any decayed petals that may adhere to the seed-pods ; and as the latter ripen it will be well to devise some means to protect them from birds. I have no direct proof to adduce that birds eat the seed-pods of cultivated Roses ; but I have often seen the greenfinch feasting on the Sweet Briar hips, and should these by any chance become scarce or fail he probably might not object to this slight change of diet.

It is quite conceivable that some lovers of Roses may wish to raise seedlings although not willing to incur the trouble of crossing or hybridizing. If so the seeds should be gathered from the most approved sorts only, and such as have been highly cultivated. If we sow the seeds of a common variety or one that has had no special cultivation, the offspring may vary but little from the parent, or not take the development in size, form, or colour that it would if proceeding from a superior variety or one that had been highly cultivated.

In the first extensive sowing of Rose seeds which I made the seeds were gathered promiscuously from varieties subjected to ordinary cultivation, and the result was but little variation or advancement. In successive sowings the seeds were gathered year by year from choicer sorts and plants subjected to higher cultivation, and the variation and advancement continued to increase. This, be it remarked, was independent of artificial fertilisation ; the seedlings seemed to be more marked as the result of higher cultivation in the parent.

In all cases the seed-pods should be left on the plants as long as possible, even to December, as a means of securing well-ripened seeds.

CHAPTER IX.

On Cleaning and Sowing the Seed, and the Subsequent Treatment of the Seedlings.

I N the last chapter we left the seeds ready for gathering prior to Winter, that drear season at which the Flower Garden presents but few attractions. Its denizens, stripped of their gay attire, are sunk in repose ; often bound fast in icy chains ; all vegetation sharing in one general imprisonment, waiting for the balmy breath of spring to release them from their slumbers, to burst forth endued with fresh life and vigour. Let us now speak of the cleaning and sowing of the seed.

When removing the seed-pods from the plants on which they have grown, the seeds should be rubbed out between the hands previous to sowing. Some pods that are hard, or were not fully ripened when gathered, will require stronger measures to separate them. These may be rubbed through a coarse wire sieve, the hard coating of the seeds being strong enough to protect them from injury in the process ; and if any are found proof against this they may be crushed beneath a rolling-pin or slight taps of the hammer.

So soon as the seeds are broken up they should be laid out in the sun and air to dry, and when sufficiently dried it is easy to rid them of their pulp and external covering by sifting and winnowing them in pans. I am aware that some growers prefer packing away the fresh-gathered seed-pods in damp earth, not sowing them till March or even November of the following year. If this practice is adopted care should be taken that they are not placed in bulk, or they may become heated and the germ destroyed. I am, however, in favour of sowing as soon as gathered, or at any time afterwards, when the ground is in fair condition, up to the end of March ; the seedlings will then break through the ground in Spring and Summer, and onwards even to the second Spring. The seeds then are sufficiently clean for sowing ; and in what manner shall this be performed ?

The French growers sow *principally* in the open ground, either in beds or in drills by the side of walks ; but M. Hardy, late of the Jardin du Luxembourg, preferred

sowing in frames. I remember seeing there some years since a vast number growing in a wooden frame, the most of them apparently varieties of ROSA INDICA, and their healthful appearance and vigorous growth sufficiently attested the suitability of the treatment.

If a frame cannot be spared for the purpose, *the tender kinds, at least*, should be sown in pans, thoroughly drained, and filled with equal parts of leaf-mould and loam well mixed together. After the seeds are sown they may be watered and covered over with about half-an-inch of the same soil, sifted, and mixed with a little sand. The pans must now be set in the best spot we can find for them—in a cold frame or greenhouse, if accessible, where they should be kept in a state of equable moisture. Here they will vegetate as out of doors, and in Autumn or the following Spring they may be transplanted as the others.

If it be the intention to sow in the open borders, a sunny but sheltered situation should be chosen: the aspect should be east, that the young plants may not be fatigued with the afternoon's sun. When preparing the ground for sowing the soil should be well loosened with a fork or spade to the depth of eighteen inches or two feet, and made light and rich, the top being broken up fine, and laid level with a rake. If drills are preferred, draw them about nine inches apart; if broadcast sowing, the ground is already prepared.

It is desirable to sow rather thick, for in general not one-fourth of the Rose-seeds vegetate, and of these only a portion the first year. After the seed is sown the earth should be trodden down or beaten with a spade, and watered if dry, and covered afterwards with from half-an-inch to an inch of light free soil. Care must be taken to keep the earth moderately moist. Protect from mice. If sown in February some of the seeds will germinate in April. So soon as they are seen rising through the soil means must be taken to protect them from slugs, birds, and worms.

Slugs and wood-lice have a great liking for seedling Roses, and will, unless prevented, eat them off close to the ground when rising, which usually involves their destruction. To guard against these pests scatter soot or lime over the bed, which acts as a protection, and at the same time promotes the growth of the plants. Birds will occasionally pull them up when just sprouting forth; and whether this is done to gratify the palate or merely from the love of mischief I cannot determine, but however it may be we are equally the sufferers.* The best scare-crow I can find is glass. Let a stick be stuck in the ground in a bending position, from the end of which two pieces of glass should be suspended with bast or twine so that they dangle in the air; striking together with every breeze, they keep up a musical chant around the seedlings which the feathered plunderers seem unable to account for, and the most daring depredators are content to sit and chirrup at a distance.

* The old stuffed figure which served well enough as a scare-crow in my boyish days is of no avail against the superior intelligence of modern birds. I recently set up a well-contrived figure, but in less than half-an-hour that incarnation of impudence, the London sparrow, was hopping on the head and shoulders and pulling out the interior to build its nest with.

Worms are often a great nuisance among seedlings, throwing up heaps of soil which smother the young plants; sometimes, too, they drag them into the earth, which destroys them. The best remedy here is lime-water applied two or three evenings consecutively in dry weather. If the seeds vegetate very early the young plants must be protected from the Spring frosts; and hooping the beds over with osiers and covering with a mat offers perhaps the simplest and most efficient means of doing this.

So soon as the seeds vegetate the young plants require constant attention as to shading, watering, and weeding, as well as protection from their enemies. Some of the Autumnals will flower the first year. These precocious youngsters, with the exception of the Tea-scented, are, however, seldom long with us, being of defective constitution. It is to those which flower during the second year or afterwards that we look for improved varieties. The Summer kinds will not flower for two, three, or even four years. Seedling Roses should be watered only when the soil is *really* dry, and then in the evening or morning, before sunset or sunrise. The same framework used to protect the plants from frost in Spring will answer for Summer shading, but shade only when the sun is powerful and then only for a few hours in the middle of the day; for shading as well as watering may be carried too far, and if so, favours the development of mildew. Watch your seedlings closely, to see what amount of sun they will bear without injury, and determine your movements accordingly.

At the time of weeding it is well to have a sharp-pointed stick in the hand, with which to stir the soil round the seedlings. This must be done with great care, or the plants just protruding will be injured; indeed if they are germinating thickly it is a dangerous operation and perhaps better left alone.

So soon as the seedlings have formed their second leaves, if they should have sprung up so thick as to impede each other's growth, a part may be safely drawn out after a good shower of rain (raising the soil in the first instance with a hand-fork), and transplanted to a shady border in the evening of the day, watering and covering with a hand-glass until they take hold of the soil. Let it be understood, however, that transplanting at this season is not recommended; it is here chosen because less injurious than suffering the plants to remain crowded together. It may not involve any positive loss, but it ordinarily retards the period of flowering.

When the plants have formed a few leaves the pleasure attendant on the raising of seedlings increases ten-fold. In looking over the bed, how anxious we are to discover to what groups certain curious-looking individuals belong? We look, and look again, and often depart without coming to any satisfactory conclusion. The plants, however, increase in size, the scrutiny goes on, fresh features are noticed at each new examination, until at length we have something tangible to work on. We pronounce this to be a Moss, and that a Bourbon; here is evidently a Hybrid Per-

petual and there a Chinese or Tea-scented. Or if we feel inclined for a closer analysis by descending from groups to individuals, we may in some instances trace the seedling from a particular variety. Here is one evidently born of General Jacqueminot, there another from Victor Verdier. Thus far we may amuse ourselves and settle the matter in our own minds, although the flowering of these individuals may not always substantiate our preconceived notions.

I have seen seedlings of the Bourbon and Chinese Roses flower when little more than a month old. This, however, should be prevented rather than encouraged. It weakens the plants, and does not impart any real knowledge to their proprietor. The flowers may be white, they may be red, and this is the absolute amount of knowledge to be gleaned from them. As to size, form, fulness, and the other valued properties of Roses, no true idea can be formed. It is well, then, to pinch off the flower-buds immediately that they are seen, whereby the plants gain strength, and produce better flowers later on. Do not disturb any of the seedlings the first year unless overcrowded. Let the whole remain till the following Spring, then take them up and replant them in a soil moderately rich. This should be done in March, for if the operation be deferred too long there is danger of destroying the seeds which have hitherto lain dormant, and which often vegetate abundantly and *very early* in the second Spring.

When transplanting, sort out the strongest plants and place them about a foot apart; the weaker ones may then be set together at less distances. After planting it will be well to water and shade for a few days should there be much sun, and even to cover against frost if such occur before the plants are firmly settled in the ground. This may be done by sticking single boughs or Fern branches among them, or better still, by the use of mats.

In the following Summer and Autumn the flowers of many will appear. All that are single or not clear in colour may be destroyed, also any where the outline is irregular. But if the outline be good, the colour clear, and the flower possessed only of an ordinary degree of fulness, the seedling should be preserved, even though apparently inferior to varieties already known, for it has not yet passed through the high routine of culture the named varieties have, and its properties are not fully developed. It is often capable of great improvement.

As the seedlings flower, whenever one strikes the fancy it should be tied up to a stick, a number attached to it, and its properties entered against the number in a note-book; then watch for the leaf buds being in a good state, and bud two or three stocks to prove the variety. As it would occupy too much time to bud all the seedlings, the seedling plant of any that is of doubtful merit may be grown for two or three years, when its real worth will become apparent. But it should be told that budding on the Dog Rose, or any free stock, enables us to form a correct opinion of a variety a year or two sooner than we can do by trusting to the seedling plant. Therefore, if stocks are not scarce, and the cultivator has leisure, it may be interesting to bud a

plant or two of any variety the flowers or foliage of which may appear to him likely to make it interesting.

Mildew is the most discouraging visitant among seedling Roses. It is bad enough anywhere, but it seems to attack them here with redoubled virulence, and it is astonishing how suddenly it appears, spreading death and desolation in its track. It must be watched for, and when first discovered dust the plants with sulphur, on a calm evening, if possible, having first sprinkled or syringed them that the sulphur may stick on. This sometimes requires repeating at short intervals, for it is not always a preventive but a temporary cure.

As winter approaches it is necessary to provide some protection against frost. The plants being young are extremely delicate and liable to suffer from frost. If raised in the borders out-of-doors they must be protected for the first year in severe weather with a mat, or some frost-excluding material. I have in this edition of the "Rose Garden" advocated sowing in Winter, because calculated to induce an earlier germination, whereby are obtained plants stronger and better fitted to endure the cold of their first winter.

It will be necessary to guard the seeds effectually against mice, as the length of time they often lie in the ground increases their chance of being eaten by these intruders. It is a good plan to cover the bed with fine wire-work, or if we choose to act on the offensive rather than the defensive, the mice may be trapped and destroyed. It will be well to have an eye to this point, whether sowing in Spring or Winter.

It is no uncommon occurrence with seedlings growing out-of-doors during Winter for the roots to be thrown to the surface, the plants sometimes lying almost out of the ground. If left in this condition they wither and die. They should be re-planted; and if the beds are hoed on a fine day in Winter it will prove advantageous. Cast a little fine mould upon the surface immediately after hoeing to protect the roots.

With regard to the pruning of seedlings we have only one point to consider in the first instance—to obtain fine flowers. We sacrifice the shape of the tree to this point if necessary, cutting back to any eyes that are plump and prominent and situated on wood likely to produce fine flowers. We remove unripened shoots if there be any, and thin out well, especially if the variety be an Autumnal and therefore a certain bloomer.

CHAPTER X.

On the Cultivation of Roses in Pots.

IT is no longer said that the Rose is intractable as a Pot-plant ; indeed, it is now sufficiently established that it is perfectly suited for such, and it is consequently gaining a still wider circle of cultivators and admirers. This furnishes no matter for wonderment if we consider that in its present improved state it possesses in a greater or less degree every quality that could be wished for in a plant designed for particular cultivation. The length of time the varieties continue in bloom ; the delicious fragrance of the flowers ; their richness and beauty ; their elegant mode of growth and handsome foliage—such a combination of desirable properties must necessarily secure for it a large share of favour.

The question has been, and is still occasionally put to us—What advantage is gained by growing Roses in pots ? The same question might be asked with equal propriety respecting any class of hardy or half-hardy plants. But we reply to it by appealing to the unprejudiced judgment of horticulturists, by asking them whether the withdrawal of Pot-Roses from our greenhouses, parterres, forcing-houses, and horticultural fêtes, would not cause a very obvious blank. We think it would ; and if so, it cannot be altogether folly to grow them in this manner. But there are more cogent reasons for the practice. Some of the delicate and more beautiful kinds have their flowers bruised and spoiled even in Summer by the winds and rains of our unsettled climate, and many suffer seriously from the cold of Winter. Then, again, in some soils, as in low wet places, and in some localities, as in the neighbourhood of large towns, these same sorts will scarcely grow when planted out in the open air, whereas they flourish and flower well when grown in pots under glass. It is such kinds we recommend *principally* for Pot-culture, introducing others merely to increase the variety. I regard the Autumnals especially as of rare worth for greenhouse culture ; for by keeping three distinct sets of plants we may ensure Roses all the year round. Five months may be allowed as their natural period of blooming out of doors, from June to October inclusive ; then the shelter of a frame and greenhouse will prolong the blooming season till February, and during this and the three following months forced Roses may be obtained in beauty and abundance.

These are the principal advantages gained by growing Roses in pots. But we would not press our favourite immodestly on the attention of our readers. Suffice it to record our opinion; if the Rose is a suitable plant for Pot-culture it will undoubtedly continue to gain friends; if not, no advocacy of ours can essentially serve it.

To obtain Pot-Roses in perfection a Rose-house is necessary, even if we do not care to have them in flower earlier than April, May, or June. In the next chapter we shall give a plan of a Forcing-house for obtaining Roses in February and March, and a similar house will answer very well for a later flowering.

In entering on this branch of culture the first point that should engage our attention is to provide a good heap of soil for the plants to grow in. The groups and varieties differing greatly in their nature and habits, it will appear reasonable that more than one sort of soil will be required if all kinds are to receive that most suitable. All like a rich soil, which should be made light for the delicate-rooted varieties, and more tenacious for the robust hardy kinds.

To form a light soil procure two barrows of seasoned turfy loam, half a barrow of well-decomposed stable manure, a quarter of a barrow of leaf mould, and silver-sand in proportion to the texture of the loam, which will in no case require more than one-fourth of its own bulk.

The heavy soil may be composed of one barrow of stiff turfy loam, one barrow of night-soil that has been mixed with loam and laid by for a year, half a barrow of leaf-mould or well pulverized manure, and sand as before recommended.

Night-soil may be thought too powerful a manure, but it may be used with safety provided it has been mixed with loam and well seasoned previously by frequent turnings. The addition of about one-sixth of a barrow of *charred* earth will be found to improve both composts. These materials should be thrown together *at least three months* before required for use, and turned frequently that the integrant parts may become well incorporated and mellowed by exposure to the sun and air. The sieve is in neither case necessary, for as large pots will be principally used, the coarser, in moderation, the soil is the better will the plants thrive.

It is our intention at the end of this Division to give a list of the kinds thought most suitable for Pot-culture, but as many may prefer searching our descriptive lists for themselves, let us here consider what features are most worthy of notice when selecting for this purpose. In my Pamphlet on the Cultivation of Roses in Pots,* published some years since, the following points were given, and I do not know that I can offer any further suggestions:—

1. Elegance of habit, regarding both growth and manner of flowering.
2. Contrast of colour.

* "Observations on the Cultivation of Roses in Pots, &c.," by W. Paul, F.L.S.; Eighth Edition; Kent & Co., London.

3. Abundance of bloom.
4. Form or individual outline of the flowers.
5. Duration and constant succession of bloom.
6. Sweetness.

What! says the tyro, can we find so many good properties combined in one variety? Can we obtain a Rose of an elegant habit, an abundant bloomer the outline of whose flowers is at the same time perfect, remaining a long time in full beauty, and that is very sweet? Truly such cases are rare. Few have a strong claim on all these points, but some combine them more intimately than others, and it is these we should choose.

Roses intended for growing in pots may be either on their own roots or on short stems—the Tea-scented and Chinese kinds are usually better in the former way. Let us suppose any number of young plants are obtained on their own roots in 60-sized pots in the spring of the year. In the first place, they should be shifted into 48 or 32 sized pots, according to the rate of growth of the plant and the quantity of roots it has made, then plunge them, seeing that they are watered as often as the soil becomes dry. I believe that Roses cultivated to bloom at their natural period cannot be placed in too airy a situation, therefore I would keep them constantly plunged in an open spot in the garden, removing them on the approach of winter for shelter against frost.

Some object to plunging, and prefer placing the pots on the level ground, packing moss, cinder ashes, or sawdust between them. Practically speaking it seems to matter little, and whichever plan is adopted there are two things to guard against—the ingress of worms from the ground and the egress of the roots from the hole in the bottom of the pot. If the roots find their way into the ground there will be but few formed in the pot, and the result will be a more vigorous, but less perfect, growth; and if the plants are required to be removed at the time of flowering they will receive a severe check. Both of these occurrences must therefore be prevented by placing the pots on inverted seed-pans, or adopting some other plan which the ingenuity of the cultivator may devise.

It must not be expected that the plants will all maintain the same rate of growth, some will grow vigorously, others not so. Now, although we would not wish to deprive the cultivator altogether of the reward of his care and labour—the flowers—yet we would say a few only should be suffered to develop the first year, and the seed vessels should be cut off when the flowers drop. *The aim throughout the growing season should be to get a few stout well-ripened shoots by Autumn*—shoots that will bear strong pressure between the finger and thumb without giving any indication of softness, for it is these which will produce strong and perfect blooms.

The way to accomplish this is to place the plants a good distance from each other, and as the young shoots form they should be set wide apart, that they may enjoy the

full sunlight. From the earliest period of growth it is necessary to look them over occasionally, with the design of encouraging such shoots as maintain the best position, and checking those whose tendency is to exclude others from a fair rate of growth and destroy the symmetry of the plants. Weak shoots should be cut out, and disbudding practised freely. If two or three eyes burst from the same point, threatening to crowd or cross each other, the least promising should be at once removed.

Most of the plants shifted into 48 or 32-sized pots in spring will, if they flourish well, require a second shift in July, when 24 and 16-sized pots may be made use of

Fig. 35.—POT ROSE, two years old.

and the same soil as before. When re-potting, the crock may be removed from the bottom of the ball, and the surface soil, which is apt to become sour, rubbed carefully away, so far as can be done without disturbing the roots.

A nice judgment is required in shifting the Chinese and Tea-scented Roses, as they are very liable to suffer from over-potting. As a guide on this point turn them carefully out of the pots once or twice a year to examine the roots; if found protruding from the ball of earth in great abundance, place the plants in larger pots; if it be otherwise put them back in the same. The hardy and robust growers may, however, be cultivated on the one-shift system, that is, changed at once from small to large pots; but this treatment will not suit the small and delicate growers.

Above (Fig. 35) is shown a plant two years' old, having been grown the first year in a smaller pot. It is now autumn, and it is losing its leaves. It needs no thinning, as it has been disbudded during spring and summer, on the principles

advanced in our Chapter on Pruning. We now shorten the branches at the points where the lines intersect, and by continuing to practice disbudding we obtain a handsome and well-flowered plant the following summer.

After it is pruned, the shoots should be staked out at as great distances as possible; those that are left long ought to be made to lie almost horizontal, by bending them down, that the buds may be induced to break regularly from their summit to the base. Great care is required in this operation, as the wood of some kinds is extremely brittle. If, however, the long shoots be allowed to maintain an upright position, the probability is that two or three buds only at their top will break, which by their exuberant growth keep the lower eyes dormant, and hence results a loose and ill-regulated plant. But it is not necessary to keep them long bent; for so soon as the eyes have burst, the shoots may be tied up again. With regard to training, each cultivator will likely acquire a plan of his own. But of this hereafter.

WATERING should be carefully attended to throughout the growing season. The quantity to be given must depend on the state of the plants, the weather, and the porosity of the soil. As a general rule, Roses require but little water during Autumn and Winter. In spring, when the buds first break, occasional syringings are of infinite service. As the plants advance in growth, thereby acquiring a greater surface of foliage, and as the sun gains greater power, the quantity of water should be increased; and when in full leaf, and throughout the blooming and growing season, an abundance should be given. In making these remarks, we are supposing the water to have free egress through the rubble at the bottom of the pots, a condition essential for the health and perfect growth of the plants.

Manure-water is beneficial. The use of it imparts a freshness and dark green hue to the foliage, and increases the vigour of the plants. It should not, however, be given too frequently, nor in too concentrated a form. If guano is used, an ounce to a gallon of water is sufficient. It is well to watch the effects of the dose given, to guard against an overgrowth, and regulate the supply accordingly. Perhaps the plants cannot grow too vigorously, provided the wood can be well ripened before winter. There is the point. But as we cannot ensure a sunny Autumn, which is necessary for the perfecting of strong shoots, a moderate growth is safer. Camphor-water, an eminent Rose Amateur once advised me, from his own experience, to try; but I am unable to report any satisfactory results. It is said to add new brilliancy to the flowers. Certainly it is a safe application, and no *injurious* influences are likely to arise from its use.

In addition to our painstaking to promote the growth of our plants, we have to guard against enemies and diseases. The Rose-grub, which is most prevalent early in the season, requires close watching, and should be destroyed by hand-picking. I have picked a score off a single pot-plant. Wherever a curled leaf or shoot without a growing point meets the eye this destructive insect will be found. Some mischief has perhaps been done, for it is seldom that he can be discovered except by the effects

he produces ; but let us catch him as soon as we can, and much mischief is prevented. He eats and destroys when young, but when he arrives at maturity he is a perfect gourmand, travelling from shoot to shoot, spreading devastation in his track ; and if he reach the moth state, we may calculate on a numerous progeny the next year. I have found plants remarkably free from these pests when they were closely sought for and destroyed the year before.

The Aphis or Green-fly may be destroyed by removing the plants to a pit or house and smoking them ; it may be kept away by dipping the ends of the shoots in, or syringing with, tobacco-water, or by laying the shoot in the palm of the hand and brushing the fly off.

There is a very small canary-coloured fly, which did great mischief among Roses one season. They are generally found on the back of the leaf, close to the mid-rib, eating the leaf, working from the under-side, and not only disfiguring but injuring the plants. They are remarkably active. By giving the plant a tap, they will rise instantly in the air, fly round, and settle again on the leaves. As they were too nimble to be dealt with as their more sluggish compeers in mischief, I applied sulphur and snuff in equal portions, dusting the mixture on the back of the leaves when wet, and found it prove an excellent remedy.

A long thin caterpillar, the larva of a saw-fly, sometimes commits great havoc among Roses. They came in such myriads upon a Rose Garden in this county a few years ago that the plants were almost stripped of their leaves before their course could be arrested. Hand-picking was resorted to, by which means they were ultimately got rid of.

The orange fungus (see page 157), which often attacks Roses out of doors late in Autumn, may visit the Pot-plants ; and should it do so the leaves where it appears should be carefully rubbed between the finger and thumb, using a little sulphur in the operation.

Mildew is sometimes a source of great annoyance. Dusting the leaves with sulphur is the best remedy. Watering with a solution of nitre is also said both to destroy and prevent it. If the situation is airy and sunny there is little to fear on this account. Forced Roses are more subject to it, and when speaking of these it will require a fuller notice.

We have, then, followed our plants through the first training season. They have been shifted twice, once in Spring, and again in July. In Autumn they will be well established, when a portion may be selected for forcing, and part left for blooming at other periods.

If to produce large and handsome specimens *quickly* is the point aimed at, we would advise sacrificing the bloom in part, even the second training season, by pinching out some of the flower-buds as soon as they are formed. A Rose-house with the aid of artificial heat also favours rapid development.

The same routine of culture will require to be gone through now as in the first season, availing ourselves of whatever knowledge we may have gained by experience and observation. But a new source of amusement now opens upon us, and one which will discover and exercise our taste. The first year little training is necessary; but it has now become an important part of the work. If skilfully and tastefully done it greatly enhances the beauty of our favourites; if otherwise, it has a contrary tendency. Often we see well-grown plants, which reflect great credit on the cultivator, spoiled in the training. To manage this properly the shoots should be tied out to sticks immediately that the plants are pruned; and when the newly-formed shoots are three or four inches long *they* should be tied out also, training according to some pre-conceived plan.

Fig. 36.—POT ROSE NEWLY PRUNED, THREE YEARS OLD.

We agree that the fewer sticks used the better; but we fear Roses cannot be managed nicely without the help of some. Osiers are excellent for the purpose. We do not like to see a plant with as many sticks as it has flowers, and almost a hedge-stake used to support a branch which a privet-twigg would hold in place. This is bungling and unsightly, equalled only by the want of design often apparent in the training. The sticks should be chosen as slight as will support the flowers, and the shape of the plant should be determined before we commence to fashion it. Not that we are obliged to follow such form if by any occurrence we discover one more suitable in an after-stage of growth. If painted sticks are used in the tying out and training, they should be painted green, as near the colour of the foliage as possible, duller, not brighter, or they will create a glare, and detract from the beauty of the plant. To us the system of a tall shoot in the centre of the plant, with all the others disposed around it, gradually decreasing in height as they recede from the centre—in a word, a pyramid—presents the most pleasing object. Fig. 36 is a newly-pruned plant grown and trained on this system.

When the central shoots of a pyramid are more vigorous than the lower and surrounding ones, the latter should be pruned a fortnight before the former, which will preserve the balance of strength throughout the plant. If, under those conditions, all are pruned at the same time, the central shoots will, from their position, appropriate to themselves an undue share of food, and the others will be impoverished.

Immediately after pruning we draw the lower shoots downwards over the rim of the pot, just beneath which a wire should pass, to which the bast may be fastened. When the plants are of three or four years' growth, and have been previously trained upon this plan, tier above tier of branches may be arranged, each decreasing in circumference in the ascent till we terminate in a point. Trained on this plan, the

Fig. 37.—POT ROSE, THREE YEARS OLD, IN BLOOM.

plants require constant care and attention during the season of growth to keep them well balanced. Strong shoots must be stopped as occasion may require, and weak ones encouraged.

A round bush is quite in character in some instances, especially for such Roses as are of lowly growth.

The plants may be trained to a face, the tallest shoots ranged at the back, the others gradually decreasing in height as they approach the front. This method has been successfully carried out at the various horticultural exhibitions, where only one side of the plant, or at most three-quarters of it, is presented to view.

Pruning may be applied here as elsewhere, excepting that the growth of Pot Roses being usually less vigorous than that of kinds under common treatment out-of-

doors, they require rather closer pruning. Disbudding should be practised in pot culture especially ; it is of great assistance in obtaining well formed plants, and such we expect to see when grown in pots.

But the second season has passed away, and we have entered upon the third. Our plants are not equal to what they are capable of becoming ; but the accompanying engraving (Fig. 37) may be considered a fair illustration of a three years old

Fig. 38.—POT ROSE, FIVE YEARS OLD, IN BLOOM.

plant that has been carefully and skilfully cultivated for two seasons. Its growth is too vigorous to be called perfect, for the flowers are in consequence nearly all on the top of long shoots. This, however, is desirable at this stage of growth, and easily remedied the next year by long pruning, and afterwards bending the branches down.

Thus, we follow on year by year the same routine of culture—repotting, pruning, training—our plants continually increasing in size till we reach the mark on which we

have set our mind. Fig. 38 is a fair representation of a Pot Rose five years old in bloom.

Roses are often lifted from the ground to be grown in pots, and it is necessary to say a few words about them. Early in Autumn (October) is a good time to take them up, and if done immediately after rain the roots are less liable to be injured in the removal. When potting, whether the plants are on their own roots or on stems, the straggling roots should be cut in so far as to admit of their being placed comfortably in the pots. If any of the roots have been bruised in taking up, the bruised part should be cut away; let the cut be made clean with a knife, and fibrous roots will soon be emitted from its surface. When potting worked plants we should have an eye to suckers from the wild stock, which should be cut off close to the stem to prevent their springing into life at any future period. The sized pots most suitable for dwarf plants from the ground vary from Nos. 32 to 12; if a plant is of robust growth, strong, and well-rooted, it may be placed in the latter size; if the reverse, use the former. In reference to this the judgment at the time of potting is the best guide. Placing the plants too low in the soil is a great evil; always keep the roots near to the surface, as they are sure to strike downwards.

It is essential here that the pots be thoroughly drained, and the soil should be well shaken down among and firmly pressed upon the roots. The heads may be thinned out at the time of potting, leaving as many shoots as can be found properly situated to form handsome plants. The shortening of the shoots may be deferred till the plants are supposed to have made fresh roots, remembering, however, that the time of pruning regulates the time of blooming; the earlier they are pruned the earlier they will flower.

After potting, the plants should be placed in a cold pit, where they may remain almost closed from the air for a few days. They should be syringed twice or three times daily, and shaded also if weather is sunny. If taken up in October, when the leaf is green, and kept in a close pit, well syringed and shaded, they will retain some of their leaves almost as fresh as if left in the ground, and soon renew their hold of the soil.

It is not necessary that they should remain in a pit for any great length of time. After the first ten days or fortnight more air may be admitted gradually, and in a month the hardy kinds may be plunged out of doors in an airy situation; the tender ones may be kept in the pit, or be placed by themselves where sheltered from severe frosts. The north side of a wall or fence will serve for this purpose, erecting a temporary building, open on three sides, the top covered with felt or fern, or anything else that will exclude the rain and frost; the sides may then be closed in with mats in severe weather.

A few remarks on Roses grown in pots as climbers may not be altogether useless. If it be the wish of the cultivator to train a few upon this system they should be invariably chosen on their own roots. But perhaps it may seem strange that we

should suggest such a thing. What! cultivate climbing Roses in pots; the idea is absurd! So it would be did we recommend the groups which are ordinarily spoken of as climbers—namely, the Ayrshire, Boursault, Musk, Sempervirens, &c. But such is not our intention. Magnificent as these are when grown in the open ground to the height of 12 feet, covered with their immense trusses of bloom, we are aware that their semi-double and transient flowers render them unsuitable for pot culture. But where else are varieties found that will climb? This question will be replied to in the list given at the end of this Division.

We have now to point out the end in view and the means by which it may be

Fig. 39.—CLIMBING ROSE SOLFATERRE, TWO YEARS OLD, IN POT.

accomplished. Some kinds, which are indispensable even in a small collection, cannot be grown to advantage except as climbers; such are Lamarque, Solfaterre, Jaune Desprez, and others. As to the shape they are brought to assume, the taste of the cultivator will perhaps be the best guide. Circular trellises may be formed, varying in height and diameter that they may be fitted to any particular variety, according to its rate of growth. None should exceed four feet in height. Round these the shoots may be trained according to the accompanying illustration (Fig. 39), so as eventually to hide the frame-work and to produce a dense but not shapeless mass of foliage and flowers. It is necessary in the first instance to practice close pruning to induce the shoots to grow vigorously; they should then be trained in their proper course during the season of growth. Now, the great point to be kept in view here is so to prune and train that the plant may produce flowers from its summit to the ground, for it is

evident that if only a few flowers are to be produced at the top then the dwarfier it is grown the better. Here, as in all gardening operations, Nature requires time to perfect her work. The plants will not be complete the first year; they may not the second. Much, of course, will depend on the treatment they undergo, their strength when put to the frame-work, and the size of the latter. But little pruning is necessary; each year the weak and unripened wood only should be removed, tying the rest to the frame-work till it is covered. With respect to the shortening of the shoots, they should be cut back to eyes that are well ripened and no farther. Cover the frame-work as thoroughly and quickly as possible, and then prune as directed for Climbing Roses.

Fig. 40.—CLIMBING ROSE SOLFATERRE IN BLOOM, FOUR YEARS OLD.

Fig. 40 is a sketch of the beautiful yellow rose Solfaterre, taken from a plant in bloom which had been treated as above described.

We said at the opening of this Chapter that Roses may be had in flower all the year round. Let us revert to that point. We must divide our plants into three lots varying the colours in each as much as possible; securing the fullest kinds for forcing and the least double for Winter flowering. From June to October, inclusive, may be considered the natural season of flowering. By forcing, of which we shall speak in the next Chapter, we may obtain flowers from February to May. It is now our intention to relate how we secure flowers from November to February. This is the most

difficult point to attain. Nevertheless it is done, *by inducing the Autumnals to grow and form flower-buds late in the Autumn, and by preserving these flower-buds from wet and frost.* I do not say this plan is new, or has not been adopted by others; but I certainly am one who read the lesson from the book of Nature, and afterwards practised it with complete success. Walking one October evening among some Chinese and Tea-scented Roses which had been transplanted in Spring, and had grown and flowered but little during a dry Summer, I could not but remark how thickly the trees were then covered with small flower-buds. The first inquiry was as to the cause of this, which was soon discovered. A dry Spring had been succeeded by rain late in Summer, and the plants were now growing vigorously. Pleased at first by the prospect of so late a bloom it did not strike me that it would be the middle of November before the flowers could be perfected. However, frost and rain set in, and the consequences were soon apparent—the flower-buds were mostly blighted and decayed. One kind alone, Chinese Fabvier, a semi-double scarlet one, braved the storm, and his rich warm tints were unusually beautiful, or perhaps apparently so in contrast with the desolation that reigned around. The petals of the most double kinds had become glued together at their tops, which prevented their expansion, and the buds rotted. From these observations I inferred—1st, That had these flower buds been protected from frost and rain they would have been gradually unfolded; for they continued advancing in size so long as the weather remained favourable. 2ndly, That the least double varieties are more likely to expand their flowers perfectly late in the year than others, because less affected by damp; and that the damp was as destructive as the cold was evident from the most double varieties, which retain moisture the longest, being in the worst state, and from the semi-double ones flowering in spite of the adverse weather.

Building upon these inferences, late in the following Summer (I think in August) I cut down *the main shoots* of several Autumnals that were then flowering in pots, leaving two or three eyes on each shoot for development. They broke; and in October, the flower-buds being formed, the plants were removed to a cold pit, giving all possible air in fine weather. It was a mild Winter, but a damp one. The flower-buds advanced steadily, although some became mouldy and damp, and, as it is termed, "*fogged off.*" Nevertheless during November and December many kinds flowered beautifully; and at Christmas I cut as fine a bunch of Roses as could be desired. In wet or damp weather the lights were kept on; in frosty weather there was the further addition of a straw mat. Lovers of Roses! what think you of this? Is a cold pit unworthily occupied with Pot-Roses which shall furnish you with flowers in full beauty in November and December. It has been seen that the above succeeded well there, though it is questionable whether they would do so *every* season. Severe frost, should it occur, must injure, if not destroy, the flowers. Preferably let them have a place in a greenhouse, giving fire-heat only to dry up dampness and exclude the frost;

then if it is wished to carry the flowering season onward to February this can be done by increasing the temperature, for if we select the proper kinds and keep them growing, flowers will follow the growth as surely as the night follows the day. So soon as the plants have done flowering they may be removed to a cold pit, giving air gradually. In March they may be re-potted and pruned, and plunged out of doors, where they will flower again in July.

Once every year, late in September or early in October, all Pot-Roses except the plants intended for Winter flowering should be turned out of their pots, shaking away a good portion of the soil, and re-potting them in new or clean pots, larger if thought necessary. Immediately after this operation they should be transferred to some situation where they have the morning sun only—a north border is a good place—and watering must be carefully attended to. When they have remained here for two or three weeks they should be removed under glass, as some of the modern varieties are not sufficiently hardy to endure uninjured the frost of a severe Winter. At the time of repotting it is advisable, if disbudding has not been followed, to thin out such shoots as will not be required for the succeeding year.

Whenever plants are grown in cold pits, abundance of air should be given at all seasons. Indeed, the lights need only be used as a shelter against frost or wind, or heavy rain; dews and slight rains are beneficial in Spring and Summer. In the flowering season it will be necessary to afford shade during the middle of the day, when canvas lights should be used instead of glass ones.

CHAPTER XI.

On Forcing.

OF all flowers induced to blossom amid the chills of Winter there is perhaps none which excites so much interest as the Rose. And as this branch of culture is now so generally practised, it seems to demand more than a passing notice.

The art of forcing consists in accelerating the period of growth and flowering of plants by means of artificial heat. In practising it we change their seasons, inducing them to perform certain functions at other seasons than those at which they naturally perform them. With Roses, Spring and Summer is the natural period of growth, Summer and Autumn the period of flowering, Autumn the period of maturation, and Winter that of repose. But suppose we commence forcing at Christmas, our Winter becomes their Spring, our Spring their Summer, our Summer their Autumn, and our Autumn their season of rest. Thus, in forcing, although *we change all the seasons* we take care *not to annul any one of them* or we sacrifice the health of the plants. And these changes should be brought about gradually. The first year the plants are forced they should be advanced steadily, and should in no case be brought to flower earlier than the middle of March.

In the construction of the forcing-house, every chance of increasing the quantity of light should be accepted, remembering that in their artificial Spring the plants will not have the advantage of so long or powerful a sunlight as in the natural one.

A house has been built here recently for the express purpose of growing Roses in pots to bloom in the Spring of the year. The ground plan and elevation of this house are shown in Figs. 41 and 42. Measured from the inside it is fifty feet long and eighteen feet wide. It has a span-roof, facing east and west, with glass ends, and upright sashes at both sides. It would be well if the top lights were moveable that air might be given as required; and it is beneficial to substitute canvas for glass in the Summer season. This house was built *for Pot-Roses only*; but if flowers are not wanted before March or April we think a desirable point would be gained by omitting the stages on which the pots are placed, and forming in their place a bed of good soil,

in which standards and half-standards might be planted; say three or five rows—a row of tall plants along the centre and shorter ones on either side.

In forcing Roses on a small scale a pit with a span-roof may be constructed at a very trifling cost; and an Arnott's stove, proportioned to the size of the pit, proves an effectual and wholesome heating apparatus. A pit 20 feet long and 15 feet wide, of sufficient height to enable one to walk conveniently down the middle, will hold 100 *large* plants; and to heat this structure a moderate-sized Arnott's stove is sufficient. A pan of water should be placed on the top of the stove to preserve a proper degree of moisture in the atmosphere. Plants removed from the open ground will flower better if grown one year in pots before forcing. Their early treatment is the same as that of other Roses in pots, which is fully described in the last Chapter. To this, then, we need not revert, but will suppose the amateur in possession of strong plants of at least two years' growth, whether of his own raising or purchased at the Nurseries. When about to force Roses on their own roots we should ascertain

Fig. 41.—ROSE HOUSE. Ground Plan.

whether the pots are full of sound healthy roots; for if they are not, only partial success can be obtained. If fine flowers are wanted, the last week in December or the first week in January is early enough to commence forcing, and but little fire-heat should be given in the first instance. This is their artificial Spring, and a low night temperature must necessarily be secured. The Rose is not a lover of a powerful heat; it must be forced steadily, increasing the temperature by degrees if flowers are required very early. Where bottom-heat can be readily obtained, we think it advantageous, although by no means necessary. A good point to start from in forcing is 50 to 55 degrees by day, and 40 degrees by night. The temperature of the house requires close attention; and the state of the atmosphere as regards its humidity, although often overlooked, is equally important. Too dry an atmosphere causes a drain upon the nutritive organs, and will cause the young leaves to wither and fall off; it also encourages red spider. A too damp atmosphere is favourable to the production of mildew, especially if the temperature should fall suddenly from the effect of atmospheric changes from without, or other causes. A dry air may be

remedied by syringing the plants copiously, and, if found necessary, by pouring water on the floor of the house. A damp atmosphere is best remedied by giving air. Unless the weather be frosty, air should be admitted for the first fortnight, to strengthen the growing buds; but so soon as leaves are formed it will be necessary to keep the house constantly closed, except the air be very mild, which it seldom is at this season of the year. By the admission of cold air the young leaves may, from their extreme tenderness, be blighted in an hour. The plants being once fairly aroused, and their roots in action, the temperature may be gradually raised till we reach 50 degrees by night and 75 degrees by day. A higher temperature than this should not, I think, be produced *artificially*. Towards the Spring sudden bursts of sunshine will occasionally raise the house 10 degrees without producing any injurious effects; still, if the weather be mild, we would counteract this by giving air; if keen and windy, by shading. A

Fig. 42.—ROSE HOUSE. Elevation.

temperature of 90 degrees, or even 100 degrees, caused by sunshine, is, however, productive of less injury than a keen frosty air.

In case of severe weather, as was experienced in February 1845, on the 12th of which month the thermometer sunk as low as 6 degrees, there will probably be some difficulty experienced in maintaining the temperature previously recommended. Under such circumstances the plants will receive no injury from a slight decrease of heat, which is indeed much to be preferred to a high forced temperature produced by great effort. If the house or pit is so constructed that it can be conveniently covered up with mats or cloths, radiation is prevented, and the advantages are very great; and this is desirable on the score of economy, for a great expenditure of fuel is saved; but it is still more desirable for the health of the plants, because the less artificial heat employed the better.

In the early stage of growth little water need be given; the plants may be syringed occasionally with manure-water of moderate strength. I have sometimes used soot-water in lieu of the above, and the vigour of growth, the dark green hue of the foliage,

and the prominence of the buds, sufficiently attest the value of it. It may, however, be dispensed with so soon as the branches begin to harden and the flower-buds are formed. It is advisable to syringe the plants twice daily in the early stage of growth ; in the morning, just as the sun falls upon them, and again in the afternoon. But should several cloudy or rainy days follow consecutively, one syringing, and that in the morning, is sufficient. Disbudding should be practised here, as before recommended.

The Rose when forced has as much to contend with from the insect tribe as when growing naturally in the garden. Here, as elsewhere, the Rose-grub will require close seeking, for the treatment which causes the production of Roses before their natural time produces him also.

The red spider is sometimes productive of sad results, for which moisture is the best remedy. Syringe the plants abundantly and daily with tepid soot-water, perfectly clear, driving the water with some force against the young leaves *through a fine rose-syringe*, so as not to bruise or injure them. The pipes may also be washed with sulphur and soot formed into a liquid, laying it on when they are in a warm but not hot state. Thrip, should it appear, may be kept in check by smoking.*

For the destruction of the aphides the usual plan of fumigating with tobacco must be had recourse to, and this upon their first appearance. The atmosphere of the forcing house seems particularly congenial to them. To-day you will see a few stalking up and down the shoots ; disregard them for a week and you will see thousands. To avoid the unpleasant situation of being enveloped in a dense cloud of tobacco-smoke, the following plan is now adopted in many places : a portion of tobacco, judged sufficient for the size of the house, is mixed with an equal portion of damp moss, and placed in a fine wire sieve over charcoal embers. This gradually smoulders away, and the house is filled to perfection. In a large house a sieve at either end is advisable. Fumigation will require to be repeated frequently ; for if only one or two aphides escape, the house is soon swarming again, and no plant can thrive while covered with these numerous sap-suckers. Here, as elsewhere, new inventions are constantly arising, and we have found the X-L-All vaporising compound burnt over a spirit lamp a safe and efficient remedy. This remedy is also issued in the form of brown paper sheets, which may be hung up and set alight without fear of injury to the plants.

Mildew will often appear among forced Roses, and is a pest of no ordinary kind. I have seen the beauty of a house destroyed by it for a season. To know something of its history and economy may help the cultivator to combat its influences.

A microscopic examination of Rose mildew shows that the fungus growth consists of a vast accumulation of necklace-like clubs or vertical chain-like growths, as seen in

* For an account of the Entomology of the Rose, see Appendix B.

Fig. 43, enlarged 200 diameters. Each of the transparent or pale whitish-grey egg-like bodies seen in the illustration is a reproductive body or spore, which answers the purpose of a seed, for the spores germinate readily (even whilst still attached in club form) and reproduce the mildew. Germinating spores are shown at the top of the illustration, and the whitish mass of woven spawn from which the clubs arise is seen at the bottom. This condition of Rose mildew is known to botanists at its early stage under the name of *Oidium leucoconium*.

The fungus of Rose mildew is preserved through the winter in a remarkable manner. Late in the autumn, at the time when Roses are shedding their leaves, the mildew fungus produces upon the leaves from its thin bed of whitish spawn a remarkable growth similar with A in Fig. 44, enlarged 200 diameters. This is really the

Fig. 43.*—ROSE MILDEW.
Early stage—*Oidium leucoconium*
Enlarged 200 diameters.

perfect state of the fungus of Rose mildew known as *Sphærotheca pannosa*. When the fungus is in this condition it consists of innumerable microscopic brown globular cases; each case is isolated and furnished with numerous radiating arms or tentacles as illustrated. If one of these microscopic globes is cut in two it is seen to contain a second minute globular bladder inside, and within each inner bladder eight spores of the fungus are neatly packed, as seen at B.

The spores of the fungus (invariably eight in a case) are preserved through the winter in the two microscopic globes, one within the other, as just described. The enclosing cases are frost proof and wet proof, but when the spring returns the outer case opens, and sets the inner case free; the inner case or bladder then sails about in the air, where it soon opens and sets the spores free in the atmosphere. Such of these spores as alight upon Roses immediately germinate and produce the early or *Oidium* condition of Rose mildew.

If Rose mildew only grew upon garden Roses there might be some chance of its extermination, but it unfortunately grows on the wild Roses of our hedge-rows as well as upon the Meadow Sweet and other wild rosaceous plants. Rose gardens are therefore often infected from the nearest hedge-side.

One of the most approved remedies for Rose mildew is one oz. of soft soap to one gallon of water, and one handful of flowers of sulphur stirred into each four gallons; the mixture to be used with the syringe. Pure water to be afterwards used with the syringe. Sulphur dusted on the leaves when wet is the remedy usually

* For the drawings and notes of Figs. 43, 44, 45, and 46, I am indebted to the courtesy of my friend Worthington G. Smith, Esq., F.L.S.

applied. Experience and observation tell us that the best preventive as well as cure is to keep the atmosphere in a wholesome state. Sudden and violent changes of temperature should be avoided. I once saw a house of forced Roses badly struck with mildew shortly after having been watered with very cold water— 25° below the temperature of the soil in which the roots were growing. Every effort should be used to keep the plants vigorous and healthy, or, in other words, everything should be avoided that tends to lower their vitality. If they suffer from being crowded, or from

want of light or a free circulation of air, they become drawn and weakly, and are very liable to its attacks. On the first appearance of mildew such as are suffering from it should be removed to prevent infection.

During their growth the plants should be looked through frequently, and the surface of the soil stirred, using due care not to injure the fibrous roots, which often lie near the top in great abundance. At the same time suckers, if any appear, should be removed from worked plants; those from the stem cut off close, and the underground ones drawn out.

So soon as the leaves are of fair size and the flower-buds are forming, a free supply of water is required. Manure water should be given occasionally, not cold, but of the temperature of the house. If worms are troublesome lime-water may be administered.

But the reward of our care is at hand. The buds are strongly formed and show

Fig. 44 —ROSE MILDEW. Late stage—*Sphaerotheca pannosa*. Enlarged 200 diameters.

colour, and syringing must cease. Now, which do we prefer—a great display at one time, or a regular succession of flowers? If the former, lower the temperature of the house *gradually*, and run a thin canvas* over the glass to create a slight shade. This will give the buds longer time to expand, and the flowers will be increased in size, improved in colour, and last longer. A continual succession of flowers may be obtained from February to April by removing the plants, at different stages of forwardness, to a house with a lower temperature, where they get the sun and air. It is

* Tiffany and Scrim are admirable materials for this purpose.

plain that the time of flowering will be regulated by the temperature of the house ; and plain also that the finest flowers will be produced if a moderate degree of heat be maintained. Has our treatment then, guided as in some measure it must be by the state of the weather without-doors, caused them to flower in February, or is it March ? Whichever it may be, here they are, delighting us with their gay and varied colours, and shedding around a delicious perfume.

Here is a pause in the process of cultivation : the Amateur has breathing time. He has only to see that his favourites do not suffer from drought, and all will go on well. But an active mind, which the cultivation of flowers usually engenders, will find plenty of amusement in attending to the plants out of doors. Besides, is it likely that a house of forced Roses should be known to exist without drawing the proprietor's friends or some anxious connoisseurs around him ! And here is one charm hanging over the pursuit : not only does the votary of floriculture derive from the purest sources a calm and intellectual enjoyment, but he is at the same time enabled to exhibit the art in its most pleasing dress to those around him.

When the flowering is over it is advisable to remove the Summer bloomers. Do not take them at once from the forcing-house and place them out of doors, for the sudden change would prove injurious. Gradually harden them by help of a cold house if standards, or a pit if dwarfs. When the Summer kinds are removed, fresh plants, kept in reserve for the purpose, may, if the Amateur wish, be brought to fill their places. The Autumnal bloomers, may, however, be treated somewhat differently ; their shoots should be cut back to three or four eyes with good leaves, and they will give forth a second crop of flowers in grand perfection during May. At the time they are cut back it is well to remove a little of the surface soil, replacing it with well-pulverized manure.

After April very little fire heat is required for the forcing-house ; indeed, if the weather be warm and sunny none is needed. After the second flowering the admission of air should be gradually increased for a few days, when the plants may be re-potted and removed from the house. In the operation of potting it will be found necessary to shake away a portion of the soil, sometimes using larger pots, and sometimes others of the same size ; the old pots should not be used again till they have been washed or well rubbed out. After potting, plunge the plants in an airy and sunny situation, where they may remain till required for forcing the following year. Having been early excited, they will be disposed to rest early, and thus are obtained specimens in the best condition for forcing. I have observed plants which have been forced for several years in succession cease growing about Midsummer, and shed a portion of their leaves shortly afterwards. If, from much rain, the bark and soil become thoroughly moistened, they are aroused, a second growth occurs, and the best wood is lost. To prevent this the pots should be laid on their sides under a

north wall or fence as soon as the wood is matured. The Autumnals removed from the forcing-house in May will, if suffered, produce flowers again in September and October. But this is working them rather hard ; and if we are anxious to secure good plants for the next forcing season the flower buds should be nipped out so soon as formed, and all gross shoots should be stopped back or destroyed. It is the shoots formed after the first flowering that we are looking forward to for fine flowers the next year, and the eyes on them should be kept dormant. Roses thus treated will flower well forced several years in succession.

It is not intended to be expressed that Roses newly removed from the ground will not bear forcing. If worked on the Dog Rose, or any free stock, they do not absolutely require to go through the preparatory course previously recommended. If taken up in October they may be forced the first year, although they do not form such regular and handsome plants and flowers. For several years past it has been customary here to pot and place the new varieties in the forcing-house in December, in order to test their merit before offering them to the public, and some tolerable flowers are thus produced, certainly not in full and perfect beauty, though sufficiently good to enable one to form an opinion of their value. But this is treading on the very confines of the laws of Nature, and is one of those things which may be done, and not what should be recommended. Small plants established are preferable to large ones newly potted. In fact, the former, if in a good state, will produce flowers equal to those of larger plants ; the difference will chiefly consist not in quality but in quantity. Plants of this description, after having been in the house for a short time, should be shifted into 32 or 24 sized pots, using a rich light soil, and taking care not to bruise the tender roots or loosen the ball of earth in the operation. With regard to the description of Roses best suited for forcing, some varieties, which do not expand their flowers freely out-of-doors, are beautiful when forced ; and some kinds, of rare beauty in the garden, are of little worth for forcing. A list of the best will be furnished hereafter.

Many who might not have convenience or inclination for forcing Roses would yet willingly appropriate a pit to secure a good bloom in April and May ; and this may be attained without much trouble. Let the plants be pruned and placed in the pit early in November. Keep them as close to the glass as possible. Give air abundantly in mild weather, covering the glass with mats or fern on cold nights, or even during the day in the event of severe frost.

When the first edition of this work was published (1848) forced Roses were seldom met with except in the Rose nurseries and private gardens, and at that time they were rare and highly prized. But at the present time the market gardeners round London and elsewhere grow them largely. The majority deal with but few kinds, among which *Marechal Niel*, *Niphetos*, *Mrs J. Laing*, *Captain Hayward*, and *General Jacqueminot* figure conspicuously. With some they are grown in pots, and with others planted out

under glass. Their system of cultivation does not differ essentially from that which we have described. Large quantities of Roses are, however, now poured into the market from this source and from abroad in winter and spring, before or after the Roses here are in bloom out-of-doors, and they no longer realise the almost fabulous prices which have been heard of in the past.*

* I once paid 12s. per dozen in Covent Garden Market for red Rose blooms to meet the requirements of a valued friend.

CHAPTER XII.

Remarks on Sundry Operations in the Rose Garden.

CERTAIN branches of cultivation have been made the subject of separate Chapters, but there are various matters interesting and important in themselves yet not of sufficient magnitude to require this; such it is our intention to include in the present chapter.

This would seem the proper place in which to speak of Garden Sports. When a branch of a tree produces flowers which differ from those on corresponding branches of the same tree it is called a "sport." Any cause that tends to produce an abnormal condition of a plant, such as high cultivation, favours the production of sports. Camellias and Chrysanthemums have hitherto given us the greatest number of "branch sports," but they are becoming more frequent amongst Roses. During twenty-six years, from 1850 to 1876, I met with but one "branch sport" among my Roses, and that was a branch of Mrs Bosanquet which produced red flowers. Now, see how many "branch sports" have been produced over the last ten years, and others are continually coming into notice from different cultivators. It may be said this is due, or partly due, to the breaking of fresh ground by hybridizing the so-called species. Well, admitting this to be a factor in the case, there still remains, it seems to me, a large residuum most reasonably accounted for by the highly nitrogenised manures on which Roses have been fed over the last few years, principally with the view of getting large flowers for our flower shows. There is one fact worthy of notice as a point of difference between "seedlings" and "branch sports." The former seldom re-assume the likeness of the parent, the latter often do so; hence, unless "fixed" by cultivation their commercial value is somewhat less.

Orange Fungus, sometimes known as Red Rust, is a frequent visitant in some districts. When observed under the microscope and enlarged two hundred diameters it is seen as in Fig. 45—a densely compacted mass of jointed orange coloured clubs. The clubs grow by forming new joints at the bottom, and constantly push off the top joints, which in turn germinate and reproduce the fungus. The upper joints

are shown as pushed off or free in the illustration, and it is curious to note that as upper joints become mature they become finely hairy or spinulose as shown. This early condition of Orange Fungus is known to botanists as *Coleosporium pinguæ*.

As autumn approaches, the orange tint of the *Coleosporium* fungus becomes replaced by an intense brown or black hue, and this black colour is a sign that the

Fig. 45.—ORANGE FUNGUS
Early Stage—*Coleosporium pinguæ*.
Enlarged 200 diameters.

mature condition of the fungus is reached on the now dying leaves. If a little of the black powder is placed under the microscope and enlarged two hundred diameters it will be seen as at Fig. 46. Each of the four dark bodies here illustrated is a compacted series of about six or seven resting spores placed one on the other. Each series of spores is enclosed in a frost-proof and water-proof membrane, which membrane preserves

the resting spores amongst the rotting Rose leaves on the ground safe and intact all through the Winter. When the Spring arrives the spore-membrane cracks and the resting spores become separate, they are then carried about in the air by the winds of early spring, and such spores as alight upon Roses produce Orange Fungus. When in a very infantile state Orange Fungus is pale sulphur in colour, or even cream-coloured. This very early condition, seen just before the development of the orange-colour, is known as *Lecythea rosæ*.

Fig. 46.—ORANGE FUNGUS.
Late Stage—*Phragmidium mucronatum*.
Enlarged 200 diameters.

Orange Fungus in its different stages is not confined to garden Roses, for it grows with great virulence on many of the wild Roses of our hedges; our gardens are therefore frequently infected from wild Roses.

As Orange Fungus grows within the substance of the foliage and stem it is impossible to reach it with any mixture from the syringe. In places where this pest frequently occurs care should be taken to gather together and burn the dead Rose foliage of the Autumn. By this means the resting spores of the fungus may be destroyed, and there will be less chance of the recurrence of the fungus in the following Spring. In bad cases some of the resting spores will remain upon the leafless stems and branches of Rose plants; these may be syringed off, but they will probably retain their vitality upon or in the ground unless some poisonous solution is used. The following infusion has produced good results—Four ounces of hellebore root to half-a-gallon of water, then dissolve half-a-drachm of bichloride of mercury in a little spirit, and add this to the solution, with half-a-gallon of lime water.

Let us now briefly consider the work and enjoyments of the year, commencing

with the Spring. The last operation performed in the Rose Garden has been pruning, and now forking the beds over requires to be done.

When Roses are newly planted they need a little extra attention. They should be mulched and watered occasionally if the Spring or Summer prove dry. As care in childhood and early life often determines the constitution of the man, so attention at this epoch of a plant's existence usually establishes a vigorous and healthy subject. Unless it is the intention to supply the plants with manure-water during that part of the growing season which precedes their flowering, now is the time to enrich the soil. If the ground has been prepared the previous autumn this will be unnecessary, but under all other circumstances it should be done. The manure should be well-decayed, and a thick coating laid on the beds previous to forking, that it may be turned in in this operation. *An annual forking is indispensable*, and if the beds are also hoed with a Vernon hoe three or four times in the course of the summer, as the nature of the soil or the season may require, the plants will be largely benefitted. The latter practice is especially recommended for stiff and adhesive soils.

Rose-trees require a careful looking over during April and May, to remove the Rose-grub, which, if allowed to pursue its ravages, proves most destructive to the early bloom. Tobacco-smoke and tobacco-water seem alike inefficient; soot-water is evidently disagreeable to them, but they survive it; and the only effectual remedy I know of is to search diligently, in the early stages of the young shoots' growth, and draw the vagrants from their flimsy hiding-places. I believe certain birds frequently make a meal off them, but their operations are too irregular to be relied on. The green-fly abounds everywhere; syringing with tobacco-water, or dusting with snuff and soot when the leaves are damp, that the mixture may adhere thereto, destroys or disperses it. Where only a few trees are grown it is also a good practice to smoke the trees with tobacco, using the fumigating-bellows, first enclosing the head with some material that will prevent the escape of the smoke.

In budded and grafted Roses, suckers from the stock often shoot forth, and will impoverish the tree if allowed to remain. They should be watched for, and invariably removed so soon as seen; if proceeding from beneath the ground, it is necessary to remove the soil, for which purpose a spade is best, and they should be cut off close to the stock whence they spring. If this is strictly attended to for two or three years the Dog-rose will cease to throw suckers. On the specimen plants here, which are of some age, it is rare that a sucker is seen.

At the same time that we are on the look-out for suckers, it may be well to have an eye on the heads of the trees, to establish a regular growth. Besides the shoots produced at stated periods—in Spring, and in Summer immediately after flowering,—it is not unusual, when a plant is in full vigour, for buds that have lain dormant even for a year or two to burst into life, producing very gross shoots. If such proceed from the Summer kinds, they rarely flower, and, not ripening well, are of

little use; if they arise from the Autumnals, a large truss of flowers is often produced, but their quality is quite mediocre. In both cases these gourmands, by drawing to themselves too large a share of the nutritive juices of the plant, starve the more moderate and valuable shoots. But what shall be done with them? They are fine shoots, and it seems a pity to destroy them. But if the plant is already well furnished, it is certainly best to destroy them by cutting them off close to their base, so soon as discovered. If, however, there are but few shoots, or a tree is ill-shapen, they may be turned to advantage. Under the latter state of things pinch out their tops when they have reached an advantageous height, which the looker-on must determine, and thus they may be brought to fill up a scanty tree or balance a mis-shapen one. But supposing, when such shoots arise, a Summer Rose has an abundance of vigorous shoots, or an Autumnal Rose is scant of bloom, though at the same time in such a state of health and vigour as to warrant us in concluding there is sufficient command of food to support and develop existing branches and anticipated flowers, this may render it advisable to allow such shoots their natural course of growth. But remember, *the most vigorous shoots in Summer Roses are least likely to flower; in Autumnals they do not produce the best flowers.*

We would treat these gross shoots in the same way when they arise on Dwarf or Pillar Roses, or indeed anywhere.

As a general rule, so soon as the flower-buds are formed, if we are seeking large flowers in preference to numbers, it will be well to nip out first those that seem imperfect, and afterwards such as are smallest and most backward. It has even been recommended to cut off the early flowers of the Autumnals, *on the ground that there is an abundance of other Roses in June*, and the practice causes a finer and more certain production in Autumn. Yet we see no reason for destroying the first flowers of the former. Let them bloom: and when the flowers drop, remove the soil an inch or two deep for a good space around each plant, placing a spadeful of manure there. Cover this over again with the soil, and water the plants twice or thrice, if the weather continue dry. This treatment will induce a fresh and vigorous growth, ensuring, as a consequence, fine flowers. *The secret of securing a good bloom of Roses in Autumn exists in keeping the Autumnals growing during Summer and Autumn.* Do this, and there is no fear of failure.

The Autumnals perhaps give a better succession of flowers when grown on their own roots than when budded: the growth of the former is less periodic; shoots spring into life at shorter intervals.

It is good practice to manure the plants twice yearly on poor soils in winter and again when the first flowering is over, and water should be given freely in the growing and blooming season.

These are some of the operations necessary to be attended to *previous to the flowering season* in order to secure the well-being of our favourites. Some of them

may appear tedious, but to those who love flowers there is an interest felt in the simplest operations of culture ; for he who plants a tree adopts it as his own, appoints himself its protector, and delights in administering to its wants. Every act of labour bestowed increases his attachment to it, and every stage of progress offers beauties to his sight. As he wanders in the Rosarium, and sees the plants covered with flower-buds, what agreeable anticipations does he indulge in, heightened, perhaps, by the occasional recognition of a flower blossoming before its time. Every succeeding walk shows him an increase in the number, till at last he beholds them flushed with blossoms, yielding a rich harvest for the labour he has bestowed.

Well they reward the toil. The sight is pleased,
The scent regaled.
Each opening blossom freely breathes abroad
Its gratitude, and thanks him with its sweets.

What a delightful month is June for the lover of Roses ; and what time is equal to the morning for inspecting the flowers ? What floricultural enjoyment can surpass that afforded by a walk in the Rosarium at grey dawn, when

The lamps of heaven grow dim, and jocund day
Stands tiptoe on the misty mountain's top ?

Then the White Roses first show, and how inexpressibly pure they seem in the twilight ! The deeper tints,—the blush, the pink, the rose,—follow in rapid succession ; and as darkness flies away the crimson and the blacker hues rise in rich effulgence to complete the picture. How beautiful the foliage appears glistening with dew ! The flowers, too, are rife with freshness and beauty. Is there not life in every fold ? And what a delicious odour is borne on the surrounding air ! As we gaze and admire, there is little to disturb our meditations ; the warblings of the feathered choristers alone break in upon the slumbering scene. Here is the consummation of our hopes in Rose-culture. And what a recompense for the toil we have sustained ! Do we not feel as we admire, that

“ Nature never did betray
The heart that lov'd her : 'tis her privilege,
Through all the years of this our life, to lead
From joy to joy.”

Next to the morning's walk in the Rosarium a ramble at eventide is, perhaps, the most delightful. The colours of many kinds have the same fervid glow ; the same perfumes scent the air, but (alas, that the life of our favourites should be so fleeting !) instead of the young and promising beauties of the morning we gaze on Roses of mature age.

But these are not all the sweets attendant on the cultivation of flowers. As the amateur scans the beauties which surround him, when satiated—if indeed satiety can be experienced here—with the sight, the reflections awakened by association in flori-

cultural nomenclature afford him new sources of enjoyment. What an amount of virtue, learning, wit, valour, often congregate on a small plot in the flower-garden! How proud is the florist of his royal, classical, and social subjects and attendants! Kings and emperors are surrounded with the good and great of all times—his Homers, his Platos, his Aristotles, his *peaceful* Alexanders and Cæsars! There kings and emperors are placed beside the subverters of dynasties and empires; there warriors who have indulged in deadly strife exist together in the strictest amity—a Charles beside a Cromwell, a Scipio in company with a Hannibal. In “rigid Cincinnatus, nobly poor,” he reads a lesson on self-negation and magnanimity; in Napoleon, however much he may be dazzled by the splendid genius of the man, he cannot but recoil from one who drenched the earth with blood, as he ponders over the futility

Fig. 47.—STANDARD ROSE.

of human ambition. Then let him contrast the consequences of the tyranny and licentiousness of an Anthony with those arising from the virtues and philanthropy of a Howard: the one through his vices lost a kingdom; the other, though an humble individual, conferred lasting benefits on thousands of his race, and earned in the work an honoured and imperishable name.

But we have digressed very far, and must return to the practical part of our subject. With regard to the manner in which Roses should be grown, the habit of the variety may be taken as a guide. The vigorous growers would seem best adapted for Standard (see Fig. 47) or Pillar Roses, unless of slovenly growth, when they are suited only for covering banks or for climbers.

The kinds of moderate growth look well on Half-Standards. The kinds of

delicate or dwarf growth are best on Dwarf Stocks or on their own roots; they rarely succeed well as Standards; besides which, a small head on a long stem is unsightly. But all sorts, be they strong, moderate, or small growers, may be advantageously cultivated as Dwarfs in pots or in the ground (see Fig. 48).

But let us note a few thoughts respecting Climbing Roses. The groups best suited for this purpose are named in Chapter XVII. For covering walls and fences with north, north-east, or north-west aspects, the Boursault, Ayrshire, and Semper-virens are the best, because they are free bloomers and very hardy.

I was recently much struck by the beauty and effect of Climbing Roses trained upwards around the partially bare stems of some large trees in the garden of the Grand Hotel Villa Serbelloni, on Lake Como in Northern Italy. In one instance I estimated the extreme height the Roses had reached at 40 feet, and at various heights

Fig. 48.—DWARF ROSE, STAR OF WALTHAM.

from the ground to the summit lovely clusters of flowers protruded, filling up the bare and open spaces with glorious masses of colour (see Fig. 49).

When Climbing Roses are planted to cover unsightly trees, standing in positions where it is thought desirable they should remain, a slight annual pruning and manuring is all the culture they require.

An arch covered with Roses is a beautiful and effective object in a garden, and in most gardens a suitable place can be found for such (see Fig. 50).

Pillar Roses are comparatively of recent introduction. They present a new feature in the Rose Garden and deserve to be more extensively cultivated. Fig. 51 was sketched from a plant of the Ayrshire Splendens, the best of that group for a Pillar Rose. The groups thought most suitable for this style of growth are named in Chapter XVII.; but it must not be inferred that *all* the varieties of these groups are suitable: they require selecting, and those denominated *vigorous* or *robust* in the descriptive part of this work are best for the purpose. But what are the proper

supports for Pillar Roses? Iron is doubtless the most durable, but also the most expensive: nevertheless, where expense is not a primary consideration, it is thought preferable. The supports more generally used are larch poles, which have a very rustic appearance when cut from the woods with the snags left projecting a few inches;

Fig. 49.—CLIMBING ROSE ON TREE—AYRSHIRE RUGA.

these hold the shoots in place, and prevent them from being torn about by the wind. But the want of durability is a great drawback on the value of these poles. In the course of three or four years, just as the Rose has covered the pole, the latter often decays at the surface of the ground, a gale of wind lays it prostrate, and the result

is sometimes disastrous to the plant. To counteract this as far as possible it is well to char about two feet of the lower end of the pole, inserting eighteen inches only in the ground. The advantage of larch poles for Pillar Roses is the rustic appearance they present, relieving the often-tiring niceties of the Rose Garden: the advantage of iron supports is their durability.

When planting Pillar Roses two or more plants of different colours are sometimes placed together, and their branches so interwoven that a pied pillar is formed. This to my taste is as objectionable as two sorts on one stem, and the effect is not equal to that produced by plants of opposing colours placed side by side. Pillar Roses

Fig. 50—ROSE ARCH—FELICITE PERPETUE.

require more manure than others. In addition to the supply granted in Spring when the soil is forked over, it is necessary to give a second supply in June, just after the plants have flowered, as recommended for the Autumnals. Pillar Roses are often found bare of branches and flowers at their base, due usually to their having been carried up too quickly, or to poverty of soil. To remedy this defect, reduce their height when pruning, and enrich the soil, when eyes will be developed at the base, and the upward growth may be again encouraged.

Pyramid Roses are not yet common in our gardens, but they are surely destined to become so, for when in bloom they present such masses of colour. As already

stated (see p. 101), there are not many sorts well suited for this purpose, but there are various colours, and no doubt others could be introduced if sought for (see Fig. 52).

The Weeping Rose (Fig. 53) is the last form of which we have to speak. Can anything be more beautiful? In windy situations an iron trellis is indispensable: in sheltered places a hoop, as shown in Fig. 26, is sufficient. It accelerates the perfecting of the Weeping Rose to thin out the supernumerary shoots in July, after the tree has flowered.

We advise cutting off the flower-stalks in all cases so soon as the flowers have decayed, removing as few leaves as possible in the operation, for in addition to the neat appearance it gives to the Rose Garden, it prevents the formation of seeds,

Fig. 51—PILLAR OR POLE ROSE—AYRSHIRE SPLENDENS.

which when suffered to ripen draw to themselves that matter which should be stored in the branches.

After worked Roses have been planted some years—say from six to ten—the health of the plants often becomes impaired; the wood annually produced grows weaker and weaker, and does not attain that maturity and size necessary for the production of fine flowers. The stems, unless washed occasionally, become covered with moss and lichens, and if the soil be at all inferior they probably cease to swell. Too little pruning will produce this state of things, but there are other causes. If we carefully remove a tree in this condition we shall find it abounds in large sucker-

like roots, about the thickness of one's little finger, almost destitute of fibre, and which have been burying themselves deeper and deeper in the earth every succeeding year. Thus they become placed farther and farther from the reach of nourishment, while the tree, increasing in size, requires a greater supply. The consequence is, the tree dwindles and becomes debilitated. This is especially the case when deep planting has been practised. When this state of things is visible the plants should either be root-pruned, or, which is better, taken up altogether and replanted. Let this be done *early in the Autumn*; and when the plants are out of the ground *cut off all the suckers*, and shorten the roots moderately close, which will induce an abundant emission of

Fig. 52.—PYRAMID ROSE IN BLOOM—MADAME PLANTIER.

fibres. Prune the heads closely *in Spring*; never mind sacrificing the flowers; the removal of trees of this age, and the shortening of the roots, would alone prevent a perfect flowering the first season: look only to the formation of the tree. It is, perhaps, not advisable to remove the whole at once, let a few be thus treated every year; for the second year after replanting, having regained their vigour, they may be expected to flower as beautifully as ever.

Every Rose-tree should be named. Wooden labels answer very well. They should be three-quarters of an inch wide, three inches long, and about the eighth of an inch in thickness. In one end of these a hole may be pierced with an awl, and copper wire passed through, by which they are fastened on the branches. Wooden labels are

preferred for naming plants in the ground. If well painted, and *the names written with a dark pencil when the paint is wet*, the writing will remain plain for four or five years, and often much longer. When stuck in the ground, the lower end of the stick should be covered with pitch for an inch or so above the line of the level of the ground.*

To have Roses in bloom during the chilly months of Autumn is the greatest triumph of modern cultivators ; and perhaps this property of the Rose has recommended it to popular notice more than any other. Now, although we do not in a general way recommend Summer pruning, yet it is desirable to practise it to obtain late Roses. Here, as with Roses in pots, I once cut back the main shoots of about thirty sorts of Autumnals in August, and on the 17th of November I gathered flowers which, if not

Fig. 53.—WEEPING ROSE—AYRSHIRE SPLENDENS.

so large were fresher and as beautiful as any I had ever seen in Summer. Some *buds*, which were gathered at the same time and placed in a vase in a warm room continued to unfold for several days. It is especially necessary to remove decaying flowers during Autumn, as from the moisture they retain at that time they cause the rapid decay of those which surround them ; a pair of scissors is very useful for this purpose.

It is an excellent plan to wash the stems of old Rose-trees in the Winter, which is a time of leisure in the garden. A mixture of cow-dung, soot, and lime, two parts

* There are now many contrivances for naming Roses. I find Yeats' Metallic Garden Labels, written on with Prepared Indelible Ink, cheap, neat, and durable. The "Acme" Label, which saves the trouble of writing the names, is perfection.

of the latter to one of each of the former, serves for this purpose. This will destroy insects which may have sought shelter in the crevices of the bark, and also the moss and lichens which often grow there. It will further soften the bark, and favour the swelling of the stem.

It is not an unfrequent occurrence that the pith of a shoot decays from an old wound in pruning, leaving the living wood hollow like a flute. It is well to place on the end of such shoots a little of the composition used in grafting (see "Grafting"), which will exclude the wet, shut up one hiding place of insects, and preserve the branch from decay.

As winter approaches it is necessary to devise some means of protection against frost for those kinds which are susceptible of its influences; such are the Tea-scented and some of the Chinese and Noisette. Branches of the common fern, which grows plentifully on most wilds, answer for the purpose, as do laurel or fir-boughs, the latter, having a more lively appearance, are preferable. They should be stuck *loosely* among the plants, if Dwarfs, that the circulation of air may not be too greatly impeded; if Standards, a branch or two may be placed in and round the heads, securing them in the most favourable position by a tie with bast. Nearly all the Tea-Roses form beautiful objects as Standards; the only objection to the culture of many as such is their tenderness. It is true that slight shelter suffices to save them. I have seen Standard Tea-scented Roses laid under a leafless tree pass safely through a winter which killed similar plants and kinds when fully exposed. I have often thought that bee-hives might be used here with advantage in small collections. Drive three stakes into the ground triangularly, on these nail a board with a hole cut in one side extending to the centre, that the stem of the tree may be drawn in so that the head rests immediately upon the board; fasten it there, and then place a hive over the head. This will undoubtedly form sufficient protection for the tenderest; it is not very troublesome or expensive, and if the hives are painted they are not unsightly, and their durability is increased. The framework may remain during winter; the hives are required in frosty weather only. In March and April the tender roses may be pruned, and in May the protection may be withdrawn. Intense cold doubtless kills many tender kinds *when left wholly unprotected*; and the alternations of frost and thaw are often severely destructive to young plants on their own roots, raising them out of the ground, and exposing their roots to the drying winds of Spring. In the Winter of 1846-47 I witnessed many die from the latter cause, which had been uninjured by the severe frost. To prevent these consequences a little fresh soil should be thrown over the roots immediately after a thaw, and, when the ground is tolerably dry, tread it down firmly.

CHAPTER XIII.

On Propagation.

THE Rose is capable of being propagated—1, by Seed ; 2, by Cuttings ; 3, by Budding ; 4, by Grafting ; 5, by Layers ; and 6, by Suckers.

1. BY SEED.—This method, which is adopted only as a means of obtaining new varieties, has been already fully entered into (see Chapter IX.), and needs no further notice here.

2. BY CUTTINGS.—Cuttings may be made with varied success at any time. The seasons which offer the greatest advantages are Summer and Autumn, but where there is a house of forced Roses, cuttings may also be taken from March to May. Let us first offer a few remarks on Summer propagation. Immediately after the plants have flowered (June), select well-ripened shoots of moderate strength, taking care not to remove any whose loss would destroy the symmetry of the plants. In taking off the cuttings they should be cut close to the old wood, if with a heel, as it is technically termed, it increases their chance of rooting. The cutting, of which Fig. 54 is a representation, should be made about three inches long, consisting of three or four joints. Two inches of the lower end should be inserted in the soil, and the part left above should have two good leaves. From four to six of these cuttings may be placed round the inside of a 48-pot, in a compost consisting of equal parts of leaf-mould, turfy loam chopped fine, and silver-sand. After insertion they should be well watered through a fine rose pot, to settle the mould closely around them. When the soil is drained and the leaves dry, the pots may be removed to a cold frame, or placed under hand-glasses, keeping them closed from the air and shaded from the sun, sprinkling them twice daily for the first fortnight. The sprinkling usually keeps the soil sufficiently moist, though it is sometimes necessary to give water in addition. We need scarcely say that the leaves should be retained on the cuttings as long as possible, but if they decay, they should be removed immediately, or the contagion spreads, and numbers may be sacrificed. Where damping or fogging-off occurs, the admission of air or more sunlight proves the best remedy.

In about a fortnight after the cuttings are made they will have formed callus, when they should be removed to a pit with bottom-heat. Here they root quickly, and may

be potted off singly into small or large 60-pots, according to their strength. Place them in bottom-heat again for a few days, and they become established, when they may be removed to a cold frame, admitting air gradually to harden them. "But," says the amateur, "is bottom-heat indispensable? I have no bottom-heat, or, at least, I have but little, and to that a variety of plants lays claim. There are my Azaleas, my Geraniums, my Fuchsias, my Cinerarias, they require all the room of this kind that I have. Surely Roses, hardy plants as they are, will strike without bottom-heat." We answer, "They will." We do not say that bottom-heat is indispensable but advantageous; they may be kept in the cold till rooted, or, indeed, throughout the year, but we hesitate to recommend the adoption of this plan unless bottom-heat can be included in it.

But there is another season at which propagation may be carried on with success, namely, Autumn, just before the fall of the leaf. In June the Autumnals only need

Fig 54.—A CUTTING.

be cared for; now, both the Summer and Autumn kinds demand attention. Among the latter the Bourbon, Noisette, Chinese, and Tea-scented should be placed in rows under a hand-glass, or round pots in a closed frame, for but few of these will do well planted as cuttings in the open ground. The hand-glass should be lifted off occasionally on a bright day during Winter, to dry the dampness of the soil, when any decayed leaves or cuttings may be removed. Water, under these circumstances, is rarely required till Spring, though if worms be troublesome in raising the earth a little lime-water may be given, supposing the soil to be well drained, which is a point of primary importance. These cuttings will not be well rooted till Autumn, when they may be taken up and potted, and placed in a frame for a few days, kept close, shaded, and syringed. Now, for what purpose are the plants required? Are they wanted for pot-culture? Or is planting-out the end in view? If the former, treat them as recommended in the Chapter "On the Cultivation of Roses in Pots" (Chapter X.); if the latter, plant them out early in Autumn.

Cuttings of the hardy kinds, such as the Hybrids of the Chinese and Bourbon, the

Boursault, the Ayrshire, the Evergreen, the Multiflora, and the Hybrid Perpetual, may be planted in beds in the open ground. By October there will be plenty of well-matured wood on the old plants, and judicious thinning will benefit rather than injure them. The cuttings in this instance should all be made with heels, by which rule only one cutting can be made from a shoot. The tops may be used, but they are not so likely to take root. The cuttings here must be longer than those placed in pots to allow of their being firmly fixed in the ground. Nine inches is a fair length, and two or three eyes should remain above ground. When prepared, the best method of planting them is to dig the soil, cutting down a trench every nine inches, in which a row is inserted at about an inch apart from cutting to cutting. A few boughs should afterwards be stuck rather thickly between every two rows, to accomplish the double purpose of shielding them from the sun, and to prevent the ground from becoming frozen very hard. Branches of some evergreens should be used, and as the leaves fall they should be cleared away, or a dampness will be engendered, resulting in loss. The branches may remain till Summer, and after their removal it will be well to hoe the soil to loosen the surface. After this it will be seen which are on a fair way to make plants: the others should be removed to give the prosperous ones a full chance of success and plenty of room to grow. Here they must remain till Autumn, when they may be conveyed to any position they are destined to fill.

But we have alluded to another season at which propagating by cuttings may take place; this is from March to May, when the cuttings are taken from plants that have been forced. They are treated in the same manner as related of June cuttings, excepting that the latter are first placed in a cold frame, and the former are placed in bottom-heat at once. Cuttings so made strike very readily; yet we apprehend this plan is least of all suited for the amateur. First, it involves the necessity of keeping the cuttings and plants in bottom-heat for six weeks or two months in the spring, a time when, to the generality of cultivators, heat can ill be spared. And then it is questionable whether by such culture we obtain the robust hardy-constituted plants that we do by raising in the open ground or with merely bottom-heat at rooting time. It should be told, however, that cuttings taken from plants that have been forced root more rapidly and with greater certainty than cuttings taken from the open air. A single eye of an indoor cutting will make a plant. Even leaves and leaflets will emit roots. I have rooted ninety per cent. of both, but abandoned the practice years ago, having found by experience that a cutting with two or more eyes made a sounder and better plant, and that the leaves and leaflets never lived to generate wood-buds.

3. BY BUDDING.—Before we enter upon the detail of this practice let us note a few thoughts respecting Stocks.

The kinds most commonly used are the Dog-Rose, the De la Grifferaie, and the

Manetti. The former abounds in the hedges throughout Europe, where it delights us with its delicately-tinted blossoms in June and July. It is, however, a bad subject there, and all who value a good fence will rejoice over its removal. There cannot be a good hedge where the Dog-Roses abound. The Autumn is the best time to remove them, and a mattock is the fittest instrument for the purpose. Before replanting in the garden the roots should be trimmed close with a bill, bruising them as little as possible in the operation, and the tops shortened, of various lengths, according to their bulk or straightness. Cuttings of the Dog-Rose may be taken the end of October, and cut into lengths of about six inches, the lower four inches being inserted under ground. If taken with heels there will likely be a larger percentage of rooted stocks fit for planting out in a year's time (October). Nine months later on (July) these Dog-Rose cuttings may be budded. A great fuss was made some few years ago about budding Roses on seedling briars, and the practice was written about as if altogether new. But it was resorted to in my father's nurseries seventy years ago, and has been carried on here from time to time ever since. The seedling Dog-Rose is a very good stock, and is easily raised from the hips gathered in the Autumn and sown in the Spring or Autumn following. It is best suited for light dry soils. The De la Grifferaie and Manetti stocks may be either struck from cuttings made in Autumn as above, or purchased at the Nurseries. The De la Grifferaie is a good stock for Tea-scented and Chinese Roses intended for pot-culture. Some varieties, too, which do not thrive on the Manetti, grow and flower well on this stock. The Manetti is desirable for Roses in pots, and admissible for hardy kinds when an extremely vigorous growth is desired; it has been recommended for kinds of delicate growth which do not thrive well on the Dog-Rose, but *my* experience does not uphold the recommendation. If a change of stock is necessary for such it would seem that one of a *finer, not coarser nature* than the Dog-Rose should be employed. That the plants grow more vigorously on the Manetti *the first year* we do not deny, *but their subsequent decline is also more rapid.*

As the stocks for standard and dwarf standard Roses shoot forth in Spring they will sometimes produce buds from the base to the top; all should be removed but two or three nearest the summit. Three placed triangularly are best, when the two lower ones—which should range on opposite sides—may be budded, and the upper one cut away so soon as the stranger buds are developed.

Manetti, De la Grifferaie, and other stocks for dwarf Roses, whether planted in rows or beds, may be allowed to grow as they like till the time for budding arrives, then clear a sufficient space on the stem as near the ground as possible to allow of the buds being inserted conveniently.

The operation of budding consists in transferring from one tree a small piece of bark containing an embryo bud, and inserting it beneath the bark of another tree. This piece of bark is called the bud, *d*; the tree in which it is inserted is called

the stock, *a*. The only implement necessary in the operation is the budding-knife, of which there are various forms, but that called Curtis's is perhaps the best. Let us suppose we have a stock which we are wishing to convert into some favourite variety. In the first place obtain a shoot from the tree whose identity we wish it to bear; from this the leaves are cut off, leaving, however, about half an inch of the leaf-stalk to every bud. Before proceeding further the prickles should be rubbed off both stock and scion, that they may not interfere with the operation or hurt the fingers of the operator. Now take the budding-knife in the right hand and make a longitudinal cut, *a a*, about an inch in length, terminating at the top end, *b*, with a cross-cut. In using the knife take care not to cut too deep; *through the bark* is all that is necessary; deeper is, indeed, injurious. Now turn the handle of the knife to the incision, running it up and down the cut *a a*, twisting it slightly on either side to raise or open the bark. All is now ready for the reception of the stranger bud. Take the shoot which is to furnish it into the left hand, with the thicker part towards the finger-ends. With the knife in the right hand commence cutting about half an inch behind the bud, passing the knife upwards under the bud, and to about the same distance beyond it. The knife should have a keen edge that the bark may not be ruffled in the operation. In cutting out the bud the knife should pass through almost level; it may, however, in some cases dip a trifle when passing directly under the bud, as the wood before and behind it are not always on the same level. If the bud be cut ever so skilfully, there will be a little of the wood adhere thereto. This some advise the removal of, others say, let it remain. Much depends on circumstances. If the shoot is not fully ripe, or if, from the nature of the variety, the wood is soft when taken, cut the bud as shallow as possible, and place it with the wood in the stock. But the shoot is usually firm and ripe, and then the wood should be withdrawn. To do this easily, place the bud between the forefinger and thumb of the left hand, with the cut uppermost, and with the upper end pointing from the hand. Insert the point of the knife just beneath the wood, *c*—that is, between the wood and the bark—and by a skilful twist of the knife, which can only be acquired by practice, the wood may be jerked out. Now, with the same hand place the bud on the bark of the stock parallel with the longitudinal incision, *a a*, and with the upper end towards the top of the shoot, then with the handle of the knife raise the bark on the side opposite to that on which the bud is placed, pushing two-thirds of the bud beneath the bark with the thumb. Now raise the bark on the

Fig. 55.—BUDDING.

opposite side, and the bud may be gently pushed under with the handle of the knife, or will probably drop in. When properly placed the eye of the bud should be directly under the opening caused by the raising of the edges of the bark of the longitudinal incision *f*; if it be not so, the handle of the budding-knife should be inserted beneath the bark to push it to a right position. But if the bud be not deprived of the leaf-stalk, if that is allowed to protrude from the opening, the eye will be secured in the best position. After being inserted the bud should be drawn upwards to the cross-cut, and the upper end cut at the same angle, that its bark may abut against the bark of the stock laid open by the cross-cut *b*. The bud then is inserted, and it now remains to bind it in. For this purpose take cotton or bast, the former is generally preferred. Commence tying at the bottom of the cut, passing upwards till the whole length of the incision is bound over. Where the buds are feeble, or where success is deemed important, it is customary to tie a little damp moss or a leaf over the bud after the operation is completed, which is in no case objectionable, except on account of the additional time it occupies.

About three weeks after the operation has been performed the cotton may be removed. If the bud is not well united, let it be tied up *loosely* again; if it is, leave it untied, and there is an end of care till the following Spring. In February the wild shoot may be cut away two inches beyond the bud, when the latter will break and soon form a tree. It is often said that it is unnecessary for the bud to remain so long dormant, and that it may be made to break, and if an Autumnal Rose even to flower, the same year. We admit the truth of this statement, but condemn the practice. It is accomplished by cutting off the wild shoot a few inches above the bud, or by tying a ligature tightly round it at the same distance. The object sought is to cut off certain channels through which the sap naturally flows that it may become concentrated in the vicinity of the bud. The results are usually premature development and an unsound plant. Let a certain number of plants be treated thus, and allow the buds inserted in others to lie dormant till Spring; defer judgment for one year, and see at the expiration of that term which form the healthier and sounder plants. Unquestionably the latter. If the buds break soon after inserted the shoots are puny and weakly, evidently suffering from want of nourishment; if allowed to lie dormant till Spring they have a rich store of food at their command and grow with surprising vigour. When a bud has shot a few inches and formed three or four good leaves it should be tied to a stick, or it may be blown out by the wind; the heart of the shoot may then be pinched out, when from the axil of each leaf an eye will quickly push forth. In May or June the stock may be headed down close to where the bud has been inserted, and if the growth be vigorous the wound made in so doing will quickly cicatrize and a perfect plant is the result.

If the best time for budding be demanded we should give July and August. It does not however require great penetration to see that this point depends in some

measure on the season. The practised hand will cut and raise the bark to ascertain when it parts freely from the wood, the tyro will find a criterion in the prickles. If slight pressure cause them to separate from the bark, the stocks are in good order, and the fitness of the shoots or scions may be ascertained by the same test. If the weather be hot and sunny, morning and evening are the best hours for budding. A July sun pouring down his rays upon the operator is not altogether pleasant, and in regard to the operation does not increase the chances of success. The shoot from which the buds are to be taken should not be cut from the tree till we are ready for action, and the less time that elapses between the different branches of the work the better; the bud should be cut out, inserted, and tied up in as short a time as possible.

The Wild Roses are sometimes budded in the hedges where they grow, which is called "Hedge-budding." If it be intended to remove them afterwards to the flower-garden, the practice is not worthy of attention; it is far better *to transfer them as stocks*, and bud those which grow after removal. But if done with the view of ornamenting parks, &c., by leaving the plants in the hedges, the idea is a good one. Bud them as heretofore described, taking care to eradicate suckers, which usually arise here in great abundance and soon starve the plants if left unchecked.

4. GRAFTING.—It is sometimes asked whether grafted Roses are equal to budded ones? When the junction becomes perfect they are, in my opinion, quite as good; but the scion and stock do not always thoroughly coalesce, owing to which more imperfect plants are raised by this mode than by any other.

In selecting stocks for grafting, whether they be Manetti, De la Grifferaie, or Dog-Roses, they should be secured of various sizes; the majority, however, should be rather thicker than an ordinary cedar pencil. It is well to pot them in 60-sized pots one year before required for use. The best time for grafting Roses in pots is January, and the stocks should be placed in bottom-heat a week or ten days beforehand. *Nearly all kinds will succeed* grafted, but the hard-wooded ones do the best. The forms most generally practised are (1) Cleft-grafting, (2) Wedge-grafting, and (3) Whip-grafting.

1. CLEFT-GRAFTING.—We shall first describe and illustrate this mode, and afterwards refer briefly to the others (see Fig. 56). Here the stocks should be larger than the scions. The latter, which may be taken from the plants as required for use, should be well-ripened shoots cut into lengths of about an inch and a-half. The tops of shoots are seldom fitted for scions; two-thirds of their length is, generally speaking, as much as can be used with advantage. Each scion should have two, three, or four buds—two are sufficient to produce a fine plant. In performing the operation, first cut the stock quite level at the top, then insert the point of the knife at *a*, drawing it down towards the root in an oblique direction. Now make a corresponding cut, commencing at *c*, so that the two cuts terminate in a point *b*. Thus a piece of the stock is cut out, and the opening made is in the form of the letter V. With regard to the

width and length of the cut, this must be regulated by the size of the grafts in hand; as to depth, the wound should not extend quite so far as the centre or pith of the stock. The piece being removed, the scion *d* must be cut to fill up the vacuity: and the more completely it does this the greater is the chance of success. The most essential point is *to bring the inner bark of the scion in exact contact with the inner bark of the stock*. When the scion is fitted in it should be bound securely there with soft bast. It is then necessary to cover the place of junction with some composition that will effectually exclude air and water. For this purpose take the following ingredients:—five-eighths black pitch, one-eighth each of bees'-wax, tallow, and resin. Put them together in a glue-pot and melt them down over a slow fire. The best way of laying on the composition is by the use of a flat stick. It is not necessary to cover the whole of the bandage. Take care, however, that the lines where the barks join—indeed, what-

Fig. 56.—CLEFT-GRAFTING.

ever part the wound extends to—be rendered impervious to air and moisture. The wound at the top of the stock should be covered, and also the summit of the scion. Care must be taken not to apply the composition too hot, or the bark will be scalded, and success rendered doubtful. A good way to test its fitness for use is to place a little on the finger of the operator, when, if it does not cause any unpleasant sensation, it may be used without fear. This composition, though soft and pliable in a warm state, becomes hard and impenetrable when cold.

2. WEDGE-GRAFTING.—This is more simple than the foregoing. In many points the modes of procedure are the same; we have only to notice the differences. Instead of inserting the scion in one side of the stock, we here split the stock down the centre to the extent of three-quarters of an inch, and insert the graft in the slit. In preparing the graft, pare off equal parts from two opposite sides, that the lower end may be in the form of a wedge. Push the wedge in the slit of the stock, binding it firmly in, and covering with the composition as before.

3. WHIP-GRAFTING.—It is not important here that the stock and scion be of the same size. The former should be cut level at the top, as before, near to the base; both should be cut in an oblique direction, taking care to make the cuts smooth and even, and of the same length and slope, that the bark of the scion may lie exactly upon the bark of the stock. In laying the scion on it is a good plan to hold the pot containing the stock in the left hand and the knife should occupy the right. Insert the knife an inch or an inch and a half below, drawing it up obliquely to the summit. Care must be taken to prevent the knife twisting, or the consequence will be an uneven cut. The stock being prepared, take the scion in the left hand, giving an eye to the size of the piece of wood removed from the stock; while in this position pass the knife downwards, repeating the movement till a clean level cut is made, and the size of the lower end such that it may when united to the stock exactly replace the part removed. The unpractised eye and hand will not always be able to fit the stock by the first cut; and as it is important that the two barks should join, he may have to take a second or a third slice from one or the other. Well, he had better do so than leave the stock and scion badly joined. But the less of this hacking work the better. It is far easier to make a clean and level cut *by a single draw of the knife* than by the most delicate after-touches. When the scion is placed in a right position it should be securely held there by the thumb and fingers of the left hand until it is bound firmly on the stock with the right.

With regard to the treatment of Roses newly grafted, if the stocks have been in bottom-heat before grafting they must remain there; if taken from the open air bottom-heat is not absolutely necessary, although it will increase the amount of success. Suckers are sure to spring from the stocks, and they often do so in an annoying abundance. They must be kept in check by pinching out their tops till the stock and scion are firmly united and the latter pushed into growth, when they may be entirely eradicated.

When the scions first shoot the young leaves are very tender, especially when developed in heat. In most cases, too, they are but ill supplied with food in this early stage of growth, and shading is especially necessary. A strong current of air or a hot sun will injure them greatly. When the shoots are three or four inches long the plants that have been grown in heat may be removed to a cooler house or frame, where air should be admitted gradually to harden them. Some will bloom the same year; but they should not be left to flower in heat, or they become drawn and weakly, producing thin and badly-coloured flowers.

In due course it is advisable to remove the ligature in grafted Roses, and this should be done so soon as we suppose by the growth of the scion that the union is complete. If when untied the junction is not perfected, a single tie at top and bottom is sufficient to render all secure.

In plants grafted out-of-doors the composition should not be removed from the

junction for two or three months ; and that which covers the summits of the stock and scion may remain till it naturally falls away.

In reference to grafting Standard Roses, as they are invariably done in the open air, March is the best season. As fine and mild a day as March is likely to afford should be chosen. Grafting requires at all times an ordinary share of patience and perseverance ; and if the practitioner be not possessed of more than an ordinary share, he had better not attempt it out-of-doors on a true March day ; for to be kept in one position five minutes at a time, with a cold wind whistling round one's ears, is a trial of no common order. What a contrast between this and budding in a July day ! In grafting Standard Roses the stock is, of course, considerably larger than the scion, and Cleft-Grafting is the mode I have pursued with the greatest success.

In grafted plants, as in budded ones, if the buds or eyes be allowed their natural course they break and form long single shoots. If these are stopped so soon as they have three or four good healthy leaves, a bud from the axil of each leaf will be developed, and a round bushy plant is formed.

5. **LAYERS.**—This mode of propagating is not so commonly resorted to as the others. Dwarf or Bush Roses only are commonly layered. It is first necessary to dig with a fork for some space around the bush, breaking the soil quite fine, mixing in a little pulverized manure and sand in the operation. The instruments wanted are—a knife, a flat trowel, and some pegs. All things being ready, select some of the best shoots, stripping off a few of the leaves at a distance varying from six inches to two feet from the point of the shoot *a, a* (Fig. 57). Now, take the shoot in the left hand, and the knife in the right ; insert the latter just beyond an eye *b*, on the upper side of the shoot, and pass it upwards steadily and evenly, cutting about half through the shoot, and for an inch in length. This done, drop the knife and take the trowel. With the left hand bend the shoot close to the ground, that you may see the best spot in which to bury it, drive the trowel into the ground, working it backwards and forwards till a good opening is made, throw a little sand in the bottom of the opening and press the shoot into it, pegging it down two or three inches under the soil. It is well to twist the shoot a little after the cut is made, so that the end of the *tongue*—as it is technically termed (*b*)—from which the roots will be emitted, may take a downward direction. Having made all secure, close in the soil, pressing it firmly round about the layer. It is a good plan to give each layer a small stick (*c*) to keep it from being agitated by the motion of the wind. As to the length of the shoot that should remain above ground, much will depend on the state of the wood. We should make the cut or tongue in wood that is young, yet firm. The larger the layer, of course the larger will be the plant, though not always the better rooted ; the contrary is often the case. June, July, and August are the months for layering ; and should the weather continue dry, the layers should be

occasionally watered. If layered in June and July, the free rooters will be ready to take off in November. It is well, however, to examine one or two of each kind to ascertain this point, as some root in an amazingly short space of time, whereas others advance very slowly. It is perhaps usually safer to delay their removal till the following Spring. When rooted, they may be cut off within an inch of the tongue, taken up, and transplanted into beds, or to various spots in the garden. In the Spring they may be cut down to within three or four eyes, and some of them will bloom in the first Summer or Autumn. Their after-treatment is the same as that of other Roses.

Fig. 57.—LAYERING.

6. SUCKERS.—This is the least artificial of the artificial modes, though the Rose is not so much *inclined* to multiply itself by suckers as are many plants. The Scotch Rose (*R. SPINOSISSIMA*) is perhaps, next to the Dog Rose, most given to this peculiarity. It pushes its shoots along under the ground, and they break through the surface at various distances. It is not very often they can be separated from the parent with roots; yet the underground stems will put forth roots if carefully severed and transplanted. The Autumn is the best time for doing this, and a spade with a sharp edge is the fittest instrument for the purpose.

CHAPTER XIV.

On Tea-Scented Roses.

SOME one has called these flowers the *élite* of the Rose Garden. And if elegance of form, with tints and odours rare as they are delicate, entitle them to this distinction, it was a happy thought, for they possess these in a remarkable degree. There is a sprightliness of bearing, a careless grace of plant and flower, that is without parallel among the most distinguished of other groups. Look at that long primrose-coloured bud of "Thé Jaune" just unfolding—how exquisitely the petals are arranged! Can anything surpass in fragrance those half-expanded flowers of Madame de St Joseph? What a treasury of beauty is presented to the eye and mind by the myriads of apricot-coloured blossoms clustering upon that pyramid of Madame Falcot. The large snowy blossoms of Niphetos, too, are nowhere equalled, and Adam, Catherine Mermet, Comtesse de Nadaillac, Devoniensis, Gloire de Dijon, Maréchal Niel, Souvenir d'un Ami, and many others, can hardly be too highly praised.

But beautiful as these Roses often are in favourable soils and situations out of doors, many of them must be grown under glass to *ensure* a constant development of flowers in that state of perfection to which they are capable of attaining.

Some years ago, in Paxton's "Magazine of Botany," I called attention to the culture of Tea-scented Roses under glass. Convinced by experiments already tried, that a house of Tea Roses would prove an interesting feature in these nurseries, and tempted by the reasonable rate at which such a structure might be built, I erected here, some forty years since, a house expressly for the purpose. It had a span roof, sloping to the east and west. It was 50 feet long, 20 feet wide, 10 feet from the ridge to the ground, with lights opening at the top and sides. There was a bed all round the inside next the walls, and a bed in the centre, and a walk between the centre and side beds. The beds were raised a foot above the level of the walk, the edgings of which were of 4-inch brickwork; the house was heated, and the entire cost was under £70.

Conceiving that it may be interesting to the uninitiated to follow the details of this system of culture, I shall here endeavour to describe my practice as clearly and briefly as possible.

The house was finished the first week in June. Before planting, the natural soil was loosened two spit deep, and the beds afterwards filled to the top of the brickwork with a prepared compost of turfy loam, decayed manure, and washed road-sand. Early in July, when the newly placed earth had become solid, I planted all the really valuable varieties of Tea-scented Roses, and among them a few high-coloured Hybrid Perpetuals and Bourbons to increase the variety. The kinds of climbing habit were placed against the walls, with the view of training them up the rafters in the way of vines; in the centre bed, under the ridge, were planted the robust growers, that they might rise to the top and spread along the ridge; the dwarf and moderate growing kinds were, lastly, planted next the walks with the view of fashioning them into pyramids. When all were planted, the earth, which had become rather dry, was thoroughly soaked with water.

It was with me a leading idea to preserve the temperature of the house similar to that out of doors. But as the sun had more power and the wind less, and as dew was altogether excluded here, I endeavoured to neutralise the excess of sun-power, and to realise the advantages of the other natural aids to growth by admitting abundance of air, by frequent syringings and occasional waterings on the floor of the house. As the plants were in a growing state when planted out, the growth continued unchecked; the flowers were sufficiently plentiful till the end of November, when the plants were brought to a state of rest by withholding moisture from the air and soil. Early in February the plants were cut in rather close, and the surface of the soil was stirred with a hand-fork, the lights being left open night and day, except in frosty weather, till the beginning of March. By this time the leaf-buds had begun to break, when less air was admitted, and frequent syringings resorted to. The green-fly was kept in check by the combustion of tobacco-paper. On the first appearance of mildew the plants were dusted all over with sulphur immediately after syringing, and this dusting was repeated at brief intervals throughout the year. With May the blooming season arrived. So vigorous had been the growth that some shoots reached the top of the house the first year, and now completely overarched the walks. To look up at them from beneath was a delight as new as it was pleasurable. Large handsome flowers, supported by a profusion of beautiful green leaves, hung drooping as if to meet the eye, which might range at pleasure from their circumference to their very centre, while the air was laden with their delicious perfume. Never before had I really *seen* Tea Roses. I had often *looked at* them as they hung drooping from the bushes out of doors, and raised the flowers individually to trace their outline and varied colours, but this conveys no idea of the effect produced by masses of these lovely flowers so disposed that all their beauty is seen and comprehended at a glance. Year by year they continued to extend and improve. Every rafter and the ridge of the house were soon covered with the choicest kinds, which were pruned annually on what grape-growers call the "long rod" system. The house, originally without heat,

had now two 4-inch pipes running round it, and I had thousands of Roses in March and April which before the house was heated did not expand till May and June. One year Maréchal Niel produced nearly a thousand flowers, equal in size and colour to any that I have ever seen, and Solfaterre, Climbing Devoniensis, Cloth of Gold, Celine Forestier, President, Madame Falcot, and many others, were marvels of grace and beauty. I do not remember that anything in the whole range of my horticultural experience ever afforded me more gratification and delight than this house of Tea-scented Roses.

It should be remarked that the plants and house were kept scrupulously clean throughout the year. Falling blossoms, decaying leaves, weeds, and every other source of impurity were cleared away at least once a week. The soil, too, was often stirred, and whenever it became dry thoroughly watered with rain-water.

Tea-scented Roses may also be grown to advantage in pots. The light soil recommended in our Chapter on "Roses in Pots" is most favourable to their growth in a young state, but as the plants are transferred to large pots a heavier soil is desirable. Care must be taken that they are neither over-potted nor over-watered. They also require less pruning when in a young state than the Hybrid Perpetual and other hard-wooded Roses. In pruning Tea-scented Roses it is less a question of "long" or "close" pruning than of finding good bold eyes in suitable positions to secure at once good flowers and handsome plants.

Those who have a mild climate, dry soil, or sheltered situation, may grow the Tea-scented Roses fairly well out of doors; but under such treatment they should be invariably protected from the winter's frost. Even in the south and west of England this is advantageous. One of the hardiest of this race—Gloire de Dijon—is also one of the freest and most beautiful, and there are different degrees of hardiness amongst the various kinds. This should be noted and made the most of. Some recommend taking up every Autumn, and placing the tender kinds in a sheltered spot to be replanted in Spring. We regard this as a mere make-shift appliance, uncertain in its results and not likely to prove entirely satisfactory to the skilled cultivator. If Tea-Roses must be grown out of doors, bud them plentifully every year, and a goodly number even of the tender kinds will, in this dormant state, pass securely through nineteen out of twenty of our winters. It is here the lover of Tea-Roses should look for the chief supply of these flowers out of doors.

CHAPTER XV.

On Exhibiting.

EVERY one who cultivates Roses may not do so with the design of becoming a candidate for floricultural honours; many are satisfied with the calm enjoyment which this, in common with other branches of Gardening, affords—the quiet mind, the healthful glow, yields them a sufficient recompense, and ample satisfaction. From such we must ask a little forbearance while we offer a few remarks on preparing for exhibition, for we should be doing an injustice to some of our readers were we to neglect this point altogether. Let us first consider the arrangement and exhibition of cut Roses. The old plan of showing large crowded bunches is superseded by the more natural one of showing single flowers or three loose trusses of each variety. By the old method a gorgeous display was created, but the principles of good taste were violated, and the connoisseur could find little to delight and interest him: each bunch was a confused mass of colour, with a ragged outline. By the method now in vogue the flowers stand out separately, and so far great improvement has been made; but there are still too many full-blown Roses at our exhibitions. We ought at our Rose shows to see the flowers in every stage, from the tiny bud onwards, and we submit whether a classification of the varieties exhibited would not be another step in the right direction. A more heterogeneous mass could not be produced by any other genus than by bringing together Roses of different groups and arranging them indiscriminately. It is cheerfully admitted that certain groups may be mixed together without any grave offence against taste, but I have seen the beautiful but tiny Moss de Meaux completely smothered between two large Hybrid Roses, and the soft and bewitching tints of the Tea Rose almost suppressed by the richness of the full deep colours of the Hybrids placed beside them. And are similar cases unfrequent? By no means. Why not, then, arrange the kinds according to the classification of some popular grower? The beauty and extent of each group would thus become apparent, and the abrupt transitions complained of be avoided.

We think it a pity that Horticultural Societies *should limit the number of varieties* to be shown. Would it not be better from an educational point of view to reduce the number of trusses from three to two, or even one, *and append a notice to the schedule*

that a bad truss or variety would be counted against the exhibitor? This would guarantee the exclusion of all inferior kinds, and secure a greater number of varieties in a small space, and in a state approaching more nearly to that of nature. But to limit the exhibition to a small number of varieties, when hundreds are grown, does not admit of classification, and renders it impossible to give a full and true account of the genus. Further—I say it with regret—our Rose shows as at present conducted bring out only one phase of the Rose, namely, the full blown flower, which, to my taste, is not by any means the most beautiful.

With this statement of our views on exhibiting cut Roses, we respectfully submit two arrangements for the consideration of those who prepare the prize schedules for our flower shows.

1st, Roses in a collection, the number of varieties unlimited, classed in groups according to the arrangement of—(name who), one, two, or three trusses only of one variety. Or,

2ndly,

A. Summer Roses in a collection, the number of varieties unlimited; classed in groups according to—(name who), one, two, or three trusses only of one variety.

B. Autumnal Roses in a collection, number of varieties unlimited, to be classed and shown as in letter A.

By the arrangements above proposed we afford the tyro efficient aid in selecting varieties. The classification enables him to see at a glance the extent, variety, and beauty of each group, and he can select from each and every one a gradation of colour from the lightest to the darkest hues it may embrace. Or if he prefer one colour more than another, such can be noted down, and its free interspersion secured. Further still, while he admires the variety and richness of colour existing in one group, the regular outline of another, and is charmed by the delicious odour of a third, he is enabled to form a correct judgment of the *comparative value* of each from the whole or the most worthy being brought at once under the eye. But these remarks are sufficiently extended, and we have to speak of dressing the exhibition boxes, and gathering and arranging the flowers.

The boxes may be made of inch deal of the simplest construction, and painted green. By the laws of some Societies, framed for general convenience, the lids must shift off at pleasure: no boxes are allowed to be placed on the exhibition tables whose dimensions exceed three feet in length, six inches in height when the lid is removed, and eighteen inches in width from front to back. A handle at either end is desirable, which should drop into the wood, that the ends may approach closely. The box may be filled with moss, into which zinc tubes may be sunk, filled with water, to contain the flowers. The tubes may be about five inches deep, an inch and a quarter wide, with a rim half an inch broad. The tubes made and sold by Mr H. Foster, Watchmaker, Ashford, Kent, are an excellent contrivance for the purpose.

Nothing, perhaps, forms so agreeable a ground on which to place the flowers as green moss, which may be gathered in most hollows of woods, and from shady banks. It is not, indeed, a bad plan to place the moss on the boxes a few days before they are wanted, keeping them in a light but shady place, sprinkling the moss with water once or twice daily.

With regard to the choice of flowers, we may presume that he only who has formed a tolerable collection, and must consequently have acquired some taste in Roses, will enter the lists as a competitor. We would therefore say, cut such flowers as appear best for the time wanted: a good variety may be in bad condition at a fixed period, and a second-rate one unusually fine. But the exhibitor must, in a certain degree, conform to the tastes of others; and there are points of beauty almost universally agreed on. The *outline* of Show Roses should be circular, free from all raggedness; the flowers should be full, showing no eye, and the petals arranged as regularly as possible; the larger the flowers the better, provided they are not coarse; the colours should be varied with due care. In gathering the flowers, we would say choose the morning for the purpose, ere the sun has risen upon them, or before he has had time to dim their beauty. When the place of exhibition is at a distance it is usually necessary to cut them the morning before the show. There is full occupation for two persons, besides the advantage of having a second opinion in cases where the merit of two or more flowers is doubtful. It is not always easy to determine this point satisfactorily, for we have not only to consider *what a flower is*, but *what it is likely to become*. The business of one should be to cull the flowers; that of the other to name and arrange them in the boxes. It is desirable that every stage of the flower should be presented to view; but if cut the morning before the day of the show the forwardest should not be more than three-quarters blown. Some of the stiff-petalled Roses, which remain a long time in perfection, may be made exceptions to this rule; but their number is few. When the flowers are gathered on the morning of the show some may be full blown, when less judgment and foresight are necessary in selecting. The Rose now is more liberally treated than formerly at our flower shows—in addition to the florists' Roses, heterogeneous specimens of flowers being admitted in competition. These are usually shown in jars and glasses, and the old favourites as well as the advancing and variable are, we think, sometimes encouraged.

Success in some measure depends on the taste with which the flowers are arranged. This requires a little study, and we would take nature for our model. Let the exhibitor walk among his plants occasionally with an eye to this point, and he will not fail to single out certain flowers remarkable for elegance of position: this is the true source from which to copy. A few leaves should be gathered with each kind, for the grace and beauty of the flowers are materially heightened by the judicious arrangement of foliage; and this is a point by which one may judge of the habit of a variety. As to the arrangement of colours, little need be said on that

point. Much will depend on the materials in hand. Contrast should, I think, be aimed at; but with regard to the exact tints fitted for each position the eye of him who arranges is usually best qualified to determine. We say nothing of the art of dressing Rose-blooms for the exhibition table as we have never studied or practised it.

A neat and commodious method of naming is, to procure some deal sticks, about four inches long and half an inch wide, gradually tapering to a point. Let them be painted white, the names written in a round legible hand, with a good dark pencil. Or small strips of card-board, the names written in ink, placed in the front of each sort, are both neat and convenient.

But the flowers are arranged, and what is to be done with them during the interval that must elapse ere they depart for the scene of competition? Shall the lids be placed on the boxes, and the flowers be kept closed from the air? By no means. Seek as cool a place as possible, where there is no draught, and where the light is not too strong. There place them till the time of departure. So necessary do many exhibitors consider it that the flowers should not be wholly closed from the air, that they have several holes made in the ends of their box-lids with a small augur. This I have found by experience a capital contrivance to admit the dust, and if these holes are made use of, they should be stopped with corks when travelling on a dusty road.

But besides the flowers of Roses, the plants are exhibited grown in pots; and it remains for us to say something of them. The advantages gained by their introduction are, that the character and habit of the variety are shown. Cut Roses create a great display, but Pot-Roses afford us more extensive information. We may propose to ourselves, while viewing them, these questions—What is the habit of the variety? Is it a free-grower, or otherwise? Is it a good trusser? A Summer or Autumn bloomer? These questions cannot always be answered by presenting a mere flower or bunches of flowers; but the introduction of Pot-Roses offers the means of a ready solution. In cultivating these for exhibition it is necessary to grow *at least* double the number required to be shown. This is no overdrawn calculation, as all who have any experience in the matter will testify. There is no difficulty in flowering *every* plant, but *there is a difficulty in bringing all to perfection at a settled point of time*. Remember, the Rose is one of the most ephemeral of flowers, and the day of exhibition is a fixed one. These facts, however, should deter no one from growing for exhibition, for they affect all exhibitors alike; all fight on equal ground; and the greater the difficulties to contend with, the greater is the triumph when achieved. For exhibition plants we should recommend many kinds to be grown on their own roots. Although with such the cultivator will not be able to appear in the field at so early a date, yet he may ultimately attain to a more distinguished position. Certain kinds will not last long in health when budded: superior

skill and great attention may bring them to a high pitch of beauty, but despite of every after-care, they canker and fall into a state of retrogression.

The principal shows near the Metropolis are in May, June, and July, and to be enabled to show in each month the plants must be divided into three lots. Those intended for the May exhibition must be grown in a green-house or frame with command of heat. It is my practice to select a good portion of the Tea-scented and other *tender* Roses for the first show, because they cannot remain out-of-doors during Winter, and they improve under this particular culture. They should be pruned early in January, and taken into the house or frame immediately, *giving plenty of air*, but keeping the frost out. By the end of February a gentle heat may be started, and increased as is found necessary to bring them into flower in proper time.

The plants intended for exhibition early in June will also require a house or frame, but those required for the end of the month may be plunged out-of-doors in an airy yet *sheltered* situation, that the foliage may not be damaged by the wind. So soon as the buds show colour remove the plants to a frame or greenhouse, giving air abundantly night and day, and shading from the sun so soon as the first flowers expand.

The plants intended to bloom in July may also be grown out-of-doors; they should be Autumnals exclusively, and by pruning late or stopping the young shoots in April later shoots are developed, and a perfect flowering is secured in July. It has been the practice with some to cut off the flowers of the Autumnals shown in May, removing the plants to a warm house or frame, by which treatment they flower again in July; this, however, we hesitate to recommend.

The details of cultivation have been given in the Chapter on "Roses in Pots;" it is our province here merely to speak of the management for exhibition. As the plants approach the flowering season some will be found forwarder than others, owing to their position or the habit of the variety. It is necessary then to calculate which are likely to be in perfection on the coming day, when means of accelerating or retarding must be had recourse to with regard to the others. If the former, a house or frame with heat is the best contrivance; if the latter, place them in a cold north house, *admitting air gradually*, or on the north side of a hedge or wall if dealing with plants which have been grown out-of-doors. Care and forethought are especially necessary here. These changes of temperature must be brought about gradually; and a calm and sunny hour ought to be chosen to remove the plants grown under glass. As well might an inhabitant of India be sent to dwell in the frozen seas, as a plant be suddenly transmuted from a high to a low temperature. When the buds show colour, any that are in advance of the mass may be plucked out, when the side buds will rise and produce good flowers. Have we, then, reached this stage of growth? A canvas awning must now be raised to shade the flowers. It should not be so thick as to exclude the light; its purpose is merely to break the sun's

rays. As our flowers advance our pleasures and anxieties increase. It is difficult to judge correctly of the time a bud requires to expand, some remain as buds for many days after they show colour, others expand very rapidly. The hard buds, of which we may instance Hybrid Perpetual La Reine, are slowest in expanding, and remain longest in a showable state. The less double flowers, as Hybrid Perpetual General Jacqueminot, and Tea Madame Falcot, advance more rapidly, and are in general proportionally ephemeral. This is the best guide we can offer to the unpractised eye, though by no means an unerring one. If, after all our care, our specimens are *far* too early or too late, it is better to allow them their natural course than to resort to violent measures; it is better to show fine specimens not arrived at or beyond their glory, than to produce what might be construed as bad cultivation. Roses will not submit kindly to the large amount of forcing or keeping back which Azaleas and some other plants will endure.

We have already stated our views on tying up and training, but there is some doubt whether that system tells best on the exhibition tables. There, one side is to the wall, so that at best not more than three-quarters of a round plant can be seen. Now, it is evident that by leaving the back of a plant bare, or thinly set with branches, a greater display can be made with the same material than when the branches are set at equal distances all round, as by the former practice more flowers are brought into full sight. Yet a skilful judge will surely detect *the false show*; and if the round plants are in other respects nearly equal, we opine he would give his decision in their favour. Be this as it may, a *perfect plant* must yield its possessor a greater pleasure and more solid satisfaction than an ill-balanced or imperfect one.

These remarks bring us to the period of exhibition. If the distance be great the plants should be packed for travelling the day before. All is bustle and anxiety. A light spring van is the best vehicle for their conveyance, the space in which from four to eight large plants will fully occupy. The surface of the soil of the pots should be covered with nice green moss. Each flower-bud must have a stick to support it during the journey—unless the variety produces its flowers in trusses, when a stick to a truss is sufficient—but should not be tied so tight as to prevent an easy motion. If the flowers are heavy, soft tissue-paper should be drawn closely round them without compression; if produced in trusses, wadding may be placed among them to support and prevent them from bruising each other. In packing, the plants should stand clear of each other, and all free from contact with the sides of the van. Between the pots moss or sawdust should be *tightly* pressed, at least half their depth, to keep them from shifting. A light tilt must go over the van to exclude sun, rain, or dust, the last of which, by-the-bye, it is not always easy to do. But all is ready, and there is nothing like being at the place of exhibition in time. A careful person ought to accompany them, as the pace at which they travel should be a steady walking one. Attention, John! From home to the

exhibition *all* depends on you. You must neither trot, gallop, nor canter. If you do the consequences may be disastrous. Put your horse to his easiest walking pace, having reckoned up beforehand the time he will require for the journey. Having arrived early, you will find the tents only partially occupied; but the place for Roses, as for other objects, is already assigned. For you the north side of the tent is the best; indeed, for Roses as cool and shady a place as possible should be apportioned, as some flowers will lose colour in a few hours in a sunny or hot position. In proceeding to set up the plants it is well to calculate the elevation at which they show best; to which raise them by means of blocks of wood of different thicknesses, about the diameter of the bottom of the pots. The sticks used merely as supports in travelling should be withdrawn. When the plants are all nicely adjusted each should have the name placed to it in a position where easily seen, written in a bold legible hand, or done in the Egyptian style with Indian Ink. At the grand Metropolitan exhibitions visitors are often so numerous that many cannot get near the objects exhibited; for their information, then, this is particularly desirable. All is now finished, and we await the decision of the judges, viewing the productions of our contemporaries and anticipating the result. Perhaps, on returning to the tents after judgment has been pronounced, our plants are not so high in the scale as we expected to find them. A feeling of disappointment may arise. Shall we take umbrage at it? Certainly not. This would be foolish and ungenerous. Let us ask ourselves this question:—Which is the more likely, that the Censors—men selected, as they should be, on account of their professional knowledge and known probity—which, we say, is the more likely, that they should have shown an indifference to or prejudice against our plants; or that we, the owners thereof, have been indulging in an overweening fondness? The answer is apparent. And let us ask ourselves again, if there is any disgrace in being beaten. Certainly not. *Every place here is honourable.* If *A* produces good plants, it is no discredit to him that *B* produces better. Nor would it always be correct reasoning to say that the latter is the more skilful cultivator. The air, or the soil, or the means at the disposal of *B*, may enable him to accomplish with ease that which is impracticable with *A*. *If our plants are good*, never mind those of our contemporary being better? Are not both engaged in the same work, both interested in the advancement of a favourite flower? Let us persevere, and we may probably reach the summit of our ambition at some future time.

In packing for returning the same care is requisite as before, if the plants are intended to be shown elsewhere, or, indeed, if any store is set by the flowers yet unfolded. Under other circumstances the flowers may be cut off, which saves much time in repacking for travelling. But if the flowers are preserved the plants may serve for other shows, although they must be considered in greater perfection when possessed of expanded flowers and others yet to come, than when showing expanded flowers only.

When the flowering is over the flower-stalks should be cut off, and a second growth will shortly ensue. The Autumnals, which bloomed in May, will flower again in August; those of June, in September; and if those of July are placed in a warm greenhouse in September some of them may be kept in flower till Christmas.

Before concluding this chapter I think it right, in the interest of truth, to state my opinion that the most successful prize-winners are not always the soundest cultivators. There is, too, a deal of art in exhibiting for prizes with which cultivation has nothing to do. Further, the "cram" system of cultivation necessary to produce the large cut flowers required for prize-winning often produces *plethoric* plants with *unripened* wood, which the purchaser of young plants especially should avoid when he can obtain plants with moderate and *matured* shoots.

CHAPTER XVI.

On New Roses.

IN the winter of 1856-57 I found myself unexpectedly involved in a controversy in the pages of the *Gardeners' Chronicle* on the respective merits of new and old Roses. My opponents fought valiantly and well—all honour to the brave! Some were smart, others jocular, and, as is usually the case in such controversies, a great deal was said which had nothing to do with the question at issue.

I then asserted that every year brings forth some novelties well worth adding to our collections, though it may be difficult to pick out the few real gems from amongst the shoals of mere paste imitations with which they are so skilfully commingled.

It was the opinion of those who were best versed in Rose-culture that my position was not only tenable but strong, although it was difficult—nay, impossible—to demonstrate this otherwise than by the test of time. That time has now passed, and established the general truth of my argument. General Jacqueminot and Gloire de Dijon were then unproved; and since then we have added Anna de Diesbach, Beauty of Waltham, Comtesse de Chabillant, Duc de Cazes, Empereur de Maroc, Gloire de Santenay, Lord Raglan, Louis XIV., Madame C. Crapelet, Mdle. Bonnaire, Senateur Vaisse, Victor Verdier, and—shall I go on, or content myself with saying, a host of others scarcely less noteworthy? Without entering further on this subject, I would refer those of my readers who may take an interest in it to the *Gardeners' Chronicle* of 1856-57.

Let me first bring under notice the novelties of 1861-62, of which we have now a perfect knowledge; and I state fearlessly, at the outset, that this was the richest freight of new Roses that ever reached our shores in a single year. I find on reference to my note-book that I bought sixty-two new kinds that year, fifty-six of which bloomed with me, and twenty-four of these I marked as decided acquisitions. Among them were Charles Lefebvre, Duc de Rohan, Louise Darzens, Madame Charles Wood, Madame Clemence Joigneaux, Maréchal Vaillant, Maurice Bernardin, Prince Camille de Rohan, Triomphe de Caen, and Beauty of Waltham. The last named, a seedling of my own raising, more than equals the description originally

given of it, and has proved of free growth, with splendid foliage, sweet as the Provence, and hardy as the Dog-Rose.

During the succeeding eight years, down to the Autumn of 1859, the same rule obtained, in proof of which I need only instance the following introductions:—John Hopper, Madame Alfred de Rougemont, Baron Adolphe de Rothschild, Lord Macaulay, Lord Clyde, Camille Bernardin, La Duchesse de Morny, Madame Victor Verdier, Pierre Notting, Princess of Wales, Marie Baumann, Xavier Olibo, Michel Bonnet, Dr Andry, Duke of Wellington, Duchesse de Caylus, Marguerite de St Amand, Comte de Raimbaud, Elizabeth Vigneron, Black Prince, Lady Suffield, Alfred Colomb, Fisher Holmes, Prince de Portia, Mdle. Marie Rady, Horace Vernet, Antoine Ducher, Mdle. Annie Wood, Monsieur Noman, Souvenir de Monsieur Boll, Dupuy Jamain, Elie Morel, Baronne de Rothschild, La France, Boule de Neige, Madame Noman, Duke of Edinburgh, Reve d'Or, Perfection de Lyon, Marquise de Mortemarte, Edouard Morren, Mdle. Eugénie Verdier, Countess of Oxford, Catherine Mermet, Paul Neyron, Marquise de Castellane, Louis van Houtte, Abel Grand, Mdle. Thérèse Levet, Alba Rosea, Madame Charles, Maréchal Niel, Climbing Devoniensis, Madame Margottin, Monsieur Furtado, Madame Ducher, Belle Lyonnaise, Madame Levet. Time the avenger has thus fully proved the position I then took up, "that every year brings forth some novelties worth adding to our collections."

The Autumn of 1870 gave us but few new Roses. France, engaged in a struggle of life and death, had neither heart nor time for things like these. Fourteen varieties only from that country reached my hands, of which Coquette de Lyon, and Madame Emile Dupuy (Tea-scented) seemed the most noteworthy.

The Autumn of 1871 brought us a richer freight. Among the best of this year were—HYBRID PERPETUALS:—Abbé Bramemel, Auguste Rigotard, Baron de Bonstetten, Coquette des Blanches, Etienne Levet, François Michelon, Le Havre, Lyonnaise, Madame Hippolyte Jamain, Princess Beatrice, and Richard Wallace. TEA-SCENTED:—Comtesse de Nadaillac, Madame Camille, Madame Jules Margottin, Madame Cecile Berthod, Marie Van Houtte, Perfection de Monplaisir, and Souvenir de Paul Neyron.

The following are among the best novelties of 1872. HYBRID PERPETUALS:—Bessie Johnson, Claude Levet, Firebrand, Madame Lacharme, Mdle. Marie Cointet. BOURBON PERPETUAL:—Reine Victoria. TEA-SCENTED:—Amazone, Anna Ollivier, Madame Caroline Kuster, Perle de Lyon, and Vallée de Chamounix.

Of the new varieties of 1873 I thought most favourably of the following. HYBRID PERPETUALS:—Captain Christy, Diana, Duchess of Edinburgh, Etienne Dupuy, Marie Finger, Olga Marix, Peach Blossom, Perfection des Blanches, St George, and Thomas Mills. I fear it would be tedious to my readers to continue this list year by year. I shall therefore simply enumerate the best varieties that have been introduced from 1874 to the present time, giving a separate list at the end of

the varieties of the year 1902–3, which can hardly be considered sufficiently proved to be entitled to the rank of decided acquisitions.

Selection of Roses introduced from 1874 to 1902 inclusive.

Abbé Thomasson, Abel Carriere, Adelina Viviani Morel, Admiral Dewey, Aglaia, Alberic Barbier, Albert la Blotais, Albert Foures, Albert Stopford, Alfred K. Williams, Alice Furon, Alistair Stella Gray, Alliance Franco-Russe, Alphonse Soupert, Amateur Teyssier, Amelie S. Morin, Ami Charmet, Amy Robsart, Anne M. de Montravail, Anne of Geierstein, Antoine Mermet, Antoine Rivoire, Ards Rover, Atropurpurea, Augustine Guinoisseau, Augustine Hamont, Aurora, Aurore, Baldwin, Bardou Job, Baronne Ada, Baronne C. de Rochetaillée, Baronne de Bellerocche, Beauté Inconstante, Beauté Lyonnaise, Belle Siebrecht, Ben Cant, Beryl, Bessie Brown, Billiard and Barré, Bladud, Blanc double de Coubert, Blanche Moreau, Blanche Rebatel, Boadicea, Boieldieu, Bridesmaid, Brilliant, Camoens, Captain Hayward, Carmine Pillar, Caroline d'Arden, Caroline Testout, Catherine Soupert, Cecile Brunner, Chameleon, Charles Dickens, Charles Lamb, Charlotte Gillemot, Chedane Guinoisseau, Cheshunt Scarlet, Claire Jacquier, Clara Watson, Claude Jacquet, Cleopatra, Climbing Belle Siebrecht, Climbing Captain Christy, Climbing Augusta Victoria, Climbing La France, Climbing Malmaison, Climbing Meteor, Climbing Niphotos, Climbing Perle des Jardins, Climbing Wootton, Clio, Clothilde Soupert, Comtesse B. de Blacas, Comtesse de Frigneuse, Comtesse Festetics Hamilton, Comtesse Olivier de Lorgeril, Comtesse Riza du Parc, Conrad F. Meyer, Conrad Strassheim, Cora, Corallina, Corinna, Countess of Caledon, Countess of Pembroke, Countess of Rosebery, Crimson Globe, Crimson Queen, Crimson Rambler, Crown Prince, Cumberland Belle, Daniel Lacombe, Danmark, Dawn, Delicata, Deschamps, Dorothy Perkins, Dr F. Guyon, Dr Grill, Dr Rouges, Dr Sewell, Duchess of Albany, Duchess of Bedford, Duchess of Edinburgh, Duchess of Portland, Duchesse d'Auerstædt, Duchesse de Dino, Duke of Albany, Duke of Connaught, Duke of Fife, Duke of Teck, Duke of York, Earl of Dufferin, Earl of Pembroke, Eclair, Edouard Gautier, Egeria, Electra, Elise Fugier, Ella Gordon, Ellen Drew, Ellen Willmott, Emilie Gonin, Emperor, Empress, Empress Alexandra of Russia, Enchantress, Ernest Metz, Etendard de Jeanne d'Arc, Etoile de Lyon, Eugène Furst, Eugénie Lamesch, Euphrosyne, Evergreen Gem, E. Veyrat Hermanos, Exquisite, Fair Rosamond, Fanny Stolverck, Ferdinand Batel, Ferdinand Jamain, Fiametta Nabonnand, Florence Paul, Francis Dubreuil, Francisca Kruger, Francois Crousse, Frau Geheimrath Von Boch, Frau Karl Druschki, Garden Favourite, Gardenia, Garden Robinson, General Baron Berge, General Schablikine, Georges Pernet, Georges Schwartz, Germaine Trochon, Gladys Harkness, Gloire de Margottin, Gloire de Puy d'Auzon, Gloire des Polyantha, Gloire d'un Enfant d'Hiram, Gloire Lyonnaise, G. Nabonnand, Golden Fairy, Golden Gate, Goldquelle, Grace Darling, Grand Duc A. de Luxembourg, Grande Duchesse Anastasie, Grand Mogul, Grossherzog E. Ludwig, Grossherzogin Victoria Melita, Gruss

an Teplitz, Gustave Piganeau, Gustave Regis, Harrison Weir, Hatchik Effendi, Heinrich Schultheis, Helen Keller, Helena Cambier, Henriette de Beauveau, Her Majesty, Hon. Edith Gifford, Inigo Jones, Innocente Pirola, Irene Watts, Irish Beauty, Irish Glory, J. B. M. Camm, Jean Bach Sisley, Jean Ducher, Jean Liabaud, Jean Soupert, Jeanne Forgeot, Jeannie Dickson, Jersey Beauty, J. D. Pawle, John S. Mill, Joseph Bernacchi, Josephine Dauphin, Josephine Marot, Jubilee, Jules Finger, Kaiserin Augusta Victoria, Kaiserin Friedrich, Katharina Zeimet, Killarney, Kronprinzessin Victoria, La Fraicheur, La France de '89, Lady Arthur Hill, Lady Battersea, Lady Clanmorris, Lady Mary Corry, Lady Helen Stewart, Lady Mary Fitzwilliam, Lady Moyra Beauclerc, Lady Penzance, Lady Roberts, Lady Sheffield, Le Soleil, Leuchstern, Liberty, L'Idéal, L'Innocence, Little Dot, Little Gem, Little Pet, Lord Bacon, Lord F. Cavendish, Lord Macaulay, Lorna Doone, Luciole, Lucy Carnegie, Mabel Morrison, Ma Tulipe, M. Ada Carmody, Madame Abel Chatenay, Madame Alfred Carriere, Madame Antoine Mari, Madame Badin, Madame B. Levet, Madame Berkeley, Madame Bois, Madame Cadeau Ramey, Madame Carnot, Madame C. Brunnier, Madame Chauvry, Madame Chedanne Guinoisseau, Madame C. Monnier, Madame C. P. Strassheim, Madame Cusin, Madame Delville, Madame de Watteville, Madame E. A. Nolte, Madame E. Helfenbein, Madame E. Levavasseur, Madame E. Resal, Madame Eugène Verdier (H.P.), Madame Eugène Verdier (T.), Madame Eugénie Boulet, Madame Fremy, Madame Fanny de Forest, Madame Ferdinand Jamain, Madame F. Pittet, Madame G. Luizet, Madame G. Bruant, Madame G. Durrschmidt, Madame H. de Potworowsky, Madame H. de Montefiore, Madame H. Defresne, Madame Hoste, Madame Isaac Pereire, Madame Jean Dupuy, Madame Joseph Bonnaire, Madame J. Combet, Madame Jules Finger, Madame Jules Grolez, Madame Jules Siegfried, Madame Lambard, Madame L. Messimy, Madame L. Poncet, Madame M. Calvat, Madame Moreau (T.), Madame Pernet-Ducher, Madame Pierre Cochet, Madame Pierre Guillot, Madame Pierre Oger, Madame P. Perny, Madame Ravary, Madame René Gerard, Madame Rénée de St Marceau, Madame Vermorel, Madame Viger, Madame Wagram, Mademoiselle G. Raud, Marguerite Boudet, Mademoiselle Yvonne Gravier, Magdeleine de Chatelier, Magna Charta, Maman Cochet, Mamie, Manda's Triumph, Marchioness of Downshire, Marchioness of Dufferin, Marchioness of Londonderry, Marchioness of Lorne, Margaret Dickson, Margherita di Simone, Mariano Vergara, Marie d'Orleans, Marie Louise Poiret, Marie Verdier, Marie Wolkoff, Marjorie, Marques d'Aledo, Marquise de Salisbury, Marquise de Vivens, Marquise Litta, Medea, Meg Merrilees, Mercedes, Merveille de Lyon, Merveille des Blanches, Meta, Mignonette, Milton, Mildred Grant, Miss Agnes C. Sherman, Miss Ethel Brownlow, Mrs A. Waterer, Mrs B. R. Cant, Mrs E. Mawley, Mrs Cocker, Mrs F. W. Sanford, Mrs G. Dickson, Mrs Harry Turner, Mrs John Laing, Mrs Paul, Mrs Pierpont Morgan, Mrs R. G. Sharman Crawford, Mrs W. J. Grant (see *Belle Siebrecht*), Albert Patel, Monsieur Desir, Monsieur Bunel, E. Y. Teas, Morning Glow, Mosella,

Mousseline, Muriel Grahame, Noella Nabonnand, Papa Gontier, Papa Lambert, Papillon, Paquerette, Paul Nabonnand, Pauline Bersez, Paul's Single White, Perle des Jardins, Perle des Rouges, Perle d'Or, Petit Constant, Pink Roamer, Pink Rover, Pride of Waltham, Prince Arthur, Prince de Bulgarie, Prince T. Galitzine, Princess Beatrice (T.), Princess Bonnie, Princess May, Princess of Wales (T.), Princesse A. de Monaco, Princesse de Sagan, Princesse de Venosa, Principessa di Napoli, Psyche, Purity, Queen Alexandra, Queen Mab, Queen of Queens, Queen of Waltham, Queen Olga of Greece, Rainbow, Red Dragon, Reichsgraf E. Von Kesselstatt, Reine Marie Henriette, Reine N. de Serbie, Reine Olga de Wurtemberg, René André, Rev. Alan Cheales, Robert Duncan, Robert Scott, Rosomane Gravereaux, Royal Scarlet, Ruby Queen, Salamander, Salmonea, Sappho, Schneewittchen, Silver Queen, Sir R. Hill, Sinica Hybrida Anemone, Soleil d'Or, Souvenir de C. Guillot, Souvenir de G. Drevet, Souvenir J. B. Guillot, Souvenir de J. Cabaud, Souvenir de Lady Ashburton, Souvenir de Madame E. Cauvin, Souvenir de Madame E. Verdier (H.P.), Souvenir de Madame E. Verdier (H.T.), Souvenir de Madame Joseph Metral, Souvenir de Madame Leonnie Viennot, Souvenir de Madame Levet, Souvenir de Pierre Notting, Souvenir de S. A. Prince, Souvenir de Thérèse Levet, Souvenir de William Robinson, Souvenir de Wootton, Souvenir du President Carnot, Spenser, Star of Waltham, Sulphurea, Sultan of Zanzibar, Sunrise, Sunset, Suzanne Marie Rodocanachi, Sylph, Tennyson, Thalia, The Alexandra, The Bride, The Dawson, The Meteor, The Queen, The Sweet Little Queen, Tom Wood, Ulrich Brunner fils, Ulster, Una, Valentine Altermann, Victor Hugo, Violette Bouyer, Violoniste E. Lévêque, Viscountess Folkestone, Waltham Climber No. 1, Waltham Climber No. 3, Waltham Rambler, Waltham Standard, W. F. Bennett, White Baroness, White Lady, White Maman Cochet, White Marechal Niel, Wichuraiana, William Allen Richardson, Wichuraiana rubra, William Warden, Zenobia, Zephyr.

NEW ROSES of 1902-1903.

ABBE GARROUTE (Tea-scented), coppery yellow, shaded carmine-rose.
 ADELAIDE MOULLE (Wichuraiana), lilac rose, carmine centres.
 ANGELA WELTER (Tea-scented), creamy white, yellowish centres.
 ARSENE LEFEBVRE (Hybrid Perpetual), bright vermilion.
 ASCHENBRÖDEL (Polyantha), peach-colour, orange lake centres.
 BARON LADE (Hybrid Tea), clear carmine-red.
 BARONNE DE BREZETZ (Hybrid Tea), porcelain-rose, creamy white centres.
 BELLE CAPRICIEUSE (Tea-scented), salmon-yellow, shaded rose.
 CAPITAINE SOUPA (Hybrid Tea), bright rose colour.
 COMTESSE DE CAÏLA (China), nasturtium-red, shaded orange and carmine.
 COMTESSE GEORGES DE GERMINY (Tea-scented), rosy-flesh, shaded salmon.
 DEBUTANTE (Hybrid Climbing), soft pink.

- DEPUTÉ DEBUSSY (Hybrid Tea), satin-rose, shaded with yellow.
- EDMÉE AND ROGER (Hybrid Tea), flesh-white, rosy centres.
- EDMOND PROUST (Wichuraiana), coppery-rose, carmine centre.
- ELIZA ROBICHON (Wichuraiana), lilac-rose, base of petals pale yellow.
- ELIZABETH KITTO (Hybrid Tea), salmon-pink, colour of *Madame Abel Chatenay*,
with habit of *Madame Jules Grolez*.
- FIELD MARSHAL (Climbing China), velvety blood-crimson, in the way of *Cramoisie Supérieure* but much larger and handsomer.
- FRAU LILLA RAUTENSTRAUCH (Hybrid Tea), coppery-orange, changing to rosy-flesh.
- FRAU LOUISE HUMBSER (Tea-scented), salmon-orange, tinted vermilion.
- FRIEDRICH SCHRÖDER.
- GOLDEN QUEEN (Climbing Noisette), bright golden yellow, in the way of *Rêve d'Or*
but richer in colour.
- GRUSS AN FRIEDBERG (Noisette) clear yellow, golden yellow centres.
- GUSTAV GRÜNERWALD (Hybrid Tea), carmine, yellowish centres.
- HELEN BOULTER (Hybrid Tea), satiny-flesh, washed pale rose.
- HELENE WELTER (Hybrid Tea), bright soft rose colour.
- HERZOGIN MARIE VON COBURG GOTHA (Tea-scented), yellowish-white, tinted rose
and copper.
- ISABELLA LEJEUNE (Hybrid Tea), rosy-white, shaded yellow.
- JACOBS PERLE.
- JULES VACHEROT (Tea-scented), blood red, shaded with brown.
- KÖNIGIN CAROLA (Hybrid Tea).
- LA DORDOGNE (Tea-scented), violet-rose, centre bright carmine.
- LADY WATERLOW (Hybrid Tea, Climbing), salmon-rose, golden centres.
- LEON LEROUX (Tea-scented), rosy-lake, tinted coppery-carmine.
- LIGNE ARENBERG (Hybrid Tea), satiny-white, chrysanthemum flowered.
- LILLY AND MARGOT (Dwarf Polyantha), magenta-red, striped with white.
- MA THERESE (Hybrid Tea), bright rose, shaded ; semi-climbing.
- MADAME ADELE HAMEAU (Tea-scented), apricot-carmine, shaded rose.
- MADAME ALICE HEWETSON (Hybrid Tea), salmony-flesh, centre yellowish-rose.
- MADAME B. LAFAYE (Noisette), silvery-rose, shaded with yellow.
- MADAME PAUL OLIVIER (Hybrid Tea), salmon, shaded pink-carmine.
- MADELEINE FAIVRE (Hybrid Tea), flesh-white, reflexed with yellow.
- MILLE. AÏNO ACKTÉ (Hybrid Tea), pale rosy-flesh.
- MILLE. CLAIRETTE ONOF (Hybrid Tea), white, slightly tinted with salmon.
- MARGUERITE GIGANDET (Tea-scented), coppery-yellow, reflexed with red.
- MARGUERITE GUILLOT (Hybrid Tea), creamy white, changing to pure white.
- MARGUERITE JAFFELIN (Tea-scented), china-rose, shaded with yellow.
- MARIE BÜLOW (Tea-scented), carmine-rose, shaded nasturtium yellow.

- MARIE SEGOND (Tea-scented), bright rose, tinted fiery red.
 MARTHE DUPUIS (Hybrid Perpetual), bright rose, shaded paler.
 MONSIEUR PAUL LÉDÉ (Hybrid Tea), carmine-pink, shaded yellow.
 MORGENROT (Hybrid Tea), fiery red, single, in the way of *Carmine Pillar*.
 MRS B. L. ROSE (Tea-scented), coppery-rose, shaded amaranth.
 NELLY BRIAND (Hybrid Tea), silvery-rose, shaded flesh colour.
 PASCALINE (Hybrid Polyantha), flesh-white, changing to creamy-white.
 PAUL MEUNIER (Hybrid Tea), straw colour, shaded with salmon.
 PEACE (Tea-scented), pale lemon-yellow.
 PERLE DES NEIGES (Climbing Mult. Perpetual), pure white, form and habit of
Crimson Rambler.
 PHILIPPINE LAMBERT (Polyantha), silvery-rose, with deeper centres.
 PRINCESSE CHARLES DE LIGNE (Hybrid Tea), rose colour, carmine centres.
 PRINCESSE MARIE MESTCHERSKY (Hybrid Tea), silvery-rose, shaded carmine.
 PROFESSEUR D'ANDRÉ (Tea-scented), deep carmine-rose, marbled white.
 PYRAMIDE (Climbing Polyantha), yellowish-white, tinted rose.
 REINE CAROLA DE SAXE (Hybrid Tea), silvery-rose, shaded with salmon.
 ROBERT BAESSLER.
 ROSE D'HERBEYS (Tea), canary-yellow, orange-yellow centres.
 RUHM DER GARTENWELT.
 SCHNEEKOPF (Tea-Polyantha), snowy-white.
 SENATEUR BELLE (Hybrid Tea), rosy-white, deep yellow centres.
 SOUVENIR D'ANNE-MARIE (Hybrid Tea), creamy-white, yellowish-salmon centres.
 SOUVENIR D'HELENE (Hybrid Tea), salmon-white, shaded silvery-rose.
 SWEETHEART (Hybrid Climbing), bright pink, changing to soft white.
 TEA RAMBLER (Hybrid Climber), salmon-pink, produced in clusters.
 THE FARQUHAR ROSE (Hybrid Multiflora), pink, changing to white.
 VICENTE PELUFFO (Hybrid Perpetual), bright cerise, shaded darker.
 VIRGINIE DEMONT-BRETON (Noisette), rose colour, tinted salmon; climbing.
 WILLIAM NOTTING (Hybrid Tea), coral-red, centre salmony.
 YVONNE DES BUFFARDS (Tea-scented), pale porcelain-rose, edged carmine.

Now, in glancing over the preceding lists, will anyone—even the most critical and fastidious—have the hardihood to assert that the Rose is not improving both in variety and beauty under the hands of the cultivator? But it must be borne in mind that the improvements of the Rose in the future, as with all flowers that have been long and enthusiastically cultivated, are likely to be less marked than in the past, and so that they are variations or improvements, however slight, we should, in justice to those who are working in this field, accept them as such with thankfulness.

CHAPTER XVII.

*Select List of Roses suited for Various Purposes.**A.—Large, full, well-shaped flowers suited for Exhibition.*

AUTUMNAL ROSES.—GROUP 31 (*Hybrid Perpetual*)—Abel Carriere, Alfred Colomb, A. K. Williams, Auguste Rigotard, Baroness Rothschild, Beauty of Waltham, Ben Cant, Black Prince, Camille Bernardin, Captain Hayward, Charles Lefebvre, Clio, Comte de Raimbaud, Comtesse d'Oxford, Countess of Rosebery, Crown Prince, Dr Andry, Duchess of Bedford, Duke of Albany, Duke of Edinburgh, Duke of Fife, Duke of Teck, Duke of Wellington, Dupuy Jamain, Earl of Dufferin, Earl of Pembroke, Eclair, Ella Gordon, Etienne Levet, Exposition de Brie, E. Y. Teas, Fisher Holmes, François Michelin, Frau Karl Druschki, General Jacqueminot, Grand Mogul, Gustave Piganeau, Harrison Weir, Heinrich Schultheis, Helen Keller, Her Majesty, Horace Vernet, Jeannie Dickson, Lady Sheffield, La Duchesse de Morny, Lord Macaulay, Louis Van Houtte, Madame Eugène Verdier, Madame G. Luizet, Madame Victor Verdier, Mdlle. Eugénie Verdier, Mdlle. Marie Rady, Mdlle. Marie Verdier, Magna Charta, Marchioness of Londonderry, Marchioness of Lorne, Margaret Dickson, Marie Baumann, Marquise de Castellane, Merveille de Lyon, Mrs Cocker, Mrs John Laing, Mrs R. G. Sharman Crawford, Pierre Notting, Prince C. de Rohan, Pride of Waltham, Queen of Queens, Reynolds Hole, Sénateur Vaisse, Silver Queen, Sir Rowland Hill, Star of Waltham, Sultan of Zanzibar, Suzanne Marie Rodocanachi, Triomphe de Caen, Ulrich Brunner, Victor Hugo, Victor Verdier, Waltham Standard, Xavier Olibo.

GROUP 38 (*Tea-scented and Hybrids*)—Alba Rosea, Alliance Franco-Russe, Anna Olivier, Belle Siebrecht (Mrs W. J. Grant), Bessie Brown, Boadicea, Bridesmaid, Captain Christy, Caroline Testout, Catherine Mermet, Cleopatra, Comtesse de Nadaillac, Corona, Devoniensis, Duchess of Albany, Ernest Metz, Ethel Brownlow, Etoile de Lyon, Exquisite, Francisca Kruger, Gladys Harkness, Gloire Lyonnaise, Golden Gate, Hon. Edith Gifford, Innocente Pirola, Jean Ducher, Kaiserin Augusta Victoria, Killarney, La France, Lady Mary Fitzwilliam, Madame Cadeau Ramey, Madame Cusin, Madame de Watteville, Madame Hoste, Madame Lambard, Madame Vermorel, Maman Cochet, Marechal Niel, Marie Van Houtte, Marquise Litta, Medea, Mildred Grant, Mrs E. Mawley, Muriel Grahame, Niphetos, Papa Lambert, Perle des Jardins, Princess Beatrice, Princess of Wales, Rubens, Sappho Souvenir

d'Elise Vardon, Souvenir d'un Ami, Sunset, Sylph, Tennyson, The Bride, The Queen (Souv. de S. A. Prince), Viscountess Folkestone, Waltham Climber No. 3, White Lady, White Maman Cochet. GROUP 40 (*Noisette*)—Bouquet d'Or, Cloth of Gold.

B.—*Free-blooming and showy varieties, most valuable for house decoration and the effect they produce in the garden.*

SUMMER ROSES.—GROUP 4 (*Damask*)—La Ville de Bruxelles, Madame Hardy, Madame Zoetmans. GROUP 5 (*Provence*)—Cabbage, Cristata, Unique. GROUP 7 (*Moss*)—Common, Comtesse de Murinais, Gloire des Mousseuses, Laneii, Little Gem. GROUP 8 (*French*)—Boula de Nanteuil, Duchess of Buccleuch, Kean, Ohl, Rosa Mundi. GROUP 10 (*Hybrid Chinese*)—Blairii No. 2, Chenedolé, Paul Verdier, Vivid. GROUP 11 (*Hybrid Noisette*)—Madame Plantier, Madeleine. GROUP 12 (*Hybrid Bourbon*)—Charles Duval, Charles Lawson, Coupe d'Hébé, Juno, Paul Perras, Paul Ricaut. GROUP 13 (*Alba*)—Celestial, Félicité (Parmentier), Madame Legras. GROUP 15 (*Austrian Briar and Hybrid*)—Copper, Harrisonii, Persian Yellow, Soleil d'Or.

AUTUMN ROSES.—GROUP 25 (*Perpetual Moss*)—Blanche Moreau, Madame Edouard Ory, Madame William Paul, Perpetual White, Salet. GROUP 30 (*The Rugosa Rose*)—Atropurpurea, Blanc double de Coubert, Belle Poitevine, Conrad F. Meyer, Mercedes, Madame G. Bruant, Mrs Anthony Waterer, Rugosa, Rugosa Alba. GROUP 31 (*Hybrid Perpetual*)—Alfred Colomb, Anna Alexieff, Annie Laxton, Antoine Ducher, Baron A. de Rothschild, Baroness Rothschild, Beauty of Waltham, Boieldieu, Brilliant, Camille Bernardin, Captain Hayward, Charles Dickens, Charles Lamb, Charles Lefebvre, Clio, Comtesse de Serenye, Comtesse d'Oxford, Countess of Rosebery, Crown Prince, Dr Andry, Duke of Connaught, Duke of Edinburgh, Dr Hogg, Dupuy Jamain, Emperor, Empress, Firebrand, Fisher Holmes, Florence Paul, François Levet, François Michelin, Frau Karl Druschki, Garden Favourite, General Jacqueminot, Gloire de Margottin, Heinrich Schultheis, Helen Keller, Jean Cherpin, Jeannie Dickson, John Hopper, Jules Margottin, Julie Touvais, La Duchesse de Morny, Lord Bacon, Madame C. Joigneaux, Madame Victor Verdier, Madlle. Annie Wood, Mdle. T. Levet, Magna Charta, Marchioness of Lorne, Marechal Vaillant, Margaret Dickson, Marquise de Castellane, Merveille de Lyon, Milton, Mrs F. W. Sanford, Mrs R. G. Sharman Crawford, Mrs John Laing, Paul Neyron, Prefet Limbourg, Pride of Waltham, Princess L. Victoria, Queen of Queens, Red Dragon, Revd. Alan Cheales, Sénateur Vaisse, Silver Queen, Star of Waltham, Thomas Mills, Triomphe de Caen, Ulrich Brunner, Victor Hugo, Victor Verdier, Violette Bouyer, Waltham Standard, White Baroness, William Warden. GROUP 32 (*Bourbon Perpetual*)—Baron Gonella, Baronne de Maynard, Boule de Neige, Comtesse de Barbantanne, Madame Isaac Pereire, Michel Bonnet. GROUP 33 (*Rose des Rosomanes*)—Geant des Batailles, Gloire des Rosomanes. GROUP 34

(*Bourbon*)—Acidalie, Lorna Doone, Kronprinzessin Victoria, Madame Pierre Oger, Marie Paré, Mrs Bosanquet, Queen, Queen of Bedders, Robusta, Sir J. Paxton, Souvenir de Malmaison. GROUP 35 (*Crimson Chinese*)—Cramoisie Superieure, Fabvier, Sanguinea. GROUP 36 (*Chinese*)—Archduke Charles, Aureole, Common, Ducher, Irene Watts, Jean Bach Sisley, Madame E. Resal, Madame L. Messimy, Madame H. de Montefiore, Queen Mab. GROUP 38 (*Tea-scented and Hybrids*)—Admiral Dewey, Anna Ollivier, Albert Stopford, Antoine Rivoire, Augustine Guinoisseau, Aurora, Belle Lyonnaise, Belle Siebrecht (Mrs W. J. Grant), Boadicea, Camoens, Captain Christy, Catherine Mermet, Cheshunt Hybrid, Clara Watson, Comtesse F. Hamilton, Corallina, Corinna, Devoniensis, Duchess of Albany, Empress Alexandra of Russia, Enchantress, Exquisite, Francisca Kruger, G. Nabonnand, General Schablikine, Gladys Harkness, Gloire de Dijon, Gloire Lyonnaise, Goubault, Grace Darling, Grand Duc de Luxembourg, Gruss an Teplitz, Gustave Regis, Homer, Hon. E. Gifford, Kaiserin Aug. Victoria, Killarney, La France, Lady Mary Fitzwilliam, Liberty, Ma Tulipe, Madame Abel Chatenay, Madame Antoine Mari, Madame Berard, Madame Berkeley, Madame Cadeau Ramey, Madame Eugénie Boulet, Madame Hoste, Madame Jules Grolez, Madame Lambard, Madame Pernet Ducher, Madame Ravary, Madame Wagram, Mademoiselle Yvonne Gravier, Maman Cochet, Marie d'Orleans, Marie Van Houtte, Marjorie, Marquise de Salisbury, Marquise Litta, Monsieur Bunel, Mrs E. Mawley, Perle des Jardins, Princess Bonnie, Reine Olga de Wurtemberg, Safrano, Souvenir de C. Guillot, Souvenir de Madame E. Verdier, Souvenir de Wm. Robinson, Souvenir du President Carnot, Souvenir de Thérèse Levet, Souvenir de Madame Joseph Metral, Souvenir d'un Ami, Sulphurea, Sunset, Sylph, The Alexandra, The Bride, The Queen, Viscountess Folkestone, Waltham Climber No. 1, White Lady, White Maman Cochet. GROUP 40 (*Noisette*)—Bouquet d'Or, Caroline Kuster, Celine Forestier, L'Idéal, Madame Pierre Cochet, William Allen Richardson. GROUP 41 (*Noisette Perpetual*)—Coquette des Blanchés, Madame Alfred de Rougemont, Madlle. Blanche Durrschmidt, Madame Fanny de Forest.

C.—Pillar or Pole Roses.

SUMMER ROSES.—GROUP 4 (*Damask*)—La Ville de Bruxelles, Madame Hardy. GROUP 7 (*Moss*)—Baron de Wassanaer, Common, Comtesse de Murinais, Crimson Globe, Laneii. GROUP 10 (*Hybrid Chinese*)—Blairii No. 2, Brennus, Carmine Pillar, Chenedolé, Fair Rosamond, Fulgens, Paul Verdier, Souvenir de Pierre Dupuy, Vivid. GROUP 11 (*Hybrid Noisette*)—Madame Plantier. GROUP 12 (*Hybrid Bourbon*)—Charles Lawson, Coupe d'Hébé, Juno, Paul Perras. GROUP 16 (*Ayrshire*)—Bennett's Seedling, Ruga, Dundee Rambler, Splendens, Virginian Rambler. GROUP 17 (*Evergreen*)—Félicité Perpétue, Flora, Myrianthes Rénoncule. GROUP 18 (*Multiflora*)—Aglaia, Crimson Rambler, De la Grifferraie, Electra, Euphrosyne, Laure Davoust, Leuchtstern, The Dawson, Thunbergii, Thalia, Waltham Rambler.

AUTUMN ROSES.—GROUP 30 (*Rugosa*)—Conrad F. Meyer, Mercedes, Mrs A. Waterer, *Rugosa*, *Rugosa Alba*. GROUP 31 (*Hybrid Perpetual*)—Anna Alexieff, Climbing Bessie Johnson, Climbing Jules Margottin, Climbing Pride of Waltham, Climbing Victor Verdier, Clio, Crown Prince, Duke of Edinburgh, Ella Gordon, General Jacqueminot, Gloire de Margottin, Glory of Waltham, John Hopper, Jules Margottin, Madame Clemence Joigneaux, Magna Charta, Mrs John Laing, Paul Neyron, Paul's Single White, Princess L. Victoria, Red Dragon, Ulrich Brunner, William Warden. GROUP 32 (*Bourbon Perpetual*)—Madame I. Pereire. GROUP 33 (*Rose des Rosomanes*)—Bardou Job, Gloire des Rosomanes. GROUP 34 (*Bourbon*)—Acidalie, Climbing Malmaison, Mrs Paul, Robusta, Sir J. Paxton. GROUP 38 (*Tea-scented and Hybrids*)—Belle Lyonnaise, Cheshunt Hybrid, Climbing Belle Siebrecht, Climbing Captain Christy, Gloire de Dijon, Gustave Regis, Madame Alfred Carriere, Madame Berard, Madame Marie Lavalley, Noella Nabonnand, Pink Rover, Reine Marie Henriette, Reine Olga de Wurtemberg, Souvenir de Madame Joseph Metral, Waltham Climber No. 1, Waltham Climber No. 3. GROUP 40 (*Noisette*)—Aimee Vibert Climbing, Alister Stella Gray, Bouquet d'Or, Celine Forestier, Deschamps (*Longworth Rambler*), Jaune Desprez, William Allen Richardson.

D.—*Climbing Roses for Arches, Trellis, North Wall, &c.*

SUMMER ROSES.—GROUP 1 (*Boursault*)—Amadis, Gracilis. GROUP 10 (*Hybrid Chinese*)—Blairii No. 2, Brennus, Carmine Pillar, Chenedolé, Fair Rosamond, Fulgens, The Lion, Vivid. GROUP 11 (*Hybrid Noisette*)—Madame Plantier. GROUP 12 (*Hybrid Bourbon*)—Charles Lawson, Coupe d'Hébé. GROUP 16 (*Ayrshire*)—Bennett's Seedling, Dundee Rambler, Ruga, Splendens, Virginian Rambler. GROUP 17 (*Evergreen*)—Felicité Perpétue, Flora, Leopoldine d'Orleans, Myrianthes Rénoncule, Rampante. GROUP 18 (*Multiflora*)—Aglaiia, Crimson Rambler, De la Grifferraie, Electra, Euphrosyne, Laure Davoust, Leuchtstern, Psyche, Thalia, Waltham Rambler. GROUP 19 (*Wichuraiana*)—Dorothy Perkins.

AUTUMN ROSES.—GROUP 31 (*Hybrid Perpetual*)—Climbing Bessie Johnson, Climbing E. Morren, Climbing Jules Margottin. GROUP 33 (*Rose des Rosomanes*)—Gloire des Rosomanes. GROUP 38 (*Tea-scented and Hybrids*)—Cheshunt Hybrid, Climbing Belle Siebrecht, Climbing Captain Christy, Francois Crousse, Gloire de Dijon, Kaiserin Friedrich, Madame Alfred Carriere, Madame Berard, Madame Jules Siegfried, Madame Marie Lavalley, Noella Nabonnand, Reine Marie Henriette, Reine Olga de Wurtemberg, Waltham Climber No. 1, Waltham Climber No. 3. GROUP 40 (*Noisette*)—Aimée Vibert, Deschamps (*Longworth Rambler*), Jaune Desprez.

E.—*Climbing Roses for South Wall and Conservatory.*

GROUP 21 (*Banksian*)—Alba, Lutea, Fortune's Yellow. GROUP 26 (*Macartney*)—Maria Leonida. GROUP 31 (*Hybrid Perpetual*)—Climbing Pride of Waltham.

GROUP 35 (*Crimson Chinese*)—Field Marshal. GROUP 38 (*Tea-scented and Hybrids*)—Anna Ollivier, Belle Lyonnaise, Billiard and Barré, Cheshunt Hybrid, Climbing Belle Siebrecht, Climbing Captain Christy, Climbing Devoniensis, Climbing Kaiserin Augusta Victoria, Climbing Niphetos, Climbing Perle des Jardins, Climbing Meteor, Dr Rouges, Duchesse d'Auerstædt, E. Veyrat Hermanos, Fanny Stolwerck, Francois Crousse, Gloire de Dijon, Gruss an Teplitz, Henriette de Beauveau, Homer, Madame Alfred Carriere, Madame Abel Chatenay, Madame Barthelemy Levet, Madame Berard, Madame Chauvry, Madame C. Monnier, Madame Eugène Verdier, Madame Jules Siegfried, Madame Lambard, Madame Levet, Madame Moreau, Madame Wagram, Marechal Niel, Marie Van Houtte, Monsieur Desir, Noella Nabonnand, Reine Marie Pia, Safrano, Sombreuil, Souvenir de Madame Joseph Metral, Souvenir d'un Ami, Waltham Climber No. 1, Waltham Climber No. 3. GROUP 40 (*Noisette*)—Bouquet d'Or, Celine Forestier, Cloth of Gold, Fortune's Yellow, Lamarque, Ophirie, Reve d'Or, Solfaterre, Triomphe de Rennes, W. A. Richardson.

F.—*Trailing Roses for Banks, &c.*

SUMMER ROSES.—GROUP 10 (*Hybrid Chinese*)—Blairii No. 2, Fulgens. GROUP 16 (*Ayrshire*)—Bennett's Seedling, Dundee Rambler, Ruga, Splendens, Virginian Rambler. GROUP 17 (*Evergreen*)—Donna Maria, Felicité Perpétue, Flora, Léopoldine d'Orleans, Myrianthes Rénoncule, Rampante. GROUP 18 (*Multiflora*)—Aglaiia, Crimson Rambler, Electra, Euphrosyne, Laure Davoust, Polyantha Simplex, Polyantha Grandiflora, Psyche, Queen Alexandra, Thalia, The Dawson, Thunbergii, Una, Waltham Rambler. GROUP 19 (*Wichuraiana and Hybrids*)—Alberic Barbier, Dorothy Perkins, Evergreen Gem, Gardenia, Jersey Beauty, Manda's Triumph, Pink Roamer, Ruby Queen, Wichuraiana, Wichuraiana Rubra.

AUTUMNAL ROSES.—GROUP 24 (*Perpetual Scotch*)—Stanwell Perpetual. GROUP 31 (*Hybrid Perpetual*)—Climbing Jules Margottin, Climbing Bessie Johnson, Paul's Single White. GROUP 38 (*Tea-scented and Hybrids*)—Gloire de Dijon, Reine Marie Henriette. GROUP 39 (*The Musk Rose*)—Eliza Werry. GROUP 40 (*Noisette*)—Aimée Vibert, Reve d'Or.

G.—*Roses suitable for Pot Culture.*

Those marked thus (*) are Climbers.

SUMMER ROSES.—GROUP 7 (*Moss*)—Little Gem, Common. GROUP 10 (*Hybrid Chinese*)—Paul Verdier. GROUP 12 (*Hybrid Bourbon*)—Charles Lawson, Coupe d'Hébé, Juno, Paul Ricaut. GROUP 15 (*Austrian Briar and Hybrid*)—Soleil d'Or. GROUP 18 (*Multiflora*)—*Claire Jacquier, *Crimson Rambler, *Leuchtstern, *Waltham Rambler.

AUTUMNAL ROSES. — GROUP 25 (*Perpetual Moss*) — Blanche Moreau, Madame William Paul, Mousseline, Salet. GROUP 23 (*Polyantha*)—Anne Marie de

Montravel, Cecile Brunner, Eugénie Lamesch, Gloire des Polyantha, Katherine Zeimet, Léonie Lamesch, Madame E. A. Nolte, Mignonette, Pacquette, Perle d'Or, Perle des Rouges, Petit Constant, Schneewittchen. GROUP 31 (*Hybrid Perpetual*)—Alfred Colomb, Alphonse Soupert, Baroness Rothschild, Beauty of Waltham, Camille Bernardin, Captain Hayward, Charles Lefebvre, Clio, Comtesse de Serenye, Comtesse d'Oxford, Countess of Rosebery, Crimson Queen, Crown Prince, Dr Andry, Duchess of Bedford, Duke of Albany, Duke of Connaught, Duke of Edinburgh, Duke of Teck, Duke of Wellington, Dupuy Jamain, Earl of Dufferin, Earl of Pembroke, Eclair, Edward Morren, Ella Gordon, Fisher Holmes, François Levet, François Michelin, Frau Karl Druschki, General Jacqueminot, Gloire de Margottin, Gustave Piganeau, Heinrich Schultheis, Helen Keller, Jeannie Dickson, John Hopper, La Duchesse de Morny, Louis van Houtte, Madame Gabriel Luizet, Madame Lacharme, Madame Montet, Madame V. Verdier, Mdle. Eugénie Verdier, Mdle. Marie Rady, Magna Charta, Marchioness of Lorne, Margaret Dickson, Marie Baumann, Marie Louise Poiret, Marquise de Castellane, Maurice Bernardin, Merveille de Lyon, Mrs John Laing, Mrs R. G. Sharman Crawford, Paul Neyron, Pride of Waltham, Prince C. de Rohan, Queen of Queens, Saint George, Sénateur Vaisse, Silver Queen, Spenser, Star of Waltham, Suzanne Marie Rodocanachi, Triomphe de Caen, Ulrich Brunner, Victor Hugo, Victor Verdier, Violette Bouyer, William Warden. GROUP 32 (*Bourbon Perpetual*)—Madame Isaac Pereire. GROUP 34 (*Bourbon*)—Souvenir de Malmaison. GROUP 38 (*Tea-scented and Hybrids*)—Adam, Admiral Dewey, Alliance Franco-Russe, Anna Ollivier, Antoine Rivoire, Augustine Guinoisseau, Aurora, *Belle Lyonnaise, Belle Siebrecht, Bessie Brown, *Billiard and Barré, Boadicea, Bridesmaid, Camoens, Captain Christy, Caroline Testout, Catherine Mermet, *Cheshunt Hybrid, Clara Watson, *Climbing Belle Siebrecht, *Climbing Devoniensis, Comtesse de Nadaillac, Corona, Countess of Pembroke, Devoniensis, Duchess of Albany, Elise Fugier, Empress Alexandra of Russia, Enchantress, Etoile de Lyon, Exquisite, Francisca Kruger, Gladys Harkness, *Gloire de Dijon, Gloire Lyonnaise, Golden Gate, Goubault, Grace Darling, Grand Duc A. de Luxembourg, *Gustave Regis, Hon. Edith Gifford, Innocente Pirola, Jean Ducher, Jean Pernet, Kaiserin Augusta Victoria, Killarney, La France, Lady Mary Fitzwilliam, Liberty, L'Innocence, Madame Abel Chatenay, *Madame Berard, Madame Cadeau Ramey, *Madame Chauvry, Madame C. Guinoisseau, Madame Cusin, Madame de St Joseph, Madame de Watteville, Madame Eugénie Bouillet, Madame Falcot, Madame Hoste, Madame H. Defresne, Madame Jules Grolez, Madame Lambard, Madame Margottin, Madame Vermorel, Madame Vigier, Maman Cochet, *Marechal Niel, Marie Van Houtte, Marquise de Vivens, Marquise Litta, Medea, Mildred Grant, Morning Glow, Mrs E. Mawley, Muriel Grahame, Narcisse, Niphotos, Papa Gontier, Papa Lambert, Perle des Jardins, President, Princess of Wales, *Reine Marie Henriette, Robert Scott, Rubens, Sappho, Souvenir de Catherine Guillot, Souvenir d'Elise Vardon, Souvenir de Madame E.

Cauvin, Souvenir de Madame Eugène Verdier, *Souvenir de Madame Jos. Metral, Souvenir d'un Ami, Souvenir de Thérèse Levet, Souvenir de William Robinson, Souvenir du President Carnot, Sulphurea, Sunrise, Sunset, Sylph, Tennyson, The Bride, The Meteor, The Queen, Violoniste Emile Lévêque, Viscomtesse de Cazes, Viscountess Folkestone, *Waltham Climber No. 1, *Waltham Climber No. 3, White Lady, White Maman Cochet. GROUP 40 (*Noisette*)—*Alistair Stella Gray, *Bouquet d'Or, *Celine Forestier, *Lamarque, *Rêve d'Or, *Solfaterre, *Triomphe de Rennes, *W. A. Richardson. GROUP 41 (*Noisette Perpetual*)—Madame Fanny de Forest.

H.—*Winter Roses (to bloom from November to March).*

AUTUMN ROSES.—GROUP 23 (*Polyantha*)—Anne Marie de Montravel, Eugénie Lamesch, Georges Pernet, Gloire des Polyantha, Léonie Lamesch, Mignonette, Pacquerette, Perle d'Or, Petit Constant, Schneewittchen. GROUP 30 (*Rugosa*)—Madame Georges Bruant. GROUP 31 (*Hybrid Perpetual*)—American Beauty, Beauty of Waltham, Crown Prince, Frau Karl Druschki, General Jacqueminot, Jules Margottin, La France, Marchioness of Lorne, Mrs John Laing, Mrs R. G. Sharman Crawford, Queen of Queens, Silver Queen, Ulrich Brunner. GROUP 33 (*Rose des Rosomanes*)—Gloire des Rosomanes. GROUP 34 (*Bourbon*)—Armosa, Mrs Bosanquet, Queen, Queen of Bedders. GROUP 35 (*Crimson China*)—Cramoisie Superieure, Fabvier. GROUP 36 (*China*)—Archduke Charles, Ducher. GROUP 38 (*Tea-scented and Hybrids*)—Adam, Anna Ollivier, Antoine Rivoire, Augustine Guinoisseau, Belle Siebrecht, Bridesmaid, Boadicea, Camoens, Caroline Testout, Catherine Mermet, Chameleon, Corallina, Duchess of Albany, Enchantress, Etoile de Lyon, Exquisite, Fortuna, Goubault, Grace Darling, Gruss an Teplitz, Gustave Regis, Homer, Hon. Edith Gifford, Isabella Sprunt, Killarney, Liberty, L'Innocence, Madame Abel Chatenay, Madame C. Guinoisseau, Madame de Watteville, Madame Falcot, Madame Hoste, Madame Jules Grolez, Madame Lambard, Madame Ravary, Maman Cochet, Marechal Niel, Marie Van Houtte, Marquise Litta, Medea, Miss E. Brownlow, Niphotos, Papa Gontier, Perle des Jardins, Princesse de Sagan, Rubens, Safrano, Salmonea, Souvenir d'un Ami, Souvenir de Thérèse Levet, Souvenir de William Robinson, Sulphurea, Sunrise, Sunset, The Bride, The Meteor, Waltham Climber No. 1, White Lady, White Maman Cochet, W. F. Bennett. GROUP 40 (*Noisette*)—Bouquet d'Or, Celine Forestier, W. A. Richardson.

I.—*Yellow Roses.*

SUMMER ROSES.—GROUP 2—Double Yellow Provence. GROUP 15 (*Austrian Briar and Hybrids*)—Austrian Yellow, Harrisonii, Persian Yellow, Soleil d'Or. GROUP 21 (*Banksian*)—Lutea, Fortune's Yellow. GROUP 18 (*Multiflora*)—Claire Jacquier.

AUTUMN ROSES.—GROUP 19 (*Wichuraiana and Hybrids*)—Gardenia. GROUP 23 (*Polyantha Perpetual*)—Eugénie Lamesch, Perle d'Or. GROUP 36 (*Chinese*)—Aurore, Queen Mab. GROUP 38 (*Tea-scented and Hybrids*)—Alliance Franco-Russe, Amazone, Belle Lyonnaise, Beryl, Billiard and Barré, Climbing Perle des Jardins, Comtesse de Frigneuse, Duchesse d'Auerstädt, Etoile de Lyon, Gloire de Dijon, Georges Schwartz, Goldquelle, Gustave Regis, Henriette de Beauveau, Isabella Sprunt, Jean Pernet, La Boule d'Or, Madame Berard, Madame B. Levet, Madame C. Guinoisseau, Madame Charles, Madame Eugène Verdier, Madame Falcot, Madame H. Defresne, Madame Hoste, Madame Levet, Madame Margottin, Madame Ravary, Marechal Niel, Marie van Houtte, Medea, Narcisse, Perle des Jardins, Princess Beatrice, Prince Theodore Galitzine, Safrano, Souvenir de Madame Levet, Sulphurea, Sunset, Sweet Little Queen, The Alexandra, Vicomtesse de Cazes. GROUP 40 (*Noisette*)—Alister Stella Gray, Bouquet d'Or, Celine Forestier, Cloth of Gold, Isabella Gray, Joseph Bernacchi, Madame Carnot, Madame Pierre Cochet, Rêve d'Or, Solfaterre, Triomphe de Rennes, W. A. Richardson:

K.—*Very Sweet Roses.*

SUMMER ROSES.—GROUP 5 (*Provence*)—Common, Crested. GROUP 7 (*Moss*)—Common, Zenobia. GROUP 10 (*Hybrid Chinese*)—Chenedolé, Paul Verdier. GROUP 12 (*Hybrid Bourbon*)—Charles Lawson, Paul Ricaut. GROUP 15 (*Austrian Briar and Hybrid*)—Soleil d'Or.

AUTUMN ROSES.—GROUP 30 (*Rugosa*) Conrad F. Meyer, Mercedes. GROUP 31 (*Hybrid Perpetual*)—Abel Carriere, Abel Grand, Alfred Colomb, Alfred K. Williams, American Beauty, Anna de Diesbach, Antoine Ducher, Auguste Rigotard, Baron de Bonstetten, Baronne Prevost, Bessie Johnson, Beauty of Waltham, Ben Cant, Black Prince, Boieldieu, Camille Bernardin, Captain Hayward, Caroline d'Arden, Charles Lefebvre, Comte de Raimbaud, Crimson Queen, Duke of Wellington, Dupuy Jamain, Earl of Pembroke, Eclair, Elizabeth Vigneron, Eugène Furst, Ferdinand de Lesseps, Firebrand, Fisher Holmes, Francois Michelon, General Jacqueminot, Glory of Waltham, Gustave Piganeau, Louis Van Houtte, Madame C. Joigneaux, Madame G. Luizet, Madame V. Verdier, Marchioness of Lorne, Madlle. Marie Rady, Magna Charta, Mrs John Laing, Marie Baumann, Marie Louise Poirer, Pierre Notting, Prince Arthur, Prince C. de Rohan, Red Dragon, Saint George, Senateur Vaisse, Sir R. Hill, Waltham Standard, William Warden. GROUP 38 (*Tea-scented and Hybrids*)—Adam, Augustine Guinoisseau, Aurora, Boadicea, Beauté Inconstante, Countess of Pembroke, Devoniensis, Duchess of Albany, Goubault, Gloire de Dijon, Gruss an Teplitz, La France, La France de '89, Luciole, Liberty, Madame de Saint Joseph, Marechal Niel, Madame Abel Chatenay, Madame Jules Grolez, Marquise Litta, Mrs Pierpont Morgan, Mrs W. C. Whitney, Narcisse, Pink Rover, Princess Bonnie, Princess May, President, Waltham Climber No. 3, W. F. Bennett. GROUP 40 (*Noisette*)—Jaune Desprez, L'Ideal.

L.—*Miniature Roses.*

SUMMER ROSES.—GROUP 3 (*Scotch Rose*)—Double White and others. GROUP 6 (*Miniature Provence*)—De Meaux, Spong, White De Meaux. GROUP 7 (*Moss*)—De Meaux, Little Gem. GROUP 21 (*Banksian*)—Alba, Lutea.

AUTUMN ROSES.—GROUP 23 (*Polyantha*)—Anna Marie de Montravel, Cecile Brunner, Etoile d'Or, Eugénie Lamesch, Georges Pernet, Golden Fairy, Gloire des Polyantha, Katharine Zeimet, Little Dot, Léonie Lamesch, Mignonette, Pacquerette, Perle d'Or, Perle des Rouges, Petit Constant, Schneewittchen. GROUP 36 (*China*)—Little Pet. GROUP 37 (*Fairy*)—Lawrenciana, Pink and Red, Red Pet. GROUP 38 (*Tea-scented and Hybrids*)—Beryl, Ma Capucine, Madame François Janin. GROUP 40 (*Noisette*)—Adelina Vivian Morel.

M.—*Roses for Hedges.*

SUMMER ROSES.—GROUP 3 (*Scotch Roses*)—Various. GROUP 10 (*Hybrid Chinese*)—Charles Lawson, Chenedolé, Paul Perras, Paul Verdier. GROUP 11 (*Hybrid Noisette*)—Madame Plantier. GROUP 13 (*Alba*)—Blanche Belgique, Celestial, Madame Audot, Maiden's Blush. GROUP 14 (*Sweet Briar and Hybrids*)—Amy Robsart, Anne of Geierstein, Flora M'Ivor, Lady Penzance, Meg Merilees, Rose Bradwardine, Minna. GROUP 15 (*Austrian Briar*)—Harrisonii. GROUP 18 (*Multiflora*)—Crimson Rambler, De La Griffraie, Electra, Leuchtstern, Queen Alexandra, The Dawson, Waltham Rambler.

AUTUMN ROSES.—GROUP 25 (*Perpetual Moss*)—Blanche Moreau. GROUP 30 (*The Rugosa Rose*)—Blanc Double de Coubert, Belle Poitevine, Conrad F. Meyer, Mercedes, Mrs A. Waterer, Rugosa, Rugosa alba, Rugosa fl. pl. GROUP 31 (*Hybrid Perpetual*)—Clio, Climbing Jules Margottin, Climbing Pride of Waltham, Climbing Victor Verdier, Crimson Queen, Ella Gordon, Gloire de Margottin, Magna Charta, Ulrich Brunner. GROUP 32 (*Bourbon Perpetual*)—Boule de Neige, Madame I. Pereire. GROUP 33 (*Rose des Rosomanes*)—Bardou Job, Gloire des Rosomanes. GROUP 34 (*Bourbon*)—Arimosa, Robusta, Sir J. Paxton. GROUP 35 (*Crimson China*)—Belle de Florence, Cramoisie Eblouissante, Fabvier. GROUP 36 (*Chinese*)—Common. GROUP 38 (*Tea-scented and Hybrids*)—Cheshunt Hybrid, Climbing Belle Siebrecht, Gloire de Dijon, Gruss an Teplitz, Homer, Kaiserin Friedrich, Madame Abel Chatenay, Madame Alfred Carriere, Madame Berard, Pink Rover, Reine Marie Henriette, Waltham Climber No. 1. GROUP 40 (*Noisette*)—Deschamps, Fellenberg, W. A. Richardson.

N.—*Roses for the Shrubbery.*

SUMMER ROSES.—*Scotch* — *Damask* — *Provence* — *French* — *Moss* — *Hybrid Chinese* — *Alba* — *Austrian Briar* — *Multiflora*. *Sweet Briar and Hybrids*.—Various species and hybrids, such as Andersonii, Acicularis, Altaica, Lucida, Macrantha, Moschata alba, Pomifera, Rubrifolia, Setigera.

AUTUMN ROSES.—*Microphylla*—*Rugosa*—*Polyantha*—*Hybrid Perpetuals*—Any of the vigorous kinds. GROUP 24 (*The Perpetual Scotch*)—Stanwell Perpetual. GROUP 34 (*Bourbon*)—Robusta. GROUP 38 (*Tea-scented and Hybrids*)—Cheshunt Hybrid, Gloire de Dijon, Homer, Madame Alfred Carriere, Madame Berard, Madame Levet, Madame Marie Lavalley, Reine Marie Henriette, Noella Nabonnand, Reine Marie Pia, Reine Olga de Wurtemberg, Waltham Climber No. 1. GROUP 39 (*Musk Roses*). GROUP 40 (*Noisette*)—Aimée Vibert, Bouquet d'Or, Jaune Desprez, Fellenberg.

O.—*Seed Bearers* (the following may be added to those given on page 118).

AUTUMNAL ROSES.—GROUP 30 (*Rugosa*)—*Rugosa*, *Rugosa alba*. GROUP 31 (*Hybrid Perpetuals*)—Abel Carriere, Abel Grand, A. K. Williams, Anna Alexieff, Baronne Prevost, Baroness Rothschild, Black Prince, Charles Darwin, Constantin Tretiakoff, Duchess of Bedford, Earl of Pembroke, Emperor, Etienne Levet, Eugène Furst, Horace Vernet, Jean Rosenkrantz, La Rosiere, Lord Bacon, Louis Van Houtte, Madame C. Crapelet, Magna Charta, Marquise de Castellane, Maurice Bernardin, Prefet Limbourg, Princess of Wales, Red Dragon. GROUP 34 (*Bourbon*)—Sir J. Paxton. GROUP 38 (*Tea-scented and Hybrids*)—Anna Ollivier, Antoine Rivoire, Alice Furon, Belle Siebrecht, Corallina, Gruss an Teplitz, La Fraicheur, Lady M. Fitzwilliam, Liberty, Ma Tulipe, Madame Abel Chatenay, Madame Berard, Madame Jules Finger, Madame Levet, Marquise Litta, Souvenir de Madame E. Verdier, Souvenir de Wootton, Waltham Climber No. 1, White Lady.

P.—*Roses for Town Gardens.*

Scotch—*Damask*—*Provence*—*Moss*—*French*—*Hybrid Chinese*—*Hybrid Noisette*—*Hybrid Bourbon*—*Alba*—*Ayrshire*—*Evergreen*—*Microphylla* *Rugosa*:—the most vigorous growers from each group. GROUP 31 (*Hybrid Perpetuals*)—Anna Alexieff, Baron de Bonstetten, Charles Dickens, Charles Lamb, Charles Lefebvre, Clio, Crimson Queen, Crown Prince, Dr Andry, Duchess of Sutherland, Duke of Edinburgh, Dupuy Jamain, Elizabeth Vigneron, Ella Gordon, Frau Karl Druschki, Gen. Jacqueminot, Gloire de Margottin, Glory of Waltham, H. Schultheis, Jean Cherpin, Jean Rosenkrantz, Jeannie Dickson, John Hopper, Jules Margottin, Madame C. Joigneaux, Madame de Cambacerès, Madame G. Luizet, Madame V. Verdier, Mdle. T. Levet, Magna Charta, Marchioness of Lorne, Marechal Vaillant, Margaret Dickson, Marquise de Castellane, Mme. J. Bonnaire, Mrs J. Laing, Mrs Sharman Crawford, Paul Neyron, Princess L. Victoria, Rev. Alan Cheales, Ulrich Brunner, Victor Verdier, Violette Bouyer, William Warden. GROUP 32 (*Bourbon Perpetual*)—Baron Gonella, Boule de Neige, Madame I. Pereire. GROUP 34 (*Bourbon*)—Queen of Bedders, Sir J. Paxton, Souvenir de Malmaison. GROUP 36 (*Chinese*)—Common. GROUP 38 (*Tea-scented and Hybrids*)—Anna Ollivier, Belle de Bordeaux, Camoens,

Caroline Testout, Cheshunt Hybrid, Climbing Belle Siebrecht, Corallina, Dr Grill, Duchess of Albany, Enchantress, Francisca Kruger, Gloire de Dijon, Gloire Lyonnaise, Grace Darling, Gruss an Teplitz, Homer, Kaiserin Friedrich, La France, Madame Abel Chatenay, Madame Alfred Carriere, Madame Pernet Ducher, Madame Ravary, Madame Wagram, Marie d'Orleans, Marie Van Houtte, Monsieur Desir, Reine Marie Henriette, Safrano, Sombreuil, Viscountess Folkestone, Waltham Climber No. 1. GROUP 40 (*Noisette*)—Aimée Vibert, Bouquet d'Or, Deschamps, Fellenberg, W. A. Richardson.

Q.—Roses for Button-Holes.

SUMMER ROSES.—GROUP 7 (*Moss*)—Common, Little Gem, White Bath. GROUP 13 (*Alba*)—Celestial. GROUP 15 (*Austrian Briar*)—Harrisoni, Persian Yellow.

AUTUMN ROSES.—GROUP 23 (*Polyantha Perpetual*)—Cecile Brunner, Georges Pernet, Pacquerette, Perle d'Or. GROUP 25 (*Perpetual Moss*)—Blanche Moreau, Salet. GROUP 31 (*Hybrid Perpetuals*)—A. K. Williams, Brilliant, Captain Hayward, Charles Darwin, Crown Prince, Duke of Connaught, Ella Gordon, Emperor, Empress, Fisher Holmes, General Jacqueminot, Jean Cherpin, Mdle. Bonnaire, Mdle. Eugénie Verdier, Mrs J. Laing, Mrs Sharman Crawford, Prince C. de Rohan, Salamander, Victor Hugo, Victor Verdier. GROUP 38 (*Tea-scented and Hybrids*)—Alliance Franco-Russe, Anna Ollivier, Belle Siebrecht, Beryl, Billiard and Barré, Boadicea, Camoens, Catherine Mermet, Clara Watson, Duchess of Albany, Gloire Lyonnaise, Gustave Regis, Homer, Hon. E. Gifford, Isabella Sprunt, Kaiserin Augusta Victoria, Killarney, Liberty, Luciole, Ma Capucine, Madame Abel Chatenay, Madame Berard, Madame Charles, Madame C. Guinoisseau, Madame Cusin, Madame de Watteville, Madame Falcot, Madame Hoste, Madame Lambard, Madame Perny, Madame Ravary, Marechal Niel, Marie Van Houtte, Miss E. Brownlow, Mons. Desir, Niphetos, Papa Gontier, Perle des Jardins, Rubens, Safrano, Souvenir de Thérèse Levet, Souvenir de William Robinson, Souvenir du President Carnot, Sulphurea, Sunset, Sylph, The Bride, W. F. Bennett. GROUP 40 (*Noisette*)—Bouquet d'Or, L'Idéal, Madame P. Cochet, Reve d'Or, W. A. Richardson.

R.—Weeping Roses.

SUMMER ROSES.—GROUP 1 (*Boursault*)—Amadis, Gracilis. GROUP 10 (*Hybrid Chinese*)—Blairii No. 2, Fulgens. GROUP 15 (*Austrian Briar*)—Harrisonii. GROUP 16 (*Ayrshire*)—Dundee Rambler, Ruga, Splendens, Virginian Rambler. GROUP 17 (*Evergreen*)—Félicité Perpétue, Flora, Myrianthes Rénoncule. GROUP 18 (*Multiflora*)—Aglaiia, Crimson Rambler, Electra, Euphrosyne, Laura Davoust, Queen Alexandra, Thalia, Waltham Rambler. GROUP 19 (*Wichuraiana and Hybrids*)—Alberic Barbier, Dorothy Perkins, Evergreen Gem, Gardenia, Jersey Beauty, Pink Roamer, Ruby Queen, Wichuraiana, Wichuraiana rubra.

AUTUMN ROSES.—GROUP 31 (*Hybrid Perpetual*)—Climbing Jules Margottin, Paul's Single White. GROUP 35 (*Crimson China*)—Climbing Cramoisie Superieure. GROUP 38 (*Tea-scented and Hybrids*)—Gloire de Dijon, Madame Alfred Carriere, Madame Berard, Marechal Niel, Reine Marie Henriette, Reine Olga de Wurtemberg, Waltham Climber No. 1, Waltham Climber No. 3. GROUP 40 (*Noisette*)—Aimeé Vibert, Jaune Desprez, Lamarque, Reve d'Or, W. A. Richardson.

S.—*Roses for Massing.*

SUMMER ROSES.—GROUP 3 (*Scotch Roses*). GROUP 4 (*Damask*)—Madame Hardy, Madame Zoetmans. GROUP 8 (*French Roses*). GROUP 12 (*Hybrid Bourbon*)—Paul Ricaut. GROUP 15 (*Austrian Briar and Hybrids*)—Harrisoni, Persian Yellow, Soleil d'Or.

AUTUMN ROSES.—GROUP 23 (*Polyantha*)—Anne Marie de Montravel, Eugénie Lamesch, Georges Pernet, Gloire des Polyanthas, Katharina Zeimet, Léonie Lamesch, Madame E. A. Nolte, Mignonette, Pacquerette, Perle des Rouges, Perle d'Or, Petit Constant, Schneewittchen. GROUP 31 (*Hybrid Perpetual*)—Anna Alexieff, Baroness Rothschild, Brilliant, Captain Hayward, Clio, Crown Prince, Dr Andry, Duchess of Bedford, Duke of Albany, Firebrand, Fisher Holmes, Frau Karl Druschki, Garden Favourite, General Jacqueminot, Gloire de Margottin, Helen Keller, Jean Cherpin, Jeannie Dickson, John Hopper, Jules Margottin, Louis Van Houtte, Madame Victor Verdier, Marchioness of Lorne, Marie Baumann, Marquise de Castellane, Merveille de Lyon, Mrs F. W. Sanford, Mrs John Laing, Mrs R. G. Sharman Crawford, Pride of Waltham, Queen of Queens, Roslyn, Silver Queen, Spenser, Star of Waltham, Suzanne M. Rodocanachi, Ulrich Brunner fils, Victor Hugo, Victor Verdier, Violette Bouyer, White Baroness. GROUP 32 (*Bourbon Perpetual*)—Boule de Neige Comtesse de Barbantanne. GROUP 33 (*Rose des Rosomanes*)—Bardou Job, Gloire des Rosomanes. GROUP 34 (*Bourbon*)—Armosa, Kronprinzessin Victoria, Lorna Doone, Mrs Bosanquet, Queen of Bedders, Sir J. Paxton, Souvenir de Malmaison. GROUP 35 (*Crimson China*)—Cramoisie Superieure, Fabvier, Sanguinea. GROUP 36 (*China*)—Aurore, Common, Ducher, Duke of York, Irene Watts, Jean Bach Lisley, L'Ouche, Madame E. Resal, Madame H. Montefiore, Madame L. Messimy, Red Pet, White Pet. GROUP 38 (*Tea-scented and Hybrids*)—Admiral Dewey, Albert Stopford, Alliance Franco-Russe, Amateur Teyssier, Anna Ollivier, Antoine Rivoire, Augustine Guinoisseau, Aurora, Baronne C. de Rochetaillée, Beauté Inconstante, Belle Siebrecht, Beryl, Billiard and Barré, Boadicea, Camoens, Captain Christy, Caroline Testout, Chameleon, Clara Watson, Comtesse F. Hamilton, Comtesse Olivier de Lorgeril, Corallina, Dainty, Duchess of Albany, Empress Alexandra of Russia, Enchantress, Fairy Queen, Fortuna, Ferdinand Jamin, Francis Dubreuil, Francisca Kruger, General Schablikine, Georges Schwartz, G. Nabonnand, Gloire Lyonnaise, Grace Darling, Grand Duc de Luxembourg, Gruss an Teplitz, Gustave

Regis, Hon. E. Gifford, Kaiserin Augusta Victoria, Killarney, Lady Battersea, La France, Lady Mary Fitzwilliam, Liberty, Madame Abel Chatenay, Madame Berkeley, Madame Cadeau Ramey, Madame C. Guinoisseau, Madame Charles, Madame de Watteville, Madame Eugénie Bouillet, Madame Falcot, Madame Hoste, Madame Jules Grolez, Madame Lambard, Madame Louis Poncet, Madame Pernet-Ducher, Madame Ravary, Madame René de St Marceau, Madame Wagram, Marie Van Houtte, Mdle. G. Raud, Mdle. Yvonne Gravier, Maman Cochet, Marques d'Aledo, Marquise de Salisbury, Marquise Litta, Ma Tulipe, Meta, M. Bunel, Morning Glow, Narcisse, Papa Gontier, Perle des Jardins, Prince T. Galitzine, Princess Bonnie, Principessa de Napoli, Queen Olga of Greece, Reichsgraf E. Von Kesselstatt, Robert Scott, Safrano, Salmonea, Sappho, Souvenir de C. Guillot, Souvenir de Madame E. Verdier, Souvenir de J. B. Guillot, Souvenir de William Robinson, Souvenir du President Carnot, Sulphurea, Sunset, Tennyson, The Alexandra, The Queen, Vicomtesse R. de Savigny, Violoniste E. Leveque, Viscountess Folkestone, White Lady. GROUP 40 (*Noisette*)—Alistair Stella Gray, Deschamps, Fellenberg, L'Idéal.

T.—Pyramid Roses.

SUMMER ROSES.—GROUP 4 (*The Damask Rose*)—Madame Hardy. GROUPS 10, 11, and 12 (*Hybrid Chinese, &c.*)—Brennus, Carmine Pillar, Charles Lawson, Fair Rosamond, Madame Plantier, Paul Perras, Vivid. GROUP 15 (*Austrian Briar and Hybrid*)—Soleil d'Or. GROUP 18 (*Multiflora*)—Crimson Rambler, De la Griffériaie, Euphrosyne, The Dawson, Waltham Rambler.

AUTUMN ROSES.—GROUP 30 (*Rugosa*)—Belle Poitevine, Blanc Double de Coubert, Conrad F. Meyer, Mercedes, Mrs A. Waterer, Rugosa, Rugosa alba. GROUP 31 (*Hybrid Perpetual*)—Clio, Crown Prince, Duke of Edinburgh, Edward Morren, Ella Gordon, Frau Karl Druschki, Jean Rosenkrantz, Magna Charta, Mrs John Laing, Ulrich Brunner. GROUP 32 (*Bourbon Perpetual*)—Baronne de Maynard, Madame Alfred de Rougemont. GROUP 34 (*The Bourbon Rose*)—Madame Isaac Pereire, Madame Pierre Oger, Marquis Balbiano, Mrs Paul, Robusta. GROUP 38 (*Tea-scented and Hybrids*)—Billiard and Barré, Climbing Belle Siebrecht, Climbing Captain Christy, Francois Crousse, Gloire de Dijon, Gruss an Teplitz, Germaine Trochon, Gustave Regis, Pink Rover, Reine Marie Henriette, Reine Olga de Wurtemberg, Waltham Climber No. 1, Waltham Climber No. 3. GROUP 40 (*Noisette*)—Aimée Vibert, Celine Forestier, Deschamps.

U.—Seaside Roses.

SUMMER ROSES.—GROUP 3 (*The Scotch Rose*)—All sorts. GROUP 4 (*The Damask Rose*)—Madame Hardy. GROUP 5 (*The Provence Rose*)—Cabbage. GROUP 7 (*The Moss Rose*)—Common. GROUP 8 (*The French Rose*)—Rosa Mundi,

and other free-growing not over double sorts. GROUPS 10, 11, and 12 (*The Hybrid Chinese, Noisette, and Bourbon*)—Charles Lawson, Chendolé, Coupe d'Hébé, Paul Perras, Paul Ricaut, Madame Plantier. GROUP 13 (*The Alba Rose*)—Félicité, Maiden's Blush. GROUP 17 (*The Evergreen Rose*)—Félicité Perpétue. GROUP 18 (*Multiflora*)—Crimson Rambler, De la Grifferraie, Waltham Rambler.

AUTUMN ROSES.—GROUP 31 (*The Hybrid Perpetual*)—Beauty of Waltham, Charles Lefebvre, Crown Prince, Dr Andry, Duke of Edinburgh, Dupuy Jamain, Ella Gordon, General Jacqueminot, Lady Sheffield, Marchioness of Lorne, Merveille de Lyon, Mrs John Laing, Ulrich Brunner. GROUP 32 (*Bourbon Perpetual*)—Baronne de Maynard. GROUP 34 (*Bourbon*)—Armosa, Mrs Bosanquet, Souvenir de Malmaison. GROUP 35 (*Crimson Chinese*)—Fabvier. GROUP 36 (*The Chinese*)—Common, Ducher, Jean Bach-Sisley, Madame E. Resal, Madame L. Messimy. GROUP 38 (*Tea-scented and Hybrids*)—Anna Ollivier, Camoens, Comtesse F. Hamilton, Corallina, Enchantress, General Schablikine, G. Nabonnand, Gloire de Dijon, Grace Darling, Gruss an Teplitz, Gustave Regis, Homer, Madame Abel Chatenay, Madame Berard, Madame C. P. Strassheim, Madame Falcot, Madame Lambard, Madame Pernet Ducher, Marie d'Orleans, Marie Van Houtte, Perle des Jardins, Reine Marie Henriette, Rubens, Safrano, Sombreuil, Sulphurea, Waltham Climber, No. 1, Waltham Climber, No. 3, White Lady. GROUP 40 (*Noisette*)—Aimée Vibert, Bouquet d'Or, Celine Forestier, Deschamps, Ophirie, W. A. Richardson. GROUP 41 (*Noisette Perpetual*)—Coquette des Blanches, Louise Darzens, Mme. Fanny de Forest.

CHAPTER XVIII.

Calendar of Operations.

IT is not intended here to enter at any length into the *modus operandi* of cultivation, but simply to set down under the various months the work that should be done. This, it is conceived, will often save the reader both time and trouble in searching for information in the body of the work.

October.—The Rose Grower's year may be said to begin with the middle of this month. Plants that may have become weakly or unhealthy should be marked for removal, and the mind made up as to what shall take their place. In removing them large holes should be dug and left open for a week, the soil being laid round the edges to dry and air. Re-planting may be done to advantage the end of the month, or onwards till the end of March. Where fresh plantations are intended the ground should be trenched two feet deep, and plenty of rich manure be mixed with the soil. Roses from the ground wanted for pot culture should be potted the end of this month. All Roses in pots should be put under glass or shelter. Cuttings from out-of-doors may be planted either in the borders or frames. Clear wild shoots of budded stocks, excepting those containing the dormant buds. Plant Rose stocks if any inclination for budding the following year.

November.—Secure all Standard and Climbing Roses for the Winter by staking and tying. Protect tender Roses if meant to remain out-of-doors during Winter; Evergreen-boughs, Beech-boughs, Asparagus-haulm, and Fern, are useful for this purpose. Prune *hardy* Roses so far as *thinning out* supernumerary shoots is desirable, but do not shorten the shoots left till March. Prune Pot Roses (thinning out and shortening) for February flowering. Re-planting may be carried on to advantage during this month if the soil be fairly dry. Cover the ground with stable manure whether the plants are in rows or beds.

December.—Supposing the instructions for October and November to have been carried out, there is little to do this month out-of-doors. In-doors, however, matters are different. The late blooming plants under glass must be kept flowering by heat and moderate moisture; and Pot Roses for February flowering should now be brought into a warm house. The plants required to succeed these should be pruned.

If any seed has been left on the plants out-of-doors, it should now be gathered, and may be cleaned now or later on to be ready for sowing either at once or early in Spring.

January.—If little to do in the Rose Garden in December, there is still less in January. But sometimes the work of Autumn is delayed, and if so, it should be finished up this month as there must be no arrears carried on to February. Roses may be grafted in heat under glass. Plants in pots under glass will require cleaning, tying up, and smoking to keep them free from insects. A few fresh plants should be pruned and brought from without into the forcing house at brief intervals to secure a succession of flowers. If from heavy rains, snow, or sudden thaw, the water stand upon the ground out-of-doors, means should be taken to draw it off, as an excess of moisture in Winter is very damaging to both plants and prospective flowers. Lay up a store of soil and manure for future use.

February.—This should be a busy month out-of-doors. Manure and fork over the ground, taking care not to raise it to a depth that will disturb the roots. If much pruning to do, it may be begun the end of this month. Suckers, if any, may be removed. Make all plants secure against the expected March winds. Finish pruning Pot Roses, and keep up a succession of flowers by conveying fresh plants occasionally into the forcing house.

March.—Pruning out-of-doors is the great work of this month, and if many Roses are grown it will likely occupy the chief amount of the grower's time. It will, however, be got over much more easily if thinning out has been done in November. The pruning of Tea-scented Roses may be deferred till April. Layers put down during the previous Summer may now be taken off and transferred to permanent positions, transplanting carefully, and watering if dry weather. Cuttings may be taken from forced Roses, placing them in pots, and rooting them in bottom heat. Tie out Pot Roses for Summer flowering. Cuttings planted in the open ground in Autumn should be looked to, and if the ground has been loosened by the Winter's frost close it firmly around them, hoeing the ground a few days afterwards. Re-arrange any stakes and ligatures displaced by the wind. If any arrears in transplanting, manuring, or digging, let them be completed as early as possible in this month. One cannot be too early on the look-out for insects of all kinds, although during the three next months they will appear in greater abundance. Seedlings may be transplanted now, leaving them out of the ground as short a time as possible that the roots may not become dried by the March wind.

April.—Prune Tea-scented Roses. As the eyes of these and others break into life rub out a portion where crowded or ill-placed. Search closely and frequently for insects both in and out-of-doors. Roses budded last year should now have the growing buds tied up to protect them from the wind, or they may be blown out and destroyed. Remove suckers and wild shoots from these and all others. When the

flower-buds are newly formed, if large flowers are wanted, pinch out the backward flower-buds. Remove the points of any individual shoots that may show signs of developing with excessive vigour. Newly transplanted Roses should be watered during this and the following month should the weather be dry. Roses in pots under glass will henceforth require an increased supply of water, and must be kept free from aphid and grub by smoking or hand-picking. Thrip under good cultivation ought not to appear, but should it do so it may be destroyed by syringing with a solution of quassia and soft soap. Propagation from forced cuttings may be continued during this month.

May.—An important part of this month's work is the cultivation of the ground. It should be hoed frequently, especially after watering or rain, to keep the surface of the ground loose. Insects must be sought for diligently, and wild and irregular shoots brought into subjection or destroyed. The grower for exhibition must reduce the number of flowers on each plant very considerably with the view of obtaining large flowers. Water should be given freely if the weather is dry, and weak liquid manure or soot-water is a useful stimulant in this stage of the plant's growth. In light dry soils a thin layer of stable manure should be laid on the surface about the middle of the month. Roses in-doors that have flowered may be removed, bringing them to the out-of-door temperature gradually that they may not be injured by the change. If mildew appear dust the leaves with sulphur, cleansing them with the syringe a day or two afterwards, using soft soap and quassia water. Cuttings taken from under glass in March and April may now be transferred to single pots, keeping them under glass for another month.

June.—If the weather or soil be dry, water freely, hoeing the ground the following day. Look to staking and tying up. Keep a close watch over insects of all kinds. Clean and prepare Rose-stocks for budding. White Roses may be *slightly* shaded if growing for exhibition. Some of the *earliest* flowers should be crossed, that well-ripened seed may be obtained. Continue reducing the number of the flower-buds if large handsome flowers are wanted. The end of the month the Summer Roses and many of the Autumnals will be in flower. Over the past leisure, boxes should have been painted, sticks made, and green moss gathered and placed in a moist shady place, to be ready for the exhibitions. All Pot Roses may now be placed out-of-doors.

July.—In this month and onwards, the majority of growers look to be repaid for their labour and care by a grand outburst of flowers. Continue watering if dry weather. When propagating by layers, this is a good time to lay the branches in the earth. Reduce the number of shoots on Standard stocks planted for budding, leaving two or three only, and these opposite to each other, or otherwise well placed. Commence budding. If seed is not wanted, cut off the flowers so soon as they become shabby, top dressing the soil afterwards with rich but not fresh

manure. Be on the alert against mildew, dusting the leaves freely with sulphur when the first spots appear. Such Roses in pots as have grown well may now be placed with advantage in larger pots, keeping the flower-buds pinched off those wanted for winter flowering. Visit the Rose Shows.

August.—Read the instructions for the last three months, and repeat such of them as the state of the ground or plants may show to be desirable.

September.—Untie budded stocks. Continue such operations of the preceding months as are in arrear or may show themselves necessary. If any ground is clear where Roses are intended to be planted in the coming autumn now is the time to deal with it. Manure heavily, trenching the ground two feet deep, throwing the surface in ridges, to be levelled just before planting. Overhaul the entire stock of Pot Roses. Examine the roots carefully, and remove to larger pots such as are abundantly rooted. In this operation draw away a portion of the old soil from the top and bottom of the ball of earth, replacing what is required to fill the larger pots with fresh rich soil. Pot Roses wanted to flower through the winter months, must not be repotted now, but in spring or summer. Such should now be covered with incipient flower-buds, and if removed to a warm (not hot) house the end of the month, will continue to flower throughout the winter.

END OF DIVISION I.

Division II.

*An arrangement in natural groups of the most esteemed varieties of
Roses recognised and cultivated in the various Rose Gardens,
English and Foreign, with full descriptions and
remarks on their origin and mode of culture.
Illustrated with 21 full page engravings.*

IN TWO PRIMARY CLASSES:—

Class I.—Summer Roses;

Blooming in May, June, and July.

Class II.—Autumnal Roses;

*Blooming from May till November, or later, if not prevented
by Frost.*

INTRODUCTORY REMARKS.

Derivation of the word Rose—on Species—on the Origin of the Floricultural Groups—Terms used in the Description of Varieties—Popular Names applied to the different Forms of the Rose.

THE word "Rose" is generally allowed to have been derived from the Celtic *rhodd*, or *rhudd*, signifying "red," in allusion to the colour of the flowers of most of the species. We may trace a great resemblance in the names by which various nations distinguish this plant. In the Greek it is called *Rhodon*; in Latin, *Rosa*; in French, *Rosier*; in Italian, *Rosajo*; in Spanish, *Rosal*; in Portuguese, *Roseira*; and in German, *Rosenstock*.

In the natural system of botany the Rose belongs to the order Rosaceæ, in the Linnæan system to the class and order Icosandria Polygynia.

According to the authority of most Botanists, the genus *ROSA* stands divided into sections, which are subdivided into numerous species, the distinguishing characters of which consist in the colour, shape, size, &c., of various organs, such as the leaves, prickles, flowers, and fruit. On the value of these characters as constituting distinct species, botanical writers are, however, by no means agreed. While in the "*Rosarum Monographia*" seventy-eight species are described (besides others recorded as doubtful species), and the Messrs Loddiges had in their Catalogue a far greater number, M. Boitard, a modern French author, stoutly maintains there are but three.*

It is not my intention here to enter into the botany of the Rose,† but I would state it to be my impression that the differences of opinion arise in some measure from the unsettled definition of the word "species." I have often been asked what constitutes a species. And this question seems so necessary to be answered, in order that the arrangement of the varieties may be rightly understood, that I shall here offer a reply.

Mirbel says, "A species is composed of a succession of individuals, which have

* "*Manuel Complet de l'Amateur des Roses*," par M. Boitard, Paris, 1836. His species are :—1, *R. simplicifolia*; 2, *R. lutea*; 3, *R. mutabilis*. He divides these into races and varieties, and, according to this arrangement, nearly all the varieties cultivated in European gardens belong to the third species (*R. Mutabilis*).

† A popular article on this subject will be found in the "Appendix."

descended one from the other in a direct line, whether by seed or a simple separation of parts.

"We find commonly in the individual all the characters which distinguish the species to which it belongs from all other species in the Vegetable kingdom."

M. Boitard accepts the first sentence, but repudiates the other, and places in its stead, "Each individual of which is capable of reproducing by seed fertile individuals possessing one or more characters in common with the parent, and invariable in all."

In the Introduction to Lindley's "*Rosarum Monographia*" we find the following definition given:—"By species I wish to be understood here to mean an assemblage of individuals, differing in particular respects from the rest of the genus, but having more points of affinity among themselves than with others; their union being therefore natural."—*Ros. Mon. Intro.*, p. 18.

"We assemble under the name of species," says Decandolle, "all the individuals which bear sufficient resemblance to each other to lead us to believe that they have originally descended from a single being or a couple of beings."—*Physiologie Végétale*, tome ii., p. 688.

Although not agreeing altogether in the views of M. Boitard, I would state my conviction that most Botanists have been too ready in admitting as species individuals of a genus so remarkable for its disposition to vary; and if we adopt Decandolle's definition, I think that many of the so-called species are nothing more than hybrids or varieties, which, to use his words, "have originally descended from a single being or a couple of beings." I have been led to this conclusion more particularly from observations in raising seedlings, among which it is not uncommon to find plants differing as widely from their parents as some of the Botanists' species differ from each other. I think we may accept the definition given in the "*Rosarum Monographia*," and that the division there made has met the views of many subsequent writers may be gathered from the extent of their extracts from that work.

But it is necessary to consider other questions which the discussion of this invariably gives rise to. The tyro having made up his mind as to what he will accept as a definition of the word "species," we may suppose the next questions to be—What was the origin of the Floricultural Groups? what is the real difference between these groups? and how may one be enabled to refer any variety brought before him to its proper position?

We need scarcely say that the Botanist's sphere of labour is widely different from the Florist's. The former collects and examines the productions of Nature, arranging them in classes and orders; which he again divides into genera and species, pointing out their properties and uses. The Florist here takes up the work. Once in possession of species, he applies the art of culture with the view of fashioning them to his own taste. Let us confine our remarks to the department

of the Florist, and as varieties usually originate with him, we may presume that he is competent to answer the above questions.

Having the species, or varieties produced from species, at his command, he saves seed from them, which he sows; and from the proneness of Nature's offspring to assume new forms and tints, hence arise individuals differing from their parents. These are commonly termed varieties; and he bestows names on such of them as he deems improvements on former kinds and therefore worthy of public notice.

But the Florist does more than this. He does not rest satisfied with the simple workings of Nature. Her march is too slow for him. He strives to anticipate her. He brings together varieties of different species, and, hybridizing them, he effects new combinations—produces new races;* the individuals of which differ widely in appearance, and which may eventually become so numerous as to induce him to group them, that they may be the more readily comprehended. To accomplish this end he seizes hold of external characters—whether it be the colours of the flowers, as in Carnations, &c., or the general appearance of the plant, as in Roses---and forms a system of arrangement of his own; not strictly botanical, perhaps, but popular and useful. Such is the origin of the Floricultural Groups. As to the differences between these groups, we shall point out, as we approach each one, the characters which distinguish it from all others.

Now, it will be tolerably evident, that to be able to group varieties correctly, some practice among Roses, combined with previous study, is necessary. If an individual wish to become sufficiently acquainted with Roses to enable him to do this, I would say let him first study the features of the species from which the Florist's groups have descended. Let the groups be considered next; then the varieties, which, though ever so variously hybridized, will after a little practice be readily understood. A hybrid may sometimes be met with whose place it may at first sight be difficult to determine; but in such cases a second or third inspection and a little reflection usually solve the difficulty. To illustrate this remark, let us suppose the existence of a variety due to the hybridizing of a Damask with a Hybrid Provence Rose. The Hybrid Provence being a hybrid between the French (R. Gallica) and the Provence (R. centifolia), such variety might partake of the

* M. Deslongchamps in his work on the Rose devotes considerable space to a discussion on the subject of raising Roses from seed, and especially in proving that they vary from seed without being hybridized. What practical man has any doubt on the subject? But with the same stroke he endeavours to establish that the so-called hybrids are not really such—have not been produced by the union of two distinct species, but by freaks of Nature. In this, if he admits as distinct species those plants which most Botanists do, he appears to me to fail absolutely; and he admits that the authority of the French Rose-growers, most of whom devote a great part of their time to the raising of seedlings, is against him. M. Vibert, one of the oldest and most distinguished cultivators in France, goes so far as to say that he obtained spotted Moss Roses by crossing the spotted varieties of the French Rose (R. Gallica) with self-coloured varieties of the Moss Rose (R. centifolia). The plants produced from this experiment partook unmistakably of the characters of each parent, and differed from all pre-existing kinds.

nature of both these species, and also of the Damask (*R. Damascena*) parent. These are, on the authority of most Botanists, three distinct species. Well, supposing the features of each to be visible in the new variety, where is the place for such a hybrid? We would say—Is it sufficiently original in character to demand the formation of a new Floral group? If so, this is the proper course to pursue; and it is thus that several new groups have of late years been added. The Hybrid Perpetuals and Hybrid Teas, for instance, are of modern date, and it must be admitted by all that for these hybrids new groups or sections were necessary. But supposing this new individual to possess no very distinct features: then will not the characters of any one species or group predominate? Undoubtedly they will; and the variety should be referred to that group which it most nearly resembles in external characters.

If we glance at the species from which the beautiful varieties which decorate our gardens have sprung we find nearly all are natives of civilised countries, and have been for some years known and cultivated in Europe. This will account for the number of varieties that have been derived from them. It is probable that many other species, which are at present only known as species, will eventually give birth to esteemed garden kinds; that fresh Floral groups will arise, possessed of distinct characters from those we already possess. If these anticipations be realised, what may not the Roses of the future be! And an air of reasonableness is given to this supposition by the recent appearance of numerous varieties raised from the *Rosa rubifolia*, which was formerly only known to us as embellishing with its pale red blossoms the prairies and forests of North America. There is no doubt some of the species are more disposed to improvement than others, but all are capable of it. I believe that when our cultivators shall become tired of working upon the garden kinds they already possess they will direct their attention to others of the species, and bring forth the treasures they are capable of producing.

When we look at the species with single or semi-double flowers, which are the types of the present garden varieties, and compare them with those varieties, the contrast may well make us inquire—Have the latter really descended from these species? So greatly are they improved in form and texture of petal; increased also in size; changed from single to double; and varied in colour to a remarkable degree; that I do not wonder at persons unacquainted with the effects of cultivation on the wild species wishing to know the process of development before they accredit statements such as these. We may fairly presume, however, that such is their origin. But if so, how has such a change been wrought? We reply—Simply by a long course of careful and systematic culture. What was the Rose, comparatively speaking, eighty or even fifty years since? There are doubtless some of the admirers of the genus who can glance retrospectively to the latter period, and trace the gradual alteration from flimsy semi-double varieties, few blooming in the

Autumn, to the full bold flowers of the present day, so exquisite in colour, so symmetrical in form. In order to trace their descent it is necessary to revert to the species which we must suppose existing in a wild state. We know little of cultivation as pursued in remote ages, but may be justified in presuming that seeds of the Rose were sown as well as those of other trees and plants. It is recorded that the Romans sowed Rose-buds, but we now allude to times anterior to these. Now, supposing the seeds of the wild species to have been gathered and sown, Nature's stores thus opened, she would yield forth her treasures, here as elsewhere, in rich abundance; the plants raised would produce flowers varying in colour, size, and degree of fulness.* We may suppose the handsomest of these would be cherished most, and the probability is seeds would be saved from such; hence we might expect to obtain variety as before, and a further advance in beauty. So on from time to time, the improvement taking place so gradually as to fix the attention only of the curious in these matters; or, if at any period a great advance had been made, it would not have been considered worthy of record in less civilised times, when the constant occurrence of important changes and stirring events kept men in a state of excitement, disquietude, and doubt. Ages might thus roll away and the species be not marvellously changed from their primitive form. But following the stream of time, we reach the period when the raising of plants became a settled occupation; soon men turned their attention to the improvement of races; then the sexes of plants were generally acknowledged; and finally, the effects of artificial fertilisation were made known, and the art practised. The latter was indeed a grand stride in the path of improvement; by its pursuance man stepped in to co-operate with Nature, and the results are strikingly visible.

Although departing from our subject, yet to render this hypothesis more credible let us glance for a moment at analogous cases.

Let us turn to the *Heartsease*, or the *Dahlia*, whose progress from the species to the present state has been more rapid, and has fallen within the pale of more general observation. It is well known that the beautiful garden varieties of *Heartsease* are descended from the *Viola tricolor* and *V. lutea* of botanists, both species indigenous to Britain. They had long been grown in the borders of flower gardens, and the flowers had no doubt become varied in colour and size, but I believe that it is not more than eighty years since Mr Thompson, of Iver, first commenced their cultivation with the expectation of improving them. They were then, perhaps, not very far removed from the species. He collected several kinds, and saved seed from them promiscuously. From the plants thus raised some were larger and handsomer than their parents; these he reserved, saving seed from such, and by continuing to re-

* In presuming thus far we are supported by natural occurrences. The flowers of the Dog-Rose in the hedges and woods vary in size and colour, and in the south of Europe some of the wild kinds have double flowers.

serve and save seed from the finest varieties, and by planting them in the most favourable soil, he materially improved them. He did not long work single-handed; other florists joined him, and the results are now before us—the flowers are changed from an irregular and indescribable form, and become quite circular. I do not know whether he adopted artificial fertilisation in his course of practice, but others have done so.

Take another instance. The Dahlia when first introduced into England was single, the flowers had but one row of petals, the centre being occupied with a yellow disk; they resembled a single Aster. The first double Dahlias had long narrow flat pointed petals, and were very different in character from the present favourites. The florist and amateur disliked the pointed flat-petalled flowers, and they raised an ideal standard of perfection. All their endeavours were directed towards the attainment of this ideal. Dahlias, said they, should not be flat flowers, but circular, forming half a ball; the petals should not be long and pointed, but short, rounded at the edge, and cupped. Now mark the change that has followed. The Dahlia has, so to speak, been re-modelled.*

So doubtless it has been with the Rose, though its development has been more gradual, has been spread over a greater extent of time, and has, consequently, been less marked than in the above cases. We must remember that the Rose is not a flower recently risen into favour, deriving its popularity from cultivators of the present day alone; it is of the highest antiquity; and the ancients having cherished it so much, we may fairly presume they would bestow some pains on its cultivation. It is not then, I think, surprising, when we consider the length of time the Rose has been under cultivation, and how freely the numerous species of which it is composed intermix—it is not, I say, surprising that the varieties are removed to a greater distance from the species than in either of the above-mentioned flowers.

The Dahlias are the offspring of a single species; the Heartsease arose from two; but the Roses of our day claim no less than twenty species as their progenitors. Should we not expect, then, from a larger surface on which to build, and a greater quantity and choice of materials, added to which, time almost unlimited, a superstructure to arise more grand, more varied, and more perfect?

In grouping the varieties I have endeavoured not to increase more than necessary the number of groups into which, on the authority of Rose cultivators, the Rose at present stands divided. It were easy to effect a different arrangement, and perhaps a better one; but it is questionable whether the improvement would be sufficient to compensate for the confusion that must necessarily arise from such a step. In few instances have I therefore formed fresh groups; and where I have thought varieties

* Since this was written the Cactus and Pompon Dahlias have become new and popular types of this flower.

to belong to other groups than those in which some cultivators place them, they will be removed to what appears to me a more correct position. To prevent confusion arising from this change, the names will be retained in their accustomed places, the reader being referred to the other groups for their proper descriptions.

It was conceived that the Hybrid Perpetual Roses differed too widely to remain grouped as heretofore; witness *Baronne Prévost*, *Gloire des Rosomanes*, *Louise Odier*, and *Madame Alfred de Rougemont* being placed together.

The original group of Hybrid Perpetuals will now be divided into four—Hybrid Perpetual, *Rose des Rosomanes*, Bourbon Perpetual, and *Noisette Perpetual*, of which the varieties just mentioned may be considered the types. There are two or three other like cases, of which may be instanced the *Polyantha* and *Ayrshire*.

It is thought desirable, before proceeding further, to explain certain terms which it is found necessary to use in describing the varieties; and the first which present themselves are those relating to *the size of the flowers*:—They are *five*, namely:—

Very small, applied when the flowers are about 1 inch in diameter.

Small from 1½ to 2 „

Of medium size 2 „ 3 „

Large 3 „ 4 „

Very large 4 „ 5 „

There are also *five* terms used expressive of *the degree of fulness*:—*Single*, *Semi-double*, *Double*, *Very Double*, and *Full*.

The *Single* are such as possess but one row of petals; example, the *Single Austrian Rose*.

The *Semi-double* have from two to five rows of petals; example, *Amadis* (*Boursault*), *Fabvier* (*Crimson Chinese*).

The *Double* have more than five rows of petals, yet when full blown usually show the stamens in the centre of the flower; examples, *General Jacqueminot* (*Hybrid Perpetual*), *Safrano* (*Tea-scented*).

The *Very Double* have a sufficient number of petals to hide the central stamens; examples, *Charles Lefebvre*, *Madame Clemence Joigneaux* (*Hybrid Perpetuals*).

The *Full* have the petals placed closely together; examples, *La Reine* (*Hybrid Perpetual*), *Maréchal Niel* (*Tea-scented*).

It should, however, be told that the flowers of some varieties vary at times and under certain conditions as to fulness.

In reference to the *form of the flowers*, we have the terms *Globular*, *Cupped*, *Compact*, and *Expanded*.

The term *globular* is applied to such varieties as assume that form, in which the outer petals encircle the flower, the latter remaining closed, or almost closed, till nearly full-blown; thus the flower in its early stage is a perfect globe. Examples of this term: the *Cabbage Rose* (*Provence*), *La Reine* (*Hybrid Perpetual*), *Gloire*

de Dijon (Tea-scented). It is worthy of remark that Roses of this form usually remain perfect for a longer period than others. I have kept globular-shaped Roses in good preservation for a week or ten days after being cut off the plant.

The term *cupped* is applied in cases where the outer petals of the flower stand erect or are slightly incurved, the petals within being in general of smaller size than the outer ones, the flower thus being a little hollow in the centre like a cup. Examples of this term: Madame Hardy (Damask), Coupe d'Hébé (Hybrid Bourbon), Beauty of Waltham, Madame Gabriel Luizet (Hybrid Perpetuals).

The term *compact* is applied to those varieties whose petals are stiff and upright, the centre of the flower being almost level with the circumference, usually rising above it rather than being depressed. Examples of this term: De Meaux (Moss), Boula de Nanteuil (French), Madame Boll and Florence Paul (Hybrid Perpetuals).

The *expanded* differ from the *compact* in this respect; the outer petals, instead of standing erect, lie almost horizontal, usually turning back upon the flower-stalks in the last stage of the flower. Examples: most of the French Roses, Geant des Batailles and Alfred K. Williams (Hybrid Perpetuals).

These are the terms which I have thought it expedient to make use of to convey a correct idea of the size, form, and fulness of the different varieties of the Rose.

With regard to the form of a flower, it may be remarked that it often varies as the flower passes through the different stages of its existence. Thus Roses which are globular when young sometimes pass into the cupped state as they advance in age; a Rose which is cupped when half-blown may become compact when full-blown; and a Rose that is compact in the former stage may become expanded in the latter. And the same with regard to colour. A Rose may be pink or rose-colour when first opening to the sun, and fade to blush ere it decay. Now, with regard to form, as it would be difficult in all cases to record such peculiarities, *I have contented myself with seeking out the most perfect stage of the flower*, and noting the form of such. As to colour, where this changes it will be found noticed in the description.

There are *four terms* used illustrative of the rate of growth:—*Vigorous*, *Robust*, *Moderate*, and *Dwarf*.

Vigorous is used to point out such varieties as form long shoots. Examples: Madame Hardy (Damask), Magna Charta (Hybrid Perpetual).

Robust alludes to those which form very stout shoots of less length than "Vigorous." Examples: Juno (Hybrid Bourbon), Baroness Rothschild (Hybrid Perpetual).

Moderate alludes to those which are of moderate growth; such usually form neat and compact bushes or heads when on stems. Such are most of the French and Bourbon Roses, and many of the Hybrid Perpetuals.

Dwarf is applied where any variety is of small or dwarf growth.

To know the rate of growth of a plant is of the highest importance in the selection of varieties. How otherwise can they be properly adapted for particular purposes? How else arranged correctly in Rose clumps, or in the formation of a Rosarium? One cannot always judge correctly of the actual rate of growth by a young plant; its vigour may be extraordinary, when the variety is in reality only a moderate grower. Hence it frequently happens that we find Roses in clumps and elsewhere badly placed; the guiding line when planting having been the rate of growth of the young plants; and thus a moderate grower fills a position suited only for a robust or vigorous one, and *vice versa*.

It is the frequent meeting with cases such as these that has induced me to attach the rate of growth to the varieties, as far as it was practicable to do so. As this feature in description will be new to those who have not seen the Descriptive Catalogues of the Collection here, it may be well to give a table of the average height of the varieties of the different groups intended to be expressed by each term. The terms *vigorous*, *robust*, *moderate*, and *dwarf*, are applied to certain kinds, *viewed in comparison with others of the same group*; thus, a growth of two to three feet would entitle a *Provence Rose* to the appellation of *vigorous*, whereas a growth of six to eight feet would be required to justify the application of the same term to the *Hybrid Chinese*; because the latter are, as a whole, more vigorous than the *Provence Roses*.

The following Table is drawn up in reference to their growth in these Nurseries, the soil of which is a strong alluvial loam. However they may differ *in extent of growth* in other soils, I imagine *most groups* will remain *comparatively* the same.

TABLE OF THE AVERAGE HEIGHT OF VARIETIES OF EACH GROUP TO WHICH THE TERMS "VIGOROUS," "ROBUST," "MODERATE," AND "DWARF" ARE APPLIED.

CLASS I.—SUMMER ROSES.

GROUPS.	VIGOROUS.	ROBUST.	MODERATE.	DWARF.
I. The Boursault Rose	10 ft.	...	...	...
II. The Double Yellow	...	...	3 ft.	...
III. The Scotch Rose	...	...	...	1½ to 3 ft.
IV. The Damask Rose	4 to 5 ft.	3 to 4 ft.	2 to 3 ft.	...
V. The Provence Rose	2 to 3 ft.	2 ft.	2 ft.	...
VI. The Pompon Rose	...	...	...	1 to 1½ ft.
VII. The Moss Rose	6 ft.	4 ft.	2 ft.	1 ft.
VIII. The French Rose	3 to 4 ft.	2 to 3 ft.	2 ft.	1 to 1½ ft.
IX. The Hybrid French	3 ft.	2 to 3 ft.	1½ to 2 ft.	1 to 1½ ft.
X. The Hybrid Chinese	6 to 8 ft.	6 to 8 ft.	2 to 4 ft.	1 to 2 ft.
XI. The Hybrid Noisette	6 ft.	...	2 ft.	1 to 2 ft.
XII. The Hybrid Bourbon	6 to 8 ft.	4 to 6 ft.	2 ft.	...
XIII. The Alba Rose	4 to 5 ft.	2 to 3 ft.	1½ to 2 ft.	1 ft.
XIV. The Sweet Briar and Hybrids ...	4 to 6 ft.	...	2 to 3 ft.	...
XV. The Austrian Briar and Hybrids ...	3 to 4 ft.	...	...	...
XVI. The Ayrshire Rose	15 ft.	...	...	...
XVII. The Evergreen Rose	15 ft.	...	6 to 8 ft.	...
XVIII. The Multiflora Rose	10 to 15 ft.	...	...	...
XIX. The Wichuraiana and Hybrids ...	10 to 15 ft.	...	...	...
XX. The Prairie Rose	8 to 10 ft.	...	...	...
XXI. The Banksian Rose	15 ft.	...	...	...
XXI.*The Cherokee or Camellia Rose ...	12 ft.	...	...	...

CLASS II.—AUTUMNAL ROSES.

GROUPS.	VIGOROUS.	ROBUST.	MODERATE.	DWARF.
XXII. The Ayrshire Perpetual Rose ...	10 to 12 ft.	...	...	...
XXIII. The Polyantha Perpetual Rose ...	...	...	...	1 to 3 ft.
XXIV. The Perpetual Scotch	...	...	2 to 3 ft.	...
XXV. The Perpetual Moss	...	2 to 3 ft.	1½ to 2 ft.	...
XXVI. The Macartney Rose	4 to 6 ft.	...	...	...
XXVII. The Shining-leaved Rose	3 to 5 ft.	...	...	...
XXVIII. The Berberry-leaved Rose ...	...	...	...	...
XXIX. The Microphylla Rose	4 to 6 ft.	...	3 ft.	...
XXX. The Rugosa Rose	...	3 to 4 ft.	2 to 3 ft.	...
XXXI. The Hybrid Perpetual	4 to 6 ft.	4 to 5 ft.	2 to 3 ft.	1 to 2 ft.
XXXII. The Bourbon Perpetual	6 to 8 ft.	...	2 ft.	1 ft.
XXXIII. The Rose des Rosomanes ...	6 to 8 ft.	...	2 to 3 ft.	1 ft.
XXXIV. The Bourbon Rose	6 ft.	4 to 6 ft.	2 to 3 ft.	...
XXXV. The Crimson Chinese	3 ft.	...	2 ft.	1 ft.
XXXVI. The Chinese or Monthly	3 to 5 ft.	...	2 ft.	1 ft.
XXXVII. The Fairy Rose	...	...	...	1 to 1½ ft.
XXXVIII. The Tea-Scented and Hybrids ...	6 to 10 ft.	3 to 4 ft.	2 ft.	1 ft.
XXXIX. The Musk Rose	8 to 10 ft.	...	...	...
XL. The Noisette Rose	8 to 10 ft.	4 to 6 ft.	2 to 3 ft.	1 to 2 ft.
XLI. The Noisette Perpetual	6 to 8 ft.	...	3 ft.	...

In the preceding table I have avoided the maximum and minimum of height, and endeavoured to secure the mean. In poor soils some of the varieties probably will not reach the height given, and in rich soils they may rise above it. Certainly the most vigorous kinds, which are usually grown as Pillar or Climbing Roses, may by skilful pruning and training be extended almost indefinitely, especially when placed against fences or walls.

Much confusion has arisen from there being no acknowledged standard of reference for the names of particular forms of Rose Trees. Thus the terms *low standard*, *half-standard*, and *dwarf standard* are used synonymously by some. Before concluding, it may be well to intimate what is here intended by the use of certain names :—

Weeping Roses are kinds of vigorous and pendulous growth, worked on stems of 4 feet or upwards.

Standard Roses are any kinds on stems of about 3 feet.

Tall Standards 4 to 5 feet.

Half-Standards $1\frac{1}{2}$ to $2\frac{1}{2}$ feet.

Dwarf Standards varying from 6 to 18 inches.

Dwarfs are budded or grafted close to the ground, and termed *worked dwarfs*; or are grown from cuttings or layers, and spoken of as *own root roses*.

Climbing Roses are the most vigorous kinds selected from various groups.

Pillar and *Pyramid Roses* are analogous to the last, but the best form of these are kinds of more erect habit and less flexible growth than are usually chosen for Climbing Roses.

Pot Roses are any of the above grown in pots.

Class I.—Summer Roses.

Blooming in May, June, and July.

Rosa Alpina.

GROUP I.—THE ALPINE OR BOURSALT ROSE.

The Boursault Roses are very distinct from all others. The shoots are long, flexible, very smooth, in some instances entirely free from thorns; the one side often of a pale green, the other of a reddish tinge; the eyes are formed farther apart than in common. The flowers are produced in large clusters. By these features are the varieties of this group readily distinguished. The Boursault Roses, though of vigorous growth, are not of a sufficiently pendulous habit to make perfect "Weeping Roses" without assistance from the cultivator. When desired to be formed into such, the branches should be drawn to the ground with tar-twine or twisted bast, when the immense trusses of flowers they bring forth produce a most gorgeous appearance. One inducement to grow them in this manner is, that most Roses of a pendulous growth producing pale-coloured flowers, they introduce a charming variety among Weeping Roses; for the Boursault are mostly purple or crimson. Besides forming good Weeping Roses, they are fine grown either on pillars or on fences with a northerly aspect, a situation where few other kinds succeed well. It might be supposed that they are very hardy, growing naturally as they do on the Alps of Austria and Switzerland. And such is indeed the case; they will bloom well in situations where they scarcely obtain a gleam of sunshine. The popular name of the group "Boursault" is due to the first double Alpine Rose being so named in compliment to M. Boursault, a French cultivator.

Boursault Roses should be well thinned out in pruning; but the shoots that are left for flowering should be shortened in very little.

1. AMADIS (*Crimson*); flowers deep crimson-purple, shaded more or less with vivid crimson, large and semi-double; form cupped; habit erect; growth vigorous;

the young wood of a whitish green. A showy Rose; excellent as a pillar for distant effect.

2. BLUSH (*De Lisle*); flowers pale blush.
3. ELEGANS; flowers light purplish crimson, semi-double.
4. GRACILIS; flowers lively cherry, shaded with lilac blush, of medium size, full; form cupped. Habit branching; growth vigorous. Prickles singularly large and long; foliage of a rich dark green, the variety evidently being a hybrid.
5. INERMIS; flowers deep reddish rose.
6. INERMIS MORLETTI; flowers light rose, semi-double; very vigorous.
7. PENDULINA; flowers rich carmine, of medium size, single; growth vigorous.

Rosa Sulphurea.

GROUP II.—THE DOUBLE YELLOW ROSE.

This Rose may be distinguished by its flat glaucous leaves, which are usually of a pale or yellowish green. The vigorous shoots grow erect, the weaker ones rather twisted, and both are covered with long thin prickles.

It is generally allowed to be a native of Persia, first introduced to England from Constantinople. It is notorious for refusing to expand its blossoms, and has been the subject of much discussion. It was apparently unfavourably known in this respect more than two hundred years ago. John Parkinson, who wrote on Gardening early in the seventeenth century, says of it—"The flower is so thick and double that very often it breaketh out on one side or another, but few of them abiding whole and fair in our country." As he does not give us any means of remedying the defect we may presume that that was a puzzle to him which still remains so to us. At least, if we can advance a reasonable supposition as to the cause, we have not yet been able to provide a remedy. The methods of treatment and aspects which different writers have recommended to induce this capricious plant to flower constantly and well are very various, but all seem of little use. Different aspects have been chosen, and different modes of culture followed, but what has succeeded in the hands of one individual has in like situations and circumstances failed in the hands of another.

In the first volume of the *Gardeners' Chronicle* (1841) the Editor invites his correspondents to a discussion on this plant; and, at p. 811, winds up the subject with a leading article. It is there remarked:—

"In what aspect it most flourishes may perhaps be gathered from this, that in ten cases success is connected with an east aspect, in eight with a north, in seven

with a west, in six with a full exposure all round, and in only one case is the south spoken of; this, however, is by W. Leveson Gower, Esq., whose Roses at Titsey, near Godstone, are well known for their beauty, and this gentleman finds them do better there than on a north or west wall.

“Nothing can be more conflicting than the evidence about soil. The majority of cases of success occur in light land, gravelly, sandy, loamy, and even marly.

“But, on the other hand, we have some instances of success in the stiffest land. Mr Bowers, of Laleham, grew it in Northamptonshire in cold clay twenty inches deep; an anonymous correspondent asserts that he has had it in the greatest perfection in the blue clay of Essex, and that he has never known it to fail when it was put into clay in a north aspect; and another writer testifies to success in strong wet undrained clay in the same county.”

The Double Yellow Rose certainly is very beautiful when perfect; and could any system of cultivation be divulged which, followed, would ensure a successful issue, I should consider pages well occupied in doing this. But although my anticipations are not thus sanguine, the subject yet deserves a little consideration.

Some have said—Grow it on its own roots; others, Bud it on the Dog-rose; and others again, Bud it on the Chinese. At East Lodge, on Enfield Chase, the seat of the late Hon. Mrs Elphinstone, there was a plant on its own roots, growing at a distance of about ten yards from a wall with a north-eastern aspect. It here produced its beautiful yellow blossoms abundantly, covering the bush on all sides during the flowering season for several successive years. The situation is high and exposed; the soil is *naturally a heavy loam*, but was somewhat lightened and enriched by the frequent addition of stable manure.

In certain districts of Suffolk, in Sussex, and in the Isle of Wight, it is said to bloom well generally.

I am informed by a friend, a great Rose amateur, that at Ballater, in Scotland, both this and the Austrian Rose flower beautifully. He has seen them there growing most luxuriantly, in a very exposed situation, covering a wall of great height and extent, laden with perfect flowers.

The late Mr Cunningham of Edinburgh once informed me that there was a plant *on a south wall* in that neighbourhood which flowered in perfection every year. The main stem and branches were as large as those of a Pear-tree, and bushels of flowers might be gathered from them in the season.

In the Nurseries of my father, the late Mr A. Paul, the plant to which allusion is made in the First Division of this work was grown on its own roots, trained to a *west wall*, where it flowered constantly and well. The soil in which it grew *was originally* a heavy loam, but having been occupied as garden ground for a century or two it presents more the appearance of black garden mould. The sub-soil is gravel.

In some parts of Italy perfect flowers are produced with so much certainty that it is cultivated as a market plant, and it is often met with in the markets in various parts of France.

I think one thing is tolerably clear; our climate generally is not suited for its cultivation, and this presents a difficulty not easily overcome. Locality is evidently of vast importance, and a locality with a pure dry atmosphere is preferable to any other. In dry mild seasons it has flowered in its favourite haunts in England better than at other times; and then in places where in less favourable seasons it would never flower. I have never heard of its flowering near London or in the immediate neighbourhood of any large manufacturing town. There we may plant it, but no one can say whether it will ever produce perfect blossoms or not. The fact of its doing so is an anomaly—rather the exception than the rule. Notwithstanding this, its beauty when perfect tempts many to cultivate it; and let us consider the most reasonable means of obtaining success.

I believe one point has been too much overlooked both by cultivators and writers on this subject—the general health of the plant. Let the cultivator procure, in the first instance, a healthy and vigorous plant, and, if possible, keep it in a healthy condition. It must be borne in mind, however, that it is *possible* to produce an overgrowth; a moderate course is best. Do not tempt it to grow too exuberantly, nor suffer it to dwindle, producing shoots resembling weak straws. Half the plants which I have seen have been in this latter condition, unhealthy, debilitated, literally starved, and often swarming with insects. Can such be expected to develop perfect flowers? This state of things may answer (barring the insects), applied to some varieties whose flowers are too full to expand under ordinary circumstances; indeed it does answer, but it will not do so in this instance. I would advise all who desire to cultivate the Double Yellow Rose to plant it on a border with an eastern or western aspect; not training it to a wall but growing it as a round bush. Let the locality be airy, the soil rather heavy, and tolerably rich. So soon as the buds break set a watch over the plant to keep it free from the insects which almost invariably infest it, and which may be done by brushing them off into the hand or syringing with tobacco-water. When the flower-buds are forming have an eye to their growth; if weakly, or seeming likely to become so, water the plant twice or thrice a week with a solution of guano, using about two ounces to a gallon of pond or rain-water. As soon as the flowering season is past remove some of the shoots if they have been produced in such number as to crowd each other, when those suffered to remain will become thoroughly matured by fuller exposure to sun and air. By this procedure one grand point is gained—the formation of wood in the most favourable condition for the production of perfect flowers. In March the plant may be pruned, *but very little*; on the weak shoots five or six eyes should be left, on the strong ones from six to nine eyes.

SCOTCH ROSES (*see* GROUP III.)

It is only by the introduction of the Persian Yellow Rose and the Soleil d'Or that we have become in some measure indifferent to the possession of the old Double Yellow; the former, though not of equal beauty, being a free and tolerably certain bloomer.

1. DOUBLE YELLOW, or SULPHUREA, flowers of the deepest and brightest yellow found among Roses, very large and full, rarely expand well, form globular; habit branching; growth moderate or sometimes vigorous.

Rosa Spinosissima.

GROUP III.—THE SCOTCH ROSE.

Well has this Rose been named "Spinosissima," for it is indeed the most spiny of all Roses, and the spines are as sharp as they are plentiful. They are far more so than they seem to be; and a word of caution here may save the tyro an unpleasant greeting. The Scotch Rose is a native species, growing plentifully in many parts of Britain. I have somewhere read or heard it stated that the first double Scotch Roses were raised from seed by Mr Brown, a nurseryman at Perth, who collected plants from their native wilds, planted them in his nursery, and flowered and gathered seeds from them there. Some of the plants raised from these seeds produced double flowers. It is from that part of Britain many of our finest varieties have issued, and varieties have been exceedingly numerous; for they seed so abundantly, and the seed vegetates so freely, that there is no difficulty in raising seedlings. But with English amateurs they are not popular; why, I do not know, except it arise from the short duration of their flowers.

They all form compact bushes, being usually grown as such, for they are not well adapted for standards. They flower abundantly, and early in the season. The flowers are small and globular, many of them as they hang on the bush looking like little balls. I recollect being much struck with a stand of these Roses brought to one of the Horticultural exhibitions in the month of May. The season was an early and a genial one, and they were produced in great beauty.

Scotch Roses are in good taste planted as a hedge round a Rosarium, where such may be required; a bank of Scotch Roses I should also conceive to produce a good effect. They *like* a pure air—and indeed what Roses do not?—but will grow almost anywhere.*

* I recollect once meeting with a plant at Garth Point, North Wales, which had fastened itself in the crevice of a bare rock, where it not only lived but flourished. It was alone, no plant disputed its position.

When plants of the Scotch Rose become established in the soil the stems push laterally under ground, often rising to the surface at a considerable distance from the mother plant. These are called suckers, and are separated from the mother to form new plants, and thus is the Scotch Rose propagated. It is not easy to confound this with any other group, the spines are so thickly set on the stems. The growth is dwarf. The flowers are mostly blush, small, double, and globular in form, possessed of a peculiarly grateful fragrance. The plants resemble each other so nearly in every respect that it seems only necessary to affix the colours.

There is one hybrid of this group well worthy of cultivation, the Stanwell Perpetual, which blooms both in Summer and Autumn, and is very sweet.

1. ALTAICA (OR GRANDIFLORA), a single-flowered variety of great beauty.
The colour is lemon-white, each blossom having a wealth of golden anthers.
2. ARISTIDES, flowers white and pink.
3. BLANDA, flowers white.
4. CHARLOTTE, flowers flesh colour.
5. DUCHESS OF BEDFORD, flowers deep rose.
6. EUGENIUS, flowers pink.
7. EURIPIDES, flowers purple.
8. GIL BLAS, flowers creamy white.
9. KING OF SCOTS, flowers pink.
10. LADY WYNNE, flowers flesh, tinted with peach
11. LARGE BLUSH, flowers blush.
12. LASS O' GOWRIE, flowers cream.
13. MEG MERRILEES, flowers pink.
14. MISS TROTTER, flowers blush.
15. MRS STIRLING, flowers deep pink.
16. PINK AND WHITE.
17. PRINCESS, flowers blush and pink.
18. PROVINS, flowers pink.
19. RED.
20. SCOTIA, flowers pink.
21. SINGLE BUFF.
22. SINGLE FAWN.
23. SINGLE RED, very brilliant colour.
24. TOM JONES, flowers blush.
25. TRANSPARENS, flowers creamy blush and pink.
26. WHITE.
27. YELLOWISH WHITE.
28. YELLOW.

Rosa Damascena.

GROUP IV.—THE DAMASK ROSE.

Formerly all dark Roses were termed Damask, probably from the first dark varieties having borne this name. But there are now dark Roses belonging to almost every group; and there are Damask Roses of various colours; some are white. The Damask are readily distinguished from others by a robustness of growth, in conjunction with rough spinous shoots, and downy coriaceous leaves of a light green colour. Owing to this latter feature they present a striking contrast when introduced among other groups. The flowers are mostly of fair size; some are large, and all are showy.

The Damask Rose is allowed to be of great antiquity. Some suppose it to be of this Virgil speaks in the Georgics and elsewhere. It is generally believed that it was first introduced from Syria, and brought to England in 1573. But Johnson, in "The History of Gardening," says, "The learned Linacre, who died in 1524, first introduced the Damask Rose from Italy." Who will fight the battle? We must not pause to do so. Wherever the truth may lie, it is evident that this Rose has been cultivated in England for a great length of time; and it affords a striking example of the treasures Nature's plants are capable of yielding beneath the hand of the industrious cultivator; of the power given unto man to improve by his labour the races of the vegetable world. For two hundred years this Rose underwent but little change; but modern Rose-growers have improved and varied it to such a degree, producing through it, first, Damask Perpetual, then Hybrid Perpetual, that the favourites of so long standing are threatened with oblivion.

The Damask Roses are very hardy, thriving well either as standards or dwarfs. They do not form compact-headed trees, but their growth is graceful; rather more rambling than that of the French Roses. They flower abundantly; in some instances the flowers rest among the leaves and branches which surround them; in others they are elevated above. It is chiefly from the petals of this species, in common with those of the Provence (*R. CENTIFOLIA*), that Rose-water is distilled. Acres of Roses are grown in some parts of the world expressly for the purpose.

1. COMMANDANT BEAUREPAIRE; flowers bright rose, striped with purple and white.

2. LA VILLE DE BRUXELLES; flowers light vivid rose, the colour gradually receding from their centres, leaving the edges of a rosy blush; large and full; form expanded; habit branching; growth vigorous.

3. LEDA (*Painted Damask*); flowers blush, tinged with flesh, the petals often

DAMASK MADAME HARDY (see GROUP IV).

marginated with lake ; of medium size, full ; form expanded. Habit branching ; growth robust ; leaves broad, short, and handsome. A beautiful Rose when the lake margin is perfect.

4. MADAME HARDY ; flowers pure white, occasionally delicately tinged with flesh, large and full ; form cupped. Habit erect ; growth vigorous, frequently producing the flowers in large clusters. A beautiful Rose. Raised by M. Hardy at the Jardin du Luxembourg in 1832.

5. MADAME SOETMANS ; flowers delicate flesh, changing to white, glossy, large and full ; form cupped. Habit branching ; growth vigorous. A beautiful Rose.

6. MADAME STOLTZ ; flowers pale straw, of medium size, full ; form cupped.

7. POPE ; flowers crimson and purple shaded, large and full.

8. SEMIRAMIS ; flowers fawn, shaded with pink.

9. YORK AND LANCASTER ; flowers pink and white striped ; large, full ; form globular ; growth vigorous.

Rosa Centifolia.

GROUP V.—THE PROVENCE ROSE, WITH ITS HYBRIDS.

Who has not heard of the Provence, or, as it is more frequently called, the Cabbage Rose? There are numerous varieties, though Nature has not been so lavish with her gifts here—has not answered so fully to the strivings of art to improve this group—as in some other instances. Perhaps the old favourite is so perfect that it cannot be surpassed. Be this as it may, the group has improved by the varying of the colours, if no individual variety has been raised to surpass the original.

The Provence Roses are deliciously fragrant ; their habit is for the most part branching or pendulous.

The foliage is bold and handsome ; the leaflets broad and wrinkled ; in many instances obtuse, the edges deeply serrated. The prickles on the branches are very unequal ; some are fine and straight, others large at their base and falcate. These points, with the drooping habit, and usually globular flowers, serve as marks by which we distinguish them.

They thrive well either as dwarfs or standards ; but some varieties require the fostering care of the cultivator to tempt them to produce their flowers in full beauty. To ensure complete success plant them in a rich soil, and water them occasionally in Spring with liquid manure. All, except the vigorous growers, which are in many instances hybrids, should be subjected to close pruning.

1. ADRIENNE DE CARDOVILLE ; flowers rosy crimson, large and full ; form

CRISTATA; CRESTED PROVENCE OR MOSS (see GROUP V.)

cupped ; fine. Habit branching ; growth moderate. Raised in the neighbourhood of Paris. Introduced in 1845.

2. COMMON OR CABBAGE ROSE ; flowers rosy pink, their circumference changing paler soon after expansion ; the tops of the petals sometimes slightly reflexing, large and full ; form globular. Habit branching ; growth vigorous.

3. CRISTATA (*Crested Moss*) ; flowers rosy pink, their circumference changing paler, often assuming a lilac tint, large and full ; form globular. The flower-buds beautifully crested, the crest sometimes appearing on the leaves. Habit branching ; growth moderate. An extraordinary and beautiful Rose, first noticed growing on the walls of a convent near Berne, in Switzerland, in 1827. Prune short ; the more vigorous the growth the more is the crest developed.

4. REINE DE PROVENCE ; flowers glossy lilac blush, large and very double ; form globular. Habit branching ; growth vigorous ; shoots very spinous.

5. UNIQUE (*White Provence*) ; flowers paper-white, large and full ; form deeply cupped. Habit erect ; growth moderate. A good white Rose, well suited for masses.

6. UNIQUE PANACHEE SUPERBE (*Superb Striped Unique*) ; flowers white striped with lake, but sporting much, sometimes coming altogether white, and sometimes wholly red ; large and full ; form cupped. Habit erect ; growth moderate ; shoots very spinous.

WHITE PROVENCE ; *see* Unique.

Rosa Centifolia.

GROUP VI.—THE MINIATURE PROVENCE, OR POMPON ROSE.

The Roses in this group are remarkable for their diminutiveness. They are well adapted for edgings to the Rosarium or Rose-clumps generally. They are sometimes planted in masses, in which manner they look well, as they are of neat growth, and bloom profusely ; but they do not last long in flower ; and for this reason we should hesitate to recommend them, except under particular circumstances. The Chinese, Bourbon, Dwarf Polyantha, and Hybrid Tea-scented Roses are usually preferred for dwarf masses, and no wonder, when it is considered that they produce their beautiful flowers during one-half of the year.

1. DE MEAUX (*Pompon*) ; flowers light rose, very small and full ; form compact. Habit erect ; growth dwarf.

2. DWARF BURGUNDY ; flowers deep red, very small and double ; form cupped ; growth dwarf.

3. SPONG ; flowers pale rose, small, and very double ; form cupped ; growth dwarf.

4. WHITE BURGUNDY; flowers white, their centres pink; very small and very double; form cupped; growth dwarf.

Rosa Centifolia.

GROUP VII.—THE MOSS ROSE.

The History of the Moss Rose is wrapped in obscurity. It was first introduced to England from Holland in 1596, and it is generally believed that it was a sport from the Provence Rose; that it was not originated by seed, as most new varieties are, but by a branch of the Provence Rose sporting, as it is termed—that is, producing flowers differing in character and habit from others of its own nature—flowers enveloped in moss. Some groups of Roses are more disposed to sport than others; and the Provence and Moss Roses possess this peculiar property in a remarkable degree. I have seen the White Moss bearing at the same time, and on the same plant, red, white, and variegated flowers. I have also seen the Perpetual White Moss, whose flowers should be white, produce pink flowers entirely destitute of moss. I am informed, and think it probable, that the Moss Unique was first obtained in this manner: a branch of the White Provence Rose produced flowers enveloped in moss; the branch was propagated from; and the plants so propagated produced flowers retaining their mossy characteristic.

Like many others, the group now before us has been much improved of late years; many of the old varieties, formerly so much esteemed, though possessed of but few petals, and almost destitute of form and fragrance, are now quietly departing to give place to more perfect kinds. A remarkable illustration of the effects of hybridising is met with here. There have been introduced within the last few years some Moss Roses of the most vigorous growth, with shining foliage, and others bearing flowers in the Autumn. The former have been produced by crossing the Moss with the Hybrid Chinese Roses, or *vice versâ*; the latter by bringing together the Moss and Perpetual. (See "Hybridising," Chapter VIII.)

The Perpetual Moss we refer to a separate group (Class II., Group XXV., Autumnal Roses); the others we retain here. Besides these, there are varieties possessing some of the characters of the French Rose; such as Gloire des Mousseuses.

Moss Roses require high cultivation; some are of delicate growth, and will only flourish in a kindly soil; others are very hardy, but all, whether hardy or delicate, delight in a rich soil. But few of the Moss Roses are well adapted for Standards; it is true that many will exist as such, but they merely suffer existence, they cannot be said to flourish. They should be grown either on their own roots or budded on short stems (the latter is preferable in most cases), and should be closely pruned.

Exceptions may be made to this rule where the varieties are of vigorous growth.

If we except the Common Moss and Little Gem, we do not consider this group well suited either for pot-culture or for forcing. Their distinctness, however, stands forth prominently in their favour, and in large collections it is worth while to introduce a few for the sake of variety. The flower garden or the Rosarium is their proper place, and we think a greater space should be allotted them there than is usually done. No Roses can be more interesting; certainly none are sweeter or more beautiful.

On rich warm dryish soils, with an airy situation, the varieties termed "vigorous" may be fashioned into "Pillar Roses," and they are indeed unique when cultivated in this manner. Could anything be more beautiful than a collection of Moss Roses, formed into pillars varying in height from six to eight feet? There is an abundance of material with which to form such. All the kinds marked "vigorous" are suited for the purpose.

The moss-like substance which surrounds the flower-buds of these Roses is a sufficient mark of distinction, but they are altogether dissimilar to others. They vary much in character and vigour.

1. ALICE LEROY; flowers lilac blush, shaded with rose, large and double, well mossed; form cupped; growth vigorous. Should be pruned moderately close.

2. ANGELIQUE QUETIER; flowers rosy lilac, large and very double; well mossed; form cupped; growth vigorous.

3. BARONNE DE WASSENAER; flowers bright red, of globular form, produced in clusters, large, but not very double, a good hardy free Rose; growth vigorous. Forms a good Standard.

4. BLUSH; flowers blush, their centres pink, well mossed, large and full; form cupped; habit branching; growth moderate; foliage fine.

5. CAPTAIN INGRAM; flowers dark velvety purple, exceedingly rich in colour, of medium size, full; growth vigorous. Forms a good Standard.

6. CELINA; flowers deep rosy crimson, shaded with dark purple, a streak of white occasionally tracing the centre of a petal; colour brilliant when newly opened; large and double; form expanded; growth moderate. A beautiful Rose. A good seed bearer.

7. COMMON, OR OLD; flowers pale rose, very large and full, well mossed; form globular; growth vigorous; foliage fine. One of the most beautiful. Thrives as a Standard.

8. COMTESSE DE MURINAIS; flowers pale flesh when newly opened, soon changing to white, large and very double; form cupped; growth vigorous. Raised from seed by M. Vibert in 1843. Thrives as a Standard.

CRESTED MOSS; *see* Group V., Provence Rose, "Cristata."

9. CRIMSON (*Damask Moss*); flowers rose, large and double; form expanded,

MOSS LITTLE GEM (*see* GROUP VII.).

well mossed; growth vigorous; foliage large and fine. Raised at Tinwell, in Rutlandshire, and hence sometimes called the Tinwell Moss.

DAMASK Moss; *see* Crimson,

10. CRIMSON GLOBE (hybrid); flowers deep crimson, large, full, and perfectly globular. A great acquisition to this class. First-Class Certificate.

11. CUMBERLAND BELLE; a climbing Moss Rose with bright silvery rose-coloured flowers.

12. ETNA; flowers brilliant crimson with a purplish tinge, of large size, and very double. A beautiful Rose. Raised at Angers. Introduced in 1845.

FERRUGINEUSE; *see* Luxembourg.

13. GLOIRE DES MOUSSEUSES; flowers pale rose, margined with blush, very large, full, and well mossed. One of the handsomest of this group. Growth robust.

14. GRACILIS (*Prolific*); flowers deep pink, large and full, well mossed; form globular. An abundant blooming variety, with fine large foliage; excellent for masses.

15. JOHN CRANSTON; flowers crimson and purple shaded, of medium size, full; form expanded; growth vigorous.

16. LANEII (hybrid); flowers rosy crimson, occasionally tinged with purple, large and full; form globular; buds broad, bold and well mossed; foliage very large. Raised by M. Laffay of Bellevue. Introduced in 1854. Growth robust.

17. LITTLE GEM (Wm. Paul & Son); a miniature Moss Rose, forming compact bushes, densely covered with small double crimson flowers, beautifully mossed. It is of charming effect in the garden, and most valuable for bouquets, vases, or masses.

18. LUXEMBOURG (*Ferrugineuse*) (hybrid); flowers deep crimson, often shaded with purple, of medium size, and double; form expanded; growth vigorous. Suitable for a short pillar, or a Standard; requires but little pruning. A good seed bearer.

19. MADAME DE LA ROCHELAMBERT; flowers amaranth, large and full; growth moderate.

20. MARIE DE BLOIS; flowers bright rosy lilac, large and full, well mossed; growth robust. One of the best.

21. NUITS D'YOUNG; flowers dark velvety purple, very double; growth moderate.

PERPETUAL WHITE; *see* Group XXV., Perpetual Moss.

22. POMPON (*De Meaux*); flowers blush; their centres pale pink, small and full; form cupped. Habit dwarf. A very pretty and interesting Rose of delicate growth. Found growing in a garden at Taunton, in Somersetshire, about sixty years ago. Prune closely.

23. PRINCESS ALICE; flowers blush, pink centres, large, full, and well mossed; growth vigorous.

24. PRINCESS ROYAL (Portemer); flowers rosy flesh, large and full; form globular, well mossed; flower stalks very erect. Raised at Gentilly. Introduced in 1846. Prune closely.

25. PRINCESS ADELAIDE (hybrid); flowers pale glossy rose, blooming in large clusters, large and full; form compact. Habit erect; growth vigorous. A fine Rose for a sunny wall or pillar. Prune sparingly.

PROLIFIC; *see* Gracilis.

26. PRINCESSE DE VAUDEMONT; flowers pink; growth moderate.

27. PURPUREA RUBRA; flowers dark purple, large and full. A good and distinct variety; growth vigorous.

28. REINE BLANCHE; flowers pure white, large and full; growth vigorous.

29. VANDAEL; flowers rich purple, lilac edges, large and full; growth robust. A good dark Moss Rose.

30. WHITE BATH; flowers paper-white, occasionally producing striped or pink petals, well mossed, exquisite in bud, large and full; form globular. Habit erect; growth moderate. A beautiful Rose, and still the best White Moss. Prune closely.

31. WILLIAM LOBB; flowers crimson, changing to slate, large; growth vigorous.

32. ZENOBIA (hybrid); flowers beautiful satin pink, large, full, and globular; exceedingly fragrant. A good pot Rose.

Rosa Gallica.

GROUP VIII.—THE FRENCH ROSE.

The French Provins, or "Garden" Roses, as they are often termed, once formed the most extensive group belonging to the genus "Rosa." They have been very long under cultivation, and many of the old varieties are prolific beyond measure in producing seed, which vegetates freely. Hence is accounted for the number of French Roses which have been introduced into our gardens; and some even of the oldest are still admired and cultivated. They are very hardy, thriving well in the commonest garden soil.

All hues are here, and some interesting striped Roses, which are singularly beautiful. To see the latter in perfection they should be viewed early in the morning, before a summer's sun has dimmed their beauty; for the colours of these Roses in particular fly at the Fire King's approach, when the contrast often becomes too feeble to please.

The French Roses approach nearer to the Provence than to any other group; they are distinguished from them by a more upright and compact growth; the prickles are also smaller and less numerous, and the flowers are flatter. The Hybrid Chinese are descended from these, but there is little fear of mistaking the one for the other.

In Pruning French Roses, the heads should be well thinned out, as they are disposed to produce an abundance of shoots, far more than can be suffered to remain if fine flowers combined with the ultimate good of the tree are the chief ends in view. Thin out the heads well; then, when pruning, shorten the shoots left back to four, five, or six eyes, or to where the wood is firm and well ripened and the eyes full and plump.

1. ADELE PREVOST; flowers beautiful blush, their centres pink; cupped, large, and full; form fine. Habit erect; growth vigorous.

2. BELLE DES JARDINS; flowers bright red, striped with white.

3. BOULA DE NANTEUIL; flowers crimson purple, their centres sometimes fiery crimson, very large and full; form compact. Habit branching; growth robust.

4. CYNTHIE; flowers pale rose, their circumferences almost blush, large and full; form cupped. Habit erect; growth moderate.

5. D'AGUESSEAU; flowers fiery crimson, occasionally shaded with dark purple, glowing, large, and full; form compact. Habit erect; growth moderate.

6. DUCHESS OF BUCCLEUCH; flowers lively crimson, their circumferences inclining to lavender-blush, very large and full; form cupped. Habit erect; growth vigorous.

7. *EBLOUISSANTE DE LAQUEUE*; flowers dark velvety crimson, their centres almost scarlet, large and very double; form expanded; habit erect; growth small.

8. *GLOIRE DE COLMAR*; flowers rich velvety crimson. A fine Rose.

9. *GRANDISSIMA (Louis Philippe)*; flowers rosy crimson, sometimes purplish, very large and full; form compact; habit branching; growth vigorous.

10. *KEAN*; flowers rich velvety purple, their centres crimson-scarlet, large and full; form compact, perfect; habit branching; growth vigorous.

11. *LA VOLUPTE (Lætitia)*; flowers rose slightly shaded with lilac, large and full, form cupped, the petals exquisitely arranged; growth moderate.

12. *NAPOLEON*; flowers deep rose shaded with purple, large and double.

13. *OHL*; flowers violet-purple, their centres brilliant red, large and full; habit branching; growth robust. A fine Rose.

14. *ŒILLET PARFAIT*; flowers pure white distinctly striped with rosy crimson, the latter colour shaded with purple; of medium size, double; form cupped; habit erect; growth small. Beautiful when true, like a scarlet bizarre Carnation. Somewhat hybridized, partaking slightly of the Damask, Group IV. Raised by M. Foulard at Mons. Introduced in 1841.

PAULINE GARCIA; see Group IX., Hybrid French.

15. *PERLE DES PANACHEES*; flowers white striped with rose colour, the marking very clear and distinct, of medium size, full; form expanded; habit erect; growth moderate. One of the best of the striped Roses.

16. *ROSA MUNDI*; flowers white striped with carnation, large and semi-double; form expanded; habit branching; growth moderate. An abundant seed bearer, and the parent of most of the striped French Roses.

17. *TRANSON GOUBAULT*; flowers clear red, pale at their circumferences, large and full.

18. *VILLAGE MAID (La Rubanée)*; flowers white striped with rose and purple, the stripes varying in breadth, sometimes the one and sometimes the other colour predominating, large and full; form cupped; habit pendulous; growth small. Very pleasing.

Rosa Gallica.

GROUP IX.—HYBRID FRENCH, OFTEN CALLED HYBRID PROVENCE.

This group resembles the last more nearly than any other, and for that reason we term them Hybrid French. Their growth is less robust than that of the true French—the shoots are less knotty, and the wood is usually of a pale green. The eyes are in many cases formed on the shoots at very short distances from each other. The

flowers are mostly light coloured, and are remarkable for their beauty and purity of appearance.

The varieties of this group are hardy, requiring no particular treatment, and flourishing equally well whether grown as Standards or Dwarfs.

1. ASPASIE ; flowers flesh colour, changing to blush after expanding, of medium size, full ; form cupped ; habit erect ; growth moderate.

2. BLANCHEFLEUR ; flowers white slightly tinged with flesh, large and full ; form compact, perfect ; habit erect ; growth robust. An abundant and early bloomer ; very beautiful on the tree.

3. COMTESSE DE LACEPEDE ; flowers silvery blush, sometimes rosy flesh, large, full ; form cupped ; growth moderate.

4. COMTESSE DE SEGUR ; flowers flesh colour, buff centres, of medium size ; nicely cupped, full ; growth moderate.

5. DUCHESSE D'ORLEANS ; flowers flesh colour, wax-like, large and full ; form cupped ; habit erect ; growth moderate.

6. EMERANCE ; flowers cream, their centres pale lemon, the petals smooth and of even form, of medium size, full ; form cupped ; habit erect ; growth moderate.

7. PAULINE GARCIA ; flowers creamy white, of medium size, full. Pretty and distinct.

8. PRINCESSE CLEMENTINE ; flowers pure white.

Rosa Gallica.

GROUP X.—HYBRID CHINESE.

The Hybrid Chinese Roses have originated from the French and the Provence crossed with the Chinese, or *vice versa* ; they are therefore Hybrids. Although called Hybrid Chinese, they partake more intimately of the nature of the French and Provence Roses than of that of their Chinese parent ; we therefore arrange them under Rosa Gallica. One feature in particular requires notice ; they bloom only in June and July ; whereas the Chinese are the most protracted bloomers, flowering constantly from June till November. Although the Hybrid Chinese resemble the French Roses more nearly than any other group, there are certain marks of difference in habit and flowering which we will now endeavour to point out.

The group "Hybrid Chinese" of some Catalogues includes more than the name seems to imply ; it embraces those varieties also whose parentage on the one side is the Noisette and Bourbon. In our arrangement they stand divided into three groups, namely, Hybrid Chinese, Hybrid Noisette, and Hybrid Bourbon, the first of which is the one now under consideration.

HYBRID CHINESE, BLAIRII No. 2 (*see* GROUP X.).

The Hybrid Chinese differ from the French Roses in their growth, which is more diffuse; in their foliage, which is usually smooth, shining more or less, and retained on the tree later in the year; in their thorns, which are larger and usually more numerous; and in their flowers, which are produced in larger clusters, with petals less flaccid, and which remain in a perfect state a longer time after expansion. These Hybrids are more vigorous in growth than either of their parents, and are in their nature very hardy. There are therefore none better for planting in unfavourable situations or where the soil is poor.

They require but little pruning, especially the vigorous growers. The heads should be well thinned out in November, and the shoots shortened in to from six to twelve eyes in March. We here allude to the mass only. There are some few which require closer pruning; such are all those which are particularised in the descriptions as of moderate growth.

To those who plant Roses chiefly with the view of ornamenting the Flower-garden, or to produce effect by masses of flowers, there are perhaps none better adapted to ensure the perfecting of their design, as very many of them form large-headed trees of elegant growth, producing their brilliant and various-coloured flowers in gorgeous abundance. It is advisable to select these Roses on stems rather above the average height; they are mostly of a pendulous habit, and, when budded on tall stems the flowers droop gracefully and are displayed to great advantage.

The kinds denominated vigorous form the best of Summer-flowering Pillar Roses. They will grow from four to eight feet in the course of a year, they bloom freely when established, and are well clothed with handsome foliage.

1. BLAIRII, No. 2; flowers rosy blush, very large and double; habit branching; growth vigorous; foliage fine. One of the largest of Roses, and one of the freest growers, often attaining to ten or twelve feet in one season. A fine wall, arch, or pergola Rose.

2. BRENNUS; flowers light carmine, large and full; form cupped; habit branching; growth vigorous; foliage fine. Raised by M. Laffay at Paris. Introduced in 1830.

3. CHENEDOLE; flowers light vermilion, very large and very double; form cupped; habit erect; growth most vigorous; shoots very spinous. A superb Rose for a pillar; a good seed-bearer; and one of the most attractive Roses grown. Introduced by M. Thierry of Caen.

COMTESSE DE LACEPEDE; *see* Group IX., Hybrid French.

4. FAIR ROSAMOND (Wm. Paul & Son); flowers flesh colour, shaded and mottled with rosy pink, large and full, distinct and beautiful.

5. FULGENS (*Malton*); flowers brilliant crimson, of medium size, full; form cupped, fine; habit branching; growth vigorous. Requires but little pruning.

6. GENERAL JACQUEMINOT; flowers deep purple, shaded with brilliant crimson, large and full; form compact; habit erect; growth vigorous. Introduced in 1846.

MADAME PLANTIER ; *see* Group XI., Hybrid Noisette.

MALTON ; *see* Fulgens.

7. PAUL VERDIER ; flowers light red, of fine globular form. A good pot Rose. Growth vigorous.

8. SOUVENIR DE PIERRE DUPUY ; flowers deep velvety red, very large and double ; fine.

9. VIVID ; flowers brilliant crimson, very showy. A fine pillar or climbing Rose. Growth vigorous.

Rosa Gallica.

GROUP XI.—HYBRID NOISETTE.

The Hybrid Noisette Roses form but a small group. They are, nevertheless, a distinct and interesting one. Their parentage on the one side is mostly of the French or of the Provence, and on the other of the Noisette Rose. They resemble the Hybrid Chinese more nearly than any other group ; they differ from them in the flowers being of smaller dimensions and formed in large corymbs or clusters ; owing to which there is a greater succession and longer duration of bloom. They are suitable for the same purposes and require the same treatment as the Hybrid Chinese, Group X.

1. MADAME PLANTIER ; flowers creamy white when newly opened, changing to pure white, of medium size, full ; form compact ; habit branching ; growth vigorous ; shoots slender ; foliage light green. An immense bloomer and a beautiful Rose, forming a large bush or tree, producing a sheet of white blossom, and lasting a long time in flower.

2. MADELINE (*Emmeline*) (*Double-margined hip*) ; flowers creamy white, sometimes pale flesh, usually margined with crimson, large and very double ; form compact ; habit erect ; growth vigorous. A beautiful Rose when produced true to character, and by no means an inconstant one.

Rosa Gallica.

GROUP XII.—HYBRID BOURBON.

The Hybrid Bourbon Roses are also in greater part descended from the French or the Provence crossed with the Bourbon, or *vice versa*. They are less diffuse and more robust in growth than the Hybrid Chinese, being readily distinguished from them by their broad stout foliage, the leaflets of which are more obtuse. The *tout ensemble* of these Roses is particularly fine ; some are compact growers, others are abundant bloomers, and the flowers are in general large and handsome. They are

well suited for growing in pots, either for forcing or exhibition. In pruning they may, with few exceptions, be treated as recommended for the Hybrid Chinese.

1. CHARLES DUVAL; flowers deep pink, large and full; form cupped; habit erect; growth vigorous; the shoots clothed with beautiful foliage. A good Rose for pot and pillar; forms also a handsome tree.

2. CHARLES LAWSON; flowers vivid rose shaded, large and full; form compact; growth vigorous. A fine Pot Rose; good also for a standard or pillar.

CHENEDOLE; *see* Group X., Hybrid Chinese.

3. COUPE D'HEBE; flowers rich deep pink, exquisite in colour, large and very double; form cupped, perfect; habit erect; growth vigorous; foliage fine. Good for a pillar. Raised by M. Laffay of Bellevue. A good seed bearer.

4. JUNO; flowers pale rose, very large and full; habit branching; growth robust; A good Pot Rose.

5. PAUL PERRAS; flowers beautiful pale rose, large and very double; form compact; growth vigorous. A good Rose for a pillar; forms also a fine tree. An abundant seed bearer.

6. PAUL RICAUT; flowers rosy crimson, large and full.

7. PURITY; flowers pure white, with faintly flushed centres; of medium size and an early bloomer.

Rosa Alba.

GROUP XIII.—THE ALBA OR WHITE ROSE.

What shall be said of the varieties of this Rose? Their strongest claim to notice rests, perhaps, on their distinctness; they differ from all others. Although forming but a small group, the extreme delicacy and surpassing beauty of the flowers, which are chiefly of white, blush, flesh, and pink hues, make them a highly popular one. Great size they cannot boast of, but the flowers are neat and elegant, and produced in great abundance.

The upper surface of the leaves of the true Alba has a whitish appearance, beneath which is shown an intense green; the shoots are in many instances spineless; but the varieties are, as in most other groups, hybridized, and some are very thorny. They form handsome trees, both as Standards and Dwarfs; the strong growers require moderate pruning; the others close pruning.

The Alba Rose ranges over the middle of Europe, and was introduced in 1597.

1. BELLE DE SEGUR (*Josephine Beauharnais*); flowers soft rosy flesh, edges blush, of medium size, full; form cupped.

2. BLANCHE BELGIQUE; flowers white, very floriferous.

3. **CELESTIAL** ; flowers flesh colour, beautifully tinted with the most delicate pink, of medium size, cupped ; growth vigorous.

4. **FÉLICITÉ PARMENTIER** ; flowers rosy flesh, their margins white, exquisite in bud, of medium size, full ; form compact ; habit erect ; growth robust. A very abundant bloomer, and indispensable even in a small collection.

JOSEPHINE BEAUHARNAIS ; *see* Belle de Segur.

5. **LA SEDUISANTE** ; flowers rosy flesh, large and full ; form compact ; habit erect ; growth vigorous. Shoots covered with small red spines.

6. **MADAME AUDOT** ; flowers glossy flesh, edges creamy blush, large and full ; form cupped ; habit branching ; growth vigorous.

7. **MADAME LEGRAS** ; flowers pure white, their centres sometimes creamy, large and full ; form expanded.

8. **MAIDEN'S BLUSH** ; flowers blush.

Rosa Rubiginosa.

GROUP XIV.—THE SWEET BRIAR.

The Sweet Briar is a native species well-known to all lovers of plants from the delicious fragrance of its leaves and the beauty of its bright scarlet fruit. It is also one of our best hedge plants. The flowers of the varieties hitherto produced under cultivation are interesting, and are in some cases the result of hybridizing with other species.

Nos. 1 to 4, 8 to 10, and 12 to 20, raised by the late Lord Penzance, also form splendid hedges, and they lend themselves admirably to any style of growth, such as pillar, arch, pergola, or isolated bushes.

1. **AMY ROBSART** ; flowers deep rose.
2. **ANNE OF GEIERSTEIN** ; flowers dark crimson.
3. **BRENDA** ; flowers peach colour.
4. **CATHERINE SEYTON** ; flowers soft rosy pink.
5. **COMMON** ; flowers pink, single.
6. **DOUBLE WHITE** ; flowers white.
7. **DOUBLE SCARLET** ; flowers rosy red.
8. **EDITH BELLENDEN** ; flowers pale rose.
9. **FLORA M'IVOR** ; flowers white, tinted rose.
10. **GREEN MANTLE** ; flowers rose, white centre.
11. **HEBE'S LIP** ; flowers cream colour, edged with red.
12. **JEANIE DEANS** ; flowers crimson, semi-double.
13. **JULIA MANNERING** ; flowers pearly pink.
14. **LADY PENZANCE** ; flowers coppery yellow, distinct and lovely.

15. LORD PENZANCE ; flowers fawn colour.
16. LUCY ASHTON ; flowers white, pink edges.
17. LUCY BERTRAM ; flowers crimson, white centre.
18. MEG MERRILEES ; flowers crimson.
19. MINNA ; flowers white, tinted blush.
20. ROSE BRADWARDINE ; flowers clear rose.

Rosa Lutea.

GROUP XV.—THE AUSTRIAN BRIAR.

This may be called a group of Yellow Roses, for the varieties which compose it are mostly of that colour. The Austrian Briar is a native of Germany, Italy, and the South of France, and was introduced into England in 1596. It is distinguished by its small leaflets and solitary flowers, the bark of the wood being for the most part of a chocolate colour. The varieties are very hardy, but require a pure air and dry soil to flower them in perfection. Hence, they rarely succeed well near London; the Harrisonii is perhaps an exception. I have been told that the Persian Yellow grows wild in the hedges of Persia. If so, strange it is that a Rose of such rare beauty should only so recently have reached Europe. But probably it was the single kind which caught the eye of my informant.

The Harrisonii is capable of being formed into a perfect Weeping Rose. Select a plant on a four-feet stem, grow it vigorously, thinning out, but not shortening the shoots. Thus it will droop beautifully, producing its golden blossoms in rich abundance. If a Weeping Rose is wanted every year two plants should be grown, *that each may be cut in close every alternate year*, otherwise the tree becomes weak and shabby.

These Roses require very little pruning; the flowers are usually produced from the eyes at the middle or near the top of the shoots; the branches should, therefore, be well thinned out in ordinary pruning, the shoots left having their mere tips taken off.

1. COPPER ; flowers rich reddish copper, single ; form cupped ; habit branching ; growth moderate ; distinct and beautiful.

2. DOUBLE YELLOW (Williams) ; flowers bright yellow, of medium size, double ; form cupped ; habit branching ; growth moderate. An abundant and early bloomer ; requiring but little pruning. A good seed bearer. Raised by Mr Williams of Pitmaston.

3. HARRISONII ; flowers fine golden yellow, of medium size, double ; form cupped ; habit pendulous ; growth moderate. An abundant and early bloomer, producing a

BRIAR ROSE, PERSIAN YELLOW (*see* GROUP XV).

splendid effect on the tree, but very transitory; requires little pruning. Introduced from America about fifty years since.

4. PERSIAN YELLOW; flowers of the deepest yellow, large and full; form globular; habit branching; growth various, often vigorous; requires but little pruning. Introduced from Persia by Sir H. Willock in 1837.

YELLOW PROVENCE; see *Rosa Sulphurea*, Group II., "DOUBLE YELLOW."

5. SINGLE YELLOW; flowers bright primrose, large and single; form cupped; habit branching; growth moderate.

6. SOLEIL D'OR; a handsome and interesting hybrid. It is a cross between *Persian Yellow* and the Hybrid Perpetual *Antoine Ducher*; the flowers are deep golden yellow shaded with Nasturtium-red and rose colour; large, full, and quite distinct; they are produced in Summer and Autumn. This variety will probably be the forerunner of a perpetual flowering group of a very hardy tribe; the growth is more vigorous than the *Persian Yellow*.

Rosa Arvensis.

GROUP XVI.—THE AYRSHIRE ROSE.

This is a native species, abounding also throughout Europe, trailing over waste lands and climbing the hedges and thickets, often completely hiding the undergrowth from view, producing its solitary blossoms in magnificent profusion in June and July. This is the hardiest of Climbing Roses, growing exceedingly rapid where others will scarcely exist. The shoots are slender, owing to which the varieties form admirable Weeping Roses when worked on tall stems; they are also of the best description for planting to cover banks and rough places in parks or shrubberies, soon converting the dreary waste into a flowery plain. "Ruga," one of the best of the group, is apparently a Hybrid between the Ayrshire and Tea-scented. It was raised in Italy, and is hardy, notwithstanding the proverbial delicacy of the one parent.

As may be supposed from the names of these Roses they are chiefly of British origin; indeed, it is only recently we find mention of them in foreign Catalogues.

1. ALICE GRAY (*Scandens*); flowers creamy salmon blush.

2. BENNETT'S SEEDLING (*Thoresbyana*); flowers white, of medium size, double; form expanded; a free bloomer.

3. DUNDEE RAMBLER; flowers white, of medium size, double; form compact.

4. JESSICA; flowers delicate pink.

MYRRH-SCENTED; see *Splendens*.

MADAME VIVIAND MOREL; see Group XXII., "AYRSHIRE PERPETUAL."

5. QUEEN OF THE BELGIANS; flowers creamy white, thick petals, large and double; form expanded.

6. RUGA ; flowers flesh-colour, changing to creamy white, large and double ; form cupped ; very sweet. A good seed-bearer.

SCANDENS ; *see* Alice Gray.

7. SPLENDENS (Myrrh-scented) ; flowers pale flesh, buds crimson when young, presenting a pretty effect on the tree, large and double ; form globular. One of the best of Weeping Roses. A good seed-bearer.

THORESBYANA ; *see* Bennett's Seedling.

8. VIRGINIAN RAMBLER ; flowers white, shaded with pink, double ; form compact.

Rosa Sempervirens.

GROUP XVII.—THE EVERGREEN ROSE.

The Sempervirens Rose abounds throughout the middle of Europe, and is supposed to have been introduced to England in 1629. It is suited for the same purposes as the Ayrshire, from which it differs by producing its flowers in corymbs instead of singly, and by holding its beautiful dark green leaves till the depth of winter. On account of these properties we think it more valuable than the last-mentioned. It is not strictly evergreen as its name would lead us to suppose. It is very hardy, of vigorous growth, and an abundant bloomer. As Pillar or Pergola Roses some varieties are very beautiful, rising quickly to the height of ten or twelve feet, their pretty ranunculus-shaped flowers drooping in graceful corymbs of from ten to fifty blooms each. In pruning they require much thinning, and the shoots left should be merely tipped.

1. ADELAIDE D'ORLÉANS (*Léopoldine d'Orléans*) ; flowers creamy white, of medium size, full ; form globular. Blooms in large handsome clusters. A good Climbing or Weeping Rose.

2. BANKSLÆFLORA ; flowers cream colour, with yellowish centres, of medium size, very double ; form cupped. A distinct and good Pillar or Climbing Rose ; the foliage of a light green. Requires very little pruning.

3. DONNA MARIA ; flowers pure white, of medium size, full ; form cupped ; fine. A beautiful Rose, blooming in handsome trusses ; foliage pale green ; growth less vigorous than others. Raised by M. Vibert.

4. FÉLICITÉ PERPÉTUE ; flowers flesh colour, changing to white, produced in graceful trusses, drooping with their own weight, of medium size, full ; form compact. A superb Pillar, Climbing, or Weeping Rose. Raised at the Château de Neuilly in 1828.

5. FLORA ; flowers fine bright rose, full.

LEOPOLDINE D'ORLEANS; *see* Adelaide d'Orléans.

6. MYRIANTHES RÉNONCULE; flowers pale peach, their centres white, hanging in graceful trusses, of medium size, full; form cupped, fine. A handsome Climbing or Pillar Rose.

7. PRINCESSE LOUISE (*Princesse Marie*); flowers creamy white, the back petals shaded with rose, large and double; form cupped. Raised at the Château de Neuilly in 1829.

8. RAMPANTE; flowers pure white, sometimes produced in Autumn. A profuse bloomer.

9. ROSEA PLENA; flowers rosy flesh changing to white, large and very double; form cupped; foliage glossy, fine. Raised by M. Laffay.

10. WILLIAMS' EVERGREEN; flowers creamy white.

Rosa Multiflora.

GROUP XVIII.—THE MULTIFLORA ROSE.

To Japan and China we look for the habitats of the type of this group. It was introduced into England in 1804. These are also climbing Roses, producing their flowers in large corymbs, and consequently continuing a long time in bloom. A tree of one sort is mentioned in *Loudon's Gardeners' Magazine* (vol. 9, p. 482) as having 5000 flowers on it. The variety marked with an asterisk is not hardy, and should be planted against a wall; the others may be grown without this protection. The foliage of this group is particularly elegant, and the branches have but few spines. Laure Davoust, a Hybrid, classed here, deserves a passing word; it forms a magnificent Weeping or Climbing Rose, but requires a sheltered situation. Nos. 12 and 23 are Hybrids probably between this and the Musk Rose (Group XXXIX). The "Crimson Rambler" belonging to this group is probably a seedling or sport from the old *Multiflora rubra*. It was introduced from Japan by Mr Jenner of Edinburgh, and was first named "Engineer" and afterwards "Paniculata" before it appeared as "Crimson Rambler." It is one of the brightest ornaments of the garden, best adapted for pillars and weeping standards. It should not appear too frequently among other roses on account of the depressing influence the brilliant red and green of flowers and foliage exerts over the more delicate tints of the ordinary run of flowers. A thing of beauty in itself, it sadly mars the loveliness of the delicate tints of the Tea-scented and other roses if placed in close contact with them.

1. AGLAIA; flowers produced in large clusters, and of lovely canary yellow colour

in bud, opening to nearly white. Requires time to bloom freely, but when established it is very fine.

2. *CLAIRE JACQUIER; flowers nankeen yellow, small, but produced in very large clusters; exceedingly pretty and distinct, and remarkably vigorous. Requires protection out of doors in severe weather.

3. CRIMSON RAMBLER; a very vigorous growing rose of Japanese origin, producing large pyramidal trusses of bright crimson flowers. For pillars, arches, pergolas, &c., this rose has no rival; it also makes capital hedges and large headed Standards, or to isolate on the lawn or wild garden. As a pot plant, too, it is a great success.

4. DANIEL LACOMBE; flowers chamois yellow shaded with rose, changing to pure white.

5. DE LA GRIFFERAIE; flowers deep rose in bud, changing to blush, large and full; form compact. Extremely robust; this is an excellent stock for the Tea-Scented Roses.

6. ELECTRA; a fine addition to this group. Its semi-double flowers, much resembling Aglaia, are produced very freely, even upon two year old plants. Altogether it is an improvement upon Aglaia.

7. EUPHROSYNE (Pink Rambler); a beautiful rose, bearing large trusses of semi-double rose-coloured flowers. The growth is very vigorous.

8. GARDENIÆFLORA; large trusses of snow-white double flowers, the individual blossoms of which resemble those of *Gardenia radicans*.

9. HELENE; flowers pale violet-rose with yellowish white centres; the individual flower larger than Crimson Rambler, but not quite so double.

10. LAURE DAVOUST; flowers clear pink, changing to flesh, dying off white, small and full; form cupped. The flowers are produced in large and elegant trusses, the three colours showing on the truss at the same time.

11. LEUCHTSTERN; flowers single, of a bright rose colour with large white eye. They are produced in immense corymbs, and when fully developed the plant presents a most charming picture. Not so vigorous as Crimson Rambler, but well adapted for pillars, either outdoors or in pots.

12. MADAME D'ARBLAY (Hybrid); flowers delicate flesh, changing to white, of medium size, double, produced in immense clusters; growth very vigorous.

13. MAX SINGER; flowers bright red, changing paler in colour. A pretty climbing rose.

14. POLYANTHA GRANDIFLORA. Apparently a hybrid with the Noisettes. Its blossoms are white, of large size, and abundantly produced; growth extremely vigorous.

15. POLYANTHA (*Single Multiflora*); large panicles of white bramble-like flowers produced in great profusion. Of very vigorous habit and perfectly hardy. This rose makes a good stock for the majority of Tea-Scented Roses.

16. POLYANTHA THUNBERGII; flowers single white, midway in size between the

two preceding varieties. The rich profusion of golden stamens gives the flower a charming appearance when the panicle is fully developed.

17. PSYCHE ; flowers pale rosy pink, base of petals suffused with yellow.

18. QUEEN ALEXANDRA ; a cross between No. 15 and No. 3. The semi-double flowers are produced in fine clusters, and are of a rosy pink colour.

19. ROYAL CLUSTER ; flowers white, sometimes tinted with blush ; very fragrant, and produced in large clusters.

20. RUSSELLIANA (*Scarlet Grevillei*) ; flowers rich dark lake, gradually changing to lilac, of medium size, very double ; form expanded. A good and distinct Pillar Rose.

SEVEN SISTERS ; see Russelliana.

21. THALIA (White Rambler) ; one of the best white Rambler Roses. The flowers are pure white and are produced in large clusters.

21a. THALIA REMONTANT or PERPETUAL THALIA ; flowers identical with *Thalia*, but produced throughout Summer and Autumn.

22. THE DAWSON ROSE ; a hybrid between No. 15 and H. P. *General Jacqueminot*. Its flowers are of a soft shade of pale rose, and although it is not strictly speaking a Rambler Rose, yet it is sufficiently vigorous to make a good hedge or to plant as isolated bushes.

23. THE GARLAND (Hybrid) ; flowers almost white (fawn colour in bud), of medium size, double, produced in immense clusters ; growth vigorous.

24. THE LION ; is a seedling from No. 3, bearing large single flowers of bright crimson colour.

25. THE WALLFLOWER ; flowers rosy lake, larger and softer in colour than Crimson Rambler.

26. WALTHAM RAMBLER (William Paul & Son) ; flowers rosy pink, slightly paler in the centre, showing clearly the yellow stamens. It is in the way of *Leuchtstern*, but differs from the latter in respect of its much more vigorous growth, its larger panicles of blossom, and the deeper tint of colour of the flowers. The flowers, like those of Crimson Rambler and other varieties of this group, last a long time in perfection, greatly excelling in this respect the single flowering species and varieties of Roses which bloom in early summer, and whose effect in the garden is so fugitive.

Rosa Wichuraiana.

GROUP XIX.—THE WICHURAIANA ROSE AND HYBRIDS.

This Rose is from Japan. The first variety that reached us was a Prostrate Rose, with dark shining leaves and single white flowers. There quickly followed several hybrids, in some of which traces of the Tea-scented were apparent. They form

admirable trailing Roses, and seem to prefer running over the ground to the customary perpendicular position. Many of them also make fine Weeping Roses.

1. ALBA RUBIFOLIA ; flowers pure white, large for its class, full and fragrant. Foliage particularly bright and glossy.

2. ALBERIC BARBIER ; flowers creamy white shaded with yellow, buds darker yellow ; semi-double or double ; early flowering.

3. AUGUSTE BARBIER ; flowers violet-lilac with white centres, buds darker ; semi-double.

4. DOROTHY PERKINS ; an erect growing variety of great beauty. The flowers are produced in large clusters, of a bright but soft pink colour ; double ; and produced in great profusion.

5. EVERGREEN GEM ; foliage of great beauty, of a fine bronzy colour. Flowers buff changing to white. This variety, like most of the group, is well adapted for Weeping Standards. They quickly form beautiful and graceful objects for the lawn or drive.

6. FRANCOIS FOUCARD ; flowers yellow, changing to creamy white ; semi-double ; very floriferous. Blooms also in Autumn.

7. GARDENIA ; a double variety ; the flowers, which are produced solitary, are of a bright yellow. In the bud state almost identical with the Tea Rose *Perle des Jardins*. It is a very strong grower, yielding abundance of bright glossy green foliage.

8. JERSEY BEAUTY ; certainly one of the most beautiful varieties of the group. Its glossy foliage, so freely produced, is retained on the plant almost all the year round. The flowers are single, produced in clusters of three and four, and are of a pale yellow colour when opening, expanding to a creamy white with a rich array of golden stamens.

9. MANDA'S TRIUMPH ; flowers pure white, double, of medium size.

10. MAY QUEEN ; flowers pink and double.

11. PAUL TRANSON ; large panicles of rose-coloured flowers, scented like a Tea Rose. Very vigorous and free flowering.

12. PINK PEARL ; buds crimson, changing to pearly pink as the flowers expand ; perfectly double.

13. PINK ROAMER ; clusters of single pink flowers with white centres. A very rapid grower.

14. RENÉ ANDRÉ ; buds saffron-yellow tinted orange-red, changing to pinkish white varied with carmine ; semi-double ; early flowering.

15. RUBY QUEEN ; brilliant carmine, base of petals white. A most attractive variety, bearing semi-double flowers. This variety and some others may be employed with advantage as upright climbers, rather than in the procumbent form of the type.

16. SOUTH ORANGE PERFECTION ; double rosette-shaped rosy blush flowers, produced in clusters.

17. UNIVERSAL FAVOURITE ; flowers pink and double, but very small.

18. WICHURAIANA ; the type, single white flowers in clusters, produced somewhat later than the majority of the hybrids.

19. WICHURAIANA RUBRA ; this resulted from a cross between the type and *Crimson Rambler*. The variety possesses the light green foliage of the latter, but retains the procumbent form of the type. The flowers are bright red, with white at base of petals. It blossoms at the same time as the type, and thus forms a good contrast to it. It is also sweetly fragrant.

Rosa Rubifolia.

GROUP XX.—THE PRAIRIE ROSE.

This is an American Rose, introduced in 1830. Nuttall, in his "Genera of North American Plants, &c.," says of it—"A very fine flowering species, but nearly scentless ; abundant round Detroit and through all the western states to Louisiana." When first I saw this species it struck me as offering a good foundation on which to build up a new floral group, and although little progress towards the attainment of this end has yet been made, I still think it is one of the things of the future.

1. BALTIMORE BELLE ; flowers pale blush, very double.
2. BEAUTY OF THE PRAIRIES ; flowers pink, shaded.
3. CARADORI ALLAN ; flowers French white.
4. GEM OF THE PRAIRIES ; flowers crimson, blotched with white ; fragrant and free.
5. LINNÆAN HILL BEAUTY ; flowers pale blush, very double.
6. MOUNTJOY ; flowers deep pink, with pale edges.
7. PERPETUAL ; flowers pink, changing to purple.
8. QUEEN OF THE PRAIRIES ; flowers rosy purple, large and double.
9. SETIGERA ; the type, and known also as the "Bramble-leaved" Rose. The flowers are pink in colour, and produced late in Summer.

Rosa Banksiæ.

GROUP XXI.—THE BANKSIAN ROSE.

The Banksian Rose, so named in compliment to Lady Banks, is a complete departure from the ordinary run of Roses ; the flowers, indeed, resemble more closely those of the double-blossomed Cherry. The White variety, which is deliciously

WHITE BANKSIAN ROSE (*see* GROUP XXI.).

sweet, was introduced from China in 1807, and about twenty years later our gardens were enriched by the arrival of the yellow one.

In "*La Rose*, &c., par Dr Deslongchamps," we find mention of a remarkable White Banksian Rose growing in the Jardin de la Marine, at Toulon. If still in existence, it is now about ninety years old. In 1842 the trunk was 2 feet 4 inches in circumference at its base. It divided into six branches at a little distance from the ground, the thickest of which was 12 inches in girth. Its branches covered a wall 75 feet broad, and 15 to 18 feet high; and were there greater space it could be covered, for the tree is subjected to severe pruning every alternate year to keep it within bounds; and the more it is pruned the faster does it seem to grow, often producing shoots 15 feet long in a year, and as thick as the thumb. The flowers are produced from the middle of April to the middle of May, and at the time that it is in full blossom it is calculated that there cannot be less than from 50,000 to 60,000 flowers on the tree. The effect is described as magnificent, almost magical.

In the same work is mentioned a plant of the same variety, growing at Caserta, in the Kingdom of Naples, the branches of which had climbed to the top of a large poplar tree 60 feet high. The poplar was dead, killed probably by the embrace of its insidious friend, whose branches almost exclude it from view, presenting at the epoch of flowering a most lovely spectacle.

There was growing at Goodrent, Reading, the seat of Sir Jasper Nicholls, Bart., some fifty years since, a Yellow Banksian Rose, planted out in the conservatory border. It produced one year above 2000 trusses of flowers, and there were from six to nine expanded Roses on each truss. It was trained up to a horizontal wire, fixed about three feet from the glass. There was a plant of the White variety in the same house, but with very few flowers on it.

The Banksian Roses are of very rapid growth, but they are not hardy, and can only be grown successfully out of doors against a wall; and if a dry warm border can also be secured for them it is all the better. They should be pruned in Summer, immediately after they have flowered; the gross shoots, if any, should be cut out and the plants well thinned, merely tipping the shoots that are left; these will then form new wood, which, cut back to three or four eyes in Spring, will throw an abundance of flowers. There have arisen lately several new varieties, but they bloom indifferently in our climate, and we cannot say much in their favour. Unfortunately, these elegant Roses do not thrive well out of doors in the atmosphere of the metropolis.

1. ALBA GRANDIFLORA; flowers white.

2. FORTUNEANA; flowers white, large, full, and very sweet; supposed to be a hybrid between the Banksian and *Rosa lævigata*.

3. FORTUNE'S YELLOW; flowers yellowish orange, large and semi-double, a good wall Rose. Probably a hybrid between some variety of *R. Banksiæ* and the "Yellow China." (See Group 38, section 11).

4. JAUNE SERIN (*Lutescens spinosa*); flowers bright yellow, larger, deeper in colour, and fuller than the old Yellow.

5. ODORATISSIMA; flowers white, fragrant.

6. WHITE; flowers pure white, small and full; form compact. Neat and exceedingly pretty. Very fragrant.

7. YELLOW; flowers bright yellow, small and full; form compact. Very pretty and distinct. There is also a single-flowered form of this variety in cultivation.

Rosa Lævigata.

GROUP XXI*.—THE CHEROKEE OR CAMELLIA ROSE.

This splendid single Rose, known also as R. Sinica, is a native of the far east, whence it has spread to the south-eastern states of America, the West Indies, Madeira, the Cape of Good Hope, Southern Europe, and other parts of the globe. Unfortunately it is not hardy in England, save in the southern counties. It is well suited to plant against a south wall, where it may be well sheltered from frost.

1. SINICA; flowers pure white, single, five to six inches in diameter; the foliage is most beautiful, glistening as though varnished. The variety appears to blossom more freely when the plant is budded, but it strikes freely from cuttings inserted under glass.

2. SINICA HYBRIDA ANEMONE. Apparently this recent novelty is a cross between a Tea Rose and the type. It is a most beautiful variety, bearing huge single flowers of a silvery pink colour. The plant is much hardier than the type.

Class II.—Autumnal Roses.

Blooming from May till November, or later if not prevented by Frost.

Rosa Arvensis.

GROUP XXII.—THE AYRSHIRE PERPETUAL ROSE.

There is at present but one Autumn-flowering Ayrshire Rose, but it may be the forerunner of an important group, as Ayrshire Roses flowering in the Autumn would add greatly to the beauty of our gardens.

1. MADAME VIVIAND MOREL ; flowers rose, tinted with cerise, of medium size, full, and finely formed ; produced in clusters ; growth vigorous.

Rosa Multiflora.

GROUP XXIII.—THE POLYANTHA PERPETUAL ROSE.

These are autumnal-flowering varieties of Group XVIII., of dwarf habit of growth ; being apparently hardy, they are a great addition to the garden, and highly decorative both in beds, borders, and in pots.

1. AMELIE SUZANNE MORIN ; flowers white, slightly shaded with yellow, free and constant in blooming.

2. ANNE MARIE DE MONTRAVEL ; flowers pure white, small, full, and imbricated ; produced in clusters, and in extraordinary quantities. One of the best.

3. BLANCHE REBATEL ; flowers purplish crimson, shaded rose ; a somewhat dull colour, but prettily shaped.

4. CAMILLE DE ROCHETAILLÉE ; plant very dwarf ; flowers pure white, sometimes slightly tinted. Very free flowering.

5. CECILE BRUNNER ; flowers bright rose, yellowish in centres ; very sweet ; extremely small ; perfectly formed buds.

POLYANTHA PERPETUAL, PERLE D'OR (*see* GROUP XXIII.).

6. CLOTHILDE SOUPERT; flowers large for its class, but of perfect shape; outer petals white, centres rosy; full and imbricated. Liable to vary, but at all times a most beautiful kind, and very fine for pot work.

7. ETOILE D'OR; flowers lemon-yellow, shaded sulphur; very small.

8. EUGÉNIE LAMESCH; habit very dwarf. A lovely little novelty, the flowers prettily shaped like a *Ranunculus*; colour coppery red in bud, opening to pale yellow and carmine.

9. GEORGES PERNET; flowers yellowish rose, changing to peach. Very free and continuous blooming.

10. GLOIRE DES POLYANTHA. One of the most beautiful of the group. The flowers are bright rose in colour, with white base to petals; they are produced in huge bunches freely and continuously. Splendid for massing.

11. GOLDEN FAIRY; flowers chamois-yellow, changing to white. Rather a misnomer, as the general effect is white.

12. KATHERINA ZEIMET; flowers pure white, produced in large clusters. Fine for massing.

13. LÉONIE LAMESCH; a quaint but novel variety, producing flowers of a coppery red colour with terra-cotta edges. They are rather imperfect in shape, but it is a valuable variety of vigorous habit.

14. LITTLE DOT; flowers soft pink, outside petals flaked deeper.

15. MADAME E. A. NOLTE; buds chamois-yellow, changing to rosy white as they expand; very free. A lovely variety.

16. MAGDELEINE DE CHATELLIER; flowers yellow, shaded copper, changing to sulphur-yellow. The most vigorous of the yellow kinds.

16a. MARIE PAVIC; flowers rosy white.

17. MAXIME BUATOIS; flowers coppery yellow, changing to carmine-rose.

18. MIGNONETTE; flowers soft rose, changing to white, small and pretty, blooming in clusters. One of the best.

19. MOSELLA; flowers large, almost of exhibition size. Probably nearer the *Teas* than the *Polyanthas*. The colour is yellowish white, centre slightly shaded with rose.

20. PACQUERETTE; flowers small and double, pure white; produced in panicles.

21. PERLE D'OR; flowers nankeen-yellow, with orange centres, small and full, very beautiful, flowers very numerous, and of good shape. One of the best.

22. PERLE DES ROUGES; the richest colour yet obtained in this group. The flowers are deep velvety crimson, produced in clusters, and blooming abundantly and late in the season.

23. PETIT CONSTANT; flowers deep salmon-rose, reflexed with orange; pretty and distinct.

24. SCHNEEWITTCHEN; a very dense grower, producing numerous trusses of ivory-white flowers, each having a profusion of golden stamens.

Rosa Spinosissima.

GROUP XXIV.—THE PERPETUAL SCOTCH.

These are Scotch Roses, hybridized probably with the Damask Perpetual, and blooming in the Autumn. The Stanwell is perhaps the only one worthy of the attention of the Amateur. It is among the first to unfold its delicate blossoms, flowering in May and throughout the Summer and Autumn till arrested by frost. It is deliciously sweet; some say it has the fragrance of the Attar of Roses, but it appears to me more closely to resemble the Provence Rose in this particular.

1. SCOTCH; flowers pale rosy blush, large and double; form expanded; growth moderate.

2. STANWELL; flowers rosy blush, their centres often pink, large and double; form cupped; habit branching; growth moderate. Raised at Stanwell; hence its name.

Rosa Centifolia.

GROUP XXV.—THE PERPETUAL MOSS.

Here we have a group of Moss Roses blooming in the Autumn. The flowers are not oppressed with moss, although they have sufficient to denote their origin. They require the same treatment as the Summer-blooming Moss (Group VII.).

1. BLANCHE MOREAU; flowers pure white, large, full, and of perfect form; the buds and flowers produced in clusters, and freely furnished with deep green moss. One of the best.

2. DEUIL DE PAUL FONTAINE; flowers deep purplish red, shaded.

3. EUGÈNE DE SAVOIE; flowers bright red, shaded, of good form, average size and full; growth moderate.

4. EUGÉNIE GUINOISSEAU; flowers reddish cerise, changing to reddish violet, large and full; growth vigorous.

5. JAMES VEITCH; flowers violet shaded, free bloomer; growth vigorous.

6. MADAME EDOUARD ORY; flowers bright rosy crimson, large and full; growth moderate. One of the freest and best. Raised by M. Robert at Angers. Introduced in 1854.

7. MADAME MOREAU; flowers rose, edged with white, large and full.

8. MADAME WILLIAM PAUL; flowers bright rose, large, full, and of finely cupped form; blooms freely. One of the best. Growth vigorous.

9. MOUSSELINE; flowers white, lightly tinted with rose at opening, but changing to pure white, large and full.

10. PERPETUAL WHITE; flowers white, produced in large clusters, buds plentifully and beautifully mossed; growth vigorous.

11. SALET; flowers bright rose, blush edges, large and full; growth vigorous. One of the best. Raised by M. Robert at Angers. Introduced in 1854.

Rosa Bracteata.

GROUP XXVI.—THE MACARTNEY ROSE.

The *Rosa Bracteata* was introduced from China by Lord Macartney in 1795. It is a shy seed bearer, and consequently few varieties have been obtained from it. Perhaps the only one the Amateur will care for is the *Maria Leonida*, but the single is also beautiful. Both are of vigorous growth, but not very hardy. The best situation for them is a south or east wall, where they form most interesting objects, flowering during Summer and Autumn.

The plants are evergreen, the foliage dark and shining as if varnished, which feature, in contrast with the milk-white apricot-scented flowers, is striking and beautiful.

1. ALBA SIMPLEX (*Grandiflora*); flowers white, large and single; form cupped; free bloomer when trained against a wall. Very showy.

2. MARIA LEONIDA; flowers white, centres rosy and sometimes creamy, large and full; form cupped; growth vigorous. A hybrid between the Macartney and Tea-Scented; raised at Nantes and exhibited there as far back as 1832.

Rosa Lucida.

GROUP XXVII.—THE SHINING-LEAVED ROSE.

The type or species (*R. lucida*) has single red flowers produced in July and August, with dark glossy foliage which turns crimson at the approach of Autumn.

1. CLYNOPHYLLA DUPLEX; flowers delicate blush, large and double, form cupped; foliage particularly glossy and fine; growth moderate; very lovely. A Hybrid of unknown origin, and on which it would be unsafe to speculate; it may, however, be said that it has some resemblance to Group XXVI., the Macartney Rose.

2. ROSE-BUTTON (*Lucida plena*); flowers rose colour, with deeper centres, fragrant.

MACARTNEY ROSE, ALBA SIMPLEX (see GROUP XXVI.).

Rosa (Lowea) Berberifolia.

GROUP XXVIII.—THE BERBERRY-LEAVED ROSE.

The *Rosa Berberifolia* is a native of Persia and Chinese Tartary. It was introduced in 1790. In the north of Persia it grows so plentifully that it is used for fire-wood, but it has always been a delicate plant in England. Lindley, in the "*Rosarum Monographia*," says—"Possibly the soil in which it grows wild being salt may afford a hint to those who may again have an opportunity of cultivating it." Monsieur Hardy, formerly of the Jardin du Luxembourg, succeeded in raising a hybrid from *R. involucrata* crossed with this species, which bears his name; it is exceedingly pretty and distinct, but somewhat difficult of cultivation, although at one time I had more than a thousand plants of it.

1. BERBERIFOLIA; flowers yellow, with crimson spot, small and single.
2. BERBERIFOLIA HARDII; flowers yellow, with a dark chocolate spot at the bottom of each petal, small and single. Pretty and distinct.

Rosa Microphylla.

GROUP XXIX.—THE MICROPHYLLA OR SMALL-LEAVED ROSE.

This Rose is a native of the Himalaya Mountains and also of China, and was introduced to England in 1828. It is a decided curiosity. The leaves are composed of numerous small leaflets, sometimes as many as fifteen ranging on the sides of the petiole; the branches are of a whitish brown, the outer bark often peeling off in Autumn; they are almost destitute of prickles, but the broad sepals of the calyx are densely covered with them, owing to which the flower-buds are as rough as a hedgehog. The *Microphylla* appears to delight in a warm sandy soil; it is rather tender, and requires a wall to ensure the production of its flowers in full beauty. It requires very little pruning. No varieties have yet been raised to surpass the original.

1. DU LUXEMBOURG; flowers deep pink, shaded with blush, large and full; form cupped; habit branching; growth moderate.
2. MA SURPRISE; flowers white, rosy centres, shaded with salmon, large, full, and sweet; growth vigorous.
3. RUBRA, OLD OR COMMON; flowers rosy carmine, margined with blush, large and full; form globular; habit branching; growth moderate.
4. TRIOMPHE DE MACHETEAUX; flowers blush, edged with rose, large and full.

ROSA RUGOSA (see GROUP XXX.).

Rosa Rugosa.

GROUP XXX.—THE RUGOSA ROSE.

The Rugosa Roses are valuable in the garden, for not only do they yield large handsome flowers in Summer and Autumn, but the beauty of the fruit at the latter season is very attractive. The whole Shrub is distinct from our other cultivated Roses, and although wanting in refinement is not without beauty. It is invaluable for rough places, and thrives well where other Roses will scarcely exist. I have seen it growing well in poor sandy soil close to the sea.

1. AMERICA ; large single crimson-lake flowers ; large ovate fruit, often covered with long spines.

2. ATROPURPUREA ; a single flowered variety of very rich colour, maroon changing to purple.

3. BELLE POITEVINE ; a large double flowered kind, colour soft rose.

4. BLANC DOUBLE DE COUBERT ; one of the best of the group, producing large double white flowers of snowy purity.

5. CALOCARPA ; flowers quite round, single, of a bright rose colour, succeeded with large clusters of small scarlet berries.

6. CHEDANE GUINOISSEAU ; fine satin rose colour, very large and full, and produced abundantly in clusters.

7. CONRAD F. MEYER ; a fine novelty of extra vigorous growth. The colour of the flowers is silvery rose, large size, full, and of exquisite form. A grand addition to this group.

8. DELICATA ; flowers soft rose, large, and double, produced in clusters abundantly and continuously.

9. EMPRESS OF INDIA ; a lovely rose of rich crimson colour.

10. FIMBRIATA ; white, slightly tinted fimbriated flowers, semi-double. Not very striking on the plant, but when cut extremely beautiful and novel.

HIMALAYENSIS ; *see* Rugosa flore pleno.

11. MADAME CHARLES WORTH ; flowers reddish purple, semi-double, and very sweet. Produced in large bunches.

12. MADAME GEORGES BRUANT ; flowers paper white, large and double, produced in clusters ; a good and distinct decorative Rose ; growth vigorous.

13. MERCEDES ; a new shade of colour in this group, soft rosy pink on a white ground. Flowers large, full, finely shaped, and sweet ; growth vigorous and hardy.

14. MRS ANTHONY WATERER ; a hybrid with the type and H.P. *General Jacqueminot*. Its bright crimson semi-double flowers are produced very freely.

15. NEW CENTURY ; flowers bright carmine rose, deeper in the centres, edges of petals pale rose. The growth is semi-climbing.

HYBRID PERPETUAL, CLIO (*see* GROUP XXXI.).

REGELIANA ; *see* Rugosa.

16. ROSE APPLES ; pale silvery rose. This variety is of vigorous growth.
17. RUGOSA (Regeliana) ; flowers crimson, large and single, succeeded by an abundance of large scarlet fruit ; growth moderate.
18. RUGOSA ALBA ; flowers white, large and single, followed by larger and brighter coloured fruit than the preceding, though less abundant.
19. RUGOSA FLORE PLENO (Himalayensis) ; flowers crimson, large and double ; growth moderate.
20. SCHNEELICHT ; flowers white.
21. SOUVENIR DE CHRISTOPHE COCHET ; flowers pink, semi-double, fruit extra large.
22. SOUVENIR DE PIERRE LEPERDRIEUX ; flowers semi-double, of a bright red colour. Fruit and foliage very attractive.
23. THUSNELDA ; flowers light salmon pink, very free and perpetual flowering. As with No. 7, this variety resembles the hybrid Perpetual in size of blossom.
24. WEEPING RUGOSA ALBA ; this variety should be budded upon Standard Briars to enable one to appreciate its merit.

Rosa Damascena.

GROUP XXXI.—HYBRID PERPETUAL.

How came we in possession of these lovely Roses which so suddenly delighted us with their presence, forming, as they unquestionably now do, a most valuable group among Autumnals? Their origin is various ; doubtless in many instances unknown. The first varieties recognised as such were raised by M. Laffay from between the *Hybrid Bourbon* or *Hybrid Chinese* and *Damask Perpetual*. Princess Hélène, which was introduced in 1837, was the first *striking* variety that was obtained ; Queen Victoria followed next ; and in 1840 there were above twenty varieties enumerated in the Rose Catalogues. Several of these, however, were drawn from other groups ; one-fourth were Bourbon Perpetuals. The "Crimson Perpetual," or "Rose du Roi," raised by M. Souchet at Sevres in 1819, although grouped here, differs materially from its associates ; still it is a Hybrid Perpetual, probably between some variety of *French Rose* (*R. Gallica*) and *Damask Perpetual* (*R. Damascena*). It is said by some that this Rose originated in the gardens of the Palace of St Cloud in 1812.

If we analyse this group we shall find several races or strains of flowers, which in some cases may be traced very near to their first source. Other varieties are so intermixed that it is difficult to say which race preponderates. After maturely weighing all the circumstances, I have cast these Roses into four groups—HYBRID

PERPETUAL, which is intended to contain those varieties in which the Damask Perpetual or Hybrid Chinese is distinctly traceable; BOURBON PERPETUAL, embracing those in which the Bourbon Rose preponderates; ROSE DES ROSOMANES, to which certain kinds resembling the Gloire des Rosomanes seem naturally referable; and NOISETTE PERPETUAL. There are also many minor distinctions; for instance, there is the Géant des Batailles race, the General Jacqueminot race, and others, but such divisions are less strongly marked than those above given.

I remember when the first Hybrid Perpetual Roses were introduced it was generally asked—"Will they bloom freely in Autumn?" Another question now added is—"Will they grow?", the perpetual-blooming propensity having been developed to such a degree as to produce in some cases feebleness of constitution. Kinds of the latter nature, which bloom very freely, should be planted in a rich soil, pruned closely, and have some of the flower-buds cut away when just forming, at any time of the year when they can be best spared.

The group before us, spoken of in reference to their external characters, might be called Hybrid Chinese, blooming more or less freely in the Autumn. They are indeed fine Roses, quite hardy and very sweet. They thrive under common treatment, and are generally suited alike for Standards and Dwarfs, for pot culture and forcing. Indeed, nowhere are they out of place; many of them grow and flower well in the vicinity of London, and in the northern parts of England and Scotland.

ABBÉ BRAMEREL; *see* Group XXXIII., Rose des Rosomanes.

1. ABEL CARRIERE; flowers rich velvety maroon, shaded with violet, large, full, and finely shaped. One of the best.

2. ABEL GRAND; flowers rosy blush, large, full, and free. A fine Rose. Growth vigorous.

ADMIRAL DEWEY; *see* Group XXXVIII., section 3.

3. ALBERT PAYE; flowers delicate rosy flesh, large.

4. ALFRED COLOMB; flowers bright fiery red, large and full; form globular and excellent; very effective; one of the best; growth vigorous.

5. ALFRED K. WILLIAMS; flowers carmine-red, changing to magenta; large, full, and expanded. A free Autumnal bloomer, one of the best.

6. ALPHONSE SOUPERT; flowers bright rose-colour, large and very showy; forces well. A fine Rose.

AMERICAN BEAUTY; *see* *Madame Ferdinand Jamin*.

7. AMI CHARMET; pure China-rose colour, reflexed with satiny rose, very large and sweet; fine foliage.

8. ANNA ALEXIEFF; flowers rose, tinted with pink, large, full, and produced in great abundance; form cupped; growth vigorous. A good bedding Rose.

9. ANNA DE DIESBACH; flowers clear rose, unusually large; petals also large and thick; deeply cupped; growth vigorous. Figured in the "Rose Annual."

10. ANNIE LAXTON ; flowers deep rose, flushed with cherry-crimson, large, full, and distinct.

11. ANTOINE DUCHER ; flowers bright purplish red, very large, full, and fine ; growth robust.

12. ARDS ROVER ; crimson, shaded maroon ; a good pillar Rose, and moderate climber.

13. AUGUSTE RIGOTARD ; flowers fine red, the reverse of the petals whitish, large, full, and of good form ; growth vigorous.

AVOCAT DUVIVIER ; *see* Marechal Vaillant.

AUGUSTINE GUINOISSEAU ; *see* Group XXXVIII., section 3.

14. BARON ADOLPHE DE ROTHSCHILD ; flowers fiery red, very large and full. A very effective Rose of excellent habit ; growth vigorous.

15. BARON DE BONSTETTEN (*syn.* Monsieur Boncenne) ; flowers red, black, and crimson, large, full, and good ; growth vigorous.

16. BARONESS ROTHSCHILD ; flowers clear pale rose shaded with white, very large and very double. One of the best ; growth robust.

17. BARONNE DE BELLEROCHÉ ; flowers opening rosy red, changing to deep red ; globular ; outer petals very large.

18. BARONNE HAUSSMAN ; flowers bright carmine-red, large, and of fine form ; growth vigorous.

BARONNE DE MAYNARD ; *see* Group XXXII., Bourbon Perpetuals.

19. BARONNE PRÉVOST ; flowers clear pale rose, glossy, very large and full ; form compact ; habit erect ; growth vigorous. Raised by M. Desprez of Yèbles. Introduced in 1843.

20. BEAUTY OF WALTHAM (Wm. Paul) ; flowers rosy crimson, cupped, large, full, and very sweet ; petals of good substance, blooms abundantly. Raised by me from Jules Margottin in 1859 ; growth vigorous. Figured in the Rose Annual.

21. BELLEFLEUR ; a single decorative variety ; flowers fiery crimson, with bright yellow anthers, blooming early and late.

BELLE SIEBRECHT ; *see* Group XXXVIII., section 3.

22. BEN CANT ; flowers deep clear crimson, with dark veining, and slightly darker flushes in the centre ; large and finely formed, with stout rounded outer petals of good lasting power ; growth strong and sturdy.

23. BERTHE GEMEN ; flowers ivory-white, large, full, and imbricated, fine in bud and half-open state.

24. BESSIE JOHNSON ; flowers light blush, large, very double, and sweet ; a fine Rose of good habit ; growth vigorous.

25. BLACK PRINCE (Wm. Paul) ; flowers dark crimson shaded with black, cupped, large, full, and of fine form ; growth vigorous. Introduced from the Waltham Cross Nurseries in 1866, and still one of the best dark Roses.

HYBRID PERPETUAL, FLORENCE PAUL (*see* GROUP XXXI.).

26. BLADUD ; flowers silvery white on outer petals, centre pale pink, large and full.
27. BOB DAVISON ; flowers dazzling scarlet-crimson, perfectly formed ; a charming Rose.

28. BOIELDIEU ; flowers bright cherry red, very large, full, and fine ; form expanded ; a free-flowering variety, and very showy.

BOULE DE NEIGE ; *see* Group XXXII., Bourbon Perpetual.

29. BRILLIANT ; a scarlet-crimson button-hole and garden Rose ; of medium size, neat, and of good quality.

30. CAMILLE BERNARDIN ; flowers bright red, large, full, and of fine form, blooms freely, very sweet ; growth vigorous.

31. CAPITAINE JOUEN ; flowers bright vivid crimson, very large and full ; growth very vigorous. A fine new Rose.

CAPTAIN CHRISTY ; *see* Group XXXVIII., section 3.

32. CAPTAIN HAYWARD ; flowers bright crimson-carmine, a new shade of colour ; of perfect form ; very sweet, and opening well. An early bloomer and a grand pot Rose.

33. CAROLINE D'ARDEN ; flowers soft rose colour, very large, full, and delightfully fragrant ; very free.

CAROLINE TESTOUT ; *see* Group XXXVIII., section 3.

34. CATHERINE SOUPERT ; flowers white, shaded with rose, large and full ; form and habit perfect. A beautiful Rose.

35. CHARLES DARWIN ; flowers brownish crimson, shaded with violet, a good Autumnal ; form expanded ; growth vigorous.

36. CHARLES DICKENS ; flowers rose colour, large and full ; a grand garden and bedding Rose, producing immense masses of fine flowers, very hardy ; growth vigorous.

37. CHARLES GATER ; flowers brownish red ; vigorous and hardy.

38. CHARLES LAMB (Wm. Paul & Son) ; flowers bright red, lovely clear colour, very beautiful in the bud ; foliage handsome, habit hardy. This variety flowers continuously throughout the Summer and Autumn, and is invaluable for garden decoration and for cutting.

39. CHARLES LEFEBVRE ; flowers bright crimson, with purplish centres, large, very double, and of fine form. One of the best ; growth vigorous. Raised by M. Lacharme at Lyons. Introduced in 1861.

40. CHARLES MARGOTTIN ; flowers brilliant carmine, their centres fiery red, very large, full, and sweet ; growth vigorous.

41. CHESHUNT SCARLET ; flowers bright scarlet crimson ; semi-double. Good in autumn.

CLIMBING BELLE SIEBRECHT ; *see* Group XXXVIII., section 1.

42. CLIMBING BESSIE JOHNSON ; a free-growing Bessie Johnson.

- CLIMBING CAPTAIN CHRISTY ; *see* Group XXXVIII., section 1.
- CLIMBING CAROLINE TESTOUT ; *see* Group XXXVIII., section 1.
43. CLIMBING EDWARD MORREN ; a free-growing Edward Morren.
44. CLIMBING JULES MARGOTTIN ; a free growing Jules Margottin.
- CLIMBING LA FRANCE ; *see* Group XXXVIII., section 1.
45. CLIMBING MDLLE. EUGENIE VERDIER ; a free growing Mdle. Eugénie Verdier.
46. CLIMBING PRIDE OF WALTHAM ; a free-growing Pride of Waltham.
47. CLIMBING VICTOR VERDIER ; flowers bright cherry-red, large and full.
48. CLIMBING QUEEN OF QUEENS (Wm. Paul & Son) ; a free growing Queen of Queens.
49. CLIO (Wm. Paul & Son) ; flowers flesh colour, shaded in centre with rosy pink, very large ; fine globular form, and freely produced. A splendid Rose, making a good Standard tree, and unsurpassed in the beauty of its flowers and their effect in the garden.
50. COMMANDANT FELIX FAURE ; flowers rich lake, shaded with black and flushed with brilliant vermilion ; globular ; growth vigorous.
51. COMTE DE RAIMBAUD ; flowers dark carmine-cerise, brilliant, large, and full ; growth vigorous. A most beautiful and reliable Rose.
52. COMTESSE BERTRAND DE BLACAS ; flowers soft bright rose colour ; large, full, and globular. Very sweet ; an excellent and effective variety.
53. COMTESSE DE CHABRILLANT ; flowers pink, large and full ; form cupped, perfect ; growth vigorous ; foliage and habit fine. Introduced in 1858. Figured in the "Rose Annual."
54. COMTESSE DE SERENYE ; flowers flesh colour, reflexed with rose, inclining to salmon in the bud ; large, full, free, and fine.
55. COMTESSE DE LUDRE ; flowers carmine, large, full, and sweet.
56. COMTESSE DE PARIS ; flowers crimson, edges of petals tipped with silvery white ; large, full, and perfect flower.
57. COQUETTE BORDELAISE ; flowers in the way of Paul Neyron ; colour carmine-rose, banded and blotched with white like a Camellia.
- COQUETTE DES BLANCHES ; *see* Group XLI., Noisette Perpetual.
58. COUNTESS OF OXFORD ; flowers bright carmine-red, shaded, very large, full, and of fine form ; foliage handsome ; growth vigorous. One of the best.
59. COUNTESS OF ROSEBERRY ; flowers brilliant carmine-rose, large and full, of finely cupped form ; foliage handsome, wood smooth, habit good ; three First-class Certificates. One of the best.
60. CRIMSON PERPETUAL, Portland or Rose du Roi ; flowers crimson, cupped.
61. CRIMSON QUEEN (Wm. Paul & Son) ; flowers velvety crimson, shaded with fiery red and maroon ; very large ; globular and handsome ; fine foliage. A splendid pot Rose.

62. CROWN PRINCE ; flowers bright purple, centres shaded with lurid crimson, very large and double, petals fine, very floriferous, and of excellent growth and habit ; a most effective garden Rose, yielding large quantities of fine flowers, either for decoration or cutting.

63. DEVIENNE LAMY ; flowers beautiful carmine-red, large, full, and fine ; growth moderate.

DANMARK ; *see* Group XXXVIII., section 3.

DAWN ; *see* Group XXXVIII., section 1.

64. DOCTEUR ANDRY ; flowers dark bright red, very large and full. One of the best ; growth vigorous.

65. DOCTOR HOGG ; flowers deep violet, the nearest approach to blue, pretty bell-shaped petals ; growth vigorous.

66. DOCTOR SEWELL ; flowers crimson, shaded with purple ; form cupped.

67. DUC D'ORLEANS ; flowers bright cherry crimson ; good shape.

DUCHESS OF ALBANY ; *see* Group XXXVIII., section 3.

68. DUCHESS OF BEDFORD ; flowers dazzling light scarlet-crimson, surpassing in brilliancy any known Rose of its colour, large, full, and of perfect globular shape, a vigorous grower, with fine foliage ; one of the best.

69. DUCHESS OF YORK ; flowers pale blush pink.

70. DUCHESSE DE CAYLUS ; flowers brilliant carmine, large, full, and of perfect form, growth moderate.

71. DUKE OF ALBANY (Wm. Paul & Son) ; flowers vivid crimson when first opening, changing darker as the flowers expand, and developing a beautiful shading of velvety-black, very large and full, of magnificent petal, and grand effect ; a free autumnal bloomer.

72. DUKE OF CONNAUGHT ; flowers velvety-crimson, flushed with red, of medium size.

73. DUKE OF EDINBURGH (Wm. Paul) ; flowers brilliant scarlet-crimson, often shaded with maroon, large full, and very effective ; growth vigorous. One of the best of my seedlings.

74. DUKE OF FIFE ; a crimson-scarlet sport of Etienne Levet.

75. DUKE OF TECK ; flowers bright crimson-scarlet, clear and distinct in colour, full but not large.

76. DUKE OF WELLINGTON ; flowers bright velvety red, shaded with blackish maroon ; large and very effective ; growth moderate.

77. DUPUY JAMAIN ; flowers brilliant cerise, of fine form and substance, large, full, and blooms freely ; growth vigorous. One of the best.

78. EARL OF DUFFERIN ; flowers velvety-crimson, shaded with maroon, large full, and finely formed ; a continuous bloomer ; of vigorous growth, and bushy habit.

79. EARL OF PEMBROKE ; flowers soft velvety-crimson, shaded with bright red, similar in form and habit to Marquise de Castellane ; distinct and good.

HYBRID PERPETUAL, MARCHIONESS OF LORNE (*see* GROUP XXXI.).

80. ECLAIR ; flowers bright and fiery-red, large, and of good form ; in the way of Charles Lefebvre.

81. EDITH TURNER ; flowers very pale blush ; early blooming, and fragrant.

82. EDOUARD MORREN ; flowers bright cherry, in the way of Jules Margottin, very large and full, occasionally splendid ; growth vigorous.

83. ELISE BOELLE ; flowers white, tinted with rose ; growth vigorous. Very pretty. Raised by M. Guillot fils, at Lyons. Introduced in 1869.

84. ELLA GORDON ; flowers bright cherry colour, globular, large, and full ; petals smooth, thick, and well rounded ; foliage clean, broad, and handsome ; growth vigorous. One of the best autumn-flowering Roses.

85. ELLEN DREW ; a pale pink sport of La Duchesse de Morny.

EMPEREUR DE MAROC ; *see* Group XXXIII., Rose des Rosomanes.

86. EMPEROR (Wm. Paul & Son) ; flowers very dark, almost black, small and neat for button-holes ; hardy and free both in growth and flowering.

87. EMPRESS (Wm. Paul & Son) ; flowers white, with pink centres, small, neat, and of perfect form, a good button-hole Rose ; a seedling from the Maiden's Blush ; flowering in Summer and Autumn.

88. ETIENNE LEVET ; flowers carmine, large, full, and of fine form ; growth robust. One of the best.

EUGENE APPERT ; *see* Group XXXIII., Rose des Rosomanes.

89. EUGENE FURST ; flowers velvety-crimson, shaded with deep crimson, large and full, of good shape ; a fine dark rose.

EXPOSITION DE BRIE ; *see* Maurice Bernardin.

90. E. Y. TEAS ; flowers deep cerise-red, large, full, of perfect globular form, and very sweet ; habit erect.

91. FERDINAND DE LESSEPS ; flowers purple, shaded with violet, large, full, and of fine form ; growth vigorous.

92. FIREBRAND (Wm. Paul & Son) ; flowers fiery red, occasionally shaded with dark blackish maroon, very large, full, and of fine circular outline, very sweet ; growth moderate. Introduced in 1873.

93. FISHER HOLMES ; flowers reddish scarlet, shaded with deep velvety-crimson, very brilliant, medium size, full, and of good form ; growth vigorous. One of the best.

94. FLORENCE PAUL ; flowers scarlet-crimson, shaded with rose, large and full ; form compact, petals recurved ; habit good. A fine garden Rose.

95. FRANÇOIS LEVET ; flowers Chinese rose colour, of medium size.

96. FRANÇOIS MICHELON ; flowers deep rose, the reverse of the petals silvery, large, full, and globular ; growth vigorous. One of the best. Raised by M. Levet at Lyons. Introduced in 1871.

97. FRAU KARL DRUSCHKI ; flowers snowy white, of large size, and beautiful form. Extra fine in bud ; growth vigorous ; thoroughly perpetual. An excellent addition to this group.

98. GARDEN FAVOURITE (Wm. Paul & Son); flowers bright pink, large and full; a fine decorative Rose, producing immense quantities of lovely and durable flowers.

GÉANT DES BATAILLES; *see* Rose des Rosomanes, Group XXXIII.

99. GENERAL BARON BERGE; flowers fine bright deep red, outer petals shaded with violet; of large size; sweet and free blooming.

100. GÉNÉRAL JACQUEMINOT; flowers brilliant red, large and double; form cupped; growth vigorous. One of the best. Raised by M. Roussel at Meudon. Introduced in 1853.

GLADYS HARKNESS; *see* Group XXXVIII., section 3.

101. GLOIRE DE BOURG LA REINE; flowers brilliant scarlet-red, large and full; growth vigorous.

GLOIRE DES ROSOMANES; *see* Rose des Rosomanes, Group XXXIII.

102. GLOIRE DE L'EXPOSITION DE BRUXELLES; flowers deep velvety purplish amaranth, almost black, base of petals fiery red; large, full, and very sweet.

103. GLOIRE DE MARGOTTIN; flowers dazzling red, very brilliant; large, full, finely formed. One of the best decorative Roses, and a fine variety to grow as a pillar.

104. GLOIRE D'UN ENFANT D'HIRAM; in the way of Ulrich Brunner, but brighter in colour.

GLOIRE LYONNAISE; *see* Group XXXVIII., section 3.

105. GLORY OF CHESHUNT; flowers crimson; a climbing Rose, seedling from Charles Lefebvre.

106. GLORY OF WALTHAM (Wm. Paul & Son); flowers very large, very double, and very sweet; growth vigorous. One of the best Climbing or Pillar Roses.

107. GRAND MOGUL (Wm. Paul & Son); a seedling from A. K. Williams, producing flowers of a deep brilliant crimson, shaded with scarlet and black; in dull weather and in Summer the flowers are darker, approaching to maroon. They are large, full, of symmetrical shape, and produced in great profusion; the foliage is large and massive.

108. GUSTAVE PIGANEAU; flowers brilliant carmine lake; very large, equalling Paul Neyron in size, but of better shape, full, and cupped; buds handsome. The growth is only moderate.

109. HARRISON WEIR; flowers velvety-crimson, enlivened with scarlet; flowers large, full, and very smooth, good.

110. HEINRICH SCHULTHEIS; flowers delicate pinkish rose, large, full, and sweet; growth vigorous. One of the best.

111. HELEN KELLER; flowers bright rosy cerise, large shell-shaped petals; of great substance; very free and good.

112. HER MAJESTY; flowers clear and bright satiny rose, very large and full; petals most symmetrically arranged, foliage handsome; growth robust. Has been

awarded a Gold Medal, numerous First-Class Certificates, and several First Prizes. An extraordinary Rose, but unfortunately very liable to mildew.

113. HORACE VERNET; flowers beautiful velvety purplish red, shaded with dark crimson, very large and full; growth moderate. One of the best.

114. J. D. PAWLE; flowers rich velvety crimson, shaded maroon; cupped shape. A good autumnal.

115. JEAN CHERPIN; flowers velvety purple, shaded; growth vigorous.

116. JEAN LIABAUD; flowers velvety crimson, shaded with black; large, full, and of fine form.

117. JEAN ROSENKRANTZ; flowers bright coral-red, large, full, and of perfect form; growth vigorous.

118. JEAN SOUPERT; flowers carmine crimson, shaded with fiery scarlet and black, large, full, expanded; very free and sweet.

119. JEANNIE DICKSON; flowers rosy pink, edged with silvery pink, very large, full, high centred flowers; thick smooth petals. A free bloomer.

120. JOHN HOPPER; flowers lilac-rose, their centres rosy crimson, cupped, large and full; growth vigorous. A good hardy rose.

JOHN RUSKIN; *see* Group XXXVIII., section 3.

121. JUBILEE; flowers rich pure red, shading to deep crimson and velvety maroon.

122. JULES MARGOTTIN; flowers bright cherry-colour, large and full; form cupped; growth vigorous. One of the best. Raised by M. Margottin at Paris. Introduced in 1853.

123. JULIE TOUVAIS; flowers pure flesh coloured rose, satin like, extra large; growth vigorous.

124. LA DUCHESSE DE MORNAY; flowers bright delicate rose-colour, the reverse of petals silvery, large and full; growth vigorous.

LA FRANCE; *see* Group XXXVIII., section 3.

LA FRAICHEUR; *see* Group XXXVIII., section 3.

LA FRANCE DE '89; *see* Group XXXVIII., section 3.

125. LA ROSIÈRE; flowers maroon crimson, shaded with black, of medium size, cupped, double and effective.

LADY EMILY PEEL; *see* Noisette Perpetual, Group XLI.

126. LADY HELEN STEWART; flowers bright crimson scarlet, petals smooth and of great substance, highly perfumed; a good grower, and continuous bloomer.

127. LADY SHEFFIELD; flowers brilliant rosy cerise, becoming lighter as the flowers open, a beautiful and distinct shade of colour; petals large, and of great substance; flowers large, full, and of perfect form; foliage handsome. First-class certificate. Figured in *Rose Annual* 1880-81.

128. LAWRENCE ALLEN; flowers clear soft pink, shaded lighter; large and full, with high centre. An improved Baroness Rothschild.

W. E. S. J.
HYBRID PERPETUAL, QUEEN OF QUEENS (see GROUP XXXI.).

129. LE HAVRE; flowers brilliant vermilion, large, and very double; form expanded; growth vigorous.

130. LORD BACON (Wm. Paul & Son); flowers deep crimson, illumined with scarlet, and shaded with velvety black, large, full, and globular. A very fine and showy Rose, blooming abundantly, and till late in the season; growth vigorous.

131. LORD MACAULAY (Wm. Paul); flowers rich scarlet-crimson, sometimes maroon-crimson, large and full, petals of great substance; good habit; foliage handsome; growth robust. A first-class Rose.

132. LOUIS RICARD; a large and showy Pæony-like flower; deep velvety crimson shaded with vermilion and black; does not burn; growth very vigorous and good habit.

133. LOUIS VAN HOUTTE; flowers reddish scarlet and amaranth, the circumference blackish crimson, large, full, and of fine globular form; growth moderate. A beautiful Rose. Raised by M. Lacharme at Lyons. Introduced in 1869.

LOUISE DARZENS; *see* Noisette Perpetual, Group XLI.

134. MABEL MORRISON; a sport from Baroness Rothschild, producing white flowers in Summer and pale pink flowers in Autumn.

MADAME ALFRED DE ROUGEMONT; *see* Noisette Perpetual, Group XLI.

135. MADAME ANTOINETTE CHRETIEN; flowers bright rose, large and cupped.

136. MADAME BOIS; flowers fine light rose, in the way of Victor Verdier.

137. MADAME CHARLES CRAPELET; flowers rosy scarlet, often veined with lilac, large and full; form cupped; growth vigorous.

138. MADAME CHARLES WOOD; flowers vinous crimson, very large, full, and effective; growth vigorous.

139. MADAME CLEMENCE JOIGNEAUX; flowers red, shaded with lilac, cupped, large, and very double; growth vigorous.

140. MADAME DELVILLE; flowers bright rose, large and full.

141. MADAME ERNEST LEVAVASSEUR; flowers soft carmine-red, in the way of Ulrich Brunner, but brighter in colour; very large and full, growth vigorous.

142. MADAME EUGÈNE VERDIER; flowers silvery rose, large and full; form globular; growth vigorous. One of the best.

143. MADAME EUGÉNIE FREMY; flowers bright pink, reverse of petals silvery large and full.

MADAME FANNY DE FOREST; *see* Noisette Perpetual, Group XLI.

144. MADAME FERDINAND JAMIN (*American Beauty*); flowers deep even rosy carmine, with very fine petals, large and full; form cupped; very sweet.

MADAME FRANCOIS PITTET; *see* Noisette Perpetual, Group XLI.

145. MADAME GABRIEL LUIZET; flowers pale pink, a delicate and beautiful tint of colour, large and full, cupped, very sweet; growth vigorous; quite first-rate.

MADAME ISAAC PERIERE; *see* Bourbon Perpetual, Group XXXII.

146. MADAME JOSEPH BONNAIRE; flowers bright China rose, reverse of petals silvery, extra large; in the way of Paul Neyron, but paler in colour; a very handsome and showy Rose.

MADAME LA BARONNE DE ROTHSCHILD; *see* Baroness Rothschild.

147. MADAME LACHARME; flowers white, faintly suffused with rose, changing to pure white, cupped, large and full; growth vigorous.

MADAME MARIE CROIBIER; *see* Group XXXVIII, section 3.

148. MADAME MONTET; flowers delicate rose colour, large petals, almost full; fine for pots and forcing.

149. MADAME VERRIER CACHET; flowers bright rose, shaded with vermillion; large, full, and globular. Very sweet.

150. MADAME VICTOR VERDIER; flowers rich bright cherry colour, very large full, and of fine form; growth vigorous. A superb and most effective Rose. Introduced by M. Eugène Verdier in 1863.

MADAME VIGER; *see* Group XXXVIII, section 3.

151. MDLLE. ANNIE WOOD; flowers beautiful clear red, very large, full, and of excellent form; growth vigorous.

152. MDLLE. EUGÉNIE VERDIER; flowers bright flesh-coloured rose, the reverse of the petals silvery white, very large and full, of fine form and habit; growth robust. Raised by M. Guillot fils of Lyons. One of the best. Introduced in 1869.

153. MDLLE. MARIE FINGER; flowers bright flesh-coloured rose, deeper centres, large and globular; growth vigorous.

154. MDLLE. MARIE RADY; flowers fine brilliant red, very large, full, and of perfect form, blooms freely; growth vigorous.

155. MDLLE. MARIE VERDIER; flowers rose colour, fine petals, and beautifully cupped form.

156. MAGNA CHARTA (Wm. Paul & Son); flowers bright pink, suffused with carmine, very large, full, of good form, habit erect, growth vigorous; magnificent foliage; flowers produced in more than usual abundance for so fine a variety. Grand for forcing.

MAGNAFRANO; *see* Group XXXVIII., section 3.

MAMIE; *see* Group XXXVIII., section 3.

157. MARCHIONESS OF DOWNSHIRE; flowers salmon-pink, shaded with rose. Excellent in form, and a good show Rose.

158. MARCHIONESS OF DUFFERIN; flowers rosy pink, very large and full; form imbricated. Best in hot weather.

159. MARCHIONESS OF LONDONDERRY; flowers ivory white, of great substance. Magnificent in form and size, but rather dull in colour when expanded.

160. MARCHIONESS OF LORNE (Wm. Paul & Son); flowers fulgent rose colour, full, finely cupped. The blossoms are freely produced throughout the season, and they are deliciously fragrant.

161. MARÉCHAL VAILLANT; flowers purplish-red, large, full, and of good form, hardy and free; growth vigorous. Introduced by M. Jamain of Paris in 1861.

162. MARGARET DICKSON; flowers white, with pale flesh centres; large shell-like petals of good substance. Form good, foliage handsome.

163. MARGUERITE BOUDET; flowers delicate flesh colour, of exquisite shape. A poor grower.

164. MARGUERITE DE ST AMANDE; flowers rosy flesh-colour, large, full, and of fine form, an abundant bloomer; habit fine; growth vigorous.

165. MARIE BAUMANN; flowers bright carmine, very large, smooth, and of excellent form, something in the way of Beauty of Waltham; growth vigorous. Quite first-rate.

MARIE LOUISE POIRET; *see* Group XXXVIII., section 3.

MARJORIE; *see* Group XXXVIII., section 3.

MARQUISE LITTA; *see* Group XXXVIII., section 3.

166. MARQUISE DE CASTELLANE; flowers beautiful bright rose, very large and full; form perfect; blooms freely; growth robust. One of the best.

167. MAURICE BERNARDIN (*syn.* Exposition de Brie); flowers vermilion, large, full, and of fine form; growth vigorous.

168. MAVOURNEEN; flowers pale pink. A strong grower.

169. MERVEILLE DE LYON; flowers pure white, sometimes washed with satin-rose, very large, full, and cupped; probably a sport from Baroness Rothschild. One of the best.

170. MERVEILLE DES BLANCHES; a sport from Baroness Rothschild, with very large almost full flowers; white slightly flushed with pink in centres.

171. MILTON (Wm. Paul & Son); flowers very bright carmine, the petals shaded with velvety crimson and reflexed with silvery white. Of fine globular shape, and very full. The plant forms large bushes, having beautiful grass-green foliage.

172. MISS MARIE CORELLI; a distinct salmon-pink sport of Suzanne Marie Rodocanachi.

MONSIEUR BONCENNE; *see* Baronne de Bonstetten.

173. MRS COCKER; flowers a beautiful soft pink, full, and high centre. Petals shell-like; a hardy and vigorous grower, and very free flowering.

174. MRS FRANK CANT; flowers clear pink, edges of petals silvery white.

175. MRS F. W. SANFORD; a nearly white sport of Mrs John Laing. The flowers are a pale blush pink shading to white. The variety possesses all the good points of the parent, resembling it in everything but colour.

176. MRS G. DICKSON; flowers bright satin-pink, large and free; quite mildew proof.

177. MRS HARRY TURNER; flowers crimson-scarlet, shaded with maroon, brilliant.

178. MRS JOHN LAING; a new Hybrid Perpetual Rose; soft pink in colour, in

HYBRID PERPETUAL, WALTHAM STANDARD (see GROUP XXXI.).

the way of Madame Gabriel Luizet. The flowers are large, finely shaped, and exceedingly fragrant. The plant is extremely free from mildew. It commences to flower very early, is remarkably profuse, and continues to bloom till late in Autumn ; quite first-rate.

MRS ROBERT GARRETT ; *see* Group XXXVIII., section 3.

MRS W. J. GRANT ; *see* Group XXXVIII., section 3.

179. MRS R. G. SHARMAN CRAWFORD ; colour clear rosy pink, outer petals shaded with pale flesh. The form is imbricated and it is a very free flowering variety, but rather addicted to mildew. Quite first-rate.

180. MRS RUMSEY ; a sport of Mrs George Dickson. Flowers rosy pink, very freely produced, and the growth is quite proof against mildew.

OLGA MARIX ; *see* Noisette Perpetual, Group XLI.

181. OSCAR CORDEL ; flowers bright rich carmine, large and full ; sweetly scented. Very free and distinct.

182. PANACHÉ DE BORDEAUX ; in the way of Paul Neyron. Flowers are bright rose, shaded with velvety red, strongly striped and painted with white. Very curious and pretty.

183. PAUL NEYRON ; flowers dark lilac-rose, of extra size, fine form and habit ; growth vigorous. The largest Rose yet introduced. Raised by M. Levet at Lyons. Introduced in 1869.

PAUL VERDIER ; *see* Hybrid Chinese, Group X.

184. PAUL'S EARLY BLUSH ; flowers light silvery blush. A sport from Heinrich Schultheis.

PAUL'S SINGLE WHITE ; *see* Noisette Perpetual, Group XLI.

185. PIERRE NOTTING ; flowers blackish red, shaded with violet, very large and full ; form globular ; habit good ; growth vigorous.

186. PRIDE OF WALTHAM (Wm. Paul & Son) ; habit of Countess of Oxford, producing flowers of a delicate flesh-colour richly shaded with bright rose, very clear and distinct. The flowers are very large and full, with petals of great substance. Habit and constitution good. One of the best.

187. PRINCE ARTHUR ; flowers crimson, large and double ; a fine rose.

188. PRINCE CAMILLE DE ROHAN ; flowers crimson - maroon, very rich and velvety, large and full ; growth vigorous ; a fine free-flowering dark Rose.

189. PRINCESS LOUISE VICTORIA ; flowers rosy salmon-pink. A good Climbing or Pillar Rose.

190. QUEEN OF EDGELY ; a pink sport from Madame Ferdinand Jamin.

191. QUEEN OF QUEENS (Wm. Paul & Son) ; flowers pink, with blush edges, large and full ; growth vigorous ; one of the best.

192. QUEEN OF WALTHAM (Wm. Paul & Son) ; flowers beautiful rosy cherry, a very distinct and lovely colour ; in sunny weather the circumference of the petals

becomes darker than the base, a novel and strikingly beautiful feature ; a large and full flower of perfect form.

193. R. B. CATER ; flowers magenta carmine, beautifully shaded ; high centre, and petals of great substance.

194. RED DRAGON (Wm. Paul & Son) ; flowers brilliant crimson, very bright and striking, large, double, and of finely cupped shape ; the growth is exceedingly vigorous ; the habit is excellent ; the foliage large and massive.

195. REVEREND ALAN CHEALES ; flowers pure lake, back of petals silvery white, large and showy.

196. REYNOLDS HOLE ; flowers maroon, shaded with crimson, uncertain, but sometimes fine ; growth vigorous.

197. ROBERT DUNCAN ; flowers bright rosy lake, large and of good form.

ROBERT SCOTT ; *see* Group XXXVIII., section 3.

198. ROGER LAMBERLIN ; flowers deep velvety red, spotted with white ; distinct and curious ; growth vigorous.

ROSE DU ROI ; *see* Crimson Perpetual.

ROSIERISTE JACOBS ; *see* Duke of Wellington.

199. ROSSLYN ; a sport from Suzanne Marie Rodocanachi ; with soft rosy flesh coloured flowers. A fine Rose.

200. ROYAL SCARLET ; a vivid scarlet single flowered Rose. Very effective in the mass.

201. ROYAT MONDAIN ; crimson, shaded with bright red, petals edged with white ; distinct ; growth vigorous.

202. ST GEORGE (Wm. Paul & Son) ; flowers crimson, shaded with blackish purple, large, full, and globular ; habit and foliage fine. A good dark Rose ; growth vigorous.

203. SALAMANDER ; flowers bright scarlet crimson, magnificent colour. Very free and effective.

204. SENATEUR VAISSE ; flowers brilliant red, large and full ; form cupped ; growth vigorous. Quite first-class. Raised by M. Guillot père at Lyons. Introduced in 1859.

205. SILVER QUEEN (Wm. Paul & Son) ; flowers silvery blush, shaded in the centre with very delicate rosy pink, distinct and lovely, large and full, of beautifully cupped form, and produced in great abundance, every shoot being crowned with a flower bud, the latter characteristic rendering it a fine autumnal bloomer.

206. SIR ROWLAND HILL ; flowers rich deep port wine colour, shaded with blackish maroon and changing to bright ruby claret, very large and full, with petals of great substance ; sweet.

SOUVENIR DE JEAN KETTEN ; *see* Group XXXVIII., section 3.

207. SOUVENIR DE MADAME CHEDANE GUINOISSEAU ; flowers very bright red, large, full, and of good form, very free, growth vigorous. A fine Rose.

208. SOUVENIR DE MADAME FROGÈRE ; flowers white, shaded with rose, large, full, and cupped ; fine long buds ; growth robust.

209. SOUVENIR DE MADAME JEANNE BALANDREAU ; flowers madder-red, shaded with vermilion ; growth moderate.

210. SPENSER (Wm. Paul & Son) ; flowers a beautiful satin pink, outer petals reflexed with white. A magnificent and effective Rose.

211. STAR OF WALTHAM (Wm. Paul & Son) ; flowers deep crimson, colour very rich and effective ; a magnificent flower of immense size, very full, and for form, substance, and smoothness of petal unequalled ; foliage very large without being coarse, of a rich dark green colour, forming a beautiful contrast with the flower.

212. SULTAN OF ZANZIBAR ; flowers blackish maroon, edged with red, globular.

213. SUZANNE MARIE RODOCANACHI ; flowers soft rosy cerise, large and full. A fine show Rose.

214. T. B. HAYWOOD ; flowers dark crimson, and of good shape.

215. THOMAS MILLS ; flowers bright crimson, large and double.

216. TOM WOOD ; flowers cherry red, large shell-shaped petals of great substance ; growth vigorous.

217. TRIOMPHE DE CAEN ; flowers brilliant scarlet, shaded with purple ; large and full ; growth vigorous.

218. ULRICH BRUNNER FILS ; flowers bright cerise red, very large and full ; a seedling from Paul Neyron, of magnificent petal, and in all respects one of the best.

219. ULSTER ; flowers large, salmon-pink in colour, full, and of great substance. A poor grower.

220. VICTOR HUGO ; flowers brilliant crimson, shaded with purple, very striking, of medium size, almost full. One of the best.

221. VICTOR VERDIER ; flowers rosy carmine, purplish edges, very large and full ; form cupped ; growth robust. One of the best. Raised by M. Lacharme at Lyons, Introduced in 1859. *See Coloured Plate in Rose Annual, 1860-61.*

222. VIOLETTE BOUYER ; flowers white, shaded with delicate flesh colour, large, full, and finely formed ; a seedling from Jules Margottin.

223. WALTHAM STANDARD (Wm. Paul & Son) ; flowers brilliant carmine, shaded with scarlet and violet, fine stout petals ; shape of A. K. Williams ; very sweet ; quite first-rate.

224. WHITE BARONESS ; a white sport from Baroness Rothschild, flowers large and full.

WILLIAM ASKEW ; *see* Group XXXVIII., section 3.

225. WILLIAM WARDEN ; a light sport from Madame Clemence Joigneaux, producing pink flowers of fine shape ; forces well.

226. XAVIER OLIBO ; flowers velvety black, shaded with amaranth, large and full ; very showy. One of the best, but a moderate grower only.

Rosa Indica.

GROUP XXXII.—THE BOURBON PERPETUAL.

This Group embraces the "Hybrid Perpetuals" of some Catalogues, in which the characters of the Bourbon Rose are strikingly developed. They are generally of dwarf and compact growth, with roundish shining leaflets. They form beautiful objects grown as Dwarfs or Dwarf Standards, and if planted in a rich soil are certain Autumnal bloomers; it is only necessary to keep them growing and every new shoot will bear bloom. The flowers are not large, but they are well formed and usually produced in clusters. They thrive best when closely pruned.

1. *BARON GONELLA*; flowers pink and lilac, shaded, large and full; form cupped, fine; growth moderate. Raised by M. Guillot père at Lyons. Introduced in 1859.

2. *BARONNE DE MAYNARD*; flowers beautiful pure white, of medium size, very smooth; flowers abundantly; growth moderate.

3. *BARONNE DE NOIRMONT*; flowers rose, large, full, and very sweet; form cupped, fine; growth moderate.

4. *BOULE DE NEIGE*; flowers pure white, petals of great substance, of medium size, fine form; good habit, hardy and free; growth vigorous. One of the best.

5. *COMTESSE DE BARBANTANNE*; flowers flesh colour, large and full; form cupped; growth vigorous. A good useful Rose. Raised by M. Guillot père at Lyons. Introduced in 1851.

6. *COMTESSE DE ROCQUIGNY*; flowers white; tinted with rosy salmon, beautiful.

7. *MADAME GUSTAVE BONNET*; flowers white, shaded with rose and carmine, of medium size, full; form globular; growth moderate.

8. *MADAME ISAAC PERIERE*; flowers rosy-carmine, extra large and full; form expanded; growth vigorous. One of the best.

9. *MADAME PIERRE OGER*; flowers white, edged with lilac, distinct and pretty.

10. *MARIE PARE*; flowers flesh colour, with deeper centres, of medium size, full, and of good form.

11. *MICHEL BONNET*; flowers beautiful rosy-peach, large, full, and of fine form; blooms freely. One of the best. Growth vigorous.

12. *REINE VICTORIA*; flowers bright rose, of perfect form, very perpetual; growth vigorous.

Rosa Indica.

GROUP XXXIII.—THE ROSE DES ROSOMANES.

Whence arose the Gloire des Rosomanes, the type of this group, it is difficult even to conjecture, so distinct is it in appearance from all its congeners. It was

raised by M. Vibert, of Angers, but I believe he did not know from what source. The brilliancy of the flowers caused some stir among lovers of Roses when it was first introduced, and cultivators have long been striving to obtain full Roses to vie with it in colour. This is now accomplished, and in this small group are some of the richest and most beautiful of high-coloured Roses. I have classed here only such kinds as have the features of the Gloire des Rosomanes plainly visible, although it is pretty evident that Lord Raglan, and others of like aspect, are of the same blood. But in these there is more of the Hybrid Chinese. The kinds of moderate and dwarf growth require close pruning; the others, which with the Tea-scented are the very finest of Wall-Roses, should be pruned sparingly.

1. ABBÉ BRAMEREL; flowers reddish crimson, shaded with dark velvety purple, large and full; form expanded; growth robust.

2. EMPEREUR DE MAROC; flowers rich velvety maroon, of medium size, very distinct; growth moderate. *See Coloured Plate in Rose Annual, 1860-61.*

3. EUGENE APPERT; flowers scarlet and crimson shaded, colour splendid; form expanded; blooms freely; growth robust; foliage fine.

4. GEANT DES BATAILLES; flowers crimson, shaded with purple; form expanded; growth vigorous. Raised by M. Nerard at Lyons. Introduced in 1845.

5. GLOIRE DES ROSOMANES; flowers brilliant carmine, large and semi-double. A good Autumn-blooming climbing Rose, of vigorous growth.

Rosa Indica.

GROUP XXXIV.—THE BOURBON ROSE.

The type of this group, which has furnished us with some of the most lovely Roses of Autumn, was discovered by M. Breon in the Isle of Bourbon in 1817. He noticed it growing among a lot of seedlings of a different cast, raised for forming a hedge. He took charge of and flowered it, and in 1819 sent seeds to M. Jacques, gardener at the Château de Neuilly, near Paris. A little later it found its way to England. Its origin is unknown, but it is supposed to be a hybrid between the Chinese and Four-Seasons. What a numerous progeny has it given birth to, and what a lovely assemblage they form, graduating from a pure white to the darkest tints! The brilliancy and clearness of the colours, the large smooth petals of the flowers, their circular outline, and the beauty of the foliage, have rendered them especial favourites. The tardy growth of Spring seldom produces them in full beauty; but the more rapid growth of Summer provides us with an ample supply of perfect flowers during the Autumn months.

The Bourbon Roses have been recommended for planting against walls, but they

are hardy and thrive well under ordinary culture. Surely, then, this extra care is unnecessary; we would rather choose the *Rose des Rosomanes* and Tea-scented for that purpose, for the former are improved by wall culture, and the latter need protection.

The kinds of vigorous growth form handsome standards; they also look chaste and elegant trained up pillars or poles. The moderate growers are very pretty as Dwarf Standards; the Dwarfs form striking and beautiful objects when grown on their own roots. A great many are excellent for pot culture, and are beautiful in the forcing-house. All prefer and delight in a rich soil, requiring (with the exception of the vigorous kinds) close pruning.

1. *ACIDALIE*; flowers pure white, their centres blush, large and full; form globular; growth vigorous. A beautiful Rose in fine weather. Very sweet. Raised by M. Rousseau at Angers. Introduced in 1833.

2. *A. MAILLÉ*; flowers bright carmine red, changing to deeper red; very large and full. A good Rose.

3. *ARMOSA*; flowers deep pink, of medium size, full; growth moderate. A most abundant bloomer, partaking somewhat of the Chinese. A good variety for planting in masses.

BARON GONELLA; *see* Group XXXII., Bourbon Perpetual.

BARONNE DE NOIRMONT; *see* Group XXXII., Bourbon Perpetual.

4. *CLIMBING SOUVENIR DE MALMAISON*; a climbing form of the well-known *Souvenir de Malmaison*.

COMTESSE DE BARBANTANNE; *see* Group XXXII., Bourbon Perpetual.

5. *DR CAZENEUVE*; flowers very dark purplish crimson, at times almost black, of medium size.

6. *EMPRESS EUGÉNIE*; flowers rosy blush, purple edges, large and full; form cupped; growth vigorous. A good free hardy Rose.

GLOIRE DES ROSOMANES; *see* Group XXXIII., *Rose des Rosomanes*.

HERMOSA; *see* *Armosa*.

7. *J. B. M. CAMM*; pale salmon-pink flowers; growth very vigorous. Rather a hard opener. Best on cut-back plants.

8. *KRONPRINZESSIN VICTORIA*; a sport from *Souvenir de Malmaison*; flowers milk white, tinted with sulphur-yellow. Good.

9. *LORNA DOONE* (Wm. Paul & Son); flowers magenta-carmine shaded with scarlet, large, full, and globular; very sweet; flowers produced with equal freedom both in Summer and Autumn.

10. *MADAME DESPREZ*; flowers rose and lilac shaded, produced in large clusters, large and full; form cupped; growth vigorous.

11. *MARQUISE BALBIANO*; flowers rose colour, tinged with lilac, large and full; form cupped, fine; growth vigorous, well furnished with handsome foliage.

12. MARIE THERESE DE LA DEVANSAYE ; resembling No. 8 ; flowers pure white, fine long buds, excellent for cutting.

13. MRS BOSANQUET ; flowers white, their centres delicate flesh, large and full ; form cupped ; growth vigorous. A beautiful Rose, sweet, and an abundant bloomer. Good either for bedding, pot-culture, or a standard.

14. MRS PAUL ; flowers blush white, shaded rosy peach ; large open flower like a Camellia. Distinct and handsome.

15. PRESIDENT DE LA ROCHETERIE ; flowers bright red, centres slightly shaded purple, very large ; cupped and sweet.

16. QUEEN ; flowers delicate salmon-flesh, often tinged with buff, large and very double ; form cupped, fine ; growth moderate. An abundant bloomer, sweet, and of fine habit ; excellent for bedding.

17. QUEEN OF BEDDERS ; flowers deep bright crimson, produced finely and in abundance till late in the Autumn.

18. ROBUSTA ; flowers velvety fiery red, changing to purple ; a fine Pillar Rose.

19. SIR JOSEPH PAXTON ; flowers bright rose shaded with crimson, large and full ; form expanded ; growth vigorous. A fine hardy Rose with handsome foliage, good for a wall or pillar.

20. SOUVENIR DE LIEUTENANT BUJON ; flowers clear red changing to carmine, free, handsome, and very sweet.

21. SOUVENIR DE MALMAISON ; flowers flesh-colour, their margins almost white, very large and full ; form compact ; growth vigorous. A magnificent Rose, with large thick petals. A fine sort for a Standard or Pot-culture. Raised by M. Beluze, at Lyons. Introduced in 1843. One of the best.

Rosa Semperflorens.

GROUP XXXV.—THE CRIMSON CHINESE ROSE.

The original of this group was introduced from China in 1789. There are perhaps no Roses more beautiful late in the year when the Autumn is mild. I was particularly struck with this in the Autumn of 1846. A few cold misty days had obscured their brightness, when warm weather succeeded, and the buds, which the wet and cold had sealed, suddenly expanded, producing a brilliant show in November. There are some very handsome blood-coloured Roses here. All are of a branching habit and of moderate growth. Some do not thrive well as Standards, but all luxuriate on their own roots, and form pretty and interesting objects budded on dwarf stocks. They thrive best in a rich soil, with close pruning ; there are none better for planting in clumps on lawns or in the flower-garden, where the soil is rich

CRIMSON CHINESE, CRAMOISIE SUPERIEURE (see GROUP XXXV.).

and tolerably dry, for they produce a great number and regular succession of flowers throughout the Summer and Autumn. The "Sanguinea" of this group is frequently seen growing on cottages and garden walls. In 1835 there was a plant of it growing on a wall at North Stoneham Parsonage, 27 feet high, covered with flowers from the summit to the ground.

1. ABBE MIOLAND; flowers reddish purple, often streaked with white, large and very double; form globular.

AGRIPPINA; *see* Cramoisie Supérieure.

2. ALBA (*White*); flowers white, tinged with straw-colour, of medium size, double; form cupped.

3. BELLE DE FLORENCE; flowers pale cherry, produced in elegant clusters, of medium size, semi-double; form cupped. A showy Rose.

4. CRAMOISIE EBLOUISSANTE (*L'Eblouissante*); flowers vivid crimson, small and full.

5. CLIMBING CRAMOISIE SUPÉRIEURE; a very vigorous growing form of Cramoisie Supérieure.

6. CRAMOISIE SUPÉRIEURE; flowers velvety crimson, of medium size, very double; form cupped; exquisite in bud. A good Pot Rose. Growth moderate.

CRIMSON; *see* Sanguinea.

7. EUGÈNE BEAUHARNAIS (*Prince Eugène*); flowers amaranth, the buds beautiful when first unfolding, sometimes dying off blackish crimson, large and very double; form cupped.

8. FABVIER; flowers crimson scarlet, of medium size, semi-double; form expanded. One of the most brilliant of Roses, very showy, and a superb kind for planting in masses.

9. FIELD MARSHAL; a splendid addition to brilliant-flowered Climbing Roses. The blossoms are very large, full, and of beautiful shape. Being so double, they are very lasting, and from the free-flowering nature of the group this Rose inherits good Autumn-flowering qualities.

LADY OF THE LAKE; *see* Alba.

L'EBLOUISSANTE; *see* Cramoisie Eblouissante.

10. LOUIS PHILIPPE; flowers dark crimson, the edges of the centre petals almost white, of medium size, full; form globular. Raised at Angers.

11. NEMESIS; flowers very dark red; distinct.

12. PRINCE CHARLES; flowers brilliant crimson, often suffused with light purple, of medium size, full; form cupped.

13. SANGUINEA or OLD CRIMSON; flowers crimson, small and very double.

WHITE; *see* Alba.

Rosa Indica.

GROUP XXXVI.—THE CHINESE OR MONTHLY ROSE.

The varieties of this and the preceding species are included in one group by many cultivators ; and in some of the hybrids the balance is so nicely adjusted that it is hard to say to which species they belong. But the majority are well marked in character. Compare, for instance, Alba, Cramoisie Supérieure, Fabvier, &c., of the former group, with Archduke Charles and Napoleon of the present. Archduke Charles, and many others classed here, are distinct and beautiful as variegated Roses : they expand rose and white, soon become mottled with then change wholly to, crimson, from the action of the sun's rays. Strange that he who bids the colours of other expanded Roses fly at his approach should lend these a deeper and more brilliant tint ! It is to this and the preceding group, crossed with the Tea-scented and Hybrid Perpetuals that we owe that rich crop of our finest Autumn-flowering Bedding Roses of which Corallina and Sulphurea are examples.

The varieties of this group are also of even growth, although more robust than the Crimson Chinese ; they are suited for the same purposes, thriving under common treatment. It has been said that the Bourbon Roses are hardier than the Chinese, which has led many to suppose that they are easier of culture ; but nothing could be more contrary to fact. The Bourbons *are less susceptible of frost* ; but if we except the varieties hybridized with the Tea-scented, the Chinese are of the freest growth. The first Chinese Rose was introduced from China in 1789. The varieties which have sprung from it are too numerous to be described, and withal *resemble each other so closely* that we content ourselves with making a selection of the best.

1. ARCHDUKE CHARLES ; flowers rose, their margin almost white when newly expanded, gradually changing to rich crimson, from which peculiarity the plant bears flowers of various tints at the same time ; very large and full ; form expanded.

2. AURORE ; flowers creamy yellow tinted with salmon, rose, and carmine ; foliage tinted with purple ; distinct and beautiful.

3. BARONNE PISTON DE ST. CYR ; flowers pale flesh colour, bright and distinct, very attractive ; of medium size, and of regular shape, with large petals ; vigorous and free blooming.

4. CLARA SYLVAIN (*Lady Warrender*) ; flowers pure white, large and full ; form cupped. A very fine Rose, suitable either for the borders or the greenhouse.

5. CLIMBING WHITE PET ; a climbing form of Little Pet, described below.

6. COMMON or OLD CHINA ; flowers bright pink, very free flowering.

7. CORA ; flowers clear yellow tinted carmine, medium size, perfect shape. Very beautiful.

8. DUCHER ; flowers pure white, of medium size and fine form, full. Promising as a free and continuous white bedding Rose.

9. DUKE OF YORK (Wm. Paul & Son) ; flowers variable between rosy-red and white, sometimes pale with deep red centres, sometimes white edged and tipped with carmine in the way of Homer.

FELLENBERG ; *see* Group XL., Noisette Roses.

10. FRAU SYNDICA ROELOFFS ; flowers bright yellow, shaded with coppery red and peach ; handsome buds ; very sweet.

11. INDICA MISS LOWE'S VARIETY ; single crimson.

12. INDICA MISS WILLMOTT ; flowers single, coppery yellow in colour. Very pretty.

13. IRENE WATTS ; flowers salmon-white in bud, changing to salmon-rose ; long buds, very free and good.

14. JEAN BACH SISLEY ; flowers opening delicate silvery-rose, outer petals salmon-rose lined and veined with carmine, large for its class, and very sweet ; a beautiful and distinct variety.

15. LITTLE PET ; flowers white, small and double ; a pretty miniature Rose, and exceedingly free in flowering. Probably a Hybrid between the Chinese and Sempervirens.

16. L'OUCHE ; flowers pale rosy flesh reflexed with yellow ; large, full, fine conical buds ; growth vigorous.

17. MADAME BRÉON ; flowers rich rose-colour, sometimes a little tinged with salmon, very large and full ; form compact. A beautiful Rose with handsome foliage.

18. MADAME EUGENE RESAL ; flowers variable, ranging from coppery-red to bright china rose on an orange ground, exceedingly rich and effective, large and double, with fine petals. Splendid for massing.

19. MADAME H. MONTEFIORE ; flowers salmon-yellow, shaded with apricot and carmine. Very elegant buds.

20. MADAME LAURETTE MESSIMY ; flowers salmon-rose shaded with yellow ; a beautiful and distinct variety. The flowers are produced continuously and in great profusion, which renders it one of the best Roses for massing.

21. MARIA SAGE ; flowers china rose, shaded flesh colour.

MRS BOSANQUET ; *see* GROUP XXXIV., Bourbon.

22. NABONNAND ; flowers rose-colour when first opening, changing to deep velvety-crimson, large, full, and fine.

23. NAPOLEON ; flowers blush, mottled with pink, large and double ; form cupped.

24. QUEEN MAB (Wm. Paul & Son) ; flowers soft rosy apricot, centre of flower shaded with orange and the outside tinted with rose and violet. It blooms with

wonderful freedom, and is one of our best roses for garden decoration, especially in late summer and autumn, when the beautiful colours of the flowers are intensified by the lengthening nights.

25. RED PET ; flowers small, colour dark crimson.
 26. RIVAL DE PAESTUM ; flowers white, shaded yellow.
 27. SOUVENIR DE A. TERREL DES CHENES ; flowers yellow, shaded with rose
 28. VIRIDIFLORA ; flowers green, curious.
- WHITE PET ; *see* Little Pet.

Rosa Indica.

GROUP XXXVII.—THE LAWRENCEANA OR FAIRY ROSE.

The first of these interesting Roses was introduced from China in 1810. The varieties form pretty objects cultivated in pots, rarely exceeding a foot in height. Thousands of them are sold every year, and beautiful they are when covered with their tiny blossoms. In dry soils the Fairy Roses may be planted in masses, also as edgings for beds in the Rosarium ; for the latter purpose the hardiest kinds should be chosen. They require the same treatment as the varieties of the succeeding group.

1. ALBA or BLANC ; flowers white, delicate.
BLUSH ; *see* Fairy.
2. FAIRY (*Blush*) ; flowers pale pink.
3. GLOIRE DES LAWRENCEANAS ; flowers dark crimson.
4. JENNY (*Rubra*) ; flowers bright crimson.
5. LA DESIRÉE ; flowers crimson.
6. NIGRA ; flowers very dark crimson.
7. RETOUR DU PRINTEMPS ; flowers bright rose.
RUBRA ; *see* Jenny.

Rosa Indica.

GROUP XXXVIII.—THE TEA-SCENTED ROSE AND ITS HYBRIDS.

In 1810 the blush Tea-Scented Rose was introduced from China, and fourteen years later the Yellow variety was received from the same country. They have given birth to a very numerous family, some remarkable for their large thick petals ; others for possessing a strong tea-like scent ; and others for the delicacy and bewitching

tints of the flowers. It has been said, both by French and English writers on this subject, that the Yellow, although a fertile seed-bearer, never produces varieties worthy of notice. As if to redeem its character from this aspersion, a few years ago it produced, *in this country*, the *Devoniensis*,* one of the handsomest of the group, raised by Mr Foster of Plymouth, with others from the same parent, one of which was a Noisette of a yellow cast.

Within the last few years the Tea-scented Roses have increased considerably in number, and have been greatly varied in character by cross fertilisation. They are now cast in three sections—1. Tea-scented and hybrids of climbing growth; 2. Tea-scented of moderate and dwarf growth; and 3. Hybrid Tea-scented of moderate and dwarf growth. These hybrids are mostly the result of crosses among themselves or with the Hybrid Perpetuals, and are a great acquisition to our gardens; they are also hardier than the original varieties. It is difficult to decide to which group some of these hybrids most properly belong, as the features of their respective parents are often so evenly balanced in the offspring that one can hardly say which they most nearly resemble.

It must be admitted that this beautiful group is worthy of special culture (see p. 180). The varieties require a rich well-drained soil, close pruning, and, *if grown out of doors*, they thrive best in a tolerably warm soil. It must not, however, be overlooked that many of the Tea-scented Roses recently introduced are much hardier than the older varieties.

If trained to a wall with a south or east aspect the Tea Roses grow vigorously and flower in great beauty, much earlier and finer than in the open ground, producing a constant succession of flowers for one-half of the year. They also flower well grown in pots and plunged in the open ground, if removed to a cold frame during Winter. But for Pot culture under glass, for Forcing, and for planting out in the Conservatory they are unsurpassed.

SECTION I.—*Varieties of Extra Vigorous or Climbing Habit.*

1. ABBÉ THOMASSON; flowers salmon, with coppery centre, shading off to yellowish white at the edges of the petals.

2. BELLE LYONNAISE; flowers deep canary-yellow, changing to white, slightly tinted with salmon, large, full, and of fine form. One of the best.

3. BILLIARD ET BARRÉ; flowers rich golden yellow, large, almost full, globular, buds superb when half open. A most effective Rose; one of the best.

4. CHESHUNT HYBRID; flowers maroon-crimson, changing to slaty red, large and full; a useful climbing Rose, its principal defect being the dull hue of the expanded flowers. Very hardy.

* Since the publication of an early edition of this Work, I have been told that this fine Rose was not *raised* at Plymouth, but brought there from the West of France. The story is a long one, and the evidence in support of it reliable and weighty. Still the late Mr Pince of Exeter, in a letter now before me, clearly claims for it an English origin.

5. CLIMBING BELLE SIEBRECHT (*Mrs W. J. Grant*) (Wm. Paul & Son); a well developed form of the Hybrid Tea variety Belle Siebrecht, producing large quantities of fine rosy red flowers similar to the type. A most valuable addition to the deep rosy red perpetual Roses, both for indoor and outdoor cultivation.

6. CLIMBING CAPTAIN CHRISTY; flowers delicate flesh colour, deeper in the centre, large.

7. CLIMBING CAROLINE TESTOUT; an extra vigorous form of this superb Rose.

8. CLIMBING DEVONIENSIS; flowers very pale creamy white, their centres sometimes buff, sometimes yellowish; very large and full; form cupped.

9. CLIMBING KAISERIN AUGUSTA VICTORIA; a valuable addition to this section. Its blossoms resemble those of the well-known dwarf form.

10. CLIMBING LA FRANCE; flowers equal to the old variety, but growth very vigorous. An excellent pillar or climbing Rose.

11. CLIMBING MADAME DE WATTEVILLE; a strong growing form of this popular Rose.

12. CLIMBING METEOR; a climbing sport of The Meteor; flowers dark velvety crimson. A grand Rose, but requires a warm position.

13. CLIMBING NIPHETOS; flowers pure white, similar in all respects to Niphetos; habit thoroughly climbing.

14. CLIMBING PERLE DES JARDINS; pure yellow, flowers identical with Perle des Jardins. A fine addition to the climbing kinds.

15. CLIMBING SOUVENIR DE WOOTTON; a very vigorous growing form of this excellent free blooming rosy red Rose.

16. DAWN; large semi-double rosy pink flowers, produced in clusters. Makes a fine isolated bush.

17. DR ROUGES; flowers red, with yellowish centres; of irregular form, resembling a Cactus Dahlia; of good effect on the plant.

18. DUCHESSE D'AUERSTÆDT; flowers bright yellow, shaded with nankeen at the centre; very vigorous.

19. ENGLAND'S GLORY; a seedling from Gloire de Dijon crossed with Belle Siebrecht; flowers large, full, and well formed, the petals deeper than Gloire de Dijon; flesh colour, centre satiny pink, highly perfumed. A splendid grower, and very hardy.

20. E. VEYRAT HERMANOS; flowers apricot and carmine reflexed with red; very sweet, distinct, and good, but rather a shy bloomer.

21. FANNY STOLWERCK; flowers yellow and salmon-rose shaded with peach and reflexed with copper; buds coppery carmine. A fine variety.

22. FRANCOIS CROUSSE; flowers bright scarlet-crimson, sometimes fiery red; large, full, and of good shape; hardy for its class, and a real acquisition.

23. FUSION; a seedling from No. 37, but of more vigorous growth; flowers deep chamois-yellow in the centre, the outer petals changing to saffron yellow, of medium size, full.

24. GERMAINE TROCHON ; flowers nankeen yellow shaded salmon flesh and rose, hardy, and of good foliage.
25. GLOIRE DE DIJON ; flowers yellow shaded with salmon, very large and full ; a superb variety for wall or pillar. One of the hardiest and best. Raised by M. Jacotot at Dijon. Introduced in 1853.
26. GLOIRE DE PUY D'AUZON ; flowers carmine centre shaded with yellow ; a brilliant and transparent colour ; distinct and beautiful.
27. GROSSHERZOG ERNST LUDWIG ; flowers carmine rose, large and full.
28. GUSTAVE REGIS ; flowers canary yellow, centre saffron yellow, edges sometimes tinged with carmine ; large and semi-double. Very handsome elongated buds.
29. HENRIETTE DE BEAUVEAU ; flowers bright yellow ; large, full, and globular ; very free. One of the best and most effective yellow roses.
30. KAISERIN FRIEDRICH ; apparently a sport from Gloire de Dijon, flowers shaded with red when dying off ; good and hardy.
31. LE SOLEIL ; flowers rich glossy yellow, fine thick petals. A beautiful Rose.
32. MADAME ALFRED CARRIERE ; one of the most beautiful climbing Roses we possess. The colour is flesh white shaded with salmon ; large and full. Sweet-scented, growth extra vigorous.
33. MADAME BARTHELEMY LEVET ; flowers bright canary yellow, a very effective colour ; of medium size, full, and finely shaped.
34. MADAME BERARD ; flowers clear salmon-rose ; large, full, and of fine form, good habit and free. Splendid in autumn. One of the best.
35. MADAME CHARLES MONNIER ; flowers rosy-flesh, centre yellow shaded with salmon and orange, in autumn entirely orange yellow ; large, full, and globular, growth semi-climbing.
36. MADAME CHAUVRY ; flowers nankeen shaded with rose, reverse of petals coppery, distinct and handsome ; one of the best.
37. MADAME EUGÈNE VERDIER ; flowers deep chamois-yellow, large and finely formed ; very sweet ; one of the best.
38. MADAME JULES GRAVEREAUX ; flowers buff-white, shaded peach colour ; free and good.
39. MADAME JULES SIEGFRIED ; flowers creamy white, slightly shaded with flesh, deeper centre ; sweet and good.
40. MADAME MARIE LAVALLEY ; flowers bright rose, shaded and reflexed with white, large semi-double ; very effective.
41. MADAME MOREAU ; flowers coppery yellow with deeper centre, reverse of petals rosy apricot ; a fine climbing Tea. One of the best.
42. MARECHAL NIEL ; a truly splendid Rose, flowers beautiful deep yellow, large, full, and globular form ; very sweet. A most rampant growing kind, and grand for the conservatory. Raised by M. Pradel at Montauban. Introduced in 1864.

CLIMBING TEA—WALTHAM CLIMBERS (see GROUP XXXVIII.).

43. MONSIEUR DESIR; flowers velvety crimson often shaded with violet, large and double, good form and habit. One of the best dark coloured climbers.

44. NOELLA NABONNAND; a gorgeous semi-double velvety crimson Rose with extra large petals. It is the result of a cross between Bardou Job and Reine Marie Henriette, and is a great achievement. It is extra vigorous in growth, and will doubtless become one of our best decorative wall Roses.

45. PAPILLON; flowers coppery salmon-rose, of medium size, semi-double; very free in blooming.

46. PINK ROVER (Wm. Paul & Son); flowers very pale pink, deeper in the centre, buds long, clean, and handsome, most useful for button-holes; growth semi-climbing.

47. PRINCESS MAY (Wm. Paul & Son); flowers pure soft opaque pink, full and regular in shape. Especially good under glass.

48. REINE MARIE HENRIETTE; sometimes called a red Gloire de Dijon. Its flowers are fulgent crimson, large and full; magnificent and effective.

49. REINE OLGA DE WURTEMBERG; flowers very brilliant red, large and semi-double. A hardy and showy climbing rose. Extra vigorous, almost evergreen, foliage handsome.

50. ROSETTE DE LA LEGION D'HONNEUR; flowers rosy-red, small and exquisitely shaped.

51. SOUVENIR DE MADAME JOSEPH METRAL; flowers bright cerise, illumined with crimson and vermillion; very large, full, and of splendid shape and substance.

52. SOUVENIR DE MADAME LÉONIE VIENNOT; flowers yellow passing to amber, shaded cochineal; medium size, perfect shape, and freely produced.

53. SOUVENIR DE PRINCE CHARLES D'ARENBERG; flowers clear yellow, freely produced in summer and autumn.

54. VALENTINE ALTERMANN; flowers pure white, medium size, full, and finely shaped.

55. WALTHAM CLIMBER NO. 1 (Wm. Paul & Son); flowers bright rosy-crimson, shaped like a Camellia when expanded; growth extra vigorous. This and No. 56 are two brilliant wall Roses.

56. WALTHAM CLIMBER NO. 3 (Wm. Paul & Son); darker than the last named. Flowers beautifully recurved at edges of petals; very fragrant.

57. WHITE MARECHAL NIEL (Deegen's); a sport from Marechal Niel, with creamy white flowers.

SECTION II.—Varieties of more Moderate Growth.

1. ABRICOTÉ (*Fanny Dupuis*); flowers apricot colour, their margins flesh colour, large and double; form cupped; growth moderate. A beautiful Rose.

2. ADAM ; flowers rich rosy salmon, very large and full ; form globular ; growth moderate. A superb Rose, and very sweet. Raised by M. Adam at Rheims ; introduced about 1838.

3. ADRIENNE CHRISTOPHLE ; flowers yellow, copper, and apricot, shaded with rosy peach and deep yellow, large and full ; growth vigorous. Distinct and beautiful. Raised by M. Guillot fils at Lyons. Introduced in 1868.

4. ALBA ROSEA ; flowers white, centres rose, large, full, and very sweet ; growth vigorous.

5. ALBERT FOURES ; flowers yellow, shaded with coppery red, large and full, opening well.

6. ALBERT PATEL ; flowers bronzy red shaded with yellow ; very rich in colour ; of medium size.

7. ALBERT STOPFORD ; flowers deep bright carmine rose with coppery centre. Fine petals of great substance ; very free blooming and effective.

8. ALLIANCE FRANCO-RUSSE ; flowers bright yellow, shaded with salmon in centre ; handsome buds. A good and striking new Rose.

ALEXANDRA ; *see* The Alexandra.

9. AMAZONE ; flowers deep yellow, large and full ; growth vigorous. A beautiful variety.

10. ANNA CHATRON ; flowers large, full, and well formed ; long and pointed bud ; colour cream bordered with rose.

11. ANNA OLIVIER ; flowers flesh-coloured rose, the reverse of petals rose, large, full, and of good form. A distinct and good variety ; growth vigorous.

12. ARCHIDUCHESSE MARIA IMMACULATA : flowers brick-red, shaded with salmon, centre vermilion, large and full, distinct.

13. BARONNE ADA ; flowers creamy white, with chrome yellow centres ; fine large buds.

14. BARONNE DE HOFFMANN ; coppery red shaded with yellow.

15. BARONNE C. DE ROCHETAILLÉE ; long canary yellow buds, shaded with pink ; open flowers sulphur tinted with salmon ; very large, with stout petals.

16. BEAUTÉ INCONSTANTE ; flowers coppery red, shaded with carmine and yellow ; variable ; of irregular shape. Distinct and beautiful. Very fragrant.

17. BERYL ; flowers deep golden yellow ; rather small but pretty buds.

BON SILENE ; *see* Silene.

18. BOUGÈRE ; flowers deep salmon colour, very large and full, the petals of unusual substance ; form cupped ; growth vigorous. A superb Pot or Forcing Rose. Raised by M. Bougère at Angers. Introduced in 1832.

19. CAPTAIN PHILIP GREEN ; flowers cream colour, in the way of Marie van Houtte, large petals ; growth vigorous.

20. *BOADICEA* (Wm. Paul & Son); flowers pale peach tinted with pink and violet, the centre richly shaded with rose, large, full, high centred, and of fine elongated form with large stiff petals. A grand Rose for exhibition and also for garden decoration. Sweetly fragrant. Growth vigorous.

21. *BRIDESMAID*; a clear bright pink sport from Catherine Mermet. One of the best for forcing.

22. *CATHERINE MERMET*; flowers flesh coloured rose; large, full, and one of the best. Raised by M. Guillot fils at Lyons. Introduced in 1869.

23. *CHAMELEON* (Wm. Paul & Son); flowers flesh colour, somewhat variable, with a distinct and heavy blotch of deep crimson on the outside of the petals, which is an exceptionally pretty feature in the buds. A good decorative variety.

24. *CHRISTINE DE NOUË*; a splendid rose with very thick petals; large, full, and sweet. Its colour is deep rosy crimson, sometimes shaded with salmon-rose. Especially good in Autumn and for forcing. Growth vigorous.

25. *CLEOPATRA*; flowers flesh colour shaded with rose. A magnificent bloom for the exhibition. It has long pointed buds; and the expanded flowers deep and broad petals. Growth moderate.

26. *COMTESSE DE BARDI*; flowers pale yellow, outer petals flushed with rose, shell petals, medium size; buds long and pointed.

27. *COMTESSE DE FRIGNEUSE*; flowers bright canary yellow, fine and striking, large and full, very free.

28. *COMTESSE DE NADAILLAC*; flowers coppery yellow, centres salmon colour, growth moderate, one of the best.

29. *COMTESSE DE PANISSE*; flowers rosy buff, shaded with carmine and violet; large and full.

30. *COMTESSE DE RUFFI DE ROUX*; flowers bright carmine pink, shaded crimson and madder in the centre; long pointed buds.

31. *COMTESSE FESTETICS HAMILTON*; flowers brilliant carmine with coppery centre, outer petals deeper in colour. A very distinct Rose, splendid for massing. Growth vigorous.

32. *COMTESSE OLIVIER DE LORGERIL*; buds deep rose shaded with salmon-red; open flowers bright rose, reverse of petals coppery red; growth robust.

33. *COMTESSE RIZA DU PARC*; flowers salmon-rose tinted with copper, large, full, and globular; a distinct, effective, and most floriferous variety.

34. *COMTESSE SOPHY TORBY*; the Summer flowers are peach red, coppery red centres; the Autumn flowers bright coppery orange with salmon centres. Very large and full, with handsome regular petals.

35. *COQUETTE DE LYON*; flowers canary-yellow, of medium size, fine form, and full; growth vigorous.

36. *CORNELIA KOCH*; flowers yellowish white, large and full; growth moderate.

TEA-SCENTED, EMPRESS ALEXANDRA OF RUSSIA (see GROUP XXXVIII.).

37. *CORALLINA* (Wm. Paul & Son); flowers deep rosy crimson, shaded with coral red; large petals, especially beautiful in the bud state. Growth vigorous. One of the finest Roses of its colour for bedding, massing, or cutting. A splendid autumnal bloomer. As free as the old pink Monthly Rose.

38. *CORINNA* (Wm. Paul & Son). The only fault of this exquisite Rose is that it blooms so abundantly. The flowers are flesh colour shaded with rose and suffused with a warm flush of tawny copper. Growth vigorous.

39. *DAINTY* (Wm. Paul & Son); flowers primrose-yellow with yolk of egg centre, petals edged and tipped with carmine; medium size; neat flower, produced in large and elegant clusters. A good decorative variety.

40. *DEVONIENSIS*; flowers creamy white; their centres sometimes buff sometimes yellowish, very large and full; form cupped. A splendid Rose.

41. *DR ALBERT MOULONGUET*; flowers deep yellow shaded with coral red. The coral red centre reflexed with golden brown; large and full; growth moderate.

42. *DR FELIX GUYON*; flowers deep orange, centre shaded with apricot. Very large, opens well, fine buds, and very sweet. Growth vigorous.

43. *DR GRILL*; flowers coppery yellow in the centre, shading to clear rose, reverse of petals rose colour. Distinct. Growth vigorous.

44. *DUC DE CAYLUS*; flowers large, fairly full, good shape; colour dark rosy magenta, suffused with cream and canary yellow. Growth vigorous.

45. *DUC DE MAGENTA*; flowers bright rosy salmon shaded with flesh-colour and fawn, very large and full; growth moderate. A fine Rose, with large thick petals. *See Coloured Plate in Rose Annual 1860-61.*

46. *ELAINE GREFFULHE*; flowers pure white, large, perfect shape, pointed blooms. Very full.

47. *ELISE FUGIER*; flowers pure white slightly shaded with yellow in the centre. In the way of *Niphetos* but of better habit. Vigorous.

48. *EMILIE GONIN*; flowers white tinted with orange-yellow on a deeper ground, each petal broadly edged with carmine. Very large and full.

49. *EMPRESS ALEXANDRA OF RUSSIA* (Wm. Paul & Son); a fine Rose of a novel and very taking shade of colour. The buds are bronzy salmon, open flowers rich lake red shaded with orange and fiery crimson; very large, full, and globular. A gorgeous decorative rose of great beauty; growth vigorous.

50. *ENCHANTRESS* (Wm. Paul & Son); for garden decoration this Rose is almost unequalled. The plant produces a continuous supply of strong growths crowned with fine trusses of lovely creamy white, buff shaded blooms; large, full, and globular form. For winter blooming it stands unrivalled.

51. *ERNEST METZ*; flowers soft carmine rose with brighter centre, reverse of petals deeper; very large and finely formed; growth vigorous.

52. *ERNESTINE VERDIER*; flowers varying shades of pink and rose colour; free blooming; growth vigorous.

TEA-SCENTED, ETENDARD DE JEANNE D'ARC (see GROUP XXXVIII.).

53. *ETENDARD DE JEANNE D'ARC*; flowers creamy white changing to pure white; very large and full, opening well; a seedling from Gloire de Dijon; very free.

54. *ETOILE DE LYON*; flowers fine saffron yellow, brighter in centres; large, full, and of superb form and habit; requires a hot season.

55. *FAIRY QUEEN* (Wm. Paul & Son); flowers pale fawn merging into creamy white, and richly suffused with rosy-cerise, especially in the outer petals. A good decorative variety; medium size; vigorous growth.

56. *FORTUNA* (Wm. Paul & Son); flowers apricot colour shaded with buff, outer petals slightly tinged with red, large size, especially good for bedding; vigorous.

57. *FRANCIS DUBREUIL*; flowers rich velvety crimson, with beautifully formed buds; excellent for cutting.

58. *FRANCISCA KRUGER*; flowers coppery yellow shaded with peach, large and full.

59. *FRAU GEHEIMRATH VON BOCH*; flowers creamy yellow, edged and shaded with carmine. Deep petals, distinct.

60. *GARDEN ROBINSON*; flowers purplish carmine with paler centres; large, full, of good shape, and sweet; growth robust.

61. *GENERAL GALLIENI*; flowers bright cerise, base of petals coppery orange, reflexed bright red. Pointed buds. A profuse bloomer.

62. *GENERAL SCHABLIKINE*; flowers coppery red, large and full; exceedingly free and effective.

63. *GEORGES SCHWARTZ*; flowers deep canary yellow, very rich in colour, distinct and excellent; growth moderate.

64. *G. NABONNAND*; flowers pale rose shaded with yellow; very large petals and handsome buds. Exceedingly free, and one of the loveliest Roses for bedding or massing.

65. *GOLDEN GATE*; flowers rich creamy white, centre and base of petals golden yellow, often tipped with rose. A fine flower and very distinct. A good exhibitor's Rose.

66. *GOLDQUELLE*; flowers golden-yellow, of medium size, fairly full, growth moderate. Beautiful buds.

67. *GOUBAULT*; flowers bright rose, very large and double; form expanded. The young buds of this Rose are of the most elegant form, showing a rich deep crimson as the sepals part. Very sweet; growth vigorous.

68. *GRANDE DUCHESSE ANASTASIE*; large oval carmine buds, open flowers rosy salmon shaded with golden yellow at the base. Very large, full and sweet, and of perfect form; growth vigorous.

69. *HATCHIK EFFENDI*; flowers yellow shaded with rosy peach, centre reddish. Large and full.

70. *HOMER*; flowers blush rose and salmon; very variable; form cupped; growth vigorous. A good hardy free blooming sort.

71. HON. EDITH GIFFORD ; flowers flesh colour, centres salmon rose changing to white, large and full ; one of the best.

72. INNOCENTE PIROLA ; flowers cream colour, centres shaded with yellow, large, full, and globular ; in the way of *Devoniensis*.

73. IRISH BEAUTY ; a single-flowered Tea Rose with large blossoms pure white in colour.

74. IRISH GLORY ; single flowers of a beautiful marbled pink, very large and showy, produced continuously.

75. IRISH MODESTY ; single flowers, colour coral pink.

76. ISABELLE RIVOIRE ; flowers salmon-rose reflexed with apricot, centre coppery, fine oval buds.

77. ISABELLA SPRUNT ; flowers sulphur-yellow, produced abundantly, beautiful in bud ; growth vigorous.

78. JANET LORD ; flowers salmon shaded to bright rose, small, cupped shaped, produced on erect stems in great quantities during Summer and Autumn.

JAUNE ; *see* Yellow.

JAUNE OF SMITH ; *see* Smith's Yellow.

79. JEAN DUCHER ; flowers lemon to salmon-yellow, centres shaded with peach ; large and full ; form globular ; growth vigorous. One of the best.

80. JEAN PERNET ; flowers beautiful bright yellow passing to clear yellow, large, full, and altogether first-rate ; growth vigorous. Raised by M. Pernet of Lyons.

81. JEANNE FORGEOT ; flowers pale yellow on outer petals, centre golden yellow shaded with rose, handsome elongated buds ; growth moderate.

82. JOSEPHINE DAUPHIN ; flowers white, slightly tinted with yellow at the centre. Very large, with long buds. A handsome Rose.

83. JULES FINGER ; flowers rose, shaded with salmon, changing to deep rose, large, full, and finely formed ; very free.

84. LA BOULE D'OR ; flowers fine golden yellow, petals broad and smooth, large and full ; form globular ; growth robust. A fine Rose under glass only.

85. LADY MARY CORRY ; flowers deep golden yellow, of good size, perfect form ; freely produced.

86. LADY ROBERTS ; doubtless a sport from the well-known rose Anna Ollivier. Colour rich apricot, base of petals coppery red, edges of petals shaded orange, long pointed bud and large full flowers.

87. LUCIE CARNEGIE ; flowers salmon-rose shaded with coppery carmine.

88. LUCIE FAURE ; flowers lemon yellow, small pointed buds ; a good bedder.

89. LUCIOLE ; flowers bright crimson rose tinted with coppery yellow, reverse of petals bronzy ; large and full, very sweet ; buds long ; a beautiful Rose.

90. MA CAPUCINE ; flowers bright copper colour ; distinct ; not very double.

91. M. ADA CARMODY (Wm. Paul & Son); flowers ivory white shaded and edged with pink, centre slightly tinted with yellow. A very delicate and beautiful combination of shades, large and full; fine long buds; growth robust.

92. MADAME ANTHONY CHOQUENS; buds amaranth, reverse of petals deep rose, open flowers currant red; base and back of petals shaded with apricot tints. A rich blending of colours.

93. MADAME ANTOINE MARI; ground colour rose, freely washed and shaded with white; very handsome buds which open well; growth extra vigorous and free from mildew; fine for forcing and cutting. One of the best of recent novelties.

94. MADAME BADIN; flowers deep violet pink heavily shaded with black; very pretty; growth vigorous.

95. MADAME BERKELEY; flowers salmon-white, fine petals, semi-double, but very good; growth robust.

MADAME BRAVY; *see* Alba Rosea.

96. MADAME CAMILLE; flowers salmon-pink, large and full; form cupped; growth vigorous.

97. MADAME CAROLINE KUSTER; flowers pale yellow, deeper centres, large and full, form globular; growth vigorous.

98. MADAME CHARLES; flowers apricot-colour, pleasing in bud; growth vigorous. One of the best of its colour.

99. MADAME CHEDANE GUINOISSEAU; flowers canary yellow, very beautiful in bud; large, full, of fine form, and very free.

100. MADAME CLEMENCE MARCHIX; flowers cochineal red tinted with rose, handsome deep cherry red buds; growth vigorous.

101. MADAME C. P. STRASSHEIM; flowers yellowish white in Summer, sulphur yellow changing to buff in Autumn. Very free and excellent.

102. MADAME CUSIN; flowers purplish rose, centres slightly tinted with yellowish white; medium size; full, distinct, and beautiful.

103. MADAME DE LOISY; flowers rosy salmon, heavily-tinged with chamois yellow and carmine. Quite distinct, large, and full; growth vigorous.

104. MADAME DE ST JOSEPH; flowers pink, with deeper centres, sometimes dying off apricot-colour, very large and double; form expanded; growth moderate.

105. MADAME DE WATTEVILLE; flowers salmon-white, each petal bordered with bright rose like a Tulip; large and full; buds long; one of the best.

106. MADAME DE TARTAS; flowers bright rose, large, full, and produced abundantly; growth moderate.

107. MADAME EDOUARD HELFENBEIN; flowers chamois yellow, shaded and veined with apricot and carmine rose. Very distinct and beautiful; growth vigorous.

108. MADAME E. PERRIN; large flower, coppery yellow, base of petals creamy white, shaded with yellow and mauve. Fine in a hot season.

109. MADAME EMMA VERCELLONE; flowers rich coppery-red, base of petals golden-yellow; growth vigorous.

110. MADAME ERRERA; flowers variable, base of petals coppery orange, outer petals flushed and veined with rose, large and full.

111. MADAME FALCOT; flowers rich saffron-yellow, large and very double; petals large and thick; growth moderate. In the way of Safrano, but of a higher colour. A good Pot-Rose. Raised by M. Guillot fils at Lyons. Introduced in 1858 and still one of the best.

112. MADAME FRANÇOIS JANIN; flowers orange yellow, centres coppery, of medium size, blooms freely, very sweet; growth vigorous.

113. MADAME GEORGES DURRSCHMIDT; flowers rose, shaded with cerise and yellow. Very large and full.

114. MADAME HENRI BERGER; flowers china rose colour, long pointed buds opening to large full flowers. Very sweet; growth vigorous.

115. MADAME H. POTWOROWSKA; flowers amaranth, shaded with rose, and reflexed paler; growth vigorous.

116. MADAME HONORÉ DEFRESNE; flowers fine deep yellow, reflexed with copper, large, full, and finely shaped.

117. MADAME HOSTE; flowers pale lemon yellow, large, full, and perfect shape. A splendid Rose; invaluable for bedding and garden decoration.

118. MADAME JACQUES CHARRETON; outer petals milky white, centre of flower coppery salmon; distinct; buds large and handsome; growth vigorous.

119. MADAME JEAN DUPUY; flowers yellowish rose with reddish golden yellow centres, outer petals edged with rose. Large and full, opening well; growth vigorous; almost thornless. A fine rose.

120. MADAME JEANNE PHILIPPE; golden yellow; growth vigorous.

121. MADAME LA BARONNE BERGE; flowers pale yellow, edges of petals bright rose, perfect in form, in the way of Homer, but of more regular shape. Very free; growth vigorous.

122. MADAME LAMBARDE; flowers salmon-pink, shaded with rose and yellow, sometimes the pink and sometimes the yellow colour predominating; large, full, and globular, perfect in shape, and petals fine. One of the best.

123. MADAME LOUIS PONCET; flowers nasturtium red, base of petals coppery rose; growth vigorous.

124. MADAME LUCIEN DURANTON; outer petals creamy white, centre of flower coppery salmon, large and cupped, firm stalks; growth vigorous.

125. MADAME LUCIEN LINDEN; flowers deep yellowish tan, reflexed with salmon rose, centre coppery red; growth vigorous.

126. MADAME MARGOTTIN; flowers beautiful dark citron-yellow, the centres of a deeper shade; large and of globular form; growth vigorous. Requires a hot season.

127. MADAME MARIE CALVAT ; top of petals deep red, base ivory white, tinted flesh colour ; growth robust.

128. MADAME PAULINE LABONTE ; flowers salmon, circumferences creamy buff, very large and full ; form expanded ; growth vigorous. A good hardy sort.

129. MADAME P. PERNY ; flowers pure saffron-yellow changing to whitish yellow, very beautiful in bud, of medium size, not full.

130. MADAME RENE GERARD ; flowers coppery yellow shaded with red ; distinct and beautiful in bud.

131. MADAME RENÉE DE ST MARCEAU ; orange yellow buds shaded with carmine, opening flowers tinted with orange, large and full. In the way of Souvenir de Catherine Guillot. Growth vigorous.

132. MADAME VERMOREL ; flowers rose, coppery yellow centre, extra large buds, on strong stems ; growth vigorous ; fine for cutting, also for exhibition. A first-rate novelty.

133. MADAME VILLERMOZ ; flowers white, centres fawn and salmon, large and full ; form cupped ; growth vigorous. Raised by M. Lacharme at Lyons.

134. MADAME WELCH ; flowers pale yellow, with deep orange centres.

135. MADEMOISELLE GERMAINE RAUD ; flowers creamy white, deeper in centre, large, fairly full, flowering in clusters. A good decorative Rose.

136. MADEMOISELLE YOVNNE GRAVIER ; creamy yellow, reverse of petals pale rose, shaded with canary yellow ; distinct and beautiful.

137. MAID OF HONOR ; a deep rosy pink sport of Catherine Mermet.

138. MAMAN COCHET ; flesh-coloured rose shaded with carmine and salmon yellow, large and full, fine large bud. A magnificent rose of vigorous growth.

139. MARGHERITA DI SIMONE ; buds carmine and orange yellow, open flowers varying from bright rose to carmine shaded and reflexed with orange ; fine for massing.

140. MARIA CHRISTINA REINE D'ESPAGNE ; colour poppy red, small, long, perfect shaped bud ; free flowering.

141. MARGUERITE KETTEN ; flowers yellowish peach tinged with pale rose, base of petals golden yellow ; growth vigorous.

142. MARIE D'ORLEANS ; flowers bright rose shaded, large and full. A fine Tea Rose ; very hardy.

143. MARIE VAN HOUTTE ; flowers white slightly tinted with yellow, often edged with rose ; large, full, and good ; growth vigorous. Raised by M. Ducher at Lyons. Introduced in 1871. One of the best.

144. MARQUES D'ALEDO ; flowers brilliant ruby red reflexed with purple and rayed with white ; semi-double and robust.

145. MARQUISE DE CHAPONNAY ; imbricated flower salmon yellow shaded fawn ; moderate grower.

146. MARQUISE DE VIVENS ; flowers pale rose, centres shaded with yellow ; semi-double.

147. MEDEA (Wm. Paul & Son) ; flowers lemon colour, canary yellow centres, clear and bright, open flowers globular ; growth vigorous. A magnificent exhibition Rose.

148. META ; crushed strawberry colour suffused with saffron, base of petals coppery yellow ; growth vigorous.

149. MISS ETHEL BROWNLOW ; flowers bright salmon pink, shaded with yellow at base of petals, large, and of good form.

150. MISS AGNES C. SHERMAN ; flowers soft rose, centre brighter rose tinted with salmon red, large and full, perfect shape ; growth vigorous.

151. MOIRET ; flowers fawn, sometimes yellowish, exquisitely tinted with rose, variable, very large and full ; form cupped, fine ; growth vigorous. A superb Rose and very sweet.

152. MORNING GLOW (Wm. Paul & Son) ; flowers bright rosy crimson richly suffused with orange and fawn. A most fascinating combination of colours. Large massive petals. A distinct and charming variety for massing. Growth vigorous.

153. MRS B. R. CANT ; flowers deep rose on outer petals, and in the Autumn frequently a rich red, inner petals soft silvery rose suffused with buff at the base, of good substance and symmetrical in form ; a hardy variety and a vigorous grower.

154. MRS EDWARD MAWLEY ; flowers bright carmine shaded with salmon, very large, of good shape ; growth vigorous.

155. MRS JAMES WILSON ; flowers deep lemon yellow, edge of petals tipped with rose ; growth vigorous.

156. MRS OLIVER AMES ; a soft blush white sport from Mrs Pierpont Morgan, with a little deeper shading on the edges of petals ; has been awarded several medals and certificates in America as a new variety of merit.

157. MRS PIERPONT MORGAN ; a sport from Madame Cusin, with bright cerise or rose pink flowers ; growth vigorous.

158. MRS REYNOLDS HOLE ; flowers deep purplish rose, centre tinted with crimson, very large and full ; fine buds produced singly on long stems ; good foliage, growth vigorous.

159. MRS STEPHEN TRESEDER ; a fine lemon-coloured sport from Anna Ollivier ; free growing and perpetual. Very good.

160. MURIEL GRAHAME ; a sport from Catherine Mermet, pale cream faintly flushed with rose.

161. NARCISSE ; flowers pale yellow, of medium size, full ; form cupped, fine ; growth moderate.

162. NIPHETOS ; flowers white, their centres pale lemon, Magnolia-like, very large and full ; form globular. A distinct and beautiful Rose of moderate growth. Raised by M. Bougere at Angers.

163. PAPA GONTIER ; flowers rosy crimson, buds long, clean, and handsome ; not double enough for a show Rose, but excellent for cutting and forcing purposes.

164. PAUL NABONNAND ; flowers pink, large and full ; form and habit fine.

PAULINE LABONTE ; *see* Madame Pauline Labonté.

165. PERLE DES JARDINS ; flowers canary yellow, centres orange yellow, large and full ; growth vigorous. One of the best.

166. PREFET MONTEIL ; flowers canary yellow shaded with sulphur, tinted with coppery carmine as the flowers expand ; large, moderately full, of good form ; growth moderate.

PRESIDENT ; *see* Adam.

167. PRINCE THEODORE GALITZINE ; flowers deep orange yellow, produced abundantly on good stiff stems ; large, full, and opens well ; growth vigorous.

168. PRINCESS BEATRICE ; flowers pale yellow, with golden yellow centres, edge of petals slightly laced with rose ; large and full.

169. PRINCESS OF WALES ; outer petals rosy yellow, centres golden yellow, large, and of perfect form.

170. PRINCESSE ALICE DE MONACO ; flowers creamy yellow edged with rose, centre peach colour, handsome buds ; very free and effective ; one of the most beautiful decorative Tea Roses.

171. PRINCESSE DE SAGAN ; flowers velvety crimson shaded with blackish purple and reflexed with amaranth ; of medium size, full, growth vigorous. A brilliant bedding rose.

172. PRINCIPESSA DE NAPOLI ; flowers pale rose, base of petals cream colour, fine long buds ; hardy and free, vigorous.

173. QUEEN OLGA OF GREECE (Wm. Paul & Son) ; flowers deep soft rosy pink, centre shaded with yellow, edges of petals slightly paler ; large, not very full, but of good shape. An exceedingly free blooming variety, fine for bedding and massing. Growth vigorous.

174. RAINBOW ; a sport from Papa Gontier, flowers pink striped with crimson ; distinct and pretty ; growth vigorous.

175. RAOUL CHAUVRY ; long pointed semi-double buds abundantly produced ; colour yellow shaded apricot ; a charming bedding kind ; growth vigorous.

176. REICHSGRAF E. VON KESSELSTATT ; flowers bright carmine, changing to deep rose on a white ground, broadly edged with deep red ; growth vigorous. A most lovely Rose.

177. REINE NATHALIE DE SERBIE ; flowers flesh colour, shaded lightly with yellow, large and full.

178. RUBENS ; flowers white, shaded with rose, centres bronzy yellow, large and full ; form cupped, fine ; growth vigorous. A good and distinct sort. Raised by M. Robert at Angers. Introduced in 1859.

179. SAFRANO ; flowers saffron to apricot in the bud, changing to pale buff, large and double ; form cupped. A pretty and hardy variety, worthy of a place in every collection ; growth vigorous. Raised by M. Beauregard at Angers. Introduced in 1839.

180. SAFRANO A FLEURS ROUGES ; flowers coppery red, pretty in bud.

181. SALMONEA (Wm. Paul & Son) ; flowers deep bright crimson with light salmon centres, a remarkable and attractive contrast of colours ; large and full.

182. SAPPHO (Wm. Paul & Son) ; flowers fawn colour suffused with rose, centre deep yellow ; growth vigorous.

183. SHIRLEY HIBBERD ; flowers nankeen - yellow, of medium size ; growth moderate.

184. SILÈNE (*Bon Silène*) ; flowers rosy salmon, large and full.

185. SMITH'S YELLOW (*Yellow Noisette*) ; flowers pale straw colour, large and full ; form globular. A fine forcing Rose, but seldom opens well out of doors.

186. SOCRATES ; flowers deep rose, centres apricot, large and full ; growth vigorous.

187. SOMBREUIL ; flowers white, tinged with rose, very large and full ; form cupped ; growth vigorous. A good hardy free flowering sort. Raised by M. Robert at Angers. Introduced in 1850.

188. SOUVENIR DE CAMILLE GODDE ; base of petals golden yellow shaded with rose, the upper part bright magenta and the outside pale yellow. A beautiful combination of colour ; large, double, and cupped ; growth vigorous.

189. SOUVENIR DE CATHERINE GUILLOT ; flowers coppery carmine, centre shaded with orange ; an exceedingly rich-coloured Rose of great excellence ; growth fairly vigorous.

190. SOUVENIR D'ELISE VARDON ; flowers creamy white, centres yellowish, very large and full ; form globular, fine ; growth robust. A splendid Rose.

191. SOUVENIR DE GABRIELLE DREVET ; flowers salmon-white, centres coppery rose, large and full, very sweet.

192. SOUVENIR DE J. B. GUILLOT ; colour varying from deep nasturtium red shaded with crimson to bright coppery red, according to the temperature. Very rich and effective ; growth vigorous.

193. SOUVENIR DE JEANNE CABAUD ; flowers coppery yellow, centre apricot and carmine ; growth vigorous.

194. SOUVENIR DE LADY ASHBURTON ; flowers coppery red and salmon, variable, either tint prevailing at times ; very free and lovely ; growth vigorous.

195. SOUVENIR DE MADAME LEVET ; flowers deep yellow shaded with orange ; very distinct and attractive ; growth moderate, and the variety is very tender.

196. SOUVENIR DE MADAME SABLEYROLLES ; flowers rosy salmon shaded with yellow, edge of petals lined with carmine changing to creamy white ; growth vigorous.

197. SOUVENIR DE PAUL NEYRON ; flowers salmon-yellow, edged with rose ; large, full, of fine form, freely produced ; growth vigorous.

198. SOUVENIR DE PIERRE NOTTING ; fine apricot yellow washed with golden yellow and shaded with orange ; very large and full, opening well. A most promising novelty.

199. SOUVENIR DE R. TERREL DES CHENES ; large yellowish white flower, shaded with carmine rose ; free flowering.

SOUVENIR DE S. A. PRINCE ; *see* The Queen.

200. SOUVENIR DE THERESE LEVET ; flowers bright deep red shaded, of medium size, full. Beautiful in bud.

201. SOUVENIR DE WILLIAM ROBINSON ; a lovely combination of pink, white, apricot, and violet ; the buds are especially rich and effective ; a very beautiful new Rose of the tinted class ; growth vigorous.

202. SOUVENIR D'UN AMI ; flowers salmon and rose shaded, large and full ; form cupped ; growth vigorous. Introduced by M. Belot-Defougere in 1846. One of the best.

203. SULPHUREA (Wm. Paul & Son) ; flowers bright sulphur yellow, distinct and striking ; plant hardy, of good habit, and very free blooming, with rich bronze foliage, which contrasts handsomely with the colour of the flowers. A fine bedding or massing Rose, also very fine for pot culture.

204. SUNRISE ; outer petals reddish carmine shading to delicate fawn and pale salmon within, the warmer tints predominating, open flowers yellow ; growth moderate. A beautiful Rose for forcing, but not a success outdoors.

205. SUNSET ; a sport from Perle des Jardins, bearing flowers similar to that variety in form and substance, but of a deep apricot colour ; beautiful in bud, and a fine forcing variety.

206. SYLPH (Wm. Paul & Son) ; flowers ivory white tinted with peach colour, centre creamy pink, a very lovely blending of colours ; large, high centred, and deep stiff petals ; habit erect, a magnificent exhibition Rose, also good for garden decoration ; hardy and vigorous.

207. THE ALEXANDRA (Wm. Paul & Son) ; flowers pale buff with orange yellow centres shaded with apricot and bronze ; very beautifully shaped, exceedingly attractive. A fine bedding Rose.

208. THE BRIDE ; a white sport from Catherine Mermet ; the flowers are equal in quality to those of the parent Rose, and are carried well above the foliage. In all respects a first-class Rose.

209. THE QUEEN ; a pure white sport from Souvenir d'un Ami. Of American origin. A very valuable white Rose ; hardy and free.

210. THE SWEET LITTLE QUEEN ; narcissus yellow, centre ochre yellow shaded with salmon rose and orange ; very sweet, growth moderate.

211. VICOMTESSE R. DE SAVIGNY ; flowers rose shaded with salmon, centre yellowish white ; growth vigorous.

212. WHITE BOUGERE ; a pure white sport of this useful old Rose.

HYBRID TEA, AURORA (*see* GROUP XXXVIII.).

213. WHITE MAMAN COCHET; a sport from Maman Cochet with snowy white flowers usually tinged with blush or cream; a distinct and beautiful variety. Quite first-rate.

214. YELLOW (*Flavescens*) (*Jaune*); flowers sulphur coloured, large and double; form globular. The petals of this Rose are very large, the buds long and beautiful in a half expanded state.

215. ZEPHYR (Wm. Paul & Son), flowers sulphur yellow changing to nearly white as the flowers expand; large and full, of cupped form, free and elegant; growth vigorous, and very hardy.

SECTION III.—Hybrid Tea Roses.

1. ADINE; flowers orange-yellow, the base mixed with rose and carmine; large, full, and of good form; growth moderate.

2. ADMIRAL DEWEY; a beautiful light blush sport from Caroline Testout; flower of good size; plant vigorous. A very good addition to this group.

3. AIMEE COCHET; flowers flesh colour with rosy peach centre; large, full, and well formed; good grower.

4. ALICE FURON; flowers yellowish white, large and globular; habit of Lady M. Fitzwilliam, but rather more vigorous.

5. ALICE LINDSELL; colour creamy white with pink centre; large, full, and perfectly formed flowers. Very fine.

6. AMATEUR TEYSSIER; flowers canary yellow with deep saffron centre; growth vigorous.

7. ANTOINE RIVOIRE; flowers rosy flesh shaded and bordered carmine, base of petals yellow. The flowers are large, full, and imbricated. A splendid Rose for all purposes.

8. ANTOINE WEBER; pale rose colour; large full pointed flowers, produced abundantly and continuously.

9. APOTHEKER G. HOFER; flowers bright red, large and full; long buds; strong grower.

10. ARDS PILLAR; colour rich velvety crimson, large full cupped blooms. Good enough for exhibition in cool weather.

11. AUGUSTINE GUINOISSEAU; a rosy white sport from La France; flowers not quite so full as the parent, but they are produced in great profusion. An excellent Rose for massing. Deliciously fragrant and vigorous.

12. AUGUSTINE HALEM; flowers carmine rose shaded with purple; medium size and good form; free flowering and sweet.

13. AURORA (Wm. Paul & Son); centre of flowers rich bright salmon-pink shading paler towards edge of petals; large, full, and imbricated; buds rich in colour and of beautiful shape; extra fragrant; exceedingly free and always in bloom; growth vigorous.

14. BALDWIN (Helen Gould); colour beautiful pure carmine; full camellia-shaped flowers; free blooming; growth vigorous.

15. **BARDOU JOB** ; probably a hybrid of *Gloire des Rosomanes* ; rich crimson flowers shaded with black ; semi-double. Very fine ; late flowering.

16. **BEATRIX COMTESSE DE BUISSERET** ; clear rose shaded rosy carmine. A seedling from *Caroline Testout*. Growth vigorous.

17. **BEAUTÉ LYONNAISE** ; flowers white slightly tinted with pale yellow. The flowers are large, full, and very handsome, but growth is only moderate.

18. **BELLE SIEBRECHT** (Mrs W. J. Grant). One of the best of this popular section. The flowers are most freely produced on good stiff stems. They are of exquisite form, petals large and shell-like. The colour is bright rosy pink. Excellent for bedding or forcing.

19. **BESSIE BROWN** ; colour creamy white ; immense flowers of perfect shape and great substance ; free blooming and vigorous. The flowers are impatient of wet, and they also droop, which detracts much from this Rose as a decorative variety.

20. **CAMOENS** ; flowers bright glossy rose shaded with yellow at the centre ; of medium size, full, and free flowering ; one of the best bedding Roses.

21. **CAPTAIN CHRISTY** ; flowers delicate flesh, deeper in the centre ; large. A most effective Rose ; one of the best ; growth robust.

22. **CAPTAIN CHRISTY, ROUGE** ; a rich coloured sport of this old favourite Rose.

23. **CAROLINE TESTOUT** ; one of the most beautiful introductions of recent years. In many respects it resembles *La France*, but differs in form, and the growth is more vigorous. Petals large and shell-shaped. Abundant bloomer.

24. **CHARLOTTE GILLEMOT** ; a very fine Rose, but rather wanting in vigour. Flowers are large, beautifully imbricated like a *Camellia*, and ivory white in colour.

25. **CLARA WATSON** ; a fine Rose, exquisitely formed ; colour salmon-pink ; not large enough for exhibition, but an excellent garden variety ; very floriferous and of vigorous habit. First-rate.

26. **COMTESSE VITALI** ; long pointed buds ; colour saffron carmine, creamy white when open ; growth vigorous.

27. **CONRAD STRASSHEIM** ; flowers white washed with rose, reverse of petals rosy carmine, centre bright rose ; extra large, full, and continuous bloomer.

28. **COUNTESS OF CALEDON** ; flowers pale rose with deeper centres ; large perfectly formed flowers ; distinct.

29. **COUNTESS OF PEMBROKE** ; flowers soft satin rose colour, full, and sweetly scented ; growth vigorous.

30. **DAISY** ; colour rosy pink suffused with silvery pink ; very fragrant ; blooms large and perfectly formed.

31. **DANMARK** ; in the way of *La France*, flowers more regular in shape, almost as round as a cricket ball. The colour is rather deeper than *La France*. Flowers usually produced singly on good stiff stems. Grand for pot culture, but a hot season is required to perfect the blooms outdoors.

32. DUC ENGELBERT D'ARENBERG ; outer petals alabaster white, centre of flowers pale rose ; large, full, and imbricated ; growth vigorous.
33. DUCHESS OF ALBANY (Wm. Paul & Son) ; fine deep pink, in the way of La France, but darker in colour ; quite first-rate ; growth vigorous ; splendid for forcing.
34. DUCHESS OF EDINBURGH ; flowers bright rosy crimson ; large and double ; growth vigorous.
35. DUCHESS OF PORTLAND ; flowers pale yellow ; very large and of good habit. In the way of Kaiserin Augusta Victoria.
36. EDITH DOMBRAIN ; colour white tinged with pink. The blooms are large, full, and perfect. Imbricated form. Good for exhibition.
37. EDMOND DESHAYES ; flowers creamy white with flesh-coloured centres, fine double flowers with evenly imbricated petals ; growth moderate.
38. ELLEN WILLMOTT ; moderately sized neat blush white flower, most delicate in colour, sweet and very beautiful.
39. EXQUISITE (Wm. Paul & Son) ; flowers bright crimson shaded with magenta, large, full, and globular ; buds large, long, and clean, open flowers of even regular shape, produced continuously in great profusion. A grand Rose for forcing, yielding large quantities of fine flowers as fragrant as La France. Also good out-doors. Growth vigorous.
40. FARBENKOENIGIN ; clear red tinted with salmon and silvery rose, large and with fine long buds ; growth vigorous.
41. FERDINAND BATEL ; colour variable from rosy flesh on a yellow ground to nankeen orange ; remarkable for the contrasts of its colour.
42. FERDINAND JAMIN ; flowers rosy carmine shaded salmon, in the way of Madame Abel Chatenay, larger and fuller ; globular ; very promising.
43. FRANZ DEEGEN ; growth vigorous ; flowers large, full, and of beautiful form ; colour pale yellow, centre golden yellow. Very free.
44. FRAU PETER LAMBERT ; flowers dark pink shaded rose in centre, large full flowers produced singly on stiff stems. Very free. A good show and bedding variety.
45. FRIEDRICH HARMS ; lemon yellow with orange centre, large full flowers ; growth vigorous.
46. GARDENIA ; pure white, very double, small gardenia-like flowers of great beauty.
47. GLADYS HARKNESS ; flowers salmon pink, very large, good constitution and fragrant. A fine Rose.
48. GLOIRE LYONNAISE ; flowers white tinted with yellow, large, full, and of good shape, habit good and quite distinct ; growth vigorous.
49. GOLDELSE ; dark golden yellow, colour constant, full, large, and sweet. A sport from Kaiserin Augusta Victoria.
50. GRACE DARLING ; flowers creamy white tinted and shaded with peach colour ; distinct flowers, large and full. One of the best. Very hardy.

51. GRAND DUC ADOLPHE DE LUXEMBOURG ; flowers rosy red, reverse of petals brilliant lake, two distinct colours. One of the most beautiful of this group.

52. GROSSHERZOGIN VICTORIA MELITA ; creamy lemon, free and good.

53. GRUSS AN TEPLITZ ; brilliant cinnabar scarlet shaded with velvety fiery red ; a very effective decorative Rose. Fine for massing or pegging down. Very vigorous.

54. GUSTAVE SOBRY ; flowers reddish gold shading to clear yellow, large full long buds, sweet scented ; free blooming.

HELEN GOULD ; *see* Baldwin.

55. HELENA CAMBIER ; flowers variable from salmon to coppery rose, becoming lighter as flowers open ; medium size, full ; growth vigorous.

56. HELENE GUILLOT ; colour varying from pure white to salmon white, tinted with carmine, centre sometimes shaded with orange yellow and rose, large, full, camellia-shaped flowers.

57. HIPPOLYTE BARREAU ; flowers carmine tinted with velvety crimson, large, full, and very sweet.

58. JEANNE BUATOIS ; fine pearly white, slightly tinted with flesh and reflexed with yellow, a fine bud, opening well.

59. JOHANNA SEBUS ; a fine full well-formed flower, imbricated, bright satiny rose shot with yellow. In the way of Grace Darling in colour, but more intense, and does not fade ; growth vigorous.

60. JOHN RUSKIN ; colour bright rosy carmine, the blooms are very large, perfectly formed ; vigorous.

61. JOSEPHINE MAROT ; white slightly washed with rose, large expanded flowers, double, and vigorous.

62. JULES TOUSSAINT ; flowers brownish red, base of petals citron yellow, and reverse of petals slightly silvery ; growth vigorous.

63. KAISERIN AUGUSTA VICTORIA ; pure white with yellow centre, outer petals reflexed ; a very free and effective decorative Rose ; also fine for exhibition ; growth vigorous. One of the best.

64. KILLARNEY ; flowers flesh colour shaded with white and suffused with pale pink. A showy flower with large petals and fine long buds ; growth vigorous. A splendid Rose.

65. LA FRAICHEUR ; pale rose with bright carmine centres ; very pretty and effective, fine long buds ; growth moderate.

66. LA FRANCE ; beautiful pale peach, rose centre, very large and full, very free bloomer ; a fine bedding and decorative Rose. Useful for all purposes, extra fragrant ; growth vigorous.

67. LA FRANCE DE '89 ; brilliant rosy red, sometimes lined with white, very large pæony-like flowers, free, with long buds ; distinct and showy ; growth vigorous.

68. LA TOSCA ; flowers soft pink tinted with rosy white and yellow, large and full ; very free flowering, promises to be a useful bedding Rose.

69. LADY BATTERSEA ; flowers bright rosy crimson, tinted with orange, changing to rose as the flowers expand. Very pretty in bud ; growth vigorous. A fine Rose under glass.

70. LADY CLANMORRIS ; creamy white with salmon centre, petals edged with pink ; growth vigorous.

71. LADY HENRY GROSVENOR ; flowers flesh colour, large, full, and globular. A good garden Rose ; growth vigorous.

72. LADY MARY FITZWILLIAM ; flowers delicate flesh colour, large, full, and globular ; one of the best. A moderate grower.

73. LADY MOYRA BEAUCLERC ; flowers bright madder rose with silvery reflex, distinct, and good either for garden, exhibition, or pot culture.

74. LAURE WATTINNE ; colour brilliant rose, long perfectly formed buds which develop into a fine bold flower.

75. LIBERTY ; flowers rich velvety crimson, fine stiff petals ; splendid for forcing, also for outdoor cultivation. Growth fairly vigorous.

76. L'INNOCENCE ; flowers pale milk-white, perfect globular formed flowers produced on vigorous erect shoots ; free blooming and vigorous.

77. MA TULIPE ; flowers deep crimson, semi-double, very large petals, free and effective ; growth vigorous.

78. MADAME ABEL CHATENAY ; one of the best roses of recent introduction, not so much as a show bloom as for its excellent decorative qualities and attractive colour. The latter is rosy carmine shaded with vermilion rose and tinged with salmon ; base of petals deeper. Flowers of exquisite shape, not large, but full and fragrant ; growth vigorous.

79. MADAME AUGUSTINE HAMONT ; clear satin-rose, very large and sweet ; vigorous.

80. MADAME CADEAU RAMEY ; flowers rosy flesh shaded with yellow at the base of petals, and edged with rosy carmine ; large, full, and of perfect form. Quite first-rate.

81. MADAME EDMÉE METZ ; flowers rosy-pink shaded with salmon ; very free.

82. MADAME EUGENIE BOULLET ; flowers rose tinted with yellow and carmine ; large and double. A most beautiful and distinct variety.

83. MADAME FELIX FAIVRE ; flowers clear satin-rose tinted with carmine, large, fairly full, with handsome buds like Luciole ; growth vigorous.

84. MADAME JOSEPH COMBET ; a continuation of the type of which Gloire Lyonnaise was the inception. Its flowers are very large and full, and the petals well arranged ; the colour is creamy white. A beautiful Rose, but does not always open well ; growth almost climbing, with bold and massive foliage.

85. MADAME JULES FINGER ; flowers creamy white changing to almost pure white, fine globular form, full ; growth moderate.

86. MADAME JULES GROLEZ ; flowers fine satiny China rose, very bright, large, and full ; very finely shaped, and exceedingly free blooming. One of the best of the group.

87. MADAME J. P. SOUPERT ; flowers almost white, sometimes lemon-white or pale yellow ; strong, sturdy, and good, with growth in the way of Caroline Testout.

88. MADAME LECONTE ; flowers chamois-yellow shaded with salmon ; large, fairly full, with handsome buds ; growth vigorous.

89. MADAME PERNET DUCHER ; an effective decorative Rose. When opening the buds are canary yellow, but they quickly change as they expand to creamy white. These expanded flowers are almost single, but as they are so numerously produced the complete effect is very striking. The growth is vigorous.

90. MADAME RAVARY ; the buds are golden-yellow, open flowers orange-yellow ; very effective. A fine bedding and decorative Rose of recent introduction ; growth vigorous. One of the best.

91. MADAME VIGER ; beautiful pale rose, edges and reverse of petals silvery white tinted with carmine ; autumn flowers almost white, long handsome buds which open well ; good for forcing and cutting ; growth vigorous ; extra free flowering.

92. MADAME WAGRAM, COMTESSE DE TURENNE ; bright satin-rose in opening, changing to carnation ; extra large bud and flower. A very fine Rose ; growth vigorous.

93. MADEMOISELLE DE KERJEGU ; flowers silvery rose, resembling Caroline Testout. Good.

94. MAGNAFRANO ; a promising novelty with rosy red flowers.

95. MAMIE ; flowers rosy carmine, with yellow base. Beautiful shape ; growth vigorous.

96. MARGUERITE JURON ; flowers China-rose, shaded with red ; growth robust,

97. MARIE ISAKOF ; flowers deep apricot, changing to pale canary-yellow, large and cupped ; wood and foliage of Caroline Testout ; growth vigorous.

98. MARIE LOUISE POIRET ; flowers pale rose, with deeper centre, fine large petals, good ; growth vigorous. Fine for exhibition.

99. MARJORIE ; flowers white, suffused with salmon-pink ; of medium size and exquisite form ; growth robust.

100. MARK TWAIN ; flowers large and full, buds pointed ; colour delicate pink, with dark carnation-red shading. Blooms produced on stiff stems ; growth vigorous.

101. MARQUISE DE SALISBURY ; flowers brilliant velvety red, almost full, buds long ; extra fine for massing and cutting ; growth vigorous.

102. MARQUISE LITTA ; flowers carmine-rose, vermilion centre, large, full, and cupped ; growth fairly vigorous. A fine show Rose, also valuable for massing.

103. MILDRED GRANT ; blush white, tinted with pink ; flowers of great size and substance, with high pointed centre, and large shell-like petals. A splendid exhibition flower.

104. MINA BARBANSON ; flowers beautiful silvery rose, large and nearly full ; very free blooming and handsome ; growth vigorous.

105. MONSIEUR BUNEL ; flowers rosy peach, shaded with yellow and edged with bright rose ; very full and compact ; somewhat flat, but a fine Rose ; growth vigorous.

106. MRS ROBERT GARRETT ; flowers soft pleasing pink, buds long and pointed, very large ; growth vigorous.

MRS W. J. GRANT ; *see* Belle Siebrecht.

107. PAPA LAMBERT ; flowers pure rose colour, with deeper centre, extra large, full, and very sweet, with long handsome buds, a seedling from White Lady. A fine exhibition Rose ; growth robust.

108. PAPA REITER ; flowers yellowish white, free ; growth vigorous.

109. PAULINE BERSEZ ; flowers creamy white, with yellow centres, large, full, and globular, fine buds, and very free blooming.

110. PERLE VON GODESBERG ; a golden-yellow sport from Kaiserin Augusta Victoria ; highly recommended from Germany, where it originated.

111. PHARISAER ; buds long on stiff stems, of splendid texture, flower very large, rose colour shading to silver, with centre of salmon ; very free.

112. PIERRE WATTINNE ; colour rosy cerise, shaded with yellow and salmon ; large beautifully formed flowers.

113. PRECIOSA ; flowers deep velvety carmine changing to crimson ; free and effective ; growth moderate.

114. PRINCE DE BULGARIE ; flowers silvery flesh, deeper in the centres, delicately shaded with salmon and pale rose, very distinct and charming ; in the way of Souvenir du President Carnot ; fine for forcing.

115. PRINCESS BONNIE ; flowers rich vivid crimson, large, semi-double, with fine petals ; exceedingly fragrant ; beautiful long buds ; growth vigorous.

116. ROBERT SCOTT ; a seedling from Merveille de Lyon crossed with Belle Siebrecht ; very large, full, rosy pink flowers, shading to flesh colour on the outer petals ; excellent alike for out-door flowering in summer and for winter blooming under glass.

117. ROSOMANE GRAVEREAUX ; flowers silvery white, reverse of petals tinted rose ; growth vigorous.

118. SHANDON ; flowers deep carmine with reddish centres ; growth vigorous.

119. SOUVENIR DE JEAN KETTEN ; flowers rosy carmine, centre shaded with silvery salmon, extra large, cupped, very full and sweet ; of good habit, and free and continual blooming.

120. SOUVENIR DE MADAME CAMUSAT ; outer petals of flowers pale rose, centre bright carmine ; growth robust.

121. SOUVENIR DE MADAME ERNEST CAUVIN; flowers soft rosy flesh, edges of petals bright rose, centres pale yellow, often shaded with orange; a good variety; growth moderate.

122. SOUVENIR DE MADAME EUGÈNE VERDIER; flowers white shaded with salmon and deeper yellow; large and very full, with good stems, good; growth vigorous.

123. SOUVENIR DE MADAME G. DELAHAYE; flowers bright carmine, shading to rose at the edges of petals; large, full, and globular; very free flowering and sweet.

124. SOUVENIR DE MADAME DRIVON; flowers pale rosy flesh; large, full, good.

125. SOUVENIR DE WOOTTON; flowers rosy red, very free; valuable for forcing and cutting; growth vigorous.

126. SOUVENIR DU PRESIDENT CARNOT; flowers rosy flesh shaded with white, fine long buds on stiff and long stems, quite first-rate; growth vigorous.

127. TENNYSON (Wm. Paul & Son); flowers large, very full, and handsome; their colour is pearly white shaded with flesh colour and pale pink, exceedingly attractive, whilst the form is all that can be wished for, being regular and high centred; highly esteemed both for beauty and profusion of its flowers; growth robust.

128. THE METEOR; flowers dark velvety crimson, retaining its colour well; very free and valuable for forcing and cutting purposes; growth vigorous.

129. VIOLONISTE EMILE LEVEQUE; flowers rosy carmine tinted with yellow, orange centre; large full, of good form; first rate.

130. VISCOUNTESS FOLKESTONE; flowers creamy pink, centre salmon-pink, large and sweet. Very distinct and attractive. One of the best for garden decoration and massing; growth vigorous.

131. WILLIAM FRANCIS BENNETT; flowers crimson, large, very fragrant. A valuable variety for winter blooming; growth fairly vigorous.

132. WHITE LADY (William Paul & Son); magnificent creamy white flowers with large magnolia-like petals; one of the handsomest and most effective Roses, and perfectly distinct. One of the best either for exhibition or garden decoration.

133. WILLIAM ASKEW; flowers bright satiny rose, shading off to pale rose at the tips of the petals; large cupped-shaped flowers; growth vigorous.

Rosa Moschata.

GROUP XXXIX.—THE MUSK ROSE AND ITS HYBRIDS.

The Musk Rose is supposed to have been introduced to England about the year 1596, and by reason of its long residence among us has become widely spread throughout the country. The original Musk Rose is a rambling shrub, abounding in Madeira and the North of Africa, also in Persia; indeed, it is generally supposed that the Attar of Roses is made from the species now under consideration. The flowers, which form in large clusters, seldom appear till late in summer; their peculiar musk-like scent is a point of distinction, although not so powerful as some authors would lead us to believe; it is one of the fine things of nature, which requires the existence of special circumstances—a still moist atmosphere—to be readily appreciable. These Roses are of rapid growth, best adapted for climbers; they are not sufficiently hardy to bear exposure in bleak unsheltered situations. They require long pruning.

1. BRUNONIANA; flowers white, with yellow stamens, single; a variation from the type, with more glaucous foliage; growth vigorous.

2. ELISA WERRY; flowers nankeen, changing to white.

3. FRINGED; flowers white, the petals serrated; form cupped.

MADAME D'ARBLAY; *see* Group XVIII., The Multiflora Rose.

NIVEA; *see* page 339.

4. PISSARDII; flowers blush, tinged with pink, small and single; growth vigorous. A profuse and continuous bloomer.

5. PRINCESSE DE NASSAU; flowers yellowish straw; form cupped; very sweet.

6. RIVERS; flowers pink, shaded with buff.

THE GARLAND; *see* Group XVIII., The Multiflora Rose.

Rosa Moschata.

GROUP XL.—THE NOISETTE ROSE.

The original Noisette, due probably to the accidental fertilisation of the Chinese with the Musk Rose, was obtained by M. Philippe Noisette in North America, and sent to Paris in 1817. The peculiar features recommended to notice were its hardy nature, free growth, and large clusters of flowers, produced very late in the year, which were indeed recommendations of no common order. Its appearance was hailed with delight, and it soon spread throughout Europe. But we are losing the old style of Noisette, and multiplying kinds hybridized with the Tea-scented. This is a matter

of regret, for however much we may extend the range, or improve the delicacy of the colours by this process, we are rendering a hardy group of Roses tender, and blotting out the prettiest feature of the group—flowers produced in large and elegant trusses.

The kinds partaking of the nature of the Tea-scented require a wall and the treatment advanced for Tea Roses; they are marked thus §, that they may be distinguished from the others. Among the true Noisettes the kinds of vigorous growth form handsome late-flowering Climbing, Weeping, or Pillar Roses; the others thrive equally well either as Dwarfs or Standards. Rather less pruning is required here than is recommended for the Chinese and Tea-scented; a common soil suffices. I have often seen these Roses blooming unchecked amid the early storms of Winter.

1. ADELINA VIVIAND MOREL; flowers canary yellow edged with carmine; variable, and at times very pretty.

2. AIMÉE VIBERT; flowers pure white, produced in large clusters, of medium size, full; form compact; growth vigorous. Forms a noble standard; the foliage of a dark green and shining; good also for bedding. Raised by M. Vibert at Angers. Introduced in 1828.

3. AIMÉE VIBERT, CLIMBING; resembles Aimée Vibert, but is of more vigorous growth.

4. ALISTER STELLA GRAY; flowers pale yellow with orange centre, changing to white as flowers expand; small, and produced in fine clusters. A continuous bloomer.

5. BELLE VICHYSOISE; a climbing perpetual variety with pale pink flowers, produced in clusters.

6. BOUQUET D'OR; flowers pale yellow, centres coppery, large and full, and of good form; growth vigorous. One of the best.

7. §CELINE FORESTIER (*Liesis*); flowers pale yellow, deeper centres, large and full; form cupped; growth vigorous. An excellent and hardy Rose, good for wall or pillar. One of the best.

8. CLAIRE CARNOT; flowers apricot-yellow, sometimes edged with white and pink.

9. §CLOTH OF GOLD (*Chromatella*); flowers creamy white, their centres yellow; varies as to colour and fulness, usually very large and very double; form globular; growth vigorous. A beautiful Rose, and sweet, but a shy bloomer. The best mode of treatment is to plant it against a south or an east wall, or in a large pot or tub under glass, pruning it very little; when thoroughly established it will flower. Raised from Noisette Lamarque by M. Coquereau of Angers. Introduced in 1843.

10. COMTESSE DE GALARD-BEARN; flowers clear canary yellow with deeper centre, tinted pink; freely produced. A good acquisition.

§CORNELIA KOCH; see Group XXXVIII., Tea-scented.

11. DESCHAMPS (Longworth Rambler); flowers bright carmine, of medium size, but produced in great profusion. Grand in Autumn, and almost evergreen. Effective either as pillar, climbing, or for bold bedding.

12. §DESPREZ A FLEUR JAUNE (*Jaune Desprez*) (*New French Yellow*); flowers red, buff, flesh, and sulphur, very large and full; form cupped; growth vigorous; the flowers forming in clusters, the foliage large and fine; very sweet. A most desirable kind for a wall. Raised by M. Desprez at Yèbles. Introduced in 1838.

13. §EARL OF ELDON; flowers orange-buff, large and full, free and very sweet. A good wall Rose.

14. §FEE OPALE; transparent pearly white shaded with yellow and pale rose; of climbing habit.

15. §FELLENBERG; flowers bright crimson, of medium size, double; form cupped; growth vigorous. An abundant bloomer, with dark foliage, showy, but rather loose. Desirable for bedding; fine late in the year.

FORTUNE'S YELLOW; *see* Group XXI., The Banksian Rose.

16. §ISABELLA GRAY or MISS GRAY; flowers deep yellow, large and full; form globular; growth vigorous. A good Climbing Rose under glass.

17. §JOSEPH BERNACCHI; flowers yellowish-white, deeper centres, fine long buds.

18. LA BICHE; flowers white, their centres flesh colour, very large and very double; form cupped; growth vigorous. A fine Pillar Rose.

19. §LAMARQUE; flowers white, their centres deep straw colour, very large and full; form cupped; growth vigorous. A splendid kind for a wall with a sunny aspect, producing its elegant flowers in large clusters. Raised by M. Maréchal, a shoemaker, from his window-garden at Angers. Introduced in 1830.

20. §L'IDEAL; flowers coppery rose reflexed with metallic tints of copper and gold; large, almost full; distinct and beautiful. Very sweet.

LIESIS; *see* Celine Forestier.

LONGWORTH RAMBLER; *see* Deschamps.

21. §MADAME CARNOT; fine golden yellow flowers, deeper in the centre; of medium size; full and globular.

MADAME CAROLINE KUSTER; *see* Group XXXVIII., Tea-scented.

22. MADAME MASSOT; flowers pure white, flesh-coloured centres, small, full, and produced in clusters; form cupped, fine; growth vigorous.

23. §MADAME PIERRE COCHET; flowers deep orange yellow; elegant buds; quite first-rate.

24. §MADAME S. MOTTET; in the way of W. A Richardson, but the blooms are fuller, and when expanded are suffused with pink.

MARECHAL NIEL; *see* Group XXXVIII., section 1.

25. MARIE ROBERT; flowers bright rose marbled with salmon and apricot, outer petals paler; a free and continuous bloomer.

26. §MARIE THERESE DU BOURG; flowers deep coppery golden yellow.

27. MISS GLEGG; flowers white, their centres sometimes flesh-colour, produced in large clusters, small and full; form cupped; growth dwarf. Much in the style of

NOISETTE, REVE D'OR (*see* GROUP XL.).

Aimée Vibert, but the flowers are smaller and more regularly formed. A pretty Rose. Raised by M. Vibert.

28. §OPHIRIE; flowers reddish copper, the outer petals rosy and fawn, of medium size, very double; form cupped; growth vigorous; distinct and sweet; foliage handsome. An excellent Wall or Weeping Rose. Raised by M. Goubault at Angers. Introduced in 1841.

29. §PRINCE CZETWERTINSKI; pale straw with deeper centre; of climbing habit.

30. §RÊVE D'OR; flowers deep yellow, sometimes coppery yellow, large and full; growth vigorous. A good wall Rose. One of the best.

31. ROSABELLE; pale rose reflexed with salmon; of climbing habit.

SMITH'S YELLOW; *see* Group XXXVIII., Tea-scented.

32. §SOLFATERRE; flowers creamy white, their centres bright sulphur, very large and full; form cupped; growth vigorous. A fine Rose, with handsome foliage and very sweet. Excellent for a wall. Raised from Noisette Lamarque by M. Boyau of Angers. Introduced in 1843.

33. §TRIOMPHE DE RENNES; flowers canary, cream edges, large and full; form cupped, fine; growth vigorous. A good hardy Rose and very sweet

34. UNIQUE JAUNE; flowers coppery-yellow, shaded with vermilion, of medium size, full; growth vigorous.

35. §WASILY CHLUDOFF; flowers brilliant coppery-red tinted with yellow; large, full, and sweet; fine long buds and bronzy foliage.

WHITE MARECHAL NIEL; *see* Group XXXVIII., section 1.

36. §WILLIAM ALLEN RICHARDSON; flowers fine orange yellow, of medium size, full, very showy and distinct; growth vigorous.

Rosa Moschata.

GROUP XLI.—NOISETTE PERPETUAL.

These Roses are the offspring of crosses between the Noisette and Hybrid Perpetual; they are hardy and free, blooming late in the year. The individual flowers are of medium size and produced in clusters.

1. ALBANE D'ARNEVILLE; flowers white, reverse of petals flesh colour, of medium size, full and cupped; growth vigorous.

2. COQUETTE DES ALPES; flowers white, centre rose shaded, of medium size, full, form fine; growth vigorous.

3. COQUETTE DES BLANCHES; flowers pure white, large and globular; growth vigorous. One of the best.

4. LADY EMILY PEEL; flowers white, slightly shaded with rose, large and full; growth vigorous.

5. LOUISE DARZENS; flowers pure white, medium size, full, and of fine form; growth moderate; one of the best.

MADAME A. CARRIERE; *see* Group XXXVIII., Section 1, Tea-scented.

6. MADAME ALFRED DE ROUGEMONT; flowers white, delicately tinted with rose large and full, very free; growth vigorous.

7. MADAME AUGUSTE PERRIN; flowers pale rose, the reverse of the petals whitish, of medium size; growth vigorous.

8. MADAME FANNY DE FOREST; flowers salmon-white, changing to white, tinted with rose, full; growth vigorous.

9. MADAME FRANCOIS PITTET; flowers white, small, and very double; growth vigorous. A very effective garden Rose.

MADAME GUSTAVE BONNET; *see* Group XXXII., Bourbon Perpetual.

10. MDLLE. BLANCHE DURRSCHMIDT; flowers flesh colour, of medium size, double, free flowering and effective; growth vigorous.

11. OLGA MARIX; flowers flesh coloured, changing to pure white, of medium size, full; growth vigorous.

12. PAUL'S SINGLE WHITE; flowers pure white, single; growth vigorous.

13. PERFECTION DES BLANCHES; flowers pure white, of medium size, full; growth vigorous.

14. PERLE DES BLANCHES; flowers pure white, of medium size, full; growth vigorous.

Interesting Species and Hybrids not Classified.

1. ACICULARIS; a bold growing kind with handsome foliage and large rosy pink single flowers.

2. ALBERTI; single yellow flowers in the way of R. Ecæ, but freer and better.

3. ANDERSONI; single pink, very distinct and beautiful; makes a fine bush.

4. ANEMONÆFLORA; small white flowers shaped like an anemone; pretty foliage; vigorous.

5. CINNAMOMEA; very early flowering, large pink flowers and brownish wood.

6. GIGANTEA; handsome single white flowers, but very shy blooming; makes immense growths. Native of Burmah.

7. GOTTFRIED KELLER; a hybrid between a Tea Rose and Persian Yellow, with apricot yellow flowers, the reverse of the petals darker; a perpetual bloomer.

8. HISPIDA; closely allied to the Scotch Roses, producing large pale yellow flowers of much beauty.

9. LADY ARDILAUN ; probably a hybrid of *R. macrantha* ; single blush-coloured flowers, exquisitely lovely.

10. MACRANTHA ; one of the most beautiful single Roses grown. Its large white flowers and rich array of yellow stamens lend themselves to very artistic arrangements for table or otherwise.

11. MACRANTHA LADY WHITE ; }
12. MACRANTHA LADY S. WILSON ; } two very lovely seedlings of this popular
 Rose, flowers white, semi-double.

13. MACROPHYLLA ; an Indian species bearing pink flowers and very elegant foliage.

14. MOSCHATA ALBA or NIVEA ; a hybrid of *R. gallica* ; growth vigorous ; flowers single, white slightly tinged with pink ; very beautiful.

15. NUTKAENSIS ; from the Western United States ; large single pink flowers, glaucous foliage.

16. OCHROLEUCA ; yellow flowers, single, free-blooming and good.

17. OMISSA ; allied to *R. canina*, flowers pinkish white, showy and good.

18. POMIFERA ; the Apple Rose ; single pink flowers succeeded by large gooseberry-shaped fruits.

19. RUBRIFOLIA, known also as *R. ferruginea*, *R. pyrenaica*, and *R. romana* ; grown mainly for its foliage, which is red, and the wood is also of same colour. Flowers small and pink. A very useful plant for mingling with deciduous and evergreen shrubs.

20. SANCTA ; large single pink flowers, distinct and good.

21. SERAPHINA ; a low growing kind, resembling the Scotch Roses in foliage ; flowers rosy pink, single, and very small.

22. SERICEA ; flowers white, slightly tinted. A species from India with formidable prickles.

23. UNA ; a hybrid of *R. canina*, bearing lovely creamy yellow buds. Good for hedges, banks, or wild garden ; very vigorous.

24. WATSONIANA ; slender myrtle-like foliage, trusses of small pinkish white flowers.

25. XANTHINA ; a native of Siberia, very hardy ; bright deep yellow single flowers.

With this group we conclude the descriptions of the varieties of Roses generally in cultivation. An account of the species will be found in the article on the Botany of the Rose in the Appendix.

APPENDIX.

APPENDIX.

THE BOTANY OF THE ROSE.*

*The portion which relates to the groups and species has been revised for the present
Edition by J. G. Baker, Esq., F.R.S.*

BOTANICALLY considered, the Roses constitute one of the most difficult genera the student has to encounter. Notwithstanding this, they have many attractions, and the Wild Roses of our woods and hedge-rows, though of a simple type, are the very impersonations of elegance and beauty.

Doubtless, at the present day, when beauty of form is less generally prized than masses of colour, the number of cultivators who would care to collect, in their prim gardens, the aboriginal species of Roses, whether native or exotic, may be limited; but amongst those who are interested in Rose culture there may be some who desire to know the extent of materials which the genus affords, especially in reference to the working-out, by hybridisation, of characters differing from those which predominate in the races at present cultivated; and those who wish to do this may find some useful hints in the particulars which follow.

The Botanist can by no means assent to the broad and sweeping conclusion, at which perhaps the genuine Florist would arrive, that the original forms or species of Roses are unfit to find a place in our gardens. He might justly maintain that many of them are very worthy objects. There is among them a much greater diversity of elegance than the cultivated varieties with all their richness and splendour are found to possess; and hence it may be assumed that there are many wild Roses which are quite admissible into select Rose gardens, and many more which the hybridist might turn to his advantage. Moreover, a plea might be urged on behalf of the Single Roses on account of their exquisite modelling; they are often, indeed generally, set aside as inferior to those having double blossoms, and no doubt they are less enduring; but for all that, to quote but one example, who could affect to despise or look with indifference upon the Austrian Briar?

Before proceeding to sketch the various groups of Wild Roses, it may be useful to the uninitiated to explain the application of some of the terms which are employed in referring to the different parts of the Rose Tree.

* For this paper on Wild Roses I am indebted to my friend, the late Thomas Moore, Esq., F.L.S.

Root-shoots or *Surculi* are the strong one-year old shoots produced from the base of the plant; these do not usually bear any blossoms, except on their lateral branches, which are most commonly produced during the second season. The habit of these root-shoots is different, and this helps to distinguish some of the species.

Branches are the ramifications of either the root-shoots or the principal stems.

Fig. 58.—PRICKLES OF VARIOUS KINDS.

Branchlets are the small lateral shoots produced in some instances from the stronger shoots of the same season's growth.

Arms indicate the armature of the stems and branches, that is to say, the rigid processes borne on their surface. The term *armed* is used when prickles and setæ are borne indiscriminately: while *unarmed* is used to denote smoothness, or the absence of prickles and setæ.

Prickles or *Aculei* are the sharp rigid processes which occur on most of the species; in some they are straight, and in others more or less hooked; they vary much in size as well as in form and colour.

Fig. 59.—SETÆ.

Setæ are small straight prickles or aculei, tipped with a gland, and are known from true glands by their rigidity. They are believed to exist upon the root-shoots at some period in all the species, becoming soon changed into bristle-like aculei by the loss of the gland. In general they are deciduous.

Glands are secretory bodies, for the most part attached to leaves on their under-surface, and better distinguished from setæ by their scent than by anything else. The well-known appearance of the Moss Rose is caused by glands in a peculiar condition.

Pubescence is applied to a kind of downiness caused by the presence of short fine hairs. When found on the branches, peduncles, or the tube of the calyx, pubescence offers a useful discriminative characteristic.

Stipules are little leaf-like appendages growing one on each side of the leaf-stalk at its base, to which they always in some degree adhere; sometimes they are much developed, sometimes they are deciduous.

Fig. 60.—GLANDS.

Bracts are small leafy bodies produced in some species, and always situated between the true leaves and the flowers.

Disc is a term applied to a projecting part of the flower which occurs between the base of the stamens and the ovaries.

Fruit is a common term for the hip, which is the fleshy tube of the calyx grown on to maturity, and enclosing the pericarps or true fruits.

Fig. 61.—STIPULES.

The Rose constitutes the genus *ROSA* of Linnæus. This name *Rosa*, by which the plants are known to Botanists, is derived from the Celtic *rhodd* or *rhudd*, red, whence comes the Greek *Ρόδον* and the Latin *Rosa*. The plants form a very extensive and well-marked genus, readily recognised as a whole, but in many cases by no means easily distinguished from each other. The peculiar characteristics of Roses, from a botanical point of view, are—(1) the presence of an

urn-shaped calyx, which has a limb of five segments, and a fleshy tube, the apex of which is constricted into a ring or glandular disk ; (2) numerous stamens inserted with the petals on the rim of the tube of the calyx ; and (3) numerous dry bony pericarps, which are enclosed in the fleshy calyx-tube. The accompanying section of a Rose-flower will make these peculiarities more intelligible. The segments of the calyx are usually divided in a pinnate manner, but not in all cases, and they are sometimes deciduous. The petals are normally five in number, the five petalled flowers being well represented by the wild Roses of our hedge-rows. The ovaries,

Fig. 62.—BRACTS (indicated at *a*).

which are numerous, and enclosed in the calyx-tube, are distinct, bristly, and tipped by the style, which passes up to the orifice of the tube ; these styles are usually separate, but in some few species they are joined together into an elongated column. The leaves of Roses are what are called imparipinnate, that is, pinnated with a terminal leaflet, and stipules grow to the sides of their stalks.

Roses are either erect or scandent shrubs. The genus *Rosa*, like *Lilium*, *Crocus*, and *Tulipa*, is thoroughly characteristic of the North Temperate Zone. It extends from Britain across

Fig. 63.—DIAGRAMMATIC SECTION OF A ROSE FLOWER :
a, sepals ; *b*, petals ; *c*, stamens ; *d*, pistils ; *e*, pericarps.

Europe, Asia, and America, to the Atlantic, a few outlying types reaching the Neilgherries and mountains of Abyssinia and Mexico. No Roses, whatever, are tropical in their constitution, and all that are grown at the Cape, Australia, and in other southern temperate regions are introduced. The species are so difficult of limitation that their number is computed very differently by different authors. The number of distinct species known in cultivation is about fifty, and they may be conveniently arranged in ten groups, as follows :—

First comes a monotypic group, the SIMPLICIFOLIÆ. *Rosa simplicifolia* of Salisbury (*R. berberifolia*, Pallas), a native of Siberia and Persia, a scrambling shrub with small yellow flowers, differs from all the other Roses by its simple leaves, which are destitute of stipules. It has often been regarded as a distinct genus and called *Lowea berberifolia* and *Hultheimia berberifolia*. Paxton's *Rosa Hardii*, a hybrid between *simplicifolia* and *involucrata*, with the pinnate leaf of the true Roses, is more common and more easily cultivated than the true *simplicifolia*.

The most distinct group of the true Roses is the SYSTYLÆ. These differ from the other Roses by having the styles united in a column, and the stigmas forming a round head protruded beyond the disk. The oldest and best-known species of this group is *R. repens* (Scop), *R. arvensis* (Huds.), the wild white Rose so common in the neighbourhood of London, easily recognisable by its trailing habit, small simply serrated leaves, and small red globose hips. Of this the Ayrshire Rose, *R. capreolata* (Neill), is a variety. *R. sempervirens* (L.), common in the south of Europe, is an allied species, with evergreen leaves. The flowers are numerous, white,

Fig. 64.—ROSA SYSTYLA.

and fragrant, and the fruits small, globose, and orange-yellow. *R. prostrata* (D.C.), and *R. scandens* (Miller), are varieties of *sempervirens* and the Himalayan *R. longicuspis* (Bertol), and Neilgherry *R. Leschenaultiana* (Thory), are nearly allied. *R. moschata* (Miller), the Musk Rose of which the Himalayan *R. Brunonii* (Lindl.) is a mere variety, is a tall scrambling species, with many-flowered cymes and pure white flowers with a musky smell. It is spread as a wild plant from Madeira and Portugal all through the south of Europe to the Himalayas. The Rose of the mountains of Abyssinia, *R. abyssinica* (R. Br.), is scarcely more than a variety of *moschata*. The well-known Noisette Rose is doubtless a hybrid between *moschata* and *indica*. *R. nivea* (Dupont) is a fine hybrid between *moschata* and *gallica*. To this group of the *Systyla* also belongs the Chinese and Japanese *R. multiflora* (Thunb.), which has numerous very small flowers and small globose fruits. The form originally figured in the Botanical Magazine has double red flowers, and is a very pretty Rose for button-holes. The variety *R. polyantha* (S. and Z.), with numerous single small white flowers, has lately been much grown and admired. The name *polyantha* is often applied to hybrids between *multiflora* and *indica*. *R. Wichuriana* (Crepin), from Japan, differs from *multiflora* by its prostrate habit and late flowering.

Two nearly allied Chinese and Japanese small-flowered and small-fruited kinds, *R. Lucia* (F. and R.) and *R. microcarpa* (Lindl.), are but little cultivated. The Chinese *R. anemoniflora* is another rare species of this section. The very distinct *R. phoenicea* (Boiss.), the common Rose of the Holy Land, marked in this section by its long leaf-pointed sepals, is scarcely known in English gardens. The Prairie Rose, *R. setigera* (Michx.), *R. rubifolia* (R. Br.), a native of North America, is a shrub 3 or 4 feet high, with straight ascending root-shoots, glabrous branches armed sparingly with scattered falcate prickles and distant leaves of about five ovate leaflets, shining above and downy beneath; the flowers are small pale red and grow about three together, and the fruits small, pale red, and naked. It flowers in August and September. The European *R. systyla* (see Fig. 64) connects this group with the *Caninae*. It has the habit of the common Dog Rose, but the stigmas are joined in a protruded head.

All the groups which follow differ from the *Systylæ* by their distinct styles, and by having the stigmas not united in a head which is protruded beyond the disk.

Fig. 65.—*ROSA LAEVIGATA*.

The third group, the *BANKSIANÆ*, comprises two distinct species which are rambling deciduous or sub-evergreen shrubs, somewhat tender in their constitution, having trailing stems, and usually ternate shining leaves, the stipules of which are nearly free, subulate, or very narrow, and usually deciduous.

The most important Rose in this group is that known as the Banksian, of which yellow and white-flowered varieties exist. This plant (*R. Banksiae*, Lady Banks' Rose) forms a climbing and rambling shrub, the branches of which are unarmed, weak, and of a dull green colour. The leaves are entirely free from pubescence, except at the base of the centre nerve, where they are very hairy, and they consist of three or five flat oblong lanceolate obtuse leaflets. The flowers are numerous, arranged in corymbs, nodding, small, white, and very double, with a weak but pleasant scent. The fruits are small, globose, black, unarmed. The variety called *lutea* differs in having the blossoms of a nankeen yellow. This Rose, which flowers in June and July, and was introduced in 1807, comes to us from China. It is a remarkably fine conservatory plant. *R. laevigata*, the Three-leaved China Rose, is also a rambling sub-evergreen shrub, the branches of which are covered with equal scattered red falcate prickles. The leaves are very shining,

composed of three ovate-lanceolate leaflets, pale beneath, with a prickly mid-rib. The flowers are large, white, solitary, succeeded by elliptic orange red muricate fruits, crowned with spreading rigid undivided sepals. It is a native, not of China, but the Southern United States. A supposed third species, *R. Fortuneana* (Lindl.), figured and described at tab. 171 of Paxton's

Fig. 66.—*ROSA BRACTEATA*.

Flower Garden, imported from China by Fortune, is probably, as suggested by Hemsley, a hybrid between *Banksia* and *indica*.

The fourth group, *BRACTEATÆ*, is characterised by its main prickles in pairs at the base of the leaves, copious aciculi, deeply laciniated bracts and stipules, glossy coriaceous leaflets,

Fig. 67.—*ROSA CINNAMONEA*.

very short pedicels, very numerous stamens and persistently hairy fruit. There are only two closely allied species, the Macartney Rose, *R. bracteata* (Wendl.) (see Fig. 66), which was introduced from China in 1795, and *R. involucrata* (Roxb.), *R. Lyellii* (Lindl.), a native of the North of India.

The fifth group, CINNAMONEÆ, has like the last the main prickles in pairs at the base of the leaves, but the fruit is bright red and naked like that of an ordinary Dog Rose. The type of the group is *R. cinnamomea* (L.), the Cinnamon Rose (see Fig. 67), which extends all through the northern regions of the Old World. It has slender brown pruinose branches, slender uniform stipular prickles, grey pubescent leaflets, with simple teeth, broad adnate stipules, large bracts, short naked peduncles, pale red petals, spreading simple leaf-pointed sepals, and small bright red globose fruit, crowned by the persistent sepals. Nearly allied to this are the common wild Roses of the United States, *R. carolina*, *humilis*, *nitida*, and *lucida*; of these the most commonly cultivated is *lucida*, which has shining leaves and bright red flowers. Another near ally is *R. pisocarpa* (A. Gray), a native of California and Oregon, figured Bot. Mag., p. 6857, which has globose red fruit a third or half an inch in diameter. This was introduced into English Gardens a few years ago by Prof. Sergeant. Other near allies are the Oriental *R. anserinaefolia* (Boiss.) and *R. beggeriana* (Schrenck), which have flowers not more than half the size of those of *cinnamomea*, and fruit not larger than a pea. The Himalayan *R. microphylla* (Roxb.) is a most distinct rose (see Bot. Mag., p. 6548). It has stipular prickles

Fig 68.—*ROSA KAMSCHATICA REGELIANA*.

like those of *R. cinnamomea*, no setæ, very numerous small leaflets, large pink flowers, a depresso-globose bristly fruit a couple of inches in diameter, with very thick flesh and few basilar ovules. In the fruit and ovules it is completely different from any other Rose, so much so that it has been proposed to make for it a distinct genus. The Himalayan *R. sericea* has large deltoid stipular prickles, copious setæ, shining coriaceous leaves, and white flowers with only four petals. For the Japanese *R. rugosa* (Thunb.) Lindley proposed to make a distinct section which he called *Feroces*. It has stipular prickles, copious straight aciculi and setæ, downy branches, large usually bright red flowers, deciduous leaves with 5 to 9 rugose leaflets, sepals usually simple and leaf-pointed, and globose bright red fruit. It extends from Japan into Continental Asia, *R. kamschatica* (ferox) (see Fig. 68) and *Regeliana*, being merely varieties of *rugosa*, and *R. Iwara* of Siebold a probable hybrid between *rugosa* and *multiflora*.

The next group is the PIMPINELLIFOLÆ, which are erect shrubs with adnate stipules and slender scattered prickles passing gradually into usually copious aciculi. The type of the group is the Scotch Rose *R. pimpinellifolia* (Linn.) (see Fig. 69), of which *R. spinosissima*, L.

and *R. scotica* (Miller) are synonyms. It is marked by its dwarf erect habit, copious very irregular prickles, small flowers, simply serrated leaflets, white flowers varying to pink and yellow, simple calyx-segments, and globose purplish black fruit. *R. myriacantha*, D.C., a native of the South of France, differs mainly from *pimpinellifolia* by its pilose leaves, the Himalayan *R. Webbiana* by its yellow prickles, and *R. rubella* by its red flowers and red fruit. *R. Sabini*, wild in Britain, with many varieties, is intermediate between *pimpinellifolia* and *villosa*, and *R. hibernica*, also British, between *pimpinellifolia* and *canina*. The American *Rosa blanda* of Aiton (*R. fraxinifolia*, Seringe) has reddish branches, armed with pale slender aciculi and setæ, broad gland-ciliated stipules, 7-9 oblong simply serrated leaflets, downy on the ribs beneath, large red flowers with a short naked peduncle, entire leaf-pointed sepals and small globose fruit, crowned by the connivent sepals. It flowers the earliest of all the United States Roses. Closely allied to this is the Old World *R. acicularis* (Lindl.), and its variety *R. carelica* of Fries.

The Himalayan Roses are represented in this group by *R. macrophylla* (Lindl.), which has very large acute leaflets, large bright red flowers, bristly pedicels, very long sepals, and large bright red hips. *R. alpina* (Linn.) the Alpine Rose, frequent both in the Alps and Pyrenees,

Fig. 69.—ROSA PIMPINELLIFOLIA.

is a handsome species, with many varieties. The prickles when present are slender and irregular, but they are often altogether absent. The leaflets are thin, doubly serrated, and whitish beneath, the flowers bright red, the sepals simple with a leafy point, and the bright red hip, in the most characteristic form, is flask-shaped and pendulous. The Boursault Rose (*R. reclinata*, Red.) is a hybrid between *alpina* and *indica*. To this group also belong *R. hemisphaerica* (Herm.), (*R. sulphurea*, Ait.), the double yellow or Sulphur Rose, well known in gardens for its beauty and intractability. It is an erect bush four or five feet high, with copious irregular prickles, glaucous obovate leaflets and large transparent yellow flowers. It was introduced from the Levant in 1629, and is known in gardens only in a double state, but no doubt the rare oriental *R. Rapini* (Boiss.) is the same species in its single uncultivated condition. *R. hispida* (Sims), (*R. lutescens*, Pursh), with solitary pale yellow flowers and large ovate purplish-black fruits, is probably a variety of *pimpinellifolia*. An interesting new dwarf yellow-flowered Rose, resembling *spinosissima* in habit, was discovered lately by Dr Aitchison in Afghanistan, and has been named after Mrs Aitchison, *Rosa Ecæ*. It has flowered copiously in the rockery at Kew this present year. There are two small-flowered yellow Roses in Central

and Eastern Asia of which as yet we know next to nothing in England, *R. xanthina* (Lindl.), and *R. platyacantha* (Schenk), with which the Afghan plant needs careful comparison. Probably they are all forms of one species. Two interesting new species of this group are *R.*

Fig. 70.—*ROSA CENTIFOLIA*.

minutifolia (Engelm.) from California, with very minutely deeply-cut leaflets, and *R. stellata* (Wootton) from Arizona, with three digitate leaflets.

The *GALLICANÆ* are marked by their erect stems, broad based irregular hooked scattered

Fig. 71.—*ROSA POMIFERA*.

prickles, large persistent coriaceous leaflets with a cordate base, glandular pedicels and broad short calyx-segments. To this group belong all the principal Roses that were cultivated before *indica* was introduced. They fall into three series, but probably are all forms of one single

variable species. The type *Rosa gallica* (Linn.), is common as a wild plant in the South of Europe. The wild plant has short erect stems, unequal prickles, the larger subfalcate, and the smaller setaceous, leaflets with sub-simple teeth and veins raised below, 1 to 2 flowers on short erect densely hispid peduncles, short sepals densely glandular on the back, the outer copiously pinnatifid, dark red petals, and subglobose dry fruit with deciduous sepals. *R. centifolia*, L., is taller than *gallica*, with larger prickles, corymbose drooping flowers, and more pulpy acid fruit. From this is derived the Moss Rose (*R. muscosa*) (Miller), marked by its densely mossy peduncles and sepals. *R. provincialis* (Miller) differs from *centifolia* by its larger clusters of flowers, erect instead of drooping. The Pompon Rose is like *provincialis* on a smaller scale. *R. damascena* (Miller), the Damask Rose, differs from *centifolia* by its green branches, larger prickles, elongated ampullose fruit, and longer reflexed sepals. From this are derived several of the most choice cultivated forms of the group, the Four Seasons, the Rose de Trianon, the Damask Perpetuals, the Hybrid Perpetual, and the Bourbon Perpetual. *R. turbinata* (Aiton), the Frankfort Rose, is probably a hybrid between *gallica* and *canina*, and *R. hybrida* (Schleich.), which has *gallica* flowers and leaves but a protruded column of styles, is probably

Fig. 72.—*ROSA CANINA*.

a hybrid between *gallica* and *arvensis*. A recently introduced new species of this group is the Abyssinian *R. sancta* (A. Rich.), with very compound sepals.

The VILLOSÆ are marked by their scattered slender prickles, persistent sepals, and very hairy leaves. *R. mollis* (Smith), the type of the group, is one of our most handsome wild Roses. The bright red pulpy globes of fruit, crowned by their nearly simple persistent connivent sepals, are ripe a month before those of the common Dog Roses. *R. pomifera* (Herm.) (see Fig. 71), the Apple Rose, is often met with in old gardens. It has larger flowers and fruit, more compound sepals, and less hairy leaves than the wild *mollis*. *R. tomentosa* is a common wild British species, of which a handsome double flowered form is sometimes cultivated.

The CANINÆ are marked by their scattered stout hooked uniform prickles. Of the common Dog Rose of our English hedges there are innumerable sub-species and varieties. In the type the leaves and pedicels are naked, but in some of the varieties the leaves become hairy and the pedicels bristly. In cultivation *canina* (see Fig. 72) is used mainly as a stock to graft other Roses upon. The White Rose, *R. alba* (Linn.) a very old garden favourite, is probably a hybrid

between *canina* and *gallica*. *R. indica* (Linn.), *R. chinensis* (Jacq.), which was introduced in 1789, has given rise to more garden forms than any other species. The type is the familiar Monthly Rose. The simple flowered form of the plant, long unknown, has lately been found wild by Dr Henry in the mountains of Central China. *R. fragrans* (Red), *R. odoratissima* (Sweet), is a deliciously scented form; *R. semperflorens* (Curt.) is the ever-flowering China Rose, smaller and more elegant in habit than the type, with 3 to 5 ovate-lanceolate leaflets and solitary deep crimson flowers. *R. minima* (Curt.), *R. Lawrenceana* (Sweet), the parent of the Fairy Roses, is not above a foot high, with nearly straight prickles, ovate leaflets, and small semi-double pale blush coloured flowers. The Noisette Roses are hybrids between *indica* and *moschata*, the Bourbon Roses between *indica* and *gallica*, and the Boursault Roses between *indica* and *alpina*. A large flowered white Rose allied to *indica*, called *R. gigantea*, has just been discovered in Birmah. To this group belongs the Swiss and Dauphiné *R. rubrifolia* (Vill.), distinguished from *canina* by the leaves being tinged with red.

Fig. 73.—*ROSA RUBIGINOSA*.

The last group, the RUBIGINOSÆ, are marked by their scattered prickles, and leaves densely glandular beneath. The type of the group is the common Sweet Briar, *R. rubiginosa* (Linn.) (see Fig. 73), in which the leaves are strongly scented, and the prickles accompanied by a few aciculi. *R. micrantha* (Smith), a common wild Rose of the south of England, is about half-way between the Sweet Briar and the Dog Rose. *R. agrestis* (Savi), *R. sepium* (Thuill), marked by its trailing habit, small leaflets narrowed at the base, small flowers and naked pedicels, is one of the commonest wild Roses of the south of Europe. Other small-flowered members of this group are the Corsican *R. Seraphini* (Kr.), and the Caucasian *R. ferox* (M. B.). *R. lutea* (Miller), *R. Eglanteria* (L), the Yellow Eglantine, resembles the Sweet Briar in habit, but the flowers are yellow and the leaves much less glandular. The Austrian Briar (*R. punicea*) is a mere variety of *lutea* with petals more or less streaked and flushed with red.

To fully understand the botanical characters of a Rose one must know—(1) Its habit of growth; (2) its prickles, their shape, position on the stem, and relative size; (3) whether the stipules are adnate to the base of the petiole or not; (4) number, shape, texture, toothing, and vestiture of the leaflets; (5) the number and arrangement of the flowers to one inflorescence, and whether the pedicels are naked or prickly; (6) the shape of the calyx-tube and calyx-segments; (7) the size and colour of the corolla; (8) the size and shape of the fruit, and whether the calyx-segments are persistent or deciduous.

The following key will make more clear the leading differential characters of the groups we have adopted.

Leaves simple, ex-stipulate.	1. SIMPLICIFOLIÆ.
Leaves compound, stipulate.	
Styles forming a column, protruded beyond the disk.	2. SYSTYLÆ.
Styles not united in a column.	
Stipules free, deciduous.	3. BANKSIANÆ.
Stipules adnate to the petiole, persistent.	
Main prickles in pairs at the base of the leaves.	
Fruit persistently pilose.	4. BRACTEATÆ.
Fruit glabrous.	5. CINNAMONÆ.
Prickles scattered.	
Prickles passing gradually into numerous aciculi and setæ.	
Leaves not rugose; large prickles, long and slender.	6. PIMPINELLIFOLIÆ.
Leaves rugose; coriaceous large prickles, short, stout.	7. CENTIFOLIÆ.
Prickles comparatively few, equal.	
Prickles slender; leaves not, or but little, glandular below.	8. VILLOSÆ.
Prickles stout, hooked; leaves glabrous or but little glandular below.	9. CANINÆ.
Leaves very glandular beneath.	10. RUBIGINOSÆ.

We may reduce the groups to six by uniting the *Bracteata* to the *Cinnamoneæ*; the *Centifoliæ* to the *Pimpinellifoliæ*; and the *Villosæ* and *Rubiginosæ* to the *Caninæ*. In this way the great mass of the Roses will form three groups, characterised by their prickles, which may be called *Diacanthæ*, *Heteracanthæ*, and *Homocanthæ*.

THE ENTOMOLOGY OF THE ROSE.*

THERE are few practical cultivators who will not admit that much of the success of Rose growing depends upon the keeping of the plants free, either entirely or to a great extent, from certain insect pests which are found at all times and under all conditions to a greater or less degree attached to this flower. No sooner do the plants begin to put forth their leaves than the same warmth present in the atmosphere (whether artificially produced under glass or prevalent out of doors with the return of spring) which prompts the ascent of the sap serves also to revivify the germs of insect life present in the egg of certain moths, saw flies, and aphides, and to re-awaken to full life and activity such as may have passed the winter in the caterpillar or chrysalis state, and as summer advances fresh broods arise to carry on the work of destruction, and beetle and bee lend their aid in marring and destroying the beauty of the flowers and foliage. Small as they are, and low in the scale of creation, we have here no insignificant foes, and their very minuteness, combined with the variety of means they exercise to attain their ends, renders the study of their habits necessary in order to combat them, and at the same time delightful from the great diversity manifested in their economy and operations. Some work in the dark, eating their way in the pith of the young

* For this paper on the Entomology of the Rose I am indebted to my son, Mr Arthur William Paul.

shoots, and the harm done is not discovered till the part attacked withers and dies, and the caterpillar probably by that time has fulfilled its term of existence as such and is safely sleeping as a chrysalis; others work openly, seeming to defy all our efforts to subdue them, trusting to their wings, possibly to their diminutiveness, their numbers, or other means of escape to elude just punishment, but so long as there is a leaf to prey upon some insects will be found at work; irrepressible is their energy, untiring their efforts, irremediable their effects.

But while laying the insect race generally under this ban, it must in justice be admitted that we have some sheep in the flock which do not deserve to be painted in quite such black colours. Every rule is said to have its exceptions, and in this case they consist in the Ichneumon flies and a few other tribes which keep in check and thin the ranks of our foes. Therefore, after submitting to the reader a list of the species which may justly be regarded as proscribed, we shall say a few words in favour of our insect friends.

With reference to the former, it has been remarked that the species of insects found to prey upon the Rose outnumber those attached to any other tree or plant, the oak excepted. In dealing with them we should indeed hail with delight some destructive compound equally simple in its application and direful in its effects to all pests. But from their various habits and habitats such hopes are vain, and it becomes necessary to study the economy of each species and the most effective means of subduing it will be soon apparent. There is no doubt but that a state of weak health predisposes all plants to the attacks of noxious insects, and this we think is clearly proved by the unusual abundance of caterpillars and green fly in cold and unfavourable spring weather. The plants, tried and weakened by the ungenial state of the atmosphere, lack the vigour which ensures the active circulation of the sap, and, unable to resist the attacks of their enemies, speedily fall a prey to them. One general rule therefore to be observed is to keep the plants generally in good health, and then, even if insects abound, their attacks will be found to be far less disastrous in their effects.

In birds also nature has furnished us with some valuable allies in harassing our enemies; but undoubtedly the most certain modes of destruction are to be practised by the hand of the cultivator. With nearly all species of caterpillars hand picking, although tedious, is the safest and only reliable operation. In the case of small caterpillars in buds, by gently squeezing the latter their inmates may generally be destroyed expeditiously and without injury to the plant, but when the caterpillars are large it is preferable to remove them from the plant before killing them. With the moths and saw flies in their perfect state any means must be resorted to which offer chance of success. They should be watched for on all opportunities and destroyed. Early evening is the best time to seek moths, and daytime for saw flies. With regard to the green fly (*Aphis*), many preparations have been found very effective against its ravages. For Roses under glass thorough fumigation with tobacco smoke would seem the most simple and effective remedy, and out-of-doors a solution of tobacco in water or the composition formed by boiling together 1 lb. of soft soap and 1 lb. of quassia chips in four gallons of water will be found sure in their results, but it is always advisable to syringe the plant thoroughly with pure water twenty-four hours after it has undergone any operation of this kind, in order to cleanse the leaves and shoots from all impurities. Where a special mode of procedure is referrible to any species it will be noted when the insect is described. Much of the success in keeping down insects consists in using great watchfulness to accomplish the destruction of the creature in its young state, and thus preventing the spread of the evil.

Premising that everyone is acquainted with the fact that the period of an insect's existence is divided between the *egg*, the *caterpillar* or *larva*, the *chrysalis* or *pupa*, and the *imago* or *perfect* states, we shall close these few prefatory remarks with a short notice of the classification

of insects, which will we think be of assistance for the better handling of our subject. Many authorities, from Linnæus downwards, have occupied themselves on this subject, and in consequence many systems have been put forward. The one, however, which recommends itself to us as being the simplest and easiest to comprehend takes the pupa or chrysalis state as the basis of the arrangement, and divides insects into eight orders, viz.:—

LEPIDOPTERA—Consisting of moths and butterflies.

DIPTERA—Represented by gnats and the common house fly.

HYMENOPTERA—Examples: bees, saw flies.

COLEOPTERA—Consisting of beetles.

STEGOPTERA—Examples: caddis flies.

NEUROPTERA—Examples: dragon flies.

ORTHOPTERA—Such as grasshoppers and crickets.

HEMIPTERA—Of which a better example than the aphid can hardly be cited to the Rosarian.

Having thus given an outline of the various orders into which insects are divided, we will lay before the reader a synopsis of such insects as may be deemed really injurious to the Rose. It is somewhat difficult to estimate what proportion of the whole of the depredators of the Rose this list includes; although the observations from which it has been compiled have extended over a considerable period their area has been necessarily limited, and therefore the non-appearance of many injurious species, by reason of climate, locality, and soil, is possible. Much remains yet to be done. Observations from various parts of the country, duly chronicled, would afford much useful information, and all that this list can pretend to is the enumeration of such species as are universally noxious, or, if local, especially destructive where they occur.

LEPIDOPTERA—

Moths.	{	Liparis auriflua
		Bombyx neustria
		Orgyia antiqua
		Cheimatobia brumata
		Anticlea badiata
		„ derivata
		Pygæra bucephala
		Nœnia typica
		Tortrix pyrastrana
		„ ribeana
		Poronea variegana
		Dictyopteryx Bergmanniana
		Antithesia ochroleucana
		Spilonota aquana
		Microsetia centifoliella

HYMENOPTERA—

Saw Flies.	{	Tenthredo agilis
		„ cincta
		„ rosarum
		Cladius difformis
		Athalia rosæ

HYMENOPTERA—

Gall Flies.	{	Cynips rosea
		Rhodites eglanteriæ
		„ rosarum
		„ spinosissimæ
Bee.	{	Megachile centuncularis

COLEOPTERA—

Cetonia aurata
Melolontha vulgaris
Balaninus brassicæ
Melegethes æneus

ORTHOPTERA—

Gryllotalpa vulgaris

HEMIPTERA—

Aphis rosæ
Kermes rosæ
Cicada spumaria
„ rosæ
Thrips hæmorrhoidalis

ARACHNIDÆ—

Acarus tellarius

The first species to be described is the common Gold-tailed Moth (*Liparis auriflua*), the caterpillar of which, known in many parts of the country as the "palmer worm," is a frequent visitor to the Rose. It appears to be a general feeder, the Rose forming only one of many plants which it lays under contribution, and even with this flower it is by no means of a fastidious appetite, sometimes devouring the leaves, at others the petals of the flowers themselves. The caterpillar when full fed is about an inch in length; it is very hairy, in colour black, with two bright red stripes down the back. The hairs are some white and some black, and two of the segments of the body are ornamented with humps. It is a beautiful and conspicuous object, and may often be observed basking in the sun, and under such circumstances is easily seen and captured. We would, however, caution persons with tender skins from handling it too freely, for it has the power of causing a very unpleasant itching and inflammation. When full fed it spins a web somewhere amongst its food plant, and changes therein to a brown chrysalis. The moth is satiny white, with three indistinct dusky spots on each of the upper wings; the extremity of the body is ornamented with a tuft of yellow hairs, whence the species derives its name. It appears in July, and may often be caught at rest in the day-time on blades of grass under hedges and in ditches, and from its size and colour it is easily recognisable. The caterpillar is found during May and June, and again in the autumn, but specimens caught in the latter season are always very small, this being one of the species which hibernates or passes the winter season in the caterpillar state.

The next moth we have to describe is "The Lackey" (*Bombyx neustria*), and although, like the preceding, it is not entirely confined to the Rose, it is nevertheless far more destructive, and ranks amongst the most voracious devourers of our flower, for not only do the caterpillars attain to a greater size than those of the species above described, and are therefore compelled to assimilate a proportionately larger quantity of green food, but also until they are within a day or two of changing to pupæ they are gregarious, living together in large numbers, and spinning for themselves a capacious web in which they dwell secure. It may easily be imagined that an army of these leave but few leaves behind them on even a large Rose tree, and during the past summer we had under observation several colonies of these caterpillars upon various kinds of Rose bushes, the branches of which they stripped bare. Later in the season also we found the eggs of this species, which, embedded in a gummy substance, form a hard mass, and are laid in a beautifully formed and even ring encircling the twigs of the Rose. The caterpillar is slightly hairy, grayish black in colour, striped longitudinally with orange and blue alternately. When full fed it is about two inches in length; it is somewhat slender and soft to the touch. It spins a whitish cocoon either amongst its food plant or in some convenient spot near, in which it changes to a brown chrysalis. The moth is very variable in colour; the average of specimens are yellowish brown, with two darker lines running across the front wings. The hind wings are pale, with an indistinct bar across the middle. There are also specimens in which the prevailing tint is red brown, and in such the lines across the front wings are distinctly shaded off to pale brown. The caterpillar appears in spring and early summer; the moth in July. The latter measures from an inch and a quarter to an inch and a half in the expanse of the upper wings.

The "Winter Moth" (*Cheimatobia brumata*), an insect which has proved so destructive both in this country and on the continent of Europe to fruit trees, is also a frequent and troublesome visitor to the Rose. In some summers they are specially numerous, and the damage they cause very considerable. The following description of the caterpillar will, we think, serve for its identification if met with:—Colour apple green, with three or four very fine white lines running longitudinally the whole length of the body, which is further adorned

with a number of small white spots and a quantity of fine white hairs. At each segment joint there is a pale transverse line. The head is pale green. In the early stages of its existence the caterpillar establishes itself in the unexpanded leaf-buds of its food plant; as the leaves expand its habit is to spin two or three together very slightly, leaving just a feeble net-work of web in the crevices, and in this dwelling, when not feeding, it may usually be observed curled up, but, after the fashion of all the larvæ of the particular class to which this moth belongs, it may often be noticed at rest on a leaf or twig, stretched out to the full, retaining its hold by its two last pairs of legs, and imitating to perfection a twig of the plant itself, and thus without doubt eluding often observation by insectivorous birds. This caterpillar appears in April and May. When full fed it descends into the earth for the purpose of changing to a chrysalis. The moth emerges during mild weather in October, November, and December. The wings of the male are greyish brown, barred transversely with lines of a darker colour; the under wings are paler and very slightly marked. The expanse of the upper wings is about an inch. The female is incapable of flight, having the wings in a very rudimentary state, and her power of motion is confined to crawling; from this fact, and from the shape of the body

Fig. 74.—"BUFF TIP" MOTH.

Fig. 75.—"BUFF TIP" CATERPILLAR.

and length of the legs, she might be taken for a spider by a casual observer. The colour varies somewhat. I have now before me specimens ranging from pale gray to black; but the most common form seems to have the body gray, with five rows of darker spots running the whole length of it, those on the sides being larger than the others.

The annexed wood-cut illustrates the moth and caterpillar known as the "Buff Tip" (*Pygera bucephala*), Fig. 74, doubtlessly owing its fanciful name to the large patch of buff or straw colour present at the upper corner of each of the fore-wings. This is a large and handsome insect, having the upper wings of a purplish gray colour, the lower half shaded with silvery scales. Across each of these two wings run transversely two zigzag lines of a darker colour dividing each wing into three parts. In the centre of the middle part is a dark spot surrounded by a ring of pale yellow or straw colour, and the upper corner of the outside division is taken up with the patch mentioned above of the same colour, and the lower corner of this division is also slightly clouded with straw colour. The hind wings are yellowish white, head and thorax brown and buff, and the body buff. The full expanse of the upper wings when stretched out is from two to two and a half inches. The caterpillar

(Fig. 75) is also handsomely and conspicuously marked, and where it appears (and it is by no means uncommon) is one of the most destructive attackers of the Rose. Like the caterpillars of the "Lackey" moth, those of the present species live and feed gregariously, and fully rival, if indeed they do not excel, the former in their ravages. A full grown caterpillar will measure from two to three inches in length, and is stout in proportion. It is slightly hairy; the ground colour of the body is bright yellow, marked plentifully both longitudinally and transversely with black. For the purpose of passing into the pupa state it sometimes enters the earth, but more frequently undergoes its metamorphosis on the ground in some secure situation without any covering or case whatever, changing to a dark brown chrysalis. The moth appears in July, the caterpillar in the spring and early summer.

The next insect that claims attention (the Gothic Moth—*Nœnia typica*) is not a rose feeder only, but turns its attention to many plants, fruit trees being especially obnoxious to its attacks. But as a case has come under our notice where it was certainly an aggressor, we have no hesitation in including it amongst the enemies of the Rose. The case in question was that of a large specimen Rose in a pot which was grown in a greenhouse for early flowering. The leaves of this plant were observed daily to show fresh signs of depredation upon them, and such was the amount of green food abstracted that it was evident that some insect of size was at work. The leaves and plant carefully searched furnished no culprit, and it was not until some six or eight days after the mischief was first noticed that the caterpillar was discovered at dawn one April morning on a piece of bast in the neighbourhood of the plant. This was accounted for by the habit of this species in the larval state. It feeds during the night, and eludes all searching rays of daylight by hiding under dead leaves, stones, or any rubbish in the neighbourhood of its food plant. When full grown it measures about two and a quarter inches in length. The prevailing colour is pale brown, with a broad whitish gray band along each side. This band is edged with two thin distinct wavy lines, one white and the other black. The body is mottled, with two short oblique pale lines on each side of every segment excepting the second, third, fourth, and fifth, these four having a small black spot on each side, which is also present on the other segments, but not so distinct. The head is shining, of the same colour as the body, as are also the legs. The full fed caterpillar descends into the ground to change to a chrysalis. The moth, although dull in colour, is handsome. It is smoky gray, with the upper wings distinctly marked with white. The hind wings are without these markings. The full expanse of the upper wings is from one and a quarter to one and three-quarter inches. The moth appears in June. The young caterpillars are hatched in the autumn, passing the winter in a dormant state, and reawakening to activity in the spring. It is in the latter season only that they are likely to do any harm to Roses.

Before leaving the larger species of moths, there are three which we think should be mentioned, although their occurrence is not of such frequency as to lead us to anticipate any serious damage. The first is the "Vapour Moth" (*Orggia antiqua*), a very common species, but not generally met with on the Rose. The other two are the nearly allied geometers, *Anticlea badiata* and *derivata*. The larva of the first of these we have found feeding on the Dog Rose (*Rosa canina*), and the second is said to feed on the same plant.

The caterpillars of the moths we are now about to consider are much smaller than those of the preceding species, but are exceedingly destructive to Roses. Many of them, indeed, are so small as often to escape detection, and therefore destruction. These are generally intended when we hear the comprehensive soubriquet of "grub" or "maggot." The first species is *Tortrix pyrastrana*. The female moth measures nearly an inch in the full expanse of its upper wings, the male scarcely three-quarters of an inch. Their colour is pale brown, delicately reticulated with lines of a darker colour. At the jointure of the wings with the

body there is a broad dark band across the wing transversely, and about the centre of the wing there is another broad oblique line of the same colour running transversely, and at the upper corner there is also a dark triangular patch. The under wings are plain smoky brown, with the fringe of a paler colour. Head and thorax brown, body smoky. The caterpillar is pale green, sometimes dull, sometimes bright. Body slightly covered with small whitish hairs. The head is shiny, of a pale dingy green colour. When full fed it is about three-quarters of an inch in length. A thin dark line runs down the back, and the joints of the segments are clearly visible by the presence of thin white lines, which show at each movement of the insect. It is very agile in its movements. It spins together two leaves, one of which it often severs from the stem: and this dying, it appears as if the larva took up its abode in a dead leaf. When disturbed it wriggles actively, and drops from either end of its dwelling suspended by a thread. It spins a slight web in which to change to a chrysalis. The latter at first is greenish brown, but changes to a more uniform brown. The caterpillar is common throughout May and the early part of June; the moth at the end of June and during July.

The next species, *Tortrix ribeana*, very nearly resembles the preceding insect in many points. In size it is the same, but in colour much darker. The upper wings here are also delicately reticulated with darker lines, but the broad dark band at the juncture of the wings with the body is entirely wanting. The oblique central band is also neither so complete or conspicuous, and there is a very slight trace only of the triangular patch at the upper corner of the wing. The hind wings are smoky brown, with fringe of a paler colour. Head, thorax, and body dark brown. The habits of the caterpillar of this species exactly resemble those of the one last described; the points of distinction—firstly, in the colour, which is darker in *T. ribeana* than in *T. pyrastrana*, being in fact dull pale olive green: secondly, in the head, which is black instead of green (there is also a black plate on the second segment): and thirdly, in the size, the larva of the former being larger than that of the latter. This is a very common and troublesome species; it is equally abundant on Roses both out of doors and under glass, and is prevalent during a long time. Specimens were feeding with us from April 2nd to May 19th, and on the latter day we observed several young specimens out of doors. It seems very fond of *rolling* the leaf. When full fed it changes to a dark brown chrysalis, much darker in colour than the chrysalis of *T. pyrastrana*.

Poronea variegana, the next on our list, is not so common (at least in this locality), and therefore not so injurious as either of the two species last described. The moth has the upper wings nearly equally transversely divided into two parts; that including the junction with the body varying in different specimens from pure satiny white to cream colour; and the outer half brown, with a few indistinct markings of a paler colour. It is to be remarked that a great difference in colour exists in different specimens, especially with regard to the extent and purity of the white portion of the wing; but where the white is pure and conspicuous it is a charming little object. When it first emerges from the chrysalis the wings are ornamented with a number of small excrescences or coruscations. The under wings are pale smoke colour, with a fringe of a paler hue. The caterpillar is about three-quarters of an inch long when full fed, somewhat slender and very active. In colour it varies from dull pale green to bright apple green; it is furnished with a few whitish hairs. The head is shining brown or black. It rolls up the edge of a leaf, and spinning a web lives therein, devouring that part of its home which is nearest at hand. Although not so common as some others, it is nevertheless capable of inflicting considerable damage upon Roses, and from its extreme activity is difficult to capture. When disturbed it drops from its home and lets itself down to the earth by a silken thread proceeding from its mouth, and once on the ground it is very swift in its motions. The caterpillar appears during June and July, the moth in July and August.

From the middle of June and onwards during July a beautiful little yellow moth may often be observed to rise from our Rose bushes when shaken. This little creature rejoices in the long name of *Dictyopteryx Bergmanniana*; and notwithstanding its beauty is capable in its larval state of inflicting no little damage on the leaves of the Rose. The upper wings are bright golden yellow, and across each run four transverse purplish brown bars, the two central ones obliquely and the other two perpendicularly. Under a microscope these bars are found to be ornamented with silvery scales, of which a patch also is discovered on the yellow ground in the centre of the wing. The hind wings and body are smoke coloured; the thorax is bright orange. The fringe of the upper wings is pale yellow, of the under wings nearly white. The expansion of the upper wings from tip to tip is about half an inch. The caterpillar when full fed is about half an inch in length and woodlouse shaped—i.e., thicker in the centre of the body than at the extremities. In colour it varies from dull yellowish green to pure yellow. It is slightly covered with whitish hairs. The head is black and shining, and on the second segment and on the tail there is a black plate. The front or true legs are black; the hind legs or claspers the same colour as the body. In feeding it appears to choose by preference the two or three end leaflets of the leaf, spinning them together, and when disturbed it will wriggle out, suspending itself in the air by means of a silken thread, by which also it can reascend when the danger is past.* The caterpillar is most abundant during the middle and end of May; the moth in June and July. The annexed illustration (Fig. 76) represents the moth in its natural size.

Fig. 76.

Fig. 77 represents the small Tortrix or Bell Moth, *Antithesia ochroleucana*. The upper wings of this variety are black brown, with a large yellowish brown patch shading off rather darker at the edge on the outer corner of each wing; indeed this patch occupies about one-third of the area of the whole wing. The black brown colour of the remaining two-thirds is slightly marked in an irregular manner with the same pale colour; the under wings are smoky brown, with a fringe almost white. The head and thorax are black, the body brown. In colour this species varies considerably, especially in the colour of the pale patch on the upper wings, which in some specimens is much darker than in others. In size also there is much discrepancy, but on an average the expanse of the upper wings fully extended is four-fifths of an inch from tip to tip. The caterpillar, which occurs commonly, appears generally and in the greatest quantity in May and June. We have taken specimens as late as the end of July, but do not know whether they are merely belated stragglers or referrible to a second brood. The latter supposition is the one we incline to. In colour it is dark rich green; the best simile in point of colour that can be given is the young leaves of the Rose "Geant des Batailles." The body is furnished with a number of short thin hairs. The head and front or true legs are black; on the segment of the body following the head there is a shining black plate; the tail is rather paler in colour than the rest of the body; the hind legs or claspers of the same colour as the body generally. Its length when full fed is about three-quarters of an inch, and it is thicker in the middle of the body than at the extremities. Its habit appears to be to spin together two or more leaves and live therein, devouring the leaves which constitute its dwelling, and

Fig. 77.

* When full fed, the caterpillar of this species lines the inside of its dwelling with silk of a white colour, and changes therein to a pale brown chrysalis. An interesting feature with regard to this chrysalis is the power it has of moving up and down its nest by means of a series of short hooks or spines directed backwards, with which each side of its body is furnished. It possesses this power in common with the pupæ of several of the large moths, especially the wood borers, such as the Goat and Leopard Moths, the Clearwings, &c., and the chief use of it seems to be to enable the chrysalis, just before assuming the moth state, to work its way half out of the case and thus render facility of egress to the moth. For this information the reader is indebted to an article by Mr Westwood on "Rose Insects," in the *Gardeners' Magazine of Botany* of some years ago.

also sallying forth to prey upon others close at hand. It has also a partiality for the flower buds, and will often spin a web encircling a cluster of them, and eating the stalk detach the bud from it. It is active in its movements, and when disturbed will fall from the food plant on to the ground, but as far as we have observed always without spinning any thread by which it can reascend. Unlike most other species which unite several leaves to form a protection for their cocoons, this insect just rolls over the edge of the leaf and so makes a close fitting case for its cocoon; the latter is white, enclosing a black chrysalis. The moth is on the wing during the latter end of June and throughout July. It is a common and destructive species.

The next insect we have to refer to belongs also to the family of Bell Moths, and is called *Spilonota aquana*. It is an excessively common and destructive species, and although it does not appear to be exclusively confined to the Rose it is nevertheless one of the most insatiable devourers of that plant which exists. Fortunate indeed is the grower who can claim for his plants exemption from its ravages; both out of doors and under glass it seems to be ubiquitous, eating its way in the hearts of the youngest shoots, and in sheltered and favourable situations we have seen it swarm to such a degree that it was with difficulty that a bud could be found without a tenant. The damage caused to the plants by its depredations is very considerable, and such of the infected buds as may be fortunate enough to reach maturity present a mangled

Fig. 78.

and unhealthy appearance. The moth which is represented at Fig. 78 has the upper wings of an ashy white colour, clouded in places with lead and slate colour. Different specimens vary greatly in regard to the predominance of the white, but this insect may always be known by the presence of a dark brown patch on each (upper) wing at their juncture with the body. The under wings are pale smoke colour, with a pale fringe. The expanse of the upper wings fully extended is on the average three-quarters of an inch from tip to tip. The caterpillar, which may be considered *par excellence* the *bête noire* of out-door Roses, is of a fleshy brown colour, very maggoty in appearance. Its skin appears rough, as if covered with a number of small warts. The body is somewhat stouter in the centre than at the extremities, and a few small whitish hairs may be observed upon it; the head is black, and there is a black plate on the segment of the body following the head. We have already referred to its manner of attacking the plants; although it seems to spin the leaves which form its dwelling very closely together, and is therefore not easily disturbed, nevertheless it appears to have no special method or design in its workmanship, and notwithstanding its preference for the young shoots it will attack all the leaves, and is often to be discovered lurking in the retreat naturally formed at the juncture of the leaf with the stalk. We have also caught specimens living and feeding in the interior of the young flower buds, and even eating the petal of the full blown flower. It is sluggish in its movements, but when shaken out of its home lets itself fall by a silken thread which it spins from the mouth. The chrysalis, which is pale brown in colour, is contained in a cocoon spun amongst the leaves of the food plants. The caterpillar is most plentiful at the end of April and beginning of May; the moth throughout June. Hand-picking would appear to be the most effective method of reducing the number of these caterpillars. Great watchfulness is requisite, or one may get established in a young bud, and the embryo flower be devoured before the mischief is discovered.

It is not at all unusual to observe at the end of summer many of the leaves on Rose trees disfigured by certain pale tortuous tracks eaten in the leaf; sometimes these pursue a zigzag course down the centre, at others they make the entire circuit of the leaf. Although perhaps not injurious to an appreciable degree these tracks cannot be looked upon as ornamental or the causer of them as a friend. By placing one of the leaves under a microscope we shall find it tenanted by a small orange-yellow caterpillar destitute of legs. When full fed it makes

its way through the dried surface of the leaf, and having found a place of safety forms its cocoon and changes to a chrysalis, from which in due course the moth emerges. The name of this species is *Microsetia centifoliella*. The moth is very minute in size, and to the naked eye its colour is almost indistinguishable, but under a microscope it will be found to consist of such glorious hues as to defy description. Green, gold, and purple, all struggling for the mastery, present one of those brilliant and exquisite pictures for which this class of small moths is so much admired.

With this, the smallest of the group, we conclude our remarks upon LEPIDOPTEROUS insects, and amongst those of the great order DIPTERA we do not remember any that prey upon the Rose. In the HYMENOPTERA, however, we shall find several, and amongst them some of the most troublesome and destructive. Such, then, as we have to deal with are included under the three classes of Saw Flies, Gall Flies, and Bees, and it is with the first of them, as being the most important, that we will commence.

In this neighbourhood one of the most troublesome is *Tenthredo agilis*, of which Fig. 79 is an illustration life size. The caterpillar is of a dull bluish green, shading to a paler hue at the sides, with a clearly distinguishable pale line down the back. Head yellowish white, with three black spots on the face arranged triangularly. It appears to prefer the leaves of the Rose, but we have caught specimens in the full blown flowers and under such circumstances as to lead us to suppose that they prey upon them also. When full fed the larva is half-an-inch long; when not engaged in eating its favourite position is the under side of the leaf, where it rests curled up; but when feeding it clings to the edge of the leaf, sometimes fully extended, at others keeping the head and front part of the body attached to the edge of the leaf by the front or true legs, and keeping the hinder part of the body curled up and completely hidden underneath the leaf. It does not appear to be tenacious in holding on to the leaf, and when disturbed drops quickly to the ground, rolling in a ring. When full fed it descends into the ground, where it forms a cocoon of earth, in which it changes to a pupa. The perfect fly is small and slender; it has the wings transparent and nearly half-an-inch in expanse from tip to tip, possessing those beautiful iridescent gleams of rainbow colours which are to be observed in the wings of all Saw Flies. The antennæ, head, thorax, and body are shining black, the body with a transverse bar of white or whitish yellow. The legs have the first joint black, the two remaining ones yellowish brown. This species is double-brooded, but the seasons of the appearance of the larvæ seem so to merge into one another that they may be taken almost without cessation from the end of June till the autumn. The flies from the first brood emerge from the pupa about a month after it has assumed that state; the second brood pass the winter under ground as pupæ. The fly may therefore be looked for in spring, and again late in summer and early in autumn.

Fig. 79.

A less common but certainly more treacherous enemy is to be found in the larva of another saw-fly, *Tenthredo cincta*. The whole economy of this insect is so curious and interesting as to be well worth attention. The female fly, by means of the saw-like appendage with which nature has provided her, and from the presence of which in every species the family has taken its name, forms a large single groove in the stem of the young shoots of the plant, laying therein a number of eggs varying from twelve to twenty. These are arranged in pairs, forming two straight lines parallel to the sides of the branch. The eggs, however, though thus deposited in a common groove are carefully kept each in its place, for a ridge of the wood is left to prevent those on the right from touching those on the left; and not only so, but between each egg in the row a thin partition is left, forming a shallow cell. The edges of this groove, it will be obvious, must be further apart than those which only contain one egg, and in fact the whole is open to inspection; but the eggs are kept from falling out by a frothy glue deposited by the parent fly at the time of oviposition and by the walls of the cells containing them. It

has also been observed that they increase in size after they are laid, and although this growth of the egg is contrary to the analogy observable in the eggs of birds, and even of most insects, it has its advantages, for as it continues to increase it raises the bark more and more, and consequently widens at the same time the slit at the entrance, so that, with species which feed on the leaves of the plant, the grub when hatched finds a passage ready for its exit.* The young caterpillar of *Tenthredo cincta*, when hatched, works its way at once into the pith of the young shoot, and by feeding upon it causes the shoot ultimately to perish. It commences at the top and works downwards, and its progress may be traced by the drooping condition of the leaves, which gradually flag as the nourishment necessary to their existence is absorbed, and occasionally more than one larva is to be found in the same shoot. By the time it is full fed the larva has generally reached the hard wood of the plant, and making for itself a chamber in the pith there changes to the pupa state. The larva is dark green, with a pale line along each side; the fly is about one-third of an inch in length (larger than the last described) and of slender form; the expanse of the wings when stretched out is rather more than half an inch from tip to tip; head, antennæ, and body are shining black, the last with a transverse whitish band towards the tail; the legs have the first joint black, the rest yellow. The perfect fly is to be found in the spring, the caterpillar in the summer. It passes the winter in the pupa state. The best way of destroying the insect is to cut off and burn the infected shoots.

One of the commonest species of saw-flies in most districts is that known as *Tenthredo rosarum*. The economy of this species with regard to the laying of its eggs is equally curious and interesting with that of the last species. Again Rennie's description of the process is so full and exact that no apology to the reader will be necessary for reproducing it. He says: "When the female saw fly has selected the branch of a Rose tree in which to deposit her eggs, she may be seen bending the end of her belly inwards, in form of a crescent, and protruding her saw at the same time to penetrate the bark or wood. She maintains this recurved position so long as she works in deepening the groove she is making; but when she has attained the depth required she unbends her body into a straight line, and in this position works upon the place lengthwise by applying the saw more horizontally. When she has rendered the groove as large as she wishes the motion of the tendons ceases and an egg is placed in the cavity. The saw is then withdrawn with the sheath for about two-thirds of its length, and at the same moment a sort of frothy liquid, similar to a lather made with soap, is dropped over the egg, either for the purpose of gluing it in its place or sheathing it from the action of the juices of the tree. She proceeds in the same manner in sawing out a second groove, and so on in succession till she has deposited all her eggs, sometimes to the number of twenty-four. The grooves are usually placed in a line at a small distance from one another on the same branch, but sometimes the mother fly shifts to another or to a different part of the branch when she is either scared or finds it unsuitable. She commonly also takes more than one day to the work, notwithstanding the superiority of her tools. Réaumur has seen a saw fly make six grooves in succession, which occupied her about ten hours and a half. The grooves when finished had externally little elevation above the level of the bark, appearing like a puncture of a lancet in the human skin." As in the case of the species last described, the egg grows after being laid, and the mother fly seems to be aware of this, for she takes care to deposit them at such distances as may prevent their disturbing one another by their development. The young caterpillars when hatched feed upon the leaves of the Rose; they are dark yellow in colour, having the sides of a pale yellowish green and the belly whitish. This is a double-brooded species, the larva

* This account is compiled from Rennie's valuable and entertaining work on "Insect Architecture," than which no work perhaps furnishes more interesting matter to the entomologist.

appearing in June and September. Specimens of the first brood are very rapid in their transformations, seldom taking more than four or five weeks to accomplish the full term of their existence. When full fed they descend into the earth, and there pass into the pupa state, the fly emerging in July or August from the summer brood, and in the spring from the larvæ of the preceding autumn. It is a thick-bodied fly; the head and thorax are black, body yellowish brown. It is not so active as many kinds of saw flies, the female being especially easy to capture and destroy.

It is not at all an unusual circumstance to find a number of large round holes eaten in the leaves of a favourite Rose tree, the edges being left untouched. If the leaf so disfigured be turned over there will often be found reclining at full length underneath a small pale green caterpillar, the larva of a saw fly, called *Tenthredo* (or *Cladius*) *difformis*. This caterpillar is easily distinguished from the other saw fly larvæ which feed upon the Rose by the fact of its being flatter and not so plump in appearance, and another characteristic peculiar to it lies in a row of small excrescences down each side, which give it a notched appearance, and from each of these excrescences proceeds a tuft of small whitish hairs. When full fed it measures about half an inch; colour as before stated, pale green with a darker stripe longitudinally down the back; the head is brown. When disturbed it falls quickly to the ground, often rolling itself into a ring. When full fed it rolls up a small piece of the edge of the leaf and spins itself a small white silken cocoon in which it passes to the pupa state. The fly is about one-sixth of an inch long and one-third of an inch in the expansion of the fore wings. It is slender in form; the body is black and shining; the legs yellowish white, and black at the base; the wings are pale smoke coloured. The antennæ of the male when viewed under the microscope will be found to be branched somewhat resembling a stag's horn; those of the female are quite thread-like, and it is to the difference of the two sexes in this respect that it probably owes its specific name. The larva is common in June and throughout July; the fly in July and August. Mr Westwood states that this caterpillar is especially attached to standard Rose trees.

In a comprehensive, although not perhaps full, account of insects injurious to the Rose, which appeared sometime since in *The Garden* newspaper, mention is made of the Saw Fly *Tenthredo* (*Athalia*) *rosæ*. In this neighbourhood, as far as our observations have gone, the Rose seems to be exempt from its ravages; but as all localities are not so favoured, a short account of it may not be uninteresting, but the greater part of the facts are drawn from the article above alluded to. The parent fly deposits her eggs on the mid-rib of the Rose leaf, and the young larvæ emerging attack the upper surface of the leaf, leaving the under surface untouched and quite transparent. When full grown the larva is of a dark green colour, paler at the sides and underneath; head yellowish brown. It descends into the earth for the purpose of changing to a pupa. The fly is described as thick bodied, with the head and thorax black and the body yellow. It is double brooded, the caterpillar appearing in June and July and again in the autumn, the fly during July and August, and specimens from the autumn larvæ in the spring. With this species our notes on Saw Flies are brought to a close. There are one or two more species which will be found perhaps occasionally on the Rose, but they are either of such rare occurrence generally, or upon Rose trees specially, that they are hardly worthy of particularisation from our point of view.

The Gall Flies are the next class of HYMENOPTEROUS insects which come under our notice. Although the mischief they cause is very slight indeed in comparison with that effected by some insects, and many of their dwellings may be looked upon almost as objects of beauty and ornamentation, nevertheless their existence on a plant exercises a baneful influence on its welfare. Everybody has probably observed on the young branches of the Dog-Rose or Sweet Brier, during the summer and autumn months, globular masses resembling bunches of moss. In the summer they are of a bright apple-green colour, but as the shortening days of autumn

draw upon us they assume a tinge of red. These are generally known as the Rose Bedeguar, and the insect which produces them (*Cynips rosæ*) is the Bedeguar Gall Fly. In the spring the female fly selects a young growing branch, and by means of an elaborate ovipositor with which nature has provided her, makes number of incisions in the bark, placing an egg in each. The sap being thus interrupted in its natural course gathers and solidifies, forming a mass of hard woody matter which serves for food to the young larvæ, and if this woody formation be cut open it will disclose a number (varying in different cases) of chambers, each tenanted by a white grub or maggot. These change to pupæ of the same colour either in autumn or spring, and the perfect fly is disclosed in the latter season. It is somewhat difficult to account for the mossy substance which envelopes the mass, and in which the chief beauty of the object consists. Rennie conjectures that a certain amount of the sap escaping through the pores of the fibre of the chambers inhabited by the grubs, instead of being evaporated and lost, shoots out into these fibrous bristles; and it may be remarked that these bristles are not simple, but covered with a number of small spines which branch out in various directions, the counterpart, so to speak, on a small scale of the thorns which are present on the branch of the Rose. It is certain, however, that the larvæ must find them of great service in preserving them from the cold of winter. The perfect fly measures a line and a half in length. The antennæ are black, thick, and cylindrical, half as long again as the head; the eyes are brown, the head and thorax black, the body reddish brown. It seems to be generally attached to the common Dog-Rose, but is often to be seen on the Sweet Brier and occasionally on garden Roses. Mr Westwood makes mention of another species (*Aylax Brandtii*) which is found in company with *C. rosæ* inhabiting the same gall.

Three other gall insects infest the Rose, but not to such a degree as to become prejudicial to its welfare. The gall of the first of these, *Rhodites eglanteriæ*, we have found on the Dog-Rose. It is always placed on the under side of the leaf; it is perfectly round in shape, about the size of a pea. In colour it is bright apple-green, with a dull reddish patch on one side, which gradually shades off; it is not at all striped or streaked; the surface of the gall appears to be rather rough. Only one larva inhabits each gall.

The gall formed by another kind of *Rhodites* (*R. rosarum*) is very pretty. It is bright green in colour, and ornamented with several long spikes which are tinged with red. It does not seem to be a common species. In the "Entomologist's Annual" for 1872 it is mentioned as being found on the White Cluster Rose as well as on the Dog-Rose, but we have never met with it excepting on the latter.

The third species we give on the authority of the "Entomological Annual" above quoted. It is named *Rhodites spinosissima*, and is described as "bred from polythalamous fiery red galls, of irregular size and shape, on *Rosa spinosissima*. The galls are berry, egg, or cushion shaped, and frequently beset or bordered with short spines."

To the disfigurement of the leaves of our Rose bushes no insect is more devoted than a species of Upholsterer Bee (*Megachile centuncularis*). During the summer months they may be observed at work at all times during the day, but especially in the early morning in sunny weather. For the construction of their nests this section makes use of living vegetable substances; one species hangs its dwelling with the scarlet petals of the poppy, whilst the one under notice uses for its purpose particles of Rose leaves. It is interesting to watch the operations of this insect. After flying about a Rose bush for a few minutes it will select a suitable leaf, and clasping the edge with its feet, cuts out a large semi-circular piece by means of its strong and sharp mandible. Having accomplished this, without leaving hold of the piece of leaf (which is usually larger than the insect itself), it carries it between its feet, and flies off to its nest, which is situated underground either in a pathway or some other spot where the earth is sufficiently hard for the purpose. On windy days it is often

obliged to rest with its burden, and at all times when laden it is conspicuous and easily captured. It is, however, possessed of a sting capable of inflicting sharp and lasting pain. The amount of damage done sometimes in gardens by this insect is very considerable, and the large pieces they carry away, combined with the frequency of their visits to a favourite tree, render them more destructive than any single species of caterpillar. In a row of Pillar Roses in these nurseries, which was sheltered from the north by a belt of trees, scarcely a single plant remained one summer which was not subjected to its attacks. The branch represented at Fig. 80 was taken from one of these Roses, and will serve to give an unexaggerated idea of the damage it is capable of inflicting. By the side of the branch will be seen the bee itself, of life-size. It is rather more than half an inch in length; the expanse

Fig. 80.—ROSE-CUTTER BEE, WITH BRANCH AFFECTED.

of the fore wings seven-eighths of an inch. It is black-brown in colour; the thorax is woolly, the wings white veined with sepia. It is said to be common everywhere, most plentifully throughout June. The best way of destroying it is by catching it with a net. An excellent but rather laborious and not always practicable method is to trace the bee to its nest, and by destroying the latter the appearance of a young brood will be prevented. The incisions in the leaf made by this insect are very easily distinguished from those caused by caterpillars, being more circular and more dexterously and evenly cut, showing none of the jagged edges visible on the edges of the part attacked by a caterpillar. In the summer of 1902 we found a nest of this species in a greenhouse wall between the plate and the brick-

work, the mortar having been hollowed out for the purpose. The bees throughout the early summer frequented the plants in the neighbouring greenhouses, entering by the doors and side-lights when open, and carrying away large quantities of foliage, which was found most neatly rolled into its various positions when the nest was laid bare.

Amongst COLEOPTEROUS insects the first that claims our attention, no less on account of its size and brilliancy of colour than from the extent of its depredations, is the Rose Beetle (*Cetonia aurata*). Few English beetles can boast of more beautiful or effective colours than those with which this insect is adorned. The head, thorax, and wing cases are of a bright golden green; the thorax is covered with tiny punctures, which are also to be observed on the wing cases, but the latter possess in addition several larger irregularly shaped rust-coloured marks. The wings themselves are quite transparent and pale brown in colour. The underside of the body is greenish bronze colour; at the sides and under the head it is very hairy, as are also the legs at their base. In colour the legs resemble the body. It is about three-quarters of an inch in length. It may often be observed flying round a Rose flower in the bright glare of a summer sun, and on such occasions is a beautiful and conspicuous object, but it is still oftener to be found buried in the flower, either tearing the petals or devouring the anthers and pollen, thus preventing the perfecting of the seed. In addition to the Rose, this beetle is said to have also a liking for the Pæony. The larva lives underground, feeding usually upon decayed or decaying vegetable matter, and it is therefore in the perfect state that this species is injurious. The beetle is common in most localities throughout the summer, and would seem to have a predilection for white or pale coloured Roses, for what reason it is difficult to guess unless it revels in the perfume in which pale Roses are often richer than their darker brethren.

In England the mischief done by the larva of the common Cockchafer or May-bug (*Melolontha vulgaris*) is chiefly confined to pastures, where indeed the havoc they occasionally cause, either directly or indirectly, is very considerable. In France, however, they are very destructive in Rose gardens. Kirby and Spence, in their "Introduction to Entomology," mention the case of M. Vibert, who was forced to abandon his nurseries at Chenevieres-sur-Maine on account of the attacks made on the roots of the plants by this larva, which in two years destroyed 100,000 Rose trees. We have also witnessed in various parts of France no inconsiderable amount of damage caused by this insect, and the same species is very noxious to various annuals in the seed farms of central Germany, where they are so numerous that we were informed a man can collect and destroy them in affected districts at the rate of 800 a day. They live underground, attacking and devouring the roots of the plant, thus ensuring it a certain death. They are dirty-white in colour. The perfect insect is too well known to need description.

Mr Westwood, in "The Gardeners' Magazine of Botany," mentions two other *Coleopterous* insects which prey upon the Rose. The first of these is *Balaninus brassicae*, a small weevil, which he describes as feeding on the petals of the flower, riddling them with small holes. It is from one-seventh to one-sixth of an inch in length, black in colour, with the underside of the body white and the legs black. It is a very common species.

The second beetle mentioned by Mr Westwood is *Meligethes æneus*. This he has observed in the act of biting off and devouring the pollen of the flower. It is much smaller than the last named, barely one-twelfth of an inch in length. Its body is dark green, antennæ black, fore legs reddish, hind legs black. It is common everywhere.

It is a matter for congratulation to the Rosarian that amongst the two orders STEGOPTERA and NEUROPTERA no species of insects are to be found which can be classed amongst those injurious to the Rose, and amongst ORTHOPTERA the only species is the Mole Cricket (*Grylotalpa vulgaris*). This insect is only met with in the south of England, and there never in

sufficient quantity to cause any material damage. In France, however, and on the continent of Europe it is in places very abundant and occasionally destructive in the highest degree, feeding on the roots underground, and forming for itself burrows into which it retreats after feeding.

The last order, HEMIPTERA, furnishes us with one of the most pestilent and annoying of all the visitors to our Roses. We allude to the Aphis or Green Fly (*Aphis rosæ*). The genus Aphis includes a vast number of species, but that attached to the Rose would seem to be as common as any. The economy of this insect is very curious and interesting. It is generally admitted that the females are both oviparous and viviparous, and their power of increase is so great that it has been distinctly proved that in a single summer the descendants of one female Aphis will number several millions. From this fact it will be easily seen how serious their depredations may prove in their consequences. They attack the young shoots, and establishing themselves on the leaves and stem suck the sap, thus absorbing to a great extent the nourishment provided by nature for the leaves, and the shoots, even if sufficiently vigorous to sustain these repeated onslaughts, present a stunted and sickly appearance. The Rose Aphis is pale green in colour; the earliest broods, which consist only of females, are wingless and viviparous, but as the season advances the males appear, and specimens of both sexes are found furnished with white filmy wings. At this stage the females are oviparous, for although it has been proved that with some species the so-called eggs are only cocoons containing the Aphis itself, and that therefore these insects may be regarded as viviparous only, still it has not yet been proved that such is the case with all, or with the species now under consideration. By means of their wings they are enabled to migrate and establish fresh colonies, and it is often these flights which are referred to when mention is made of "blight." After depositing the eggs (or pupæ, whichever they may be) in the autumn, the parent fly dies, and while the insect is present in small numbers only, the following spring is the time when it may be attacked with the best results. By passing the hand gently over the affected parts numbers of Aphides may be crushed (they are very soft and tender) without any injury to the plant, and a good syringing will remove all traces of their former presence. In the few prefatory remarks of this chapter will be found the most approved method of exterminating this insect when once it has become established but in no case is it of more importance or more productive of good results, to keep the plant in perfect health and vigour, and thus enable it to withstand, and even to push through, the trying ordeal to which it is exposed. Aphides have the power of emitting a sweet sticky liquid, commonly known as honeydew, which proves very attractive to ants, bees, and wasps. We have in fact been tempted to place the first-named class of insects amongst those injurious to the Rose, for we were certainly witness to the disappearance under their ravages of several Rose buds under glass, which were probably saturated with honeydew, and therefore highly palatable to the ants.

There are also two kinds of scale found occasionally on the bark of Rose shoots. The commonest is white in colour (*Kermes rosæ*), but a brown species is also not uncommon. These insects fasten themselves to the bark, and suck the juice of the plant. When possible, dipping the affected parts in a solution of soft soap is the best remedy; but when this is not possible, applying the liquid plentifully with a brush answers the same end. It requires, however, only very slight attention to keep scale away, and its presence is a sign of great neglect.

The Cicadas or Froghoppers, so celebrated in poetry, and well known in tropical regions, are but poorly represented in England. Our largest species is but small in comparison with those of foreign climes, but we nevertheless find two kinds attached to the Rose. The first of these (*C. spumaria*) in the larva state envelopes itself in a mass of white froth

and is commonly known as the Cuckoo Spit. It may often be observed on the under side of Rose leaves or on the young twigs. The larva which this froth serves to conceal varies in colour from green to pale yellow. If eliminated from its protecting element it immediately sets to work and manufactures a fresh supply, and in a short time is again safely hid from view. The perfect insect is about a third of an inch long, brown in colour, sometimes a little greenish. Its head, thorax, and wing cases are finely punctured, and on the latter are two white spots; its underside is pale brown. The injury it does to Roses seems confined to the larva state, when it preys upon the sap.

The other variety of Cicada (*C. roseæ*) is much smaller than the last named. In length it is about one and a quarter line. Its usual colour is pale yellow, but it inclines sometimes to green, at others to nearly white; it is, however, always of one colour, never spotted. It is elongated in form and cylindrical, a feature it owes to the wing cases, which are folded and envelope the body. We have often observed this insect late in the autumn on standard Rose-trees, from which, when shaken, numbers would rise into the air leaping and flying. We must confess our ignorance of the economy of this species, but Guillemeau, a French author, states that the eggs are laid upon the Rose, and the larva probably feeds on the sap.

Thrip (*Thrips hæmorrhoidalis*) is also sometimes found on Roses under glass. This insect is very destructive; two or three will devour the under side of a leaf in the course of one night. Their presence may be detected by the yellow appearance of the upper side of the leaf, which when examined will show the under side eaten. The best means to adopt for the extermination of this insect is a solution of soft soap, either dipping the affected shoots in it or syringing freely. It rarely appears, however, on clean and healthy plants. Out-of-doors in hot dry summers it is often very destructive to Rose flowers, especially white and pale coloured blossoms, which it greatly disfigures with numerous small punctures, giving them a dirty and spotted appearance.

In the natural order ARACHNIDÆ, which includes spiders and mites, and the family *Acaridæ*, we have the Red Spider (*Acarus tellarius*), so well known to most cultivators of greenhouse plants, and which is often to be found on Roses under glass, especially during the late summer months. It is very minute, and, as its name implies, is red in colour. It proves injurious to the plants by settling on the leaves and abstracting the sap. It is generally found on plants which have been kept too dry, and a moister atmosphere will almost certainly ensure its disappearance.

This closes our list of injurious insects, and while on the one hand we do not think that many species which may be regarded as generally noxious are absent from this enumeration, on the other we hope that the accounts and details here furnished will not be found to be exaggerated. There remains, however, a pleasing duty to perform, with which these remarks will be closed, and that is a few words on the useful insects of the Rose. The Rose belongs to the Linnæan class, *Icosandria polygynia*; it has not therefore the need of the agency of the insect world to the perfection of its seed that monæcious and diæcious plants have; but there is no doubt but that bees and others materially assist the operations of nature in this respect. There are, however, a few species which are designed to keep in check the ravages of others, and it is to them we specially refer. None perhaps answer to this end to a greater extent than the Ichneumon flies (*Ichneumonidæ*) and their allies the *Chalcididæ*. Both these classes belong to the order HYMENOPTERA; we therefore see that although this order embraces some of the most mischievous insects, it nevertheless furnishes us to a certain extent with an antidote. The species of Ichneumon flies merge so gradually into one another that classification without the aid of a microscope is impossible. Their bodies are for the most part black and shining, and their wings transparent. Their number is so great that nearly every kind of caterpillar has its

parasite of this class. Their habits vary considerably. Some are so small that a single egg of a moth or butterfly furnishes sufficient nourishment for one of their larvæ. Some feed on the interior of the caterpillar, and the eggs of others are laid on the caterpillar's skin, and the larvæ being hatched feed, half buried, on its juices. The female fly is furnished by nature for the purposes of oviposition with a sharp lancet, and with this she pierces the skin of her victim, depositing an egg in each orifice, and the wounds are often very numerous. The larvæ hatching are at once supplied with nourishment in the shape of the flesh of the caterpillar. They are, however, possessed of such wonderful instinct that they invariably avoid the vital parts, and the parent fly only deposits so many eggs as the juices of the caterpillar will serve to nourish. Sometimes the Ichneumon larvæ arrive at the pupa state during the lifetime of the caterpillar, at others when the caterpillar has changed to a chrysalis: sometimes also the Ichneumon pupa will burst the skin of the victim, at others remain and emerge as a fly; but in all cases the death of the infected caterpillar is certain. We have now before us a bunch of small cocoons of a species infesting *Tortrix pyrastrana*, about twenty in number, all of which issued from a single chrysalis of that insect. The fly has very long yellowish brown antennæ; the head is black, thorax yellowish brown, and body black. It is very elegant and graceful in appearance. We have also bred a great number of a larger species from the caterpillars of *Antithesia ochroleucana*.

Next to the Ichneumons in importance as foes of Rose feeding insects, rank those families the larvæ of which devour the Aphides. The commonest, and therefore the most important, are the Ladybirds. These well-known insects belong to the order of COLEOPTERA, and family Coccinellidæ. In England there are six genera and more than fifty species, nearly all of which in their larval state feed on various species of Aphides. The most generally common is the seven-spotted Ladybird (*C. septempunctata*), whose larva is slate coloured. It is somewhat flat, oval in form, and fleshy. The three first segments are larger than the others; the latter are tubercled and spotted. It has the power of emitting a yellow fluid from its tubercles, which faculty the perfect insect also retains. The eggs are laid amongst a colony of green fly, on which the newly hatched larvæ feed, quickly causing a visible decrease in their numbers. It is generally to be found on the upper side of the leaf or on the stems, and retains its hold by means of its posterior legs. The pupa may be found on the upper side of the Rose leaf; it is nearly round in shape, and as the time approaches for the disclosure of the perfect insect its colour may be clearly seen through the white transparent shell.

The order STEGOPTERA furnishes us with one of the most active and powerful enemies of the Aphides in the beautiful lace-winged flies constituting the family Hemerobina, several species of which are natives of this country. All of them in the larvæ state are aphidivorous. The commonest species is *Chrysopa perla*, a beautiful looking fly of a bright apple-green colour, having the wings considerably larger than the body, and finely reticulated. Another object of great beauty is its eyes, which are of a brilliant coppery hue, bright and glistening, standing out like jewels in its head. It is on the wing during the summer and early autumn, and may be easily captured at dusk, its flight being but feeble. A remarkable feature in its economy is the curious manner in which the female fly deposits her eggs. Each egg is placed on a peduncle or hair, some ten or twelve being located together on a Rose leaf with the stalks, so to speak, converging. The spots chosen are those infested with Aphides, and when hatched the young larvæ find themselves in the midst of a plentiful supply of food. They are very ravenous, and are consequently of inestimable value where Aphides abound. Kirkby and Spence state that a larva of this insect requires but half a minute to suck the largest Aphis, and they make mention of a species, the individuals of which "clothe themselves, like Hercules, with the spoils of their hapless victims." When full fed they spin a whitish cocoon, in which they change to pupæ.

The last of the aphidivorous insects are the larva of the DIPTEROUS genus, *Syrphus* (family *Syrphinae*), all of which feed on Aphides, and where these abound perhaps the Aphis has no more voracious or implacable foe. These larvæ are blind, and are furnished with a three-pronged mandible, after the fashion of a trident, and groping about amongst their victims, they seize them with this powerful instrument, and elevating them in the air suck their juices like the larva last named, leaving the skins on the leaves.

We might add to these friends of the Rose, in a lesser degree, dragon-flies, sand-wasps, and a number of others which in the various stages of their existence prey upon other insects, thus limiting their powers of increase, and rendering them incapable of overstepping the bounds assigned them in the economy of nature.

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