AMERICAN FAMILY PRIZE-BOOK.

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BY H. BURCHSTEAD SKINNER, M. D.

BOSTON.

1853.

Class 8501

Book 1862

Cochin China Fowls.

Columbia Pear.

St. Michael Pear.

The Model Poultry House and Yard of Dr. Wm. T. G. Morton.

THE
AMERICAN PRIZE-BOOK:

A WORK ADAPTED TO THE WANTS OF ALL

TRADES AND PROFESSIONS,

FROM THE

HUMBLEST MECHANIC

TO THE

GENTLEMAN OF FORTUNE;

BUT PARTICULARLY THE

FARMER AND GARDENER,
FRUIT-GROWER AND FLORIST,
BIRD-FANCIER, CATTLE AND HORSE-
DOCTOR,
FOWL-BREEDER AND BEE-RAISER,
PHYSICIAN AND APOTHECARY,
PERFUMER AND CONFECTIONER,

MEDICAL AND CULINARY HYGIENIST,
SICK MAN AND THE HEALTHY,
RICH MAN AND THE POOR,
BUSINESS MAN AND MAN OF NO
BUSINESS,
MERCHANT AND LAWYER,
MINISTER AND LAYMAN;

AND TO EVERY DEPARTMENT OF THE HOUSEKEEPER,

FROM THE

WASHER-WOMAN AND COOK IN THE KITCHEN,

TO THE

LADY IN THE PARLOR.

WITH MANY BEAUTIFUL ENGRAVINGS.

By H BURCHSTEAD SKINNER, M. D.

BOSTON.

1853.

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H. B. SKINNER,
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H. B. S.

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PREFACE.

THE object had in view in the preparation of this work, was to bring together, in a cheap form, a vast amount of practical information adapted to the wants of every-day life.

There are elaborate works upon almost every subject, but they are mostly so expensive as to be beyond the means of the common people, and they are generally of so scientific a character as entirely to defeat the object intended, except so far as relates to literary men.

In this work we have so epitomized and condensed each subject, as distinctly to present to the mind at a glance the "*cream of the matter*." This small volume is, therefore, a library in itself, and contains in a far more practical form the substance of what is spread out in many large and expensive works.

As we write for the common people, we have avoided the use of all technical terms, as far as possible, and have rendered each subject so familiar as to range within the comprehension of all.

We send forth this little book, in the firm belief that it will work its own way to popular favor. If we are doomed to disappointment we shall not repine, as we have already enjoyed a large amount of the public patronage on our former domestic publications. Should it attain that destiny which we have marked out for it, we shall find our debt of gratitude to the public still further enhanced, and it may lead us to "*try our hand again*."

H. B. S.

WALTHAM, January 5, 1853

Morgan Horse.

THE AMERICAN PRIZE-BOOK.

CHAPTER I.

AGRICULTURAL DEPARTMENT: OR, FARMER'S VADE MECUM.

SECTION I.

OPEN FIELD CROPS, &c.

SOILS.—A farmer should be well informed of the nature of soils, and of the various plants adapted to them. Some useful plants flourish best in what are called poor lands; and if cultivators were perfectly acquainted with the art of adapting plants to soils, much manure might be saved, which is now wasted by injudicious application.

All sands are hot and dry; all clays, cold and wet; and therefore the manuring sandy lands with clay, or clay lands with sand, is best for grain and pulse. But it is not the natural soil only that the farmer ought to consider, but the depth of it, and what lies immediately underneath it. For if the richest soil is only seven or eight inches deep, and lies on a cold, wet clay or stone, it will not be so fruitful as leaner soils that lie on a better under-stratum. Gravel is, perhaps, the best under-stratum to make the land prolific.

The best loams and natural earths are of a bright brown or hazel color. Dark gray, and russet moulds are accounted the next best. The worst of all are the light and dark ash-colored.

A good method of improving soils is, to go into the forest and skim the surface of the whole lot; this, spread upon the surface of old fields, will restore them to their original productiveness, and as often as the fields decline, the soil of the woods will be fit to remove for this purpose.

All soils, however good, may be impoverished, and even worn out, by successive crops without rest.

MANURE. — No soil will always prove productive without manure. Though naturally fertile, yet if some equivalent for its produce is not returned, it must at length become barren. Some remarks, therefore, upon this subject, will not be deemed out of place.

Liquid Manure. — Water, in its purest state, retains somewhat of the food of plants, and some vegetables will maintain a feeble growth with no other nourishment than that afforded by pure air and water; yet it forms a very meagre diet for most plants.

Fresh urine is a very powerful and efficacious manure, when properly applied; but if not mixed with solid matter it should be diluted with water, as when pure it contains too large a quantity of animal matter to form a proper fluid nourishment for absorption by the roots of plants. Urine is lessened in value, but its useful qualities are not entirely lost, by putrescence. During putrefaction the greatest part of the soluble animal matter that urine contains is destroyed; it should, therefore, be used as fresh as possible, with the precaution of diluting it with water or mixing it with earth. Putrid urine, however, is a valuable manure. It abounds in ammoniacal salts; and though less active than fresh urine, is very efficacious.

The urine of one cow in five months, when properly absorbed, furnishes manure of the richest quality and most durable effects, for half an acre of ground.

Manure for Grass Grounds, — Top-Dressings, &c. — There is scarcely any question on which farmers are more divided than as to the policy of applying manure as a top-dressing to grass lands in the spring or fall. The reasoning seems to be in favor of spring-dressing, and it is supported by many excellent names. But it ought to be known that intelligent farmers near the metropolis most generally dress their lands in autumn, and for so doing they certainly make some show of reason.

1. Grass lands are less injured by carting over them in the fall than spring. 2. It is a season of greater leisure. 3. The top-dressings afford very great protection to the tender roots of plants during winter. 4. The low temperature of the atmosphere in winter checks the process of evaporation.

The fact that farmers who grow rich by supplying the great towns with hay, generally adopt the practice of fall-dressing their grass lands, deserves weight.

Top-dressing should not be used in the fall for winter grain, because it would be apt to make the young plants come forward too fast and grow so rank that they would be liable to be winter-killed. Top-dressing for wheat, rye, &c. should be applied to the growing crop in the spring or early in the summer, when it is suspected that the land is not rich enough to bring a full crop to perfection.

Materials for Dressing, &c. — With regard to the materials for dressing your grass grounds, after your garden is supplied with manure, you may as well cart on to your mowing land all that you can collect from your barn-yards, your stercoraries or dung-heaps, hog-pens, compost-beds, night-soil, &c. All sorts of dung, however, before being applied to grass land, should be well mixed with loam, sand, or some kind of earth which will imbibe the gas or effluvia of the dung or putrescent manure.

Unless you have plenty of manure, you had better not apply any dung to your high, gravelly, or sandy soils, but dress them with plaster of Paris. Uneven grass grounds will not admit of top-dressing to any advantage, on account of the manure's being liable to be washed away.

Manure from Swine. — Very valuable manure, with a little attention, may be obtained from swine. Keep and fatten four hogs in a year, confine them in a yard twenty feet square, with a warm shed attached thereto for shelter. Into this yard put the scrapings of ditches, the dirt which is continually collecting in and about the dwelling-house and other buildings, together with the straw with which they are littered, frequently clearing it out of their house and granting them a fresh supply. During the summer season, often throw in large quantities of weeds, brakes, and other rubbish that may come to hand, which helps to increase both the quantity and quality of the manure. In this way you may make from twenty-five to thirty loads of manure in a year, which answers a more valuable purpose than that which you take from the stable or barn-yard.

Ashes. — It has been discovered that, in taking the hay from meadows, the principal cause of exhaustion to the soil is the loss of the potash contained in the hay; and that this may be readily restored by sowing the meadow with a thick covering of wood-ashes. Some farmers value it as high as fifty cents per bushel, to sow on their grass and corn.

BARLEY. — The Soil. — The soil for barley should be such as will grow good turnips, or other green crops, including clovers,

and which embrace the varieties of loams and sands that are not wet, or *very* dry and poor.

Barley cannot be cultivated to advantage upon stiff, heavy, or wet grounds, or on such as are of a cold and tenacious quality. This crop occupies the ground but about three months; and it is only in a dry, light, mellow soil that its roots can extend with sufficient facility, and supply food necessary to bring the grain to rapid and perfect maturity.

Previous Crop. — Crops that precede this grain should be such as leave the ground mellow and free from weeds; and for this reason hoed crops are to be preferred, such as turnips, potatoes, peas, beans, &c. Small grains should not precede it; they impoverish the soil, leave it foul, and besides, it is contravening one of the most salutary maxims of husbandry to grow two dry crops in succession.

Mode of Manuring. — Manure should not be applied to the barley, but to the preceding crop. The short period that this grain occupies the ground does not afford time for the manure to decompose and yield its food to the plants; and if applied in excess, it causes a too rank vegetation, and the straw lodges before the grain is matured.

Preparation of the Ground. — Where barley follows a root hoed crop, one ploughing will generally suffice; but in all cases a complete pulverization of the soil is necessary. The preferable way may be to harrow the fallow, plough in the seed with a light furrow, and smooth off with the harrow.

The Seed, and Sowing. — Thin-skinned, pale, plump seed should be selected. I sow as soon as the ground is sufficiently dry in the spring. The young grain is not hurt by the ordinary frosts of the latter part of April and May. I sow from six to eight pecks per acre, according to the richness of the soil and the forwardness of the season; the poorest soil and the latest sowing requiring the most seed.

Time and Method of Harvesting. — Barley is known to be ripe by the disappearance of the reddish cast on the ear, or what the English farmers term *red roan*; by the ears beginning to droop, and bending themselves round against the stems; and by the stalks becoming brittle and of a yellowish color. This is the particular period for cutting, as, if suffered to stand longer, the heads break off and the grain wastes with the slightest touch. And it may be cut with the cradle, sickle, or scythe, according to circumstances. If it stands straight, and is not too heavy,

the cradle is to be preferred ; if heavy or lodged, the sickle or scythe.

Produce and Product.—The product varies from fifteen to seventeen bushels, according to season and soil ; compared with wheat, its product is as two or two and a half to one ; compared with oats, about equal, provided the soil is adapted to this grain. The average price of barley is at least two thirds that of wheat. Supposing wheat, then, to be one dollar and twelve cents the bushel, and the product fifteen bushels per acre, and barley to be seventy-five cents, and the product of an acre thirty bushels, and the expense of cultivation equal, the profits of the barley will be nearly as three to two compared with wheat. Barley, besides, is a less precarious crop, is subject to fewer diseases, and has fewer insect enemies to encounter, than wheat.

BUCKWHEAT. — Soil.—In light lands this crop may be used to advantage. In this climate it should not be sown till after the middle of May. One bushel is seed enough for an acre, if sown broadcast, as is usual ; but if sown in drills, less than half that quantity is sufficient.

Harvesting, &c.—Buckwheat is harvested by mowing, in the manner of barley. After it is mown, it should be several days before it is housed. There is no danger of the seed falling, nor does it suffer much by wet. From its great succulency it is liable to heat in a mow, on which account it is better to put it into small stacks of five or six loads each, than either a large one or in a barn.

Its Blossoms Food for Bees.—Buckwheat blossoms afford rich food for bees, and are useful as well from the quantity of honey which they enable the bees to make, as the long time they continue without fading or ceasing to be fragrant.

Manuring.—A bushel of gypsum to the acre, or perhaps less, applied to the ground yearly, will keep rich enough for good crops.

OATS.—The common oats which are raised I consider the best. My average crop of late years has been from forty to fifty bushels per acre, and in one instance sixty-five bushels per acre.

I make oats principally, and generally speaking, my first crop, in the line of a rotation of crops. I break up the piece intended for this crop in the fall, if possible, and in the spring cross-plough and harrow thoroughly before I sow my grain ; then harrow again until the turf is well pulverized ; then sow ten bushels of clover-seed chaff per acre and roll it in. As soon as the grain is harvested, and the young clover has received its growth, I

plough it in. This clover, with the stubble, is about equal to a common dressing of compost manure. In the fall I plough, in the spring I cross-plough, after taking from my compost-heap thirty loads per acre, which are carefully spread. The lot then being well harrowed and furrowed, is ready for planting, either with corn, potatoes, or turnips. This is my second crop. For my third crop, I again sow wheat, peas, flax, oats, &c., and stock the lot down with herdsgrass and red-top, which I believe make the best of hay. I let the lot remain in grass three years. Thus I till three years, and mow or pasture three years. My first and third crop is principally oats.

I have frequently been told that oats and corn were very impoverishing crops; but I find no difficulty in enriching my land as above stated. Ten years ago my average crop of corn was from thirty to forty bushels per acre, but in passing over a lot the second time, which was managed as above, in the summer of 1821, I had the satisfaction of harvesting ninety-six bushels of corn per acre, and received the Society's premium. My other crops have advanced in about the same proportion.

Harvesting Oats, &c. — In harvesting oats, it is recommended to mow, instead of reaping them, as soon as they begin to turn yellow. If they are then well dried, the straw will make food for cattle after being threshed, which will be eaten by the animals in preference to the best meadow hay.

WHEAT. — Wheat thrives not only in temperate, but in very hot and in very cold countries. It requires a good loamy soil, not too light nor too heavy. Wheat should be sowed the last of August or first of September. If sowed the last week in August, on clay soil, it will generally resist the effect of frost in the winter and of insects in the spring.

Early sowing requires less seed than late, because the plants have more time, and are more apt to spread and throw out a good number of stalks. More seed is required for poor than for rich lands, and rich land early sowed requires the least of any.

The proportion of seed is about three pecks to the acre, as it is less apt to lodge when sowed thin than otherwise. Wheat more naturally follows clover than any other crop, and a good farmer will be careful in the arrangement of his crop.

The best method of sowing clover land with wheat is to plough the land ten or fourteen days before you sow it, that the land may have time to get dry, and after rain, to make it dress well. In preparing your seed wheat, the first thing to be

New England Hog.

attended to is, to clean it perfectly from every injurious foreign substance.

The first preparation, therefore, should be to screen, winnow, and riddle the grain till perfectly freed from these and other improper ingredients.

When this is thoroughly accomplished, washing and steeping, for the purpose of preventing smut, should meet attention. The first step in the processes to be instituted against smut is to run the grain *very gently* through a riddle, when not only the smut balls, but the imperfect grains and the seeds of weeds, will float, and may be skimmed off at pleasure.

To prevent the wheat from winter-killing, sow the seed under furrow, at least four or five inches deep, in September, in order that it may extend its roots, and take a firm hold of the soil before the approach of winter, and roll it in the spring, with the box heavily loaded.

To prevent wheat from mildew, care should be taken to cultivate a hardy kind of wheat, to sow it early, to use saline manures, and to consolidate the soil.

INDIAN CORN. — Indian corn is a very important crop, and should always be regarded by the *farmer*, where the climate will suit it.

Soil. — A light, loamy soil is best for this crop, and even if sand greatly predominates it will produce good corn with the help of manure. Corn will not flourish on lands on which clay is the chief ingredient, and which are therefore stiff and wet.

Preparation. — The best preparation for a corn crop is a clover or other grass lay, well covered with a long manure, recently spread, neatly ploughed, and harrowed lengthwise of the furrow. A roller may precede the harrow with advantage.

The time of planting must vary in different districts, and in different seasons. The ground should be sufficiently warmed by vernal heat, to cause a speedy germination. Natural vegetation affords the best guide. My rule has generally been to plant between the 20th and 22d of May.

Preparation of the Seed. — The enemies to be combated are the wire-worm, brown grub, birds, and squirrels. Of these, the first and two last prey upon the kernels, and against these tar offers a complete protection. I soak my seed twelve to twenty-four hours in *hot* water, in which is dissolved a few ounces of crude saltpetre, and then add (say to eight quarts of seed) half a pint of tar, previously warmed and diluted with a quart of

warm water. The mass is well stirred, the corn taken out, and as much plaster added as will adhere to the grain. This impregnates and partially coats the seed with tar. The experience of years will warrant me in confidently recommending this as a protection for the seed.

The manner of planting is ordinarily in hills from two and a half to six feet apart, according to the variety of corn, the strength of the soil, and the fancy of the cultivator. The usual distance in my neighborhood is three feet. Some, however, plant in drills of one, two, or three rows, by which a greater crop is unquestionably obtained, though the expense of culture is somewhat increased.

The first dressing, or after-culture, should be performed as soon as the size of the plants will permit, and the best implement to precede the hoe is the corn-harrow, adapted to the width of the rows.

Harvesting. — The best method of harvesting is to cut the corn down at the surface of the ground when it has become glazed, or hard upon the outside, and put it immediately in stocks, and when sufficiently dried, separate the corn and stalks, and make them secure. By this method the crop may be secured before the autumnal rains, the value of the fodder is increased, and the ground is cleared in time for a winter crop of wheat or rye.

The corn cannot be husked too promptly after it is gathered from the field. If permitted to heat, the value of the grain is materially impaired.

BEANS. — *Value of Beans.* — Beans may be cultivated in drills or in hills. They are a valuable crop, and, with good care, are as profitable as a wheat crop. They leave the soil in good tilth. They ripen early and are very productive.

Mode of Planting. — They may be planted in hills or drills, the rows two and a half or three feet apart, according to the strength of the soil, and cultivated like other hoed crops. They may be planted the latter end of May, or beginning of June, or about the time of planting Indian corn. Five beans are quite enough to remain in a hill.

Hog's dung, mixed with ashes, is said to be the best manure for them; and it is said to be very injurious to beans to hoe them while the dew is on, or in wet weather.

To save Seed. — Either sow a portion for that object, or leave rows wholly ungathered of the main crop, or preserve a suf-

ficiency of good pods promiscuously. The beans saved should be the first fruits of a crop sowed at a period which throws the entire course of growth into the finest part of summer. Let them hang on the stalks till they ripen fully in August or September.

PEAS. — *Soil and Situation.* — The soil should be moderately rich, and the deeper and stronger for the lofty growers.

A fresh, sandy loam, or road-stuff, and a little decomposed vegetable matter, is the best manure. The soil for the early crops should be very dry, and rendered so, where the ground is moist, by mixing sand with the earth of the drills.

Time of Sowing. — For early crops, sow in the fall, in sheltered situations, and cover during the winter with a layer of leaves, and another of long stable-litter, loosely applied, to keep the leaves in their places.

For spring sowing, after the earth takes a temperature favorable to vegetation, your pea sowings should be made once a fortnight, to keep up a regular and successive supply.

Manner of Sowing. — For early sorts, make the drills one inch and a half deep; and let parallel drills be two feet and a half, three, or four feet asunder. Peas that are to grow without sticks require the least room. For summer crops and large sorts, make the drills two inches deep, and four, five, or six feet asunder. Peas laid a foot below the surface will vegetate; but the most approved depth is six inches in light soil, and four inches in clay soil.

Quantity of Seed. — Of the small, early kinds, one pint will sow a row of twenty yards; for the larger sorts, for main crops, the same measure will sow a row of thirty-three yards.

To destroy Insects. — If the seed peas contain insects, scald them a quarter of a minute in boiling water, spread them about, and sow them without delay. This scalding will destroy them, and cause the peas to come up sooner and grow faster.

To prevent Mice from Eating, &c. — When peas are sown before winter, or early in the spring, they are very apt to be eaten by mice. To prevent this, soak the peas for a day or two in train-oil before you sow them, which will encourage their vegetation, and render them so obnoxious to the mice that they will not eat them.

POTATOES. — The potato began to be extensively cultivated about the middle of the last century, and is now considered one of the most important of the vegetable productions.

French Merino Buck.

Winter Nelis Pear.

Devon Bull.

Soil. — The soil ought to be sandy and light, though moderately rich; that is, if fine, mealy, and dry potatoes be required. It should not by any means be glutted with manure, and need not be deep.

The Outside Rows most Productive. — A fact of great importance to potato growers is, that the *outside rows*, and all *single rows*, will be found to produce far greater crops than any of the interior rows of a plot in the garden or field. This depends upon a variety of causes, the chief of which is, the more perfect exposure of the foliage to the agency of air and light. When potatoes are planted in rows pointing north and south, the utmost energy of the light will be exerted, not only upon the foliage of the plant, but upon the surface of the intervening spaces of ground.

Its Properties and Uses. — With regard to the properties of this vegetable and the purposes to which it may be applied, little need be said. They are found to produce, — First, cottony flax from the stalk. Second, sugar from the root. Third, potass by consumption. Fourth, vinegar from the apples. Fifth, soap, or a substitute for bleaching, from the tubercles. And, finally, when cooked by steam, the most farinaceous and economical of all vegetable food.

Potatoes renewed from the Seed. — Take the apples in the beginning of October, (or whenever they are ripe,) before the frost has hurt them; hang them up by the foot-stalks, in a dry closet or warm room, till Christmas, then wash out the seeds, spread and dry them in paper, and preserve them from damps till spring.

Potatoes thus obtained will produce roots of the full size the second season after sowing, when their qualities may be more fully ascertained than they could well be the first season. They will be found to vary very much from the kinds from which the apples were gathered. It will be expedient to plant but one potato of the regenerated sorts in a hill, that you may keep each variety separate.

The varieties most valued for table use at the present time are the *Peach-Blossom*, *Canada White*, *Chenango*, and *Prince's Red*.

The *potato-rot*, which has been so deadly to the cultivation of this valuable vegetable, seems happily to be abating. The use of lime sprinkled upon the seared leaf on its first appearance has proved the most successful remedy yet discovered.

UTA-BAGA. — The soil for the culture of the ruta-baga must

be rich and dry ; and the more it inclines to a sandy loam, the better. Clay is the worst, and wet soils will not answer at all. My general practice has been, to manure well a piece of pasture, of clover lay, from which the hay has first been cut, plough it handsomely over, and harrow it well. I sow in rows, at two and a half or three feet, with a drill-harrow. The sooner the preceding operations succeed each other, the better. I have sown broadcast, but the expense of thinning and culture is increased. A man will drill in three or four acres a day. We allow a pound of seed to the acre, though half this, properly distributed, is enough. Sow from the 26th of June to the 10th of July.

In the culture of this root use the cultivator. The great aim is to extirpate the weeds, and that while they are young.

Postpone the harvesting as long as the season will permit

MANGEL-WURZEL. — *Soil.* — The soil for this root should be a loam, inclining to clay, in good tilth, well manured, and made fine to a good depth.

Planting. — The holes for the seed should be made by a wheel, containing pegs in its circumference, which penetrate the ground about an inch, leaving intervals of four inches ; the rows should be made two feet apart ; two capsules should be dropped into each hole, and the wheel of a common barrow should be pressed over them, which will compress the earth and leave a slight rut for the retention of moisture.

Uses, &c. — Man can eat this vegetable throughout the year ; it is agreeable and healthy. No insect attacks it, and it suffers but little from the variety of the seasons. The leaves of this plant form alone an excellent food for every species of domestic quadruped, during four months in the year. Turnips and other vegetables are, besides, liable to be destroyed by insects, whereas this beet is not. The roots can be preserved eight months in a sound state, while turnips are of little value after March.

Crops. — Some premium crops have yielded more than two thousand bushels per acre. In England, more than sixty tons have been raised to the acre.

Gathering. — In gathering the roots, care should be taken to cut off the leaves about half an inch above the crown, as they will not keep so well if cut more closely.

ENGLISH TURNIP. — Every farmer will find it profitable to raise a quantity of these roots. The mangel-wurzel and rutabaga, useful as they undoubtedly are, will not completely supersede, nor altogether supply the place of the old-fashioned English turnip.

Good crops have been obtained several years in succession by the following process.

Turn over a turf of old sward the first week in June. Yard your cattle at night on this, in the proportion of six head at least to the quarter of an acre, until the 20th of July. Then harrow lengthwise the furrows, so as not to disturb or overturn them, and sow in the proportion of about half a pound of seed per acre.

Fine turnips have been raised by ploughing up old sward ground some time in June, harrowing well, and sowing from the 1st to the 20th of July, and this without the application of manure. But there can be no doubt that folding sheep or horned cattle on the land thus ploughed would very much enhance the crop.

Second Crop. — Turnips are frequently, if not most generally, raised in the United States as a second crop, and no doubt this practice is often very eligible, and may be perfectly consonant with the soundest maxims of good husbandry.

Keeping from Insects. — If a quantity of lime were sowed over the field immediately after putting in the seed, it would probably preserve the crop against insects, and prevent the turnips becoming spongy, as well as increase their size. Unbleached ashes, soot, and plaster have also been highly recommended as manure for turnips.

GRASSES. — Grass is a general name for plants used in feeding cattle, in a green or dry state, for hay or for pasture. There are many kinds of grass cultivated in the United States, but for convenience' sake they may be divided into three kinds, viz. : — 1. Cultivated grasses. 2. Meadow grasses. 3. Pasture grasses. Among the cultivated grasses, *herdsgrass* is one of the most valuable, and, what is worthy the notice of every farmer, it affords *more than double* the nutriment when cut in the seed to what it does in the flower. Another consideration, which renders it particularly worthy of attention, is the seed which it affords, and which may be saved without materially diminishing the hay crop. From ten to thirty bushels of seed may be taken from an acre, which, at the price it now bears, is of itself a handsome remuneration.

Clover is a primary dependence, on all lands which will grow it. Lucern, sainfoin, orchard, tall-oat, and rye grass should not be lost sight of.

2. *Meadow Grass.* — In selecting these, the object is to obtain the greatest burden of good hay, and to mix those kinds which may be profitably cut at the same time.

For clayey and moist soils, many valuable and nutritious kinds seem to be well adapted, such as the smooth-stalked meadow, American crow's-foot, upright bent or herdsgrass, and tall fescue, are particularly suited to swamp or bog soils. For dry loams, sands, and gravels, which ought to be kept long in grass, the crow's-foot or orchard grass, and tall-oat, are probably the best; and to these might be added red and white clover.

3. *Pasture Grasses.* — The meadow fextail and orchard grasses, together with our white clover and green meadow grass, *Poa trivialis*, (which seldom requires to be sown,) I think would form the best selections for all grounds which are moderately dry. The rye and oat grasses, or meadow soft grass, might be either substituted for the first two, or combined with them. These would afford spring, summer, and fall feed, abundant in quantity, and wholesome and nutritious in quality. Gypsum is applied to pastures with the same benefit that it is to meadows.

Time of sowing Grass-Seeds. — On this subject there exists a variety of opinion. Some prefer the fall, but the majority recommend the spring, and that season, so far as our knowledge extends, is most generally chosen; but it is probable that both in fall and spring sowing of grass-seeds there may be some successful and some unfavorable results, according to circumstances of soil, season, &c. Fall-sown grass-seeds are liable to be winter-killed, or destroyed by frosts; spring-sown grass-seeds may perish by drought and heat. But whenever sown, there will be less danger, either from frost or drought, if the seed is well covered with a harrow, and the ground is pressed in with a roller.

There should be at least a bushel of plaster sown on every acre of clover and grass land of a sandy, gravelly, or loamy soil; also on all upland natural meadows.

Hops. — *A Native Plant.* — The hop is a native plant. It is found growing spontaneously on the banks and intervals of many of our large rivers. There are several distinct species, all bearing a near affinity to each other.

Soils. — The soil best calculated for the production of hops is a sandy loam, rather low and moist. I am led to this conclusion from my own observation, and from finding the lands which produce them naturally to be of this kind. Yet I have seen fine crops raised on very different soils.

Mode of Preparing the Land. — I should recommend the following mode of preparing the land and managing the crop. In the fall (October), plough the land deep, nine or ten inches.

In the spring following, pass a heavy, sharp iron-toothed harrow over the land in the same direction it was ploughed; after which, spread your manure evenly over the same, sixteen cords per acre, and more if the land be much reduced; then cross-plough the land nearly the same depth, and furrow it as for planting corn, the furrows to be at least four feet apart.

Mode of Planting. — It is customary to plant corn or potatoes with the hops. (I should prefer potatoes.) Plant every other hill in every other row with hops, thus placing the hop hills at least eight feet apart. Put four cuttings from the running roots, about eight inches in length, into each hill, and cover them the common depth of potatoes.

Management of Hops, first Season. — All the attention requisite the first season after the hops are planted is to keep them clean from weeds, which is easily done when hoeing the crop planted amongst them. In the fall (October), to prevent their being injured by the hard frosts of winter, carry on and lay out of your cart one shovelful of compost manure on the top of each hill; manure from the hog-sty I should prefer.

Time of Gathering. — As soon as hops are ripe, which is about the beginning of September, they must be immediately gathered, or the crop is lost. The quality of the hops depends considerably upon their being picked clean from leaves and stems. Care should be taken, when gathering the hops, to cut the vines two feet from the ground, that the roots may not be injured by bleeding, and see that they do not remain long in the bin or bag after they are picked, as they will very soon heat and become insipid.

BROOM CORN. — *Kinds.* — There are several varieties of broom corn, the North River crop being generally considered the best. The pine-tree kind is considered the poorest, though by several weeks the earliest, and in a short season turns out very profitable. The New Jersey, or large kind, produces about one thousand pounds per acre.

Alluvial lands, well manured, and protected by hills, are best adapted for the broom corn.

Planting. — The broom corn should be planted from two to three feet apart in rows, so that a plough or cultivator can be run between them. The hills may be laid out from eighteen inches to two feet apart; about forty seeds to a hill will answer for seeding. Put the manure into the hills; — old compost is best.

Cultivation. — The broom corn requires to be hoed three

times, the last hoeing when the stalks are three or four feet high. In the first hoeing pull up the waste stalks, leaving in the hill from seven to ten.

Gathering. — The crop should be gathered in before the severe frosts, as the frost kills the seed. The weight of the seed is about forty pounds to a bushel, and it is useful for feeding horses, cattle, and swine. It is to be ground and mixed with meal.

MILLET. — The *cultivated* and the *German millet* are the only two kinds now cared for, and they require nearly the same culture.

The soil should be well pulverized, rich, sandy, and warm. It should be ploughed three times, and carefully weeded, rolled, and harrowed.

The seed should be sown in May, and followed by a light harrowing. The weeds must be kept under as indispensable to a successful crop. That part designed for seed should be placed in a dry, airy place. The grain should be spread loosely on the barn floor, and stirred every day with a rake until it is perfectly dry. The straw makes excellent fodder for cattle.

FLAX. — The only kind of flax now raised is the common kind used in the manufacture of cloth.

The best soil for flax is that composed of a large proportion of vegetable matter. Soils of a dry, sandy, and gravelly nature are not suitable, neither is a clay bottom adapted to the purpose. Alluvial soils are good. The soil should be made fine, and freed from weeds.

The seed is sown broadcast, and covered in by a double turn of the harrows. Three bushels of seed to the acre is a good rule, and should be sown in April or May. If the crop is desired for seed, it requires a greater degree of ripeness than when the fibre is alone desired.

HEMP. — *Fresh soils*, or those which have for some time lain in grass or clover, produce this article best. Old meadow lands, or rich, clayey loams do well. Manures are not essential.

Fall and winter ploughing should not be neglected, as the ground should be made fine and of smooth surface. When the crop is designed for next year's reproduction, the seed should be sown in drills four feet apart; the female stalks should be pulled up and cast away, and the male stalks left seven to eight inches from each other.

The time of sowing the seed is the month of May, near the

10th of the month, and the seed-stalks should be cut after the first sharp frost. The seeds are to be sown broadcast, in the proportion of a bushel and a half to an acre. After the seeds are sown, nature carries forward the work, and the farmer may wait till the crop ripens.

Cutting the plant is preferable to pulling in the time of gathering; let them be cut and spread out evenly upon the ground to cure for two or three days.

Rotting is by two methods. 1. Dew-rotting. 2. Water-rotting. In dew-rotting, spread down the plants from the middle of October to the middle of December. Snow-rotting is a good practice, though it takes too much time. Nothing is better to prepare the ground for grain or grasses than the hemp crop.

SECTION II.

THE FARMER'S MISCELLANY OF HOME MATTERS.

DAIRY. — *General Remarks.* — Unless the farmer has a very diligent and industrious wife, who sees minutely to her dairy, or a most honest, diligent, and careful housekeeper to do it for him, he will assuredly lose money by his dairy; trusted to common servants, it will not pay charges. The dairymaid must be up every morning at four o'clock, or she will be backward in her business. At five the cows must be milked, and there must be milkers enough to finish by six. The same rule must be observed in the evening.

In making butter, the dairymaids should be particularly attentive to one circumstance; viz. there must be a certain proportion of *acid* in the cream, either natural or artificial, or they cannot insure a good churning of butter; some keep a little of the old cream for that purpose; others use a little rennet; and some a little lemon-juice.

In order to determine which cow's milk is best for cream, it has been recommended to let the milk of each be put by itself, and churn each separately.

The Dairy-house. — The properties requisite in a dairy-house are, that it be cool in summer and moderately warm in winter, so as to preserve nearly the same temperature throughout the

year. A dairy for the private use of any farmer or family need not be large, and may very economically be formed in a thick-walled dry cellar, so situated as to have windows on two sides, the north and east in preference, for ventilation; and in order that these windows may the better exclude cold in winter and heat in summer, they should be fitted with double sashes; and on the outside of the outer sash should be a fixed frame of close wire netting or haircloth, to exclude flies and other insects.

On preserving the Temperature of Milk-Rooms. — Where the temperature of the milk-room has become affected by the carrying of newly drawn milk into it, it may be easily reduced to the proper temperature by suspending a small quantity of ice at a considerable height from the floor; and if, during winter, the cold should become too great, a barrel of hot water, closely stopped, or a few hot bricks, placed on the floor or table of the milk-room, will readily counteract its effects. But on no account whatever should a chafing-dish with burning coals be used, as it will certainly impart a bad taste to the milk.

Dairy Utensils. — Milk-Coolers, &c. — All dairy utensils ought to be most carefully scoured, first with hot water, and afterwards rinsed with cold, and kept in an airy place, in order that every possible degree of acidity may be removed. Should one or two scourings be insufficient, they must be repeatedly cleansed until they become entirely sweet, as the slightest taint or acidity may cause material loss. Slate, according to some accounts, makes very good milk-coolers, and perhaps freestone might answer as well.

Making Butter in Winter. — Mrs. Jones prepares her cream for churning by heating the milk after it has stood twelve or twenty-four hours.

She places it over coals the evening before churning, until the milk, as it stands with the cream on, is heated ready to boiling, when she sets it by till morning. The cream is then skimmed off, and churned by stirring in an earthen vessel. The butter is delicately white and clear in its complexion, and is fine-flavored.

Garlic in Butter. — When milk has the flavor of garlic or wild onion, add a quart of boiling water to each gallon, and set it away in vessels having the bottom covered the thickness of an inch only with milk. The cream that rises will be perfectly sweet, and free from any disagreeable flavor.

CHEESE. — Making Cheese. — A person whose dairy enjoys a

high reputation gives the following directions for making cheese :
 “Take a gallon and a half of water and throw into it a pint and a half of common salt. Boil and skim it, and add three or four ounces of rose-leaves. After it is sufficiently steeped, let it cool, and put in one ounce of saltpetre and four rennets. A great-spoonful of this preparation is enough to turn fifteen gallons of milk. When the curd is made, dip it out carefully and put it into a cloth that sits in a vessel with its bottom perforated with holes. Let a person on each side of the cloth take up the corners, and raise the curd carefully, and turn it from one side to the other in the cloth, in order to the better draining off the whey ; then lay it as before in a vessel perforated with holes, and thus turn it once in fifteen or twenty minutes, and in the intervals place a follower upon it, with a stone above ; cutting the curd through each time. When the whey is out, season it with salt to your palate, while cutting it up in small pieces with a suitable knife ; then put it up for pressing. Let it stand under thirty or forty pounds’ weight for twenty-four hours, and then turn it and let it stand twenty-four hours more under the same. A severe pressure, which is sometimes given, spoils a rich cheese entirely.

“Set your cheese in closets made for the purpose, which flies cannot enter.

“The outside may be rubbed with a mixture of butter and Spanish-brown, which answers very well, but other mixtures may answer equally well.

“A small quantity of otter, say the size of a kernel of rye, *sowed up in a cloth*, may be put in each curd.

“Never wash out your cheese-cloth with soap, but boil it out in whey.”

Stilton Cheese. — How made. — Take the night’s cream and put it into the morning’s new milk with the rennet ; when the curd is separated, let it not be broken, as is done with other cheese, but take it out, disturbing it as little as possible, and suffer it to dry gradually in a sieve ; and as the whey separates, compress it gradually till it has acquired a firm consistence ; then place it in a wooden hoop, and suffer it to dry very gradually on a board, taking care at the same time to turn it daily with close binders round, and which must be tightened as the cheese acquires more solidity.

Skippers in Cheese. — Wrap the cheese in thin brown paper, so thin that moisture may strike through soon ; dig a hole in good sweet earth about two feet deep, in which the cheese must

be buried about thirty-six hours, and the skippers will be found all on the outside of the cheese; brush them off immediately, and you will find your cheese sound and good.

To prevent Cheese having a Rancid, Nauseous Flavor. — Put about one table-spoonful of salt to each gallon of milk, when taken from the cows in the evening, for the cheese to be made the next day; put the salt at the bottom of the vessel that is to receive the milk; it will increase the curd, and prevent the milk from growing sour or putrid the hottest nights in summer.

BARNs. — *Proper Location of Barns.* — The barn should be placed at a convenient distance from the dwelling-house and other buildings, but as near as may be without danger of fire, or annoyance from the effluvia of manure-heaps. Too low a spot will be miry in spring and fall. Too high an eminence will be inconvenient for drawing in loads, and on account of saving and making manure. If other circumstances permit, it may be best to place a barn in such a manner as to defend the dwelling-house from the force of the coldest winds.

Proper Size, &c. — The size of the barn should be proportionate to the produce of the farm; for in this country, where building is not expensive, all the hay and grain should be placed under cover. It is a bad practice to leave hay in stacks in the meadows where it is cut, to be there foddered out to the cattle in the course of the winter. By this mode of management the manure is almost lost.

Barn Floor, — Grain Bin, &c. — The floor of the barn should be kept tight, so that the grain cannot fall through in threshing; and for this purpose it should have a layer of thin boards under it. It is most advisable also to have a place set apart in the barn for the purpose of stowing away the grain after it is threshed. The bins for the grain should be made of hard plank, to prevent the rats and mice from eating through them, and should have lids, which can be fastened down with padlocks.

FENCES. — The kinds of fence and manner of fencing should vary according to the difference of soil and the kinds of materials for fencing. In new lands, logs are and ought to be most used. When built of white-pine, they will last about twenty years. Other sorts of wood, such as pitch-pine, hemlock, ash, oak, &c., will endure for a considerable time if not placed too near the ground.

Best Kind of Rails. — In many parts of the country, posts and rails will be found the cheapest materials for fence.

The best timber for rails, according to Dr. Deane, is red-cedar. It is easy to split, light to carry and handle, sufficiently strong, and the most durable of any.

Best Kind of Posts.—Red-cedar, locust, and chestnut are best for posts. Butternut, black-walnut, and oak are pretty good, lasting about fifteen years.

If the lower ends of posts are scorched in a hot flame before they are put into the ground, they will last the longer. Some recommend soaking them in sea-water to keep them from rotting. The posts should be set at least two feet in the ground.

Stone Walls.—In laying stone walls, regard should be had to the soil. If a miry or clay soil, the foundation should be laid in a trench nearly as low as the earth freezes. A wall of flat or square shaped stones will stand pretty well on any soil on the surface.

DRAINS.—*Two Kinds of Drains.*—Drains used in farming are of two kinds, open and covered. They should be of a size and depth proportioned to the extent of the swamp and the probable quantity of water for which they are designed to be channels. They should generally be carried through the lowest and wettest part of the soil, although it should be necessary, in order to effect that purpose, to deviate from straight lines.

Of Ditching a Fence.—When a ditch is made for a fence, it ought to be four feet wide at the top, one or less at the bottom, and about two and a half feet deep; with the earth all thrown out on one side, and banked up as high as possible.

A Rule for Open Drains.—A rule for open drains is that the width at top should be three times as much as that which is necessary at the bottom, and in case of peat-mosses or soft soils, it should be such as to allow the water to run off without stagnation, but not with so rapid a motion as to injure the bottom.

Manner of Draining a Swamp.—The manner of draining a swamp is as follows. Beginning at the outlet, pass a large ditch through it, so as mostly to cut the lowest parts. Then make another ditch quite round it, near to the border, to cut off the springs which come from the uplands, and to receive the water that runs down from the hills upon the surface, in great rains.

Of the Main Ditches.—The bottom of the main ditches, when the soil is not of an extraordinary depth, must be lower than the bottom of the loose soil; otherwise the soil will never become sufficiently dry and firm.

A Rule for all Drains.—In all drains, it is a rule to begin

at the lowest place and to work upwards, by which the water will always pass from the workmen and point out the level. This enables the laborers also to work in coarse weather, and prevents their being interrupted by wet so early in the season as otherwise might happen.

HAYMAKING. — It is a matter of much importance to the husbandman that he should take time by the foretop during the hay-making season. He must drive his business rather than be driven by it.

Season of Cutting Grass. — It is best, generally speaking, to cut your very heaviest grass first of all; and if it be lodged, or in danger of lodging, or the lowest leaves and bottom of the stalks are beginning to turn yellow, although the grass is hardly headed, and appears not to have obtained more than two thirds of its growth, you had better begin upon it. But when you have help enough, and your grass stands up well, you will do best to wait till the blossom is fully formed, and is beginning to turn brown. Clover is the most critical grass, and requires the most attention. "In all cases," says Sir John Sinclair, "clover ought to be mown *before the seed is formed*," that the full juice and nourishment of the plants may be retained in the hay.

The fore part of the season for making hay is, we believe, usually attended with less rain than the latter part. The days, too, are longer, and the dews are less copious. Farmers will, therefore, find additional motives from these circumstances to industry and exertion in early hay-time.

Grass should be mown close. — It is asserted by the "Farmer's Guide," that "grass will not thrive well that is not mown quite close; and the loss in the crop where this is not done is considerable, *as one inch at the bottom weighs more than several at the top.*"

Signs of Rain, &c. — In this climate, a southerly wind, if it continues steadfast for forty-eight hours, is generally followed by rain. If the wind, however, shift its course with the sun, or, as sailors phrase it, go round with the sun, in the morning blowing from the south, or east of south, and changing westerly as the sun advances, it generally indicates dry weather. If the wind shifts in a course opposite to the apparent course of the sun, rain commonly succeeds. If the wind continues southerly, and blows briskly through the night, it commonly, as the phrase is, "blows up rain." A northerly wind is a *drying* wind, and its predominance soon dissipates clouds, and introduces fair weather.

HARVESTING. — As a general rule, the proper time to reap wheat or rye is when the straw begins to shrink, and becomes white about half an inch below the ear.

If the grain is encumbered with grass or weeds, you must cut it very near the top, and a little earlier than you otherwise would, that you may have time to dry the weeds without the grain shelling out.

Wheat and rye should both be bound with one length of the straw, as it will save the trouble of making bands, and the wheat will dry better, as the sheaves must, of course, be small.

It is a bad plan to stow grain upon a hay-mow, as it is apt to become musty, and will be much harder to thresh, on account of the dampness communicated by the hay; it should be stowed upon a scaffold.

In making a stack, be careful and keep the seed ends of the sheaves in the middle, and a little higher than the outer ends. This will preserve it from the fowls and the rain; make up the top well with straw.

Oats should be harvested before the straw becomes fully yellow. The straw will be of little or no value if permitted to stand till it becomes white and destitute of sap. They should be gathered mornings and evenings, when the straw is made pliable by moisture.

The only certain test of judging when barley is fit to mow, must be from the dropping and falling of the ears, so as to double against the straw. In that state, and not before, it may be cut with all expedition, and carried in without danger to the mow.

BUSHES. — In many parts of our country the pasture grounds are infested and often overrun with noxious shrubs; this is the most slovenly part of our husbandry, and ought to be cured.

Eradicating them, says Deane, requires so much labor that farmers are most commonly content with cutting them once in a few years. But the more cuttings they survive, the longer lived they are apt to be, and the harder to kill, as the roots continually gain strength.

Best time for Cutting Bushes, Manner, &c. — It is undoubtedly true, that cutting bushes in the summer will do more towards destroying them than doing it in any other season, particularly in August. Other circumstances being equal, the wettest weather is best for destroying shrubs by cutting. Spreading plaster on ground where bushes have been cut may tend to check their re-sprouting, by encouraging the growth of grass.

It is said to be a good method of destroying bushes, to cut them with hoes close to the surface, when the ground is frozen hard; and that more may be destroyed in a day in this way than in the usual method of cutting with a bush-scythe.

Bushes which grow in clusters, as alder, &c., may be expeditiously pulled up by oxen; and this is an effectual way to subdue them.

Elder is considered harder to subdue than almost any other kind of bush; mowing it five times in a season, it is said, will not kill it. The roots of the shrub-oak will not be killed by digging them out.

To destroy bushes in swamps, flooding two or three summers is the most approved method. But if this is not convenient, draining will so alter the nature of the soil, that the shrubs which it naturally produced before will not be any longer nourished by it; and one cutting may be sufficient.

After all, extirpation by digging them out, and by fire, is cheapest and most effectual.

PLOUGHING. — Ploughing is the most important of agricultural operations. On the manner in which this is performed depend all the subsequent operations of tillage on the same land.

Of Ploughing in different Soils, Time when, &c. — In all stiff, heavy, and adhesive soils, that are much disposed to moisture, it should be a common rule not to plough them while wet in any considerable degree, especially if there is much clay in their composition.

Greensward, in general, can hardly be ploughed too wet, if it be not miry. Marshy, moory, and peaty or mossy descriptions of soil should, in general, when already reduced to a state of tillage, be ploughed when the season is dry.

In dry, sandy, and perhaps in some of the more mellow kinds of loamy soils, the business of ploughing may be performed when the earth is in a state of considerable moisture. But very dry, sandy land, whenever the weather is hot and dry, should merely be stirred in such a way as may be necessary to prevent the growth of weeds.

Upon the Depth of Ploughing, no certain Rule to be given. — Much has been said upon the advantages of deep ploughing. But no general rule on this subject can be given which is not liable to many exceptions. The cultivator must be regulated by the nature of the soil, the proposed crop, &c.

The point which ought to be referred to, when determining

between the merits of different specimens of ploughing, is the angle of forty-five degrees. That is, other things being equal, the nearer the furrow-slice comes to forming an angle of forty-five degrees with the horizon, the more perfect the specimen of ploughing.

Dry Soils to be tilled flat.—Dry soils, being deficient in moisture, *ought to be tilled flat*, as any sort of draining which the furrows might afford would be prejudicial rather than advantageous.

PASTURE.—*Management of Pasture Land.*—To manage pasture land advantageously, it should be well fenced in small lots, of four, eight, or twelve acres, according to the largeness of one's farm and stock; and these lots should be bordered at least with rows of trees. It is best that trees of some kind or other should be growing, scattered in every point of a pasture, so that the cattle may never have to go far in a hot hour to obtain a comfortable shade. The grass will spring earlier in the lots that are thus sheltered, and they will bear the drought better. But too great a proportion of shade should be avoided, as it will give a sourness to the grass.

Time of Turning in Cattle.—It is hurtful to pastures to turn in cattle too early in the spring; and most hurtful to those pastures in which the grass springs earliest, as in very low and wet pastures. Potching such land in the spring destroys the sward, so that it will produce the less quantity of grass. Neither should cattle be let into any pasture until the grass is so much grown as to afford them a good bite, so that they may fill themselves without rambling over the whole lot. The 20th of May is early enough to turn cattle into almost any of our pastures. Out of some they should be kept later. The driest pastures should be used first, though in them the grass is shortest, that the potching of the ground in the wettest may be prevented.

Of Cleaning Bushes and Shrubs.—The bushes and shrubs that rise in pastures should be cut in the most likely times to destroy them. Thistles and other bad weeds should be cut down before their seeds have ripened; and ant-hills should be destroyed. Much may be done towards subduing a bushy pasture by keeping cattle hungry in it. A continual browsing keeps down the young shoots, and totally kills many of the bushes. Steers and heifers may mend such a pasture, and continue growing.

Of Feeding in Rotation.—Feeding pastures in rotation is of

greater advantage than some are apt to imagine. One acre, managed according to the above directions, will turn to better account, as some say who have practised it, than three acres in the common way. By the common way I would be understood to mean, having weak and tottering fences, that will drop of themselves in a few months, and never can resist the violence of disorderly cattle; suffering weeds and bushes to overrun the land; keeping all the pasture land in one inclosure; turning all sorts of stock together; suffering the fence to drop down in autumn, so as to lay the pasture common to all the swine and cattle that please to enter; and not putting up the fence again until the 1st of May, or later. Such management is too common in all parts of this country.

Of Manuring Pastures. — Though pastures need manuring less than other lands, yet, when bushes, bad weeds, &c. are burnt upon them, the ashes should be spread thinly over the surface. The grass will thus be improved, and grass-seeds should be sown upon the burnt spots, that no part may be vacant of grass.

Of Water in Pastures. — “Sheep, calves, and horses, unless they are worked,” it is said, “require no water in their pastures. The want of water induces them to feed in the night, when the dew is on and the grass more nutritious. Cows, however, want pure water.”

Way to obtain Water. — “In pastures which are on side-hills, water may generally be obtained by digging horizontally into the side of the hill till it is found, and then carrying it out with a pipe.”

WOODLAND. — *Care should be taken of the Young Growth.* — Some ground is covered with wood or trees that are mostly designed for fuel and timber. In felling them, care should be taken to injure the young growth as little as possible. Firewood, as well as timber, should be felled when the sap is down; otherwise it will hiss and fry upon the fire, and not burn freely, although it should be ever so long dried.

How to thicken a Forest. — To thicken a forest, or to increase the number of trees in a wood-lot, it should be well fenced, and no cattle be permitted to be in it. And something may be done, if needful, by layers and cuttings.

Old Trees should be cut. — The Massachusetts Agricultural Repository recommends cutting hard-wood trees between forty and fifty years of age; and the writer states, that though trees

may shoot up in height by standing longer, yet the period of the most rapid vegetation is mostly over, and by this means much of the under-growth is necessarily destroyed.

A Decaying Forest should be cut off Clean.—The “Farmer’s Assistant” likewise says: “If woods are old and decaying, the better way is to cut all off, as you want to use the wood, and let an entire new growth start up, which will grow more rapidly.”

SECTION III.

THE MOST COMMON NOXIOUS INSECTS.

INSECTS.—The design of our work will allow us to devote but a brief space to the consideration of this subject. A few of the most approved modes of counteracting the ravages of insects will be pointed out.

Preventive Operations.—The preventive operations are those of the best culture, in the most extensive sense of the term, including what relates to choice of seed or plant, soil, situation, and climate. If these are carefully attended to, it will seldom happen that any species of insect will effect serious and permanent injury. Vegetables which are vigorous and thrifty are not apt to be injured by worms, flies, bugs, &c. Fall ploughing, by exposing worms, grubs, the larvæ of bugs, beetles, &c., to the intense frosts of our winters, is very beneficial. Insects may be annoyed, and oftentimes their complete destruction effected, by sprinkling over them, by means of a syringe, watering-pot, or garden-engine, simple water, soap-suds, tobacco-water, decoctions of elder, especially of the dwarf kind, of walnut-leaves, bitter and acrid herbs, pepper, lye of wood-ashes, or solutions of pot and pearl ashes, water impregnated with salt, tar, turpentine, &c.; or they may be dusted with sulphur, quicklime, and other acrid substances.

Canker-worm.—The female of this insect comes out of the ground late in the fall or early in the spring, or, sometimes, during a period of mild, open weather in winter. Those which rise in autumn or in winter are less numerous than those which ascend in spring; but, being very prolific, they do much injury. One method of preventing the ravages of the worm is to bar the

ascent of the females up the stem of the tree. This has generally been attempted by *tarring*, of which there are several modifications.

Three Modes of Tarring. — 1. A strip of linen or canvas is put round the body of the tree, before the females begin their ascent, and well smeared with tar. The insects, in attempting to pass this barrier, stick fast and perish. But this process, to complete the desired effect, must be commenced about the first of November, and the tarring continued, when the weather is mild enough to permit the worms to emerge from the ground, till the latter end of May, or till the time of their ascent is past. It is necessary to fill the crevices in the bark with clay mortar, before the strip of linen or canvas is put on, that the insects may not pass under it.

2. Another mode of tarring is, to take two pretty wide pieces of board, plane them, make semicircular notches in each, fitting them to the stem or body of the tree, and fasten them together securely at the ends, so that the most violent storms may not displace them. The crevices betwixt the boards and the tree may be easily stopped with rags or tow; then smear the under side of the boards with tar.

3. A gentleman informs us, that in Plymouth, Massachusetts, they make use of the following mixture as a substitute for tar in preserving fruit-trees against canker-worms, viz.: White varnish, soft soap, and whale-oil, one third of each, to be mixed and applied as tar is usually. This mixture is not soon hardened by the weather, and does not injure the trees. Another simple mode of preventing the ascent of the insect is to wind a band of refuse flax or swingle tow round the tree, and stick on the band burdock or chestnut burs, set so closely together that worms cannot pass between them.

Caterpillars.—Mode of destroying them.—This is one of the worst enemies to an orchard, when neglected, but easily destroyed by a little attention. In the spring, when the nests are small, and the insects young and tender, they never venture abroad in the early part of the day, when the dew is on the trees, or in bad weather; they may then be effectually destroyed by crushing them in the nest. This attention, continued a short time every spring, will destroy those in existence, and will prevent their increase in future years; if left till grown strong, they wander from their nests, and cannot be effectually overcome without great trouble and expense.

Other methods have been proposed, such as casting over the tree a few handfuls of ashes in the morning, before the dew is dissipated from the foliage, or after a shower of rain. A strong whitewash of fresh limestone, applied by the means of a mop, or sponge, fixed to the end of a pole, strong soap-suds, spirits of turpentine, a little oil of any kind, particularly blubber-oil, are likewise fatal to the insects.

Cut-worm. — This is an ash-colored worm, with a stripe almost black on its back. When fully grown, it is about the size of a goose-quill, and about an inch and a quarter in length. They are very apt to cut off young cabbages, cauliflowers, beets, &c. They never voluntarily appear on the surface of the ground in the day-time, but may be found about an inch below it. In the night they make their excursions, cut off the stems of young plants just at the top of the ground, and again bury themselves.

Remedies for, &c. — Lime and ashes, in some measure, prevent their doing mischief; but sea-water, salt, or brine, would be more effectual; and not a laborious remedy, even in field culture, is it to go round every morning and open the earth at the foot of the plant, and you will never fail to find the worm at the root within four inches. Kill him, and you will save, not only the other plants of the field, but probably many thousands in future years.

Apple-tree Borers. — *Preventive, &c.* — In speaking of the apple-tree borer, Professor Loy, in a letter to Jesse Buel, Esq., says: "You state that it leaves the pupa and becomes perfect in the latter part of April, and that the eggs are deposited beneath the surface of the soil. These two circumstances ascertained, I would recommend the application, early in May, or the latter part of April, of common bricklayer's mortar, around the base of the tree, so as to cover completely the part, and its immediate vicinity, where the deposit is made."

Slug-worm. — The following remedy, it is said, will prove effectual in the destruction of this worm. Make a strong infusion of tar, by pouring water on tar and suffering it to stand two or three days, till it becomes strongly impregnated. This, if sprinkled over the leaves by means of an engine, will kill these vermin instantaneously. A strong decoction of tobacco will probably produce the desired effect, and tanner's bark put round the tree, it is said, will have a salutary tendency as a preventive.

Others recommend watering the ground where these insects are with soap-suds and urine, mixed with tobacco-water. Ducks admitted into a garden will destroy all within their reach.

Wire-worm, or Red Worm. — This insect is slender, and usually about an inch long, with a hard coat and a pointed head.

Soaking seed-corn in a solution of copperas in water has been found effectual against this insect.

Probably sea-mud or sea-water would produce good effect as preservatives against this and other insects.

Striped Bug, or Yellow Fly. — This is a bug that preys on the young plants of cucumbers, melons, squashes, and other similar plants. They may be considerably thinned by killing them in a dewy morning, when they have not the free use of their wings, and cannot well escape; or the vines may be sprinkled over with sulphur, or Scotch snuff, which is an effectual antidote. But a frame, covered with muslin or gauze, is probably the best remedy.

SECTION IV.

A COLLECTION OF CHOICE RECEIPTS VALUABLE TO THE FARMER AND HIS WIFE.

[P] These have all been tested and approved.

CLASS I.

Way to make Candles. — Prepare your wicks about half the usual size, wet with spirits of turpentine, put them into the sun until dry, then mould or dip your candles.

Candles thus made last longer, and give much clearer light. In fact, they are nearly or quite equal to sperm, in clearness of light.

Take two pounds of alum for every ten pounds of tallow; dissolve the alum in water before the tallow is put in, and then melt the tallow in the alum-water, with frequent stirring, and it will clarify and harden the tallow so as to make it a most beautiful article for either winter or summer use, almost as good as sperm.

Cheese. — *To prevent its Cracking.* — The best method to prevent the cracking of cheese is to salt it in the milk, or after the cheese is formed, which may be done with much more certainty than in the curd, which is a bad method.

Dairy Secret. — Have ready two pans in boiling water; and on the new milk coming to the dairy, take the hot pans out of

the water, put the milk into one of them, and cover it with the other. This will occasion great augmentation in the thickness and quality of the cream.

Eggs. — Preserving Eggs. — A Mr. Jayne, of Yorkshire, England, obtained a patent for the following receipt, for preserving eggs, which we think worthy of trial : —

One bushel of quicklime, 32 ounces of salt, 8 ounces of cream of tartar.

Mix the same together with as much water as will reduce the composition to such consistency that an egg, when put into it, will swim. It is said eggs have been kept sound, in this way, for two years.

Another. — Put a layer of salt in the bottom of a jar, and stick the eggs, point downwards, into the salt, and so on, layer after layer.

Hams. — How to preserve. — Mr. Robert Wilson, of Fairfield, Conn., says he preserves his hams from flies, &c., by packing them in oats. In the fall he mixes his oats with corn, and grinds them, to increase the quantity.

Beef and Pork. — A Pickle for. — The following receipt is strongly recommended : Six gallons of water, 9 lbs. salt, coarse and fine mixed ; 3 lbs. sugar ; 3 ounces saltpetre ; 1 ounce pearl-ash ; one gallon molasses to every six gallons water. In making a larger or smaller quantity of pickle, the above proportions are to be observed. Boil and skim the ingredients well.

Bacon. — How to preserve. — Make a lye of wood-ashes, and boil it till it is strong. Dip each piece of meat in it, let it dry, and hang it in a smoke-house ; no insect will injure it, and the taste of the lye will not be perceived, even on the outside.

Apples. — Winter apples are better for remaining on the tree till well grown and ripened ; it improves their flavor.

To drive Ants away. — To prevent this little intruder from committing depredations on your dairy, safes, &c., smoke the bottom of your dishes or other vessels over a fire of oak chips or limbs ; smoke empty vessels, and set your full ones in them. You must repeat the process every day or two, which will probably cause them to change their haunts.

A small quantity of green sage, placed in the closet, will cause ants to disappear.

Bees. — How to catch the Moth, or Miller. — Dr. Waterman says : “ I took two white dishes, (I think white attracts their attention in the night.) or deep plates, and placed them on the top

of the hives, and filled them about half full of sweetened vinegar. The next morning I had about fifty millers caught; the second night I caught fifty more; the third night being cold, I did not get any; the fourth night being very warm, I caught about four hundred; the fifth night I got two hundred."

Bees. — *To prevent them from Fighting.* — To stop bees from fighting and robbing one another, break the comb of the robbers, so that the honey will run down among them, and they will go to work at home.

W. & C. — *To preserve Vines from Bugs* — The best remedy we have tried is, to plant onion-seeds with the cucumber, and, after the plants are up, to sprinkle ashes on every hill, just before a fall of rain, which makes a *lye* and kills the bugs, &c., almost instantaneously; the smell of the onions, when up, will keep the flies off. We have adopted this method for a number of years, not only on our vines, but on vegetables, such as beets, parsnips, &c. It promotes their growth, and loosens the earth around the roots. Ashes sprinkled on young cabbages will also destroy worms and increase their growth.

Another. — Lay two shingles flat on each hill among the plants; early in the morning, and just before night, visit them, and you will find plenty of bugs sticking to the shingles on the under side; clap them together, and the slaughter is sudden and immense.

To preserve Corn from Crows. — Take after the rate of one pound of copperas to a bushel of seed-corn, dissolve in water, and sprinkle the corn with it; the corn may, at the same time, be rolled in plaster.

This experiment has been tried for three years, with great success, by a veteran farmer.

Another. — Soak a few quarts of corn in whiskey, and scatter it over the field for the crows, who, after partaking one such meal, and getting pretty thoroughly *corned*, will never return to it again.

Hawks. — *To prevent their Depredations.* — One or more Guinea hens in a flock of fowls, it is said, will effectually prevent molestation from hawks.

Hops. — *How to protect from Insects.* — Mr. John Hobbs, of St. Ives, Cornwall, effects the destruction of all the small insect tribes which infest the hop-plant, by the erection of rails of a particular construction, smeared over with cold tar, or the saturation of the poles with a solution of copperas.

Insects. — *To destroy Insects on Plants.* — Tie up some flour of sulphur in a piece of muslin or fine linen, and with this the leaves of young shoots of plants should be dusted; or it may be thrown on them by means of a common swan's-down puff, or even by a dredging-box.

Insects in Orchards. — Worms and insects in orchards may be destroyed by allowing swine to run beneath the trees. As fast as the wormy and immature fruit falls, they will eat them, worms and all.

Worms and Grubs. — A mixture of salt and saltpetre (nitre), in proportion of eight parts of the former to one of the latter, applied about the roots, will, it is said, destroy the worms and greatly promote the health and thrift of the tree.

Bone-Dust. — Thirty bushels of bone-dust, and seventy bushels of ashes, mixed well together, is enough for an acre of turnips, the which, after being evenly spread, should be harrowed in before sowing the seed.

To render old and barren Orchards thrifty and productive. — Early in the spring plough the entire orchard and enrich with a compost of manure, swamp-muck, lime, and sea-manure. Scrape off all the old bark with a deck-scraper, or a hoe, ground sharp. Apply half a bushel of slacked lime, and the same of charcoal, around each tree. Apply then soft soap, or strong soap-suds, on the trunks and limbs, as high as a man can reach. While the trees are in full bloom, throw over them a good proportion of fine slacked lime.

CLASS II.

Calves. — *Keeping Calves with Sheep.* — We have often recommended the keeping of calves with sheep, as we have found it an excellent plan, and highly approved of by others who have tried it. In this way there is less trouble, and the calves keep in fine condition upon the coarse part of the fodder which the sheep leave. In such cases, calves are never afflicted with vermin, and if any are on them before, they will soon disappear after the calves are among the sheep.

Cattle. — *To relieve choked Cattle and Hogs.* — Raise the fore foot to relax the muscles of the leg; then tie a bit of whip-cord, drum-line, or other strong string, round the arm, just above the knee; let go the foot, and if the horse or cow does not put it to the ground, a quick stroke with the whip will make it do so, and the operation is performed, and the animal relieved.

Another. — Tie the heads of cattle down, and it will prevent their choking.

Cattle. — *Feeding, &c.* — If all the grain fed out to stock were chopped, a saving of at least twenty-five per cent. in the quantity consumed might be made. The cattle would thrive better, as the food would be converted into nutriment without making so violent a demand upon the digestive organs.

How to save in feeding Horses. — Bruise or crush your oats in a mill, or otherwise, as convenient, and your horse will become fatter on half its usual allowance, than on double the quantity unprepared. If you cannot bruise the oats, pour hot water upon them and let them soak for a few hours.

Horses. — *Salting Horses, &c.* — A good lump should be kept in a box by the side of every animal, without fear that it will ever be taken in excess.

Horses. — *Feeding with Oats, &c.* — We were lately told by the proprietor of an extensive livery stable, that he had the experience of several years in feeding the yellow carrots to his horses, and that he considers them the most valuable articles for winter food that he ever used. He considers a peck of carrots and a peck of oats worth more for a horse than half a bushel of oats.

Horses. — *Marks of, &c.*

One white foot, buy him;

Two white feet, try him;

Three white feet, deny him;

Four white feet and a white nose,

Take off his hide and throw him to the crows.

Colts. — *To prevent them Chewing their Halter.* — Take the scab from the wart or issue on the inside of the leg, rub the halter thoroughly with that, and they will not be caught chewing their halter very soon. I have tried pepper, tobacco, &c., but nothing to so good a purpose as their own or kindred musk.

Hens. — *Feed with Oats, &c.* — Hens will, it is said, be sure to furnish an extra quantity of eggs, if you deal to each about a gill of oats per day.

Hens. — *How to protect from Vermin.* — A gentleman from Hanover requests us to state the fact, that pennyroyal woven in their nests, will perfectly and certainly protect hens from vermin. He generally makes the nest entirely of this strong-scented herb.

Fowls. — *To fatten.* — Confine your fowls in a large and airy inclosure, and feed them on broken Indian corn, Indian meal, or mush, with raw potatoes cut into small pieces, not larger than a

filbert, placing within their reach a quantity of charcoal broken into small pieces. Boiled rice is also good.

Another. — It is astonishing with what rapidity fowls increase when well fed, kept in confined cribs, and in a darkened room. Fed on a mixture of 4 lbs. of oatmeal, 1 of suet, and half a pound of sugar, with milk for drink, five or six times a day in summer, a Dorking will add to its weight 2 lbs. in a week, sometimes $1\frac{1}{2}$ in four days. A young turkey will lay on 3 lbs. a week, under the same treatment.

Another. — A friend inquires, "Which is the best grain for feeding fowls, eggs being the object?"

Fowls require a variety of food. Grain of all kinds is good. *Wheat-screenings*, which can be had at all the mills where wheat is ground, constitute a good and cheap food for fowls. Buckwheat, barley, oats, and Indian corn should also be given occasionally. They should also have animal food. This may be supplied from the offals of slaughter-houses. If they are kept confined, they should have occasionally some cabbages cut up and given them. Potatoes and turnips will also be found useful. Keep them well supplied with gravel, pebbles, water, sand, ashes, &c., to dust themselves with.

Geese. — *Feeding Geese, &c.* — An experiment has lately been tried of feeding geese with turnips, cut up fine and put into a trough with water. The effect was, that six geese, weighing only nine pounds each, after three weeks' feeding with this food alone, weighed fifteen pounds each.

Sheep. — *How to give them an Appetite.* — Give to your sheep pine boughs once or twice a week; they will create appetite, prevent disease, and increase their health.

Swine. — *Substitute for Ringing.* — A Mr. Tub, an English breeder of stock, has recommended a mode of dealing with these mischievous animals, which it is said may supersede the necessity of putting rings into their nose. It consists simply of shaving off, with a razor or sharp knife, the gristle on the top of the noses of the young; this place soon heals over, and the pigs are thus rendered incapable of rooting.

Poison. — *Cure for Poison.* — It is said that a gill of melted lard poured down the throat of a sheep poisoned by eating laurel, a shrub that retains its foliage in winter, and grows abundantly on the margin of some of our streams, and in mountainous districts, is a certain cure.

Cattle are sometimes poisoned by eating the same shrub.

Would not the same remedy, in larger portions, be equally efficient?

Ointment for Cattle. — Excellent ointment for cattle can be made by taking equal parts of Venice turpentine and hog's lard well beaten together.

Milk Spreading. — This may be remedied by pressing the teat full of milk against a stone, and rubbing it smartly.

Salt for Stock. — When animals are first turned to grass, they need more salt than at other seasons; at least we infer this, as they eat it more freely.

Corn soaked for Swine. — Soak corn till fermentation is produced, and it will make excellent food for hogs.

CLASS III.

Trees. — *Transplanting, &c.* — The trees to be removed are selected, the situations chosen, and the holes dug, while the ground is yet open, in autumn. Then, just before the ground is frozen, dig a trench at some distance around the tree to be removed, gradually undermining it, and leaving all the mass of roots embedded in the ball of earth; the whole ball is then left to freeze pretty thoroughly, (generally till snow covers the ground,) when the ball of earth containing the tree is rolled upon a sled and transplanted to the hole previously prepared, where it is placed in its proper position; and as soon as the weather becomes mild, the earth is filled in around the ball. On return of growth, the trees scarcely show any effects from being removed.

Trees. — *To prevent Young Trees from becoming Hide-bound.* — An excellent mode for preventing young fruit-trees from becoming hide-bound and mossy, and for promoting their health and growth, is to take a bucket of soft soap, and apply it with a brush or old cloth, to the trunks, from top to bottom; this cleanses the bark, and destroys the worms, or the eggs of insects, and the soap, becoming dissolved by rains, descends to the roots, and causes the tree to grow vigorously.

Trees. — *To form a New Bark on Old Trees.* — Scrape the loose bark, and apply a mixture of cow-dung and urine, made into the consistency of paint. Apply the mixture with a paint-brush. This softens the old, scaly bark, which peels off the following spring, and is succeeded by fine, new, smooth bark.

Trees. — *To keep away the Borer.* — Coalpit dust, I think, has proved beneficial to my fruit-trees, by placing a few shovelfuls about the roots of each tree; it keeps away the grass, prevents

the borer from entering the bark, and, withal, makes an excellent manure.

Trees. — Setting Trees. — In setting trees, do not place them deep, and let the earth around them remain concave, that it may catch the water.

Planting Forest-Trees. — The best time for planting acorns, walnuts, as well as peaches, cherries, and other stone fruits, is in the fall of the year, as soon as they are ripe. If they are kept long after becoming thoroughly ripe, they are apt to lose their vegetative principle.

Trees. — To preserve from Mice, Rabbits, Moles, &c. — Take any quantity of tar, and six or seven times as much grease, stirring and mixing them well together; with this composition, brush the stems of young trees as high as rabbits, &c. can reach, and it will prevent their being barked.

Grafting. — Time of Grafting. — The most favorable time for grafting is from the time the buds are bursting till the tree is in full foliage. Scions take well at this season, and being set soon after vegetation commences, they will attain a good growth. But though this may be the most favorable time, yet the work may be attended to for a longer period, as circumstances require. It may be commenced the first of March, and continued till the first of August.

Trees. — Budding, &c. — If stocks are young and very thrifty, it will be in season to commence budding the first of August, for if they are set earlier they will be likely to start the present season, and then liable to be winter-killed. In this way some have suffered great loss for want of experience. If trees be rather old and of slow growth, they should be budded the latter part of July; but the better way is to put all stocks in a very thrifty condition before budding or grafting.

Scions. — Every fruit-grower should get his scions ready in due season. Wrap them in a moistened mat or cloth, put them in a close box, and keep them in a cool cellar. We have scions cut last October, which we can keep in good condition till next fall. Keep the mat moist. If the scions mould, it will do no harm.

Grafting. — Composition for. — Take one part of tallow, two parts of beeswax, and four parts of rosin. Melt the whole together; turn the mixture into water, and work it in the hands as the shoemaker does his wax, to incorporate the parts. The warmth of the hand will soon bring it to a proper consistency

when wanted for use, and a little grease will prevent its adhering to the fingers. A small piece is broken off, flattened in the hand, and covered over the cleft or wound. If of the thickness of a shilling, it will neither melt, crack, nor peel off.

To preserve Apples and Pears.—Wipe the fruit dry, then take a varnished crock or wide-mouthed jar, at the bottom of which is to be a layer of fine and very dry sand; on this place a layer of fruit, and so alternately fruit and sand, until the crock or jar is full. Put a thick coat of sand on the top, and place it in a dry place. Apples or pears thus treated will keep good all winter.

Seeds.—*How to preserve, &c., for Planting.*—Mix the seeds with clean sand, which should be occasionally slightly moistened, to prevent the seeds from drying, and put in a cool place. The seeds of stone fruit should not become much dried internally. Expose them sufficiently to evaporate the external atmosphere, and pack as above.

Corn.—*Soak your Seed Corn in Saltpetre.*—It destroys the worm, is not relished by crows or by squirrels, and yields much more abundantly than when it is planted without.

Suckers in Corn not to be cut.—An anonymous writer in the American Farmer asserts, that, from careful experiments, he is satisfied that suckers do not lessen the quantity of grain, whilst they greatly increase the amount of fodder.

Corn.—*Rule for measuring Corn in the Ear in a Crib.*—Multiply the length, width, and depth of the bin together, and their product by $4\frac{1}{2}$. Cut off the right hand figure, and the remaining figures will be the number of bushels of shelled corn, and the figure at the right the decimal of a bushel.

Wheat.—*Rust in Wheat.*—This seems to take place when it is nearly ripe, after a heavy shower of rain, succeeded by an intensely warm sun. The straw then bursts, and the sap exudes. This is the cause of rust. Steeping the seed in strong brine twelve hours, and then sifting lime over it, is the best preventive.

Silk-worms.—*Noise disturbs them.*—A friend of ours, who has had much experience in managing silk-worms, says that noise disturbs them, especially at the time of moulting. The sound of a hammer, a burst of laughter, or loud talking, disturbs them. Their food should be gently laid down by them, not thrown on them. He uses as much caution in entering the rooms as if approaching the cradle of a sick infant.

Maple Sugar. — The art of making this article is very imperfectly understood, and great improvements can and ought to be made in the manufacture of it. The difference in the yield of sugar from a given quantity of sap is owing to its possessing more or less acid, which lessens the quantity of sugar, and injures the quality. This acid is corrected by putting into the sap, when used, one ounce of limewater to every gallon, when it will uniformly produce half a pound of sugar to the gallon, of better quality than it would without limewater.

Another. — My manner of making sugar is, to have tubs, and all connected with sugar-making, clean and sweet. My next object is, to boil as soon as possible after the sap has run from the trees; in clarifying, I use for fifty pounds of sugar one pint of skimmed milk, put into the syrup when cold, and put over a moderate fire until it rises, which should occupy thirty or forty minutes, then skim and boil until it grains or sugars; after which I turn it into a tub, and after two or three weeks bore a hole in the bottom of the tub, and turn on a little cold water; and in a few days the molasses will drain out, and leave the sugar dry, light, and white.

Casks. — *Foul Casks made Clean.* — Tainted wooden casks of every description may be rendered perfectly sweet and wholesome by washing them with diluted sulphuric acid (oil of vitriol) and water, and afterwards with limewater, and then pure water.

Water. — *How to cleanse.* — Half an ounce of alum in powder will completely purify twelve gallons of corrupted water.

Potatoes. — *To keep from Sprouting.* — Fill a basket with potatoes; dip them into a large cauldron of boiling water for the space of two minutes; take them out, spread and dry them well in the sun; then pack them in barrels or hogsheads, and cover them with sand. They will remain in excellent preservation for a long time. This method is particularly recommended to masters of vessels and others preparing for sea.

To cure Poison. — It is stated that poison on the hands, or other parts, occasioned by the running ivy, or poison-vine, may be cured by rubbing the part affected a few times with hog's lard.

Manure for Melons. — The best is pigeon-dung, and from the use of this, it is said, the Persian fruit derives its superiority. Hen-dung is probably next in value, and after this, guano, which is the manure of sea-fowls.

Cheap Paint for a Barn. — An excellent and cheap paint for rough wood-work is made of six pounds of melted pitch, one pint of linseed oil, and one pound of brick dust or yellow ochre.

Sunflower. — It is said of this unornamental but useful flower, that it is destined to become one of our most valuable agricultural products. One hundred pounds of the seed afford forty pounds of oil. The refuse of the seeds, after expression, furnishes an excellent food for cattle. From the leaves of the plant, cigars are manufactured of singular qualities; the stalk affords a superior alkali, and the comb of the seeds is a choice dainty for swine.

CHAPTER II.

SECTION I.

FARM AND DOMESTIC ANIMALS.

NEAT CATTLE. — *Rules in Selecting, &c.* — Neat cattle form a very important part in every farmer's live stock. In selecting them, two things are very material: first, the health and soundness of the stock from which they are purchased; and, secondly, the quality of the soil on the produce of which it is intended to feed them. Stock for the dairy or the butcher should be selected from a breed of which you know or can ascertain every particular relative to their general health and soundness, and the manner in which they have been reared, including their food, shelter, &c.

How to determine the Age of Cattle. — The eight fore teeth of the lower jaw are shed and replaced by others, which continue through life; the two middle fore teeth fall out at about two years old, and are succeeded by others not so white. At three years old they have two more, next to those of the previous year; and thus by the two succeeding years all the fore teeth are renewed; they are then termed full-mouthed, and are five years old. At the sixth year the row is even, the last two being completely up. Besides these, they have ten grinders in each jaw.

Feeding Cattle, &c. — With respect to feeding, the first rule is, little at a time, and often; because experience has shown that animals that eat much in a short time do not fatten so well as

those which eat less but more frequently. The second rule is, to begin the course with cabbage and turnips, then to employ carrots and potatoes, and lastly, Indian, oat, or barley meal. These aliments ought to be varied several times a day, and oftener if convenient; and instead of always reducing them to a meal, there is advantage in sometimes boiling them. A little salt given daily is very useful.

Watering Cattle.—Water for cattle, in winter, should be furnished in a trough that stands in a pleasant place and out of the wind. Cattle will not drink half the usual allowance when obliged to stand in a cold wind. They will seldom put themselves to much inconvenience to procure drink more than once in a day, but when it is handy they will drink several times.

Confining Cattle.—No kind of cattle should be suffered to stroll over the fields or in the roads in the winter season. They gain nothing by it but the ill-will of neighbors and of travellers, who are often impeded on their journey by a drove of dumb loafers, sunning themselves in the streets. On the contrary, we lose immensely by suffering the manure to be scattered and frozen in winter. We should by all means confine them in the yard during the day, and let them enrich the soil or muck that we had the prudence to throw into it in autumn, after it was cleared of the old manure.

Carding Cattle.—Many speak highly of the practice of carding through the winter, but we cannot say that we have ever seen any advantages attending it. Some good ostlers will not permit a hair to be carded off in cold weather. They say their horses want their coats on in the winter season. The carding of neat cattle in winter sets them to itching and rubbing, and they seem more uneasy for the operation. We doubt whether we may not better let their hair remain until spring, when the warm weather will assist to disrobe them.

Fall Feeding.—Cattle in New England usually get their own food through the month of October, but when the season is very dry, we sometimes feed them with the toppings of the corn, and in some cases we have given them hay. We have known the seasons so favorable that cattle would take good care of themselves throughout November, and this reduces our winter or feeding months to five months and a half, down to the middle of May.

OXEN.—*Signs of a Good Ox.*—Till oxen are four years old, they are usually called steers; afterwards, oxen. The signs of a good ox are these: thick, soft, smooth, and short hair; a short

and thick head; glossy, smooth horns; large and shaggy ears; wide forehead; full, black eyes; wide nostrils; black lips; a thick, fleshy neck, and large shoulders; broad reins; a large belly; thick rump and thighs; a straight back; a long tail, well covered with hair; short and broad hoofs. The best colors are brown, dark red, and brindled. When an ox has completed his eighth year, he should be fattened.

To prevent their Necks from becoming Sore.—If oxen are worked in the yoke in wet weather, their necks are apt to become sore. To prevent this, a little tallow should be rubbed on the parts of the yoke which lie upon their necks, and also on the bows.

On Carding Oxen.—An English writer recommends carding oxen, and says, “The ox, after the sensation becomes familiar, receives pleasure from the operation, and will momentarily forego his meal to receive the full enjoyment.” This is not our faith.

The proper Care of them.—Their labor and their fodder ought to be proportioned, that their health and their spirits may be kept in full tone. Their coats ought to be sleek; their hides loose and silky; the flank should fill the hand, and the shoulder handle mellow. If they be overworked or underfed, sluggishness and disease will inevitably follow. A working ox ought always to be beef, that in case of accident he may be fit for the table.

To prevent their Pushing and Crowding.—Oxen sometimes contract a bad habit of pulling or hauling against each other; and sometimes crowd each other, so as to render them almost entirely useless as laborers. It is said that by turning them out to feed in the yoke, they will learn to move in concert, and thus be broken of the habits of pulling and crowding.

On Training Oxen to draw.—Let them be yoked and turned out to feed, with a load attached to them so heavy as to require them to act in concert to drag it. They will soon learn to pull together, and be true to the yoke.

Ox Teams.—For rough farms, oxen are much to be preferred to horses. They travel more steadily, and are more patient on the plough, than the horse is, and when they have lived long enough, they are valuable for the butcher. Oxen will not work so many hours in a day as a horse will, but they are more to be depended on in the draught. They bear to be driven about two miles an hour, and if they are inclined to go slower than this,

they should be put up to it. Fewer oxen are now used on farms that are cleared of their stumps and stones, than formerly; and for travelling on the road, the horse is now universally preferred. It is not an object, in general, to raise the largest kinds of oxen. The middle size is best, and we must take care to choose for teams such as are best built. Though strength is a great point in working oxen, we do not prefer those that have the largest bones. We notice that those oxen travel best which have the straightest limbs, and we never wish to see an ox with long legs.

On a middle-sized farm, one yoke of oxen at least, and one horse, should be kept. There are many kinds of business, where oxen and horses may be used together to advantage, and one of the prettiest teams on a farm is a yoke of oxen and a horse. They travel faster than four oxen, and the horse always makes a good leader for the team.

BULLS. — *Signs of a Good Bull.* — Head long; eyes prominent and lively; ears long, and horns wide; broad breast, and projecting before the legs; legs clean, and fine-boned; back or loin broad, straight, and flat; round or barrel carcass; rumps close to the tail, and tail well haired and in a horizontal line with the back. Bulls should be well fed, and kept in suitable inclosures. The bull is in his prime at three years of age, and should not be used after he is eight or nine.

WORKING COWS. — *Best Kind.* — Cows are fattened easier, and are better laborers, than oxen. The uses of cattle are to work, milk, and fatten. I have seen barren cows work as well as oxen; *they require less keep, and walk faster.* When first I commenced farming, I followed the example of my predecessor in feeding chiefly oxen; but I soon found that cows fattened much faster, and on less meal, and for some years past I have carefully avoided having any oxen in my stalls.

Care of Cows about to calve. — Cows which are shortly expected to calve ought to be lodged at night in some convenient place, under cover, for a week or too before calving, as it might be the means of saving the life of the calf, and perhaps of the dam likewise. The day and night after a cow has calved, she should be kept under cover, and her drink should be lukewarm. Let her not be exposed for some time to the dampness of the night.

Cows which are near calving ought to be fed with better and more substantial food than usual. Grain of any kind is now useful, but it should be crushed, bruised, or coarsely ground. If

the cleaning of a cow, after calving, be delayed, it may be promoted by giving her a pail of warm water with some ashes in it.

Cow-Stables. — The most healthy stables are those which are open to the east, or have an eastern aspect. It is a common practice to build them too close. The stable should never be completely closed up, however cold the weather may be, although it is desirable that strong draughts of cold or damp air should be guarded against, especially in winter. It may be held as a general rule, that stables or cow-houses are too close when, on entering, the breath is affected, or any smell of urine can be perceived.

Cleanliness. — It is also very important to keep cow-houses or cattle-stables clean and well littered. Dung left in stables soon renders the air unwholesome, and is the cause of disorders. Cows in a stable should be allowed a square space of at least six feet each way for each cow.

SECTION II.

GENERAL MANAGEMENT OF THE COW.

THE DAIRY, OR MILCH COW. — *Qualities.* — Tameness and docility of temper greatly enhance her value. One that is quiet and contented, feeds at ease, does not break over fences, or hurt herself or other cattle, will always yield more milk than those that are of a turbulent disposition. To render them docile, they ought to be gently treated, frequently handled when young, and never struck or frightened. Some degree of hardiness, however, a sound constitution, and a moderate degree of life and spirits, are qualities to be wished for in a milch cow, and what those of Ayrshire generally possess. Some have thought that a cow living on a small quantity of food was a valuable quality; but that will depend upon the quantity of milk given by the cow that eats little, compared with those that eat much. If the cow that eats little gives as much milk as the one that eats more, it certainly is a valuable quality; but of this I entertain doubts, which forty years' experience and observation have served to confirm. Speculative writers affirm that some cows will fatten as well, and yield as much milk, when fed on coarse, as others will do on rich

food. Cows that have been reared and fed on coarse pasture will yield some milk of a good quality, and from which the best butter may be extracted; while a cow that has been reared and fed on much better pasture would, if turned on that which is bad, give scarcely any milk.

Selecting a Cow. — With persons living in towns and villages, and keeping but a single cow, with opportunity of grazing on the commons, and depending mainly on them for food, a good rule is to get their cow not over the middle size, and from a poorer district of country. If she comes from rich, fertile pastures, she will fall off in her milk, below the quantity which they were assured she had been accustomed to give, and thus disappoint him. If from a poorer district, with the addition of the “slop” from the house and kitchen, and the *external signs here laid down*, she will be sure to improve. But if a cow that has been accustomed to feed on bad pasture be put on that which is better, she will greatly increase in milk, and fatten much faster. If two cows of the same age and condition, and which have been reared and fed on food of equal quality, are put, the one on bad food, and the other on that which is good, the latter will yield four times the milk, and fatten four times faster, than the former. A cow need not always be fed on green clover, cabbages, and cauliflower; but she will neither fatten nor yield milk if she gets no better fare than rushes, bent, and sage grass.

Signs of a Good Cow. — In selecting cows for the dairy, the following indications should be attended to. Wide horns, a thin head and neck, dewlap large, full breast, broad back, large, deep belly; the udder capacious, but not too fleshy; the milk veins prominent, and the bag tending far behind; teats long and large; buttocks broad and fleshy; tail long, pliable, and small in proportion to the size of the carcass, and the joints short.

We offer the following doggerel lines, as combining what are popularly considered the good points of a cow, such as is common among the short-horned breed of Yorkshire: —

“She’s long in her face, she’s fine in her horn,
She’ll quickly get fat without cake or corn;
She’s clean in her jaws, and full in her chine,
She’s heavy in flank, and wide in her loin.

“She’s broad in her ribs, and long in her rump,
A straight and flat back, without e’er a hump;
She’s wide in her hips, and calm in her eyes,
She’s fine in her shoulders, and thin in her thighs.

"She's light in her neck, and small in her tail,
 She's wide in her breast, and good at the pail;
 She's fine in her bone, and silky of skin, —
 She's a grazier's without, and a butcher's within."

Times and Manner of Milking. — Cows should be milked regularly morning and evening, and as nearly as may be at the same hours. At six in the morning and six at night is a good general rule, as the times of milking will be equidistant from each other. But if they are milked three times a day, as Dr. Anderson recommended, the times may be five, one, and eight. He asserted that, if cows are full fed, they will give half as much again if milked three times as if only twice. At the same time, it would prevent too great a distention of their bags, to which the best cows are liable.

Time of Calving, &c. — The cow goes with young nine calendar months, or 270 days; but this length of time is liable to variation, from the effect of circumstances. A calf is most likely to survive and be healthy which has gone exactly the nine months. Cows come into season at different periods of the year, in which state they remain for a few days, after which the affection ceases, but it afterwards returns in three or four weeks. The farmer watches these periods, and permits the company of the bull at such a time as will produce the young at a time of the year when grass is plentiful for the nourishment of the mother. This should be an advanced period of spring, for the cow will require nourishing diet some time before she drops her calf, as well as afterward.

Time of Drying up the Cow. — A cow may be kept in milk up to the time of her calving, by daily taking a quantity from her; but this is most injurious to the fœtus, and the excitement of the new upon the old milk is apt to produce local inflammation. In towns, where dairymen care nothing for the calf, and must have milk at all risks, cows are often maltreated by being milked to the last; but no one who conducts a dairy on proper principles will be guilty of this inhumanity. The best plan is to allow the cow to grow gradually dry, and not milk her at all for six or eight weeks before calving.

Abortion. — No animal is so liable to abortion as the cow, and it has been found that the habit is infectious; and when once it has got among a parcel of cows, it can be banished only with the greatest difficulty. Cows addicted to this practice should be fattened and sent to market.

Parturition. — If in a state of health, no difficulty will occur at the parturition; but should the case be otherwise, we prefer leaving the cow-keeper to ask assistance from a person of practical skill, or veterinary surgeon, than to offer any speculative advices on the subject.

Treatment after Calving. — A warm mash should be put before her, and warm gruel, or water from which some of the coldness has been taken off. Two or three hours afterwards, it will be prudent to give an aperient drink, consisting of a pound of Epsom salts and two drachms of ginger. This may tend to prevent milk fever and garget in the udder.

Attention to the Teats and Bag. — If the teats are sore, and the bag generally hard and tender, she should be gently but carefully milked three or four times every day. The natural and the effectual preventive of this, however, is to let the calf suck her at least three times in the day, if it is tied up in the cow-house, or to run with her in the pasture, and take the teat when it pleases. The tendency to inflammation of the udder is much diminished by the calf frequently sucking; or should the cow be feverish, nothing soothes or quiets her so much as the presence of the little one.

Cow Feeding. — The cow requires to be supplied with an abundance of food, not to make her fat, which is not desirable, but to keep up a regular secretion of milk in the system. The feeding must be regular, from early morning till night, and pure water must also be offered at proper intervals, if the cow has not the liberty of going to the water herself.

Regarding the nature of the food of cows, although soiling, or artificial feeding in the house, is at all times economical, there can be no doubt that the best milk and butter are produced by cows fed on natural pasture; and, although the quantity of milk is not so great, yet the butter has a sweet taste, never to be discovered in the produce of soiled cows.

Soiling out and in doors. — On well-inclosed farms, it is the custom of many to keep their cows out both night and day, from May till the end of October, so long as a full bite can be obtained; and some bring them into the house twice a day to be milked. Soiling, or feeding entirely in the house or court-yard, is but seldom practised, except by some farmers in arable districts.

Quantity and Quality of Milk. — The quantity and quality of the milk will be in proportion to the nourishment in the food. White turnips afford a good quantity of milk, but they impart a

very disagreeable taste, which may be removed, however, by steaming or boiling the turnips, or by putting a small quantity of dissolved saltpetre into the milk when newly drawn.

Brewers' Grains, &c. — Brewers' grains are said to produce a large quantity of milk, but very thin, the quality being somewhat similar to that sold in large towns, yielding neither good cream nor butter. It has been found of some importance to feed cows frequently, — three or four times a day in summer, and five or six in winter, — and to give them no more at a time than they can eat cleanly.

In establishments for the supplying of large towns with milk, the method of feeding is somewhat different; there the practice is to feed them chiefly on distillers' wash, brewers' grains, and every sort of liquid stuff that will produce a large quantity of milk, without reference to its quality.

Winter Food for Cows. — A recent writer publishes the following receipt, by the use of which his cows afforded him an equal quantity and quality of milk during the winter as during the summer: —

“Take a bushel of potatoes, break them while raw, place them in a barrel standing up, putting in, successively, a layer of bran and a small quantity of yeast in the middle of the mass, which is left thus to ferment during a whole week, and when the vinous taste has pervaded the whole mixture, it is then given to the cows, who eat it greedily.”

Parsnips cause cows to give milk in abundance, and that of the best quality.

The Profit of Cows. — The keeping of cows is very profitable. Allowing one to give only six quarts a day, for forty weeks in each year, and this is not a large allowance, her milk, at two cents per quart, will amount to upwards of thirty-three dollars; which is probably sufficient to purchase her, and pay for a year's keeping.

A farmer, some years since, kept eighteen cows on a common, and was often obliged to buy butter for his family. The common was inclosed, and the same person supplied his family amply with milk and butter from the produce of four cows well kept.

Cow-house. — The cow-house should be airy and well ventilated; of moderate temperature, and kept very clean. The stalls for the cows should be paved with smooth stones, sloping gently towards the foot, where there should be a clear run of

a gutter to carry off the urine to a pit outside. The stalls must be daily scraped and swept, and all refuse carried out to the dung-heap. In general, far too little litter is allowed. The cow should have plenty of straw bedding, kept in a cleanly condition; and this, when soiled, is to be mixed with the dung for manure. The only fastening for the cow should be a chain to go round the neck, with the other end round an upright post, but easily movable up and down, and allowing room for the animal to shift its position. The feeding-manger, or stone trough, is on the ground, and ought to be kept free of all impurities; for though the cow is not so nice as the horse, it has a disinclination for food not fresh and cleanly.

Cow Cleaning. — Except in dairies of a high order, it is customary to keep cows in a shamefully unclean condition. The floor of their habitation is filthy, the walls ragged and full of vermin, and the hides of the animal dusty or barked with dirt. Persons who keep cows are not aware of the loss they incur from allowing them to live in this uncleanly state. Some people seem to think they do quite enough for their cows if they give them food and shelter; but besides this, they require to be kept very cleanly, though seldom indulged in that luxury. The cow should be curried daily, like the horse; its hide should be freed from all impurities, and relieved from every thing that causes uneasiness. When you see a cow rubbing itself against a post, you may depend on it that the animal is ill kept, and requires a good scrubbing.

Breeds of Cows. — The *Short-horn Durham*, the *Ayrshire*, and *Devon* breeds are those now most valued. But we think as highly of some of our *native breeds* for dairy purpose as of any other.

CALVES. — *Breeding and Rearing.* — *Best Calves for Raising.* — The best calves for bringing up are those calved early in the season, or before June. When calves are weaned, they should not be suffered to be with their dams any more till fall; neither should they be pastured within sight or hearing of them. It will cause them to neglect their feeding, and they will not forget their sucking.

Calves to be reared. — When calves are to be reared, some permit them to run with the cow, and take all the milk the first season. But fine animals are raised without taking any milk from the cow after three or four days. They should have more or less milk for about twelve weeks. They may be fed

with skimmed milk or water-gruel after the first fortnight; or hay-tea may be mixed with their milk, or their milk may be mixed with meal and water. Whether calves are intended to be fattened or to be reared, it is best to feed them three times a day. But whether they are fed two or three times, the intervals between their meals should be regular, and, as nearly as possible, equidistant.

Calves designed for Veal. — Calves designed for veal should be taken from the cow the next day after they are calved. They should be permitted to suck only two teats during the first week, three during the second, and should have the whole of the milk the third and fourth week, at the end of which time they will be fit to kill. The teats not allowed to be sucked should be previously milked.

Calves a Week old for Market. — Near our large markets, calves are often sold at a week old, for one dollar; and there are those who make a business of buying and rearing them by hand. These calves are taught to drink milk out of a dish; and when the milk is poor, meal is mixed with it, and it is given warm, while the animal is quite young. When several are in a yard together, and one of them has learned to eat or to drink out of a trough, the others will very soon learn from him how to help themselves, and no labor is spent to teach them to drink.

Calves nursed by their Mothers. — Calves that are nursed by their mothers are, by some owners, suffered to suck through the summer; others allow them to suck three months, and then take them away at once. Others still let the calves take half the milk, for two or three months, and feed the calves with dough. Many contend that it is best to let the calf suck no more than two days. They take him away at that time, and give him new milk for a while, then skim-milk with meal in it, and let him have access to a field of grass.

Best Milk for Calves. — Those cows which give the greatest quantity of thin milk are most profitable for suckling calves, for rich milk is said not to be so proper food for calves as milk which is less valuable for dairy purposes.

Of Feeding with Skim-Milk. — If skim-milk is given to calves, it should be boiled and suffered to stand till it cools to the temperature of that first given by the cow. It is better boiled than when warmed only. If the milk be given too cold, it will cause the calf to purge. If this is the case, put two or three spoonfuls of rennet into the milk, and it will stop the looseness.

If the calf is bound, pork-broth is said to be a good and safe thing to put into the milk.

Calves should be kept Warm.—Moderate warmth and *dry lodging* are of the utmost consequence to young calves; and if we would turn them to any good account, they must not be stinted either in these or in their food.

Should be kept Clean.—Calves cannot be kept too clean, nor have fresh litter too often. If they are suffered to lie on their own dung and urine, they will become mangy, and scarcely ever thrive.

Wintering Calves.—More attention is required the first winter than ever after; not to keep the calf warm, for he seldom suffers for want of warmth, when he is kept from the wet, and we find him getting along better in an open shed, or hovel, than when tied up in a close barn.

Rowen hay is better suited to his capacity of chewing, and we always provide a little of that kind to give him in the fore part of winter. He also wants something less dry than hay. Roots are excellent food, and he will eat either potatoes or turnips with a good relish. Two quarts of turnips, chopped rather fine by a good spade, on the barn floor, given each day, will cause him to thrive the whole winter. Whereas, if nothing but hay is given, he invariably ceases to advance, and he too often goes behind-hand. Water should be supplied, and salt should never be forgotten. In summer, it is a preventive of relax, and in winter, it gives a relish to his food.

SECTION III.

SHEEP AND LAMBS, GOATS, &c.

Varieties.—There are a great many varieties of sheep, but the principal division is into the *long-wool* and the *short-wool* kinds.

Management.—It is important in the management of sheep, to keep the store sheep in as equal condition as possible, but not too fat, all the year round. In the grass season they should be kept in dry pastures, in which the grass is short and sweet. During the winter they should have a steady and measured al-

lowance of suitable food, and not sometimes be fed profusely, and at other times scantily.

Time of Feeding, Watering, &c. — Sheep should in the summer be turned out early in the morning to feed; and in four or five hours, after watering, be brought back to the fold, or to some shady place. At four o'clock in the afternoon they should be turned to their pasture again, and continue there till evening.

Ewes, Lambs, &c. — It is recommended to give ewes with lamb a somewhat more than ordinary quantity of food for a month or six weeks before they are expected to yearn; not enough, however, to make them fat, as dangerous consequences might attend their being in a very high condition at that period. Half a gill of Indian corn a day, given to each sheep during winter, is recommended, as keeping them in good heart, preventing the wool from falling off, and enabling the ewes to rear their young better than they would if fed altogether on food of a less substantial nature.

Season for Dropping. — In the season for dropping lambs, the utmost care is necessary. The birth is most commonly easy, but often slow. Ignorant shepherds are very apt on such occasions to be aiding in the birth, which is always useless, and often very injurious.

Time and Mode of Shearing. — The approved time of shearing is from the middle to the latter end of June. They should be washed in a warm time; after this they should run three or four days in a clean pasture, before they are shorn. It is good for them to have time to sweat a little in their wool after washing.

Proper Pastures, &c. — The fat pastures breed straight, tall sheep, and the barren hills square and short ones. But the best sheep of all are those bred upon new-ploughed land, the reason of which may be easily guessed, as such land is commonly the most free from bad grasses. All wet and moist lands are bad for sheep, especially such as are subject to be overflowed, and to have sand and dirt left on them. The salt marshes are an exception from this general rule; for their saltness makes amends for their moisture; any thing salt, by reason of its drying qualities, being of great advantage to sheep.

Value of Pea-Straw for Sheep. — Sir John Sinclair observed, that "there is no food of which sheep are fonder than pea-straw; and where circumstances are favorable for that crop, peas ought to be cultivated more for the straw, from the advantages

that would thence be derived by the sheep-farmer." Mr. Young also observes, that "the straw of early white peas applied to sheep, is the most valuable return made by straw."

Importance of Good Air, &c. — Sheep will bear a great degree of cold, and they suffer less from it than they do from close confinement. Nature has clothed them in a warm coat, and no animal suffers more in our climate from excessive heat than the sheep. They huddle and crowd more closely together than most animals do, and if to this propensity we add confinement in pens and close barns, we need not wonder that diseases multiply among them.

But as all sheep ought to be allowed a shelter in bad weather, the safest mode of keeping them is to separate them into small flocks, and in this way they will avoid the pernicious effects of bad air.

GOATS. — Varieties. — There are several varieties of the goat, but the Thibet is considered the most valuable. They produce a soft and delicate wool, often milk-white. Our common domestic goat originated from the wild goat. It matures early, and is very prolific. The female gives a great quantity of milk for so small an animal, and of the best quality. They are much superior to the cow on ship-board. The male will engender at a year, and the female at eight months. The flesh of the kid is equal to the best of lamb.

SECTION IV.

SWINE. — MANAGEMENT OF, &c.

SWINE are a very profitable animal to a farmer. Indeed, every family in which there is any cooking done should keep at least one hog, always confined in a proper pen, in order to consume the washings of pots, dishes, refuse food, &c.

Marks of a Good Hog. — The marks of a good hog are, a moderate length in proportion to the size of the body; the nose short, quarters full; carcass thick and full; hair fine and thin; with a symmetry adapted to the breed to which it belongs. Above all, it is essential that it be of a kindly disposition, to fat easy.

Best Breed. — My hogs are of the Bedford breed, so called in England; and experience has proved to my satisfaction, that this breed is far the best that has been introduced into our country. They are quiet in their nature, fat easy, and with little expense or trouble. I have had some weigh, at twelve months old, about three hundred and forty pounds, and a considerable number, of eighteen months old, four hundred pounds.

Selecting Sows. — The sow should be selected with great care, broad and straight-backed; wide hips; a great many teats; short legs, and fine bones. It is said that the sow will produce the stronger and better litter if not allowed to breed till a year old, and the boar should not be younger than that age when put to sows. Sows may be allowed to breed till they are six years old, and boars till five; and both be made good pork after this period, by methods which do not require description.

Sows will usually have pigs twice a year, and should be put to the males at such times as will bring one litter in April and another in September.

To prevent Sows from Eating their Offspring. — Young sows will sometimes eat their own offspring, which may be prevented by washing the backs of the pigs in an infusion of aloes, and for this purpose the sow must be watched. It is said that supplying them with plenty of water at this time will prevent any mischief taking place of this kind.

Raw salt pork, cut in small pieces, and given, will prevent them from eating their pigs. I have seen it given after they have eat two or three of their litter, with good success. But to prevent any mischief, it should be kept by them at this time.

Fattening Hogs. — About the first of September begin with boiled potatoes and pumpkins, mashed together, with a little Indian meal, ground oats and peas, or other grain, stirred into the mixture after it cools. From two to four weeks before killing-time, the food should be dry Indian corn, and clean cold water.

The following mixture for fattening swine has been recommended: —

Wash potatoes clean, boil and mash while hot; mix in at the same time oats and pea-meal. Put the mixture into a large tub, and let it stand till it becomes sour, but not putrid. Keep a quantity of this on hand, always fermenting, and give it to your hogs as often as they will eat.

Apples have been much recommended as food for swine. They are good raw, but better if boiled and mixed with meal.

An Ohio farmer also, in a Southern paper, recommends coals as useful in fattening hogs. After giving his hogs a small quantity daily, say two pieces to each, about the size of a hen's egg, they discontinued rooting, were more quiet, and appeared to fatten faster.

Rubbing Hogs of great Advantage. — Rubbing and currying the hides of fattening hogs is of great advantage to them. It is not only very grateful to them, but conducive to their health.

Your pigs require *warm* food to make them *grow*. Corn and cold water will make them healthy; but warm beverage is considered requisite to a quick growth.

SECTION V.

HORSES, COLTS, MULES, &c.

THE horse is one of the most useful of animals. The marks or evidences of a good one are these:—A high neck, a full breast, a lively eye, a strong back, a stiff dock, full buttock, ribs reaching near the hips, well-made hoofs, rather large, and a good gait.

On Feeding Horses. — When grain is given to horses, it is an economical practice to have it either ground or boiled. When horses are soiled, or fed in a stable on green grass, it should be cut and carried in during the morning while the dew is on.

Mode of Breaking a Young Horse. — Let him, first of all, be tamed with the bridle, by leading him *again and again*; in the first place, after, or by the side of another horse; and after he walks well, bring him to trot after his leader. In the next place, put on the saddle, and lead him in that, time after time. Then lay a small weight on the saddle, and if he be apt to start, fasten it that it may not be flung off; increasing the weight from time to time, till he learns to carry what is equal to the weight of a man. Lastly, let a man gently mount him, while another holds him by the bridle, and fix himself firmly on the saddle. The place of riding is recommended to be a ploughed field. Let him thus be ridden, with a horse going before him, till he learns the use of the bit, and will stop or go forward at the pleasure of the rider, and without the application of much force.

Mode of Teaching a Horse to Draw. — In teaching a horse to

draw, gentleness must be used. He should be tried first in company with other horses, whether in carting or ploughing; and the draught should not be so heavy as to fret him or put him to great exertion till he has learned to draw steadily. After this he may be put to draw light loads by himself. Lastly, he may be put to a pleasure carriage, but coupled with another rather than alone, and to a sleigh rather than a chaise.

Food for Horses. — Horses love a dry pasture, not too much shaded, and short grasses of the best kinds. Clover and white honeysuckle, both green and dry, are excellent food for them. It nourishes them well, and prevents costiveness, which is very hurtful to them. The best of clover hay will keep them as well as most other kinds of hay with oats.

Of all juicy food for horses in winter, carrots have the preference; they have been found by experience to answer well instead of oats for laboring horses; and to fatten those that are lean. He who would be sure to keep his horse in good order must beware whom he suffers to ride him, and must see that he is never abused. Horses should not be sweated. Profuse sweating should always be avoided, and when a horse is much warmed by exercise, he should not be exposed to cold air, nor night dew, and much less to rain or snow. If he cannot be instantly rubbed down and housed when warm, he should be covered with a blanket; and he should always have a dry stable, and be well littered. The neglect of these precautions may bring on incurable disorders.

Horses should be Curried. — When horses are kept in stables, as they generally are in the coldest half of the year, they should be daily dressed, as it is called. The currycomb and brush should be well used on all parts of their skin which are covered with hair.

Horses should have Shelter. — When a horse runs in a pasture during the grass season, he should have some shelter; not only a shade from the intense heat of the sun, but a shed, or a clump of trees, that he may retreat from the inclemencies of the atmosphere.

MULE. — The mule is generally well-limbed, large, sure-footed, and capable of carrying a great load, and of performing long journeys. They are less subject to disease than the horse, and endure to a much greater age. They are put to labor at three years of age. They are naturally obstinate, but good treatment will nearly overcome this objection.

SECTION VI.

DOGS. — VARIETIES, QUALITIES, &c.

Breeding, Rearing, &c. — 1. Learn, if possible, the pedigree of the dog for three or four generations.

2. The male should be one year, and the female fifteen months old before breeding.

3. The male need not be rejected till he is eight, nor the female till her sixth year.

4. The female goes with young sixty-three days.

5. They may be allowed to breed three times a year, but not rear more than five puppies.

6. They may be fed with porridge, milk diluted, mashed potatoes, &c.

7. Give them a clean straw bed, and a good yard for exercise.

8. The sucking-teeth are shed at about four months.

9. Gentleness does more in training dogs than severity.

Newfoundland Dog. — The true breed is rather small of stature, the large kind having been crossed with the mastiff. They are a famous dog for the water, and are very intelligent. They are kind and docile in disposition, yet will faithfully defend their master and his property.

Spaniel. — The spaniel is very useful to sportsmen as a *bird* and *water dog*. They are docile in their disposition and habits, obedient, and easily trained to a variety of pleasing tricks.

Setter. — This dog is sometimes called the land spaniel. There are several varieties. He is gentle in character, but needs considerable care in training.

Pointer. — The Mexican pointer is undoubtedly the best variety. They are true to the scent, and also useful as a water dog. We prefer the pointer to any other dog, for general uses.

Shepherd's Dog. — This dog is remarkable for his sagacity and strong propensity to tend live stock. This animal stands about twenty-one inches high at the shoulder, and is very graceful in his appearance.

Bull-Dog. — This is a pugnacious animal, and is mostly used as a watch-dog for stores. He is snub-nosed, and savage in his disposition.

Drover's Dog. — This dog somewhat resembles the shepherd's dog; his color is nearly the same, and he possesses his docility, with rather more courage.

Terrier. — This is considered a very valuable dog. They are mortal enemies to rats, mice, foxes, cats, &c.

Poodle. — This is a very small animal, white and curly, of good disposition, and valued only as a family pet.

CHAPTER III.

CONTAINING THE LATEST AND MOST APPROVED SYSTEM FOR THE CURE OF ALL DISEASES INCIDENT TO DOMESTIC ANIMALS.

SECTION I.

NEAT CATTLE.

CATTLE. — *To cure Hoven Foot.* — Take three quarters of a pint of olive-oil, one pint of melted butter or hog's lard; give this mixture by means of a horn or bottle, and if it does not produce a favorable change in a quarter of an hour, repeat the same quantity, and walk the animal gently about. This will usually cure the most inveterate cases in half an hour.

Another. — Make about a pint of lye, either with hot embers thrown into a sufficient quantity of water, or pearlash, and turn it down the throat of the ox or cow affected.

Hoof-ail. — The foot should be carefully washed and cleansed, and thoroughly examined, to be sure that the lameness does not arise from a nail casually run into the foot, or a prick in shoeing, from a wound from a stump, or other substance between the hoofs. If no appearance occurs of any break in the skin, while the foot is still wet, apply as near as may be to the centre of the slit between the hoofs from one to three grains of corrosive sublimate in powder. In slight cases a cure may be affected by the use of salt, or tartar is best.

Loss of the Cud. — The treatment in such cases consists in stimulating the stomach by tonics, such as aloes, pepper, and gin mixed; or, with patience, the following remedy will succeed.

Let the animal fast some time, then give a warm bran or pollard mash, with good air and warm water and salt. After

conquering the obstruction, bitter effusions made of camomile, hoarhound, oak-bark, &c., in beer, may be required as restoratives, although perhaps good, dry, nourishing food will have an equally good effect.

Horn-ail. — The indications of this disease are coldness of the horn, dulness of the eyes, sluggishness, want of appetite, and a disposition to lie down. When the brain is affected, the animal will toss its head, groan, and exhibit indications of great pain.

Remedy. — A practical farmer and a friend of ours, while he admits that the application of spirits of turpentine is good, asserts that the use of hot brimstone is still better, for the cure of the horn-ail. He puts one spoonful, boiling hot, into the cavity just between the horns.

Another. — Take of salt one half-pint, of soot one half-pint, of black pepper one table-spoonful; make all fine, and give one or two spoonfuls at a time, night and morning. It is easily done, by drawing the tongue out of the mouth with the hand, and putting the spoon as far down as it will reach; then let go the tongue, and keep up the nose, and it will all go down.

Murrain, or Plague. — The following recipe for the cure of murrain, in nine cases out of ten, has proved successful. The person from whom we obtain it has cured a great many cattle in this vicinity, for which he charged \$1 per head, and asked \$10 for the receipt.

Recipe. — Give $1\frac{1}{2}$ oz. pearlash, dissolved in two quarts of iron water (from blacksmith's trough). If not better in five hours, give $\frac{1}{2}$ an oz. more, in one quart of water. The water should be warm. Give no drink but warm water for two days. Give warm mash to eat.

Another. — Take half a pound of salt, two ounces of bruised coriander-seed, one ounce of genuine myrrh in powder; give these in a little water.

Mange, or Itch. — Take half a pound of black brimstone, quarter of a pint of turpentine, one pint of train-oil. Mix them together, and rub them well in over the affected parts.

Lice on Cattle. — Grease, fat, lard, or any oily substance, if applied to neat cattle infested with pediculi, will have the desired effect; it must be applied by being well rubbed into the hair on those parts where the vermin are found, and repeated until they are destroyed.

Goose-grease, hog's fat, pot-skimmings, will all answer the

purpose, and may be obtained in any farmer's family without cost.

Tobacco, also, will kill these vermin on cattle, by its operation on them as poison. A simple infusion of tobacco, applied warm, and rubbed into the neck or dewlaps, or wherever found, so as to completely wet the hairs, and repeated at an interval of a few days, will destroy the nits and lice in a short time, and at a cheap rate. The currycomb should be used after the application. A writer in the *Michigan Farmer* recommends buttermilk for the destruction of lice on cattle.

Cure for Wens. — Take a pint bottle and put in half a pint of fine sulphur; fill the bottle with spirits of turpentine. Mix it well, and apply it to the wen daily, rubbing it in well with the hand. We have the name of the gentleman who has tried this recipe and found it effectual. It removed two wens, which were as big as hen's eggs, from the jaws of two oxen.

Cure for Bloated Cattle. — After cutting off the end of the tail, boil a strong dose of thoroughwort and tansy; pour it down the throat as soon as it is cool enough; then turn the animal into the yard, and drive it about a few minutes. This will soon start the wind; repeat the dose if necessary.

Scours. — Give half an ounce of powdered catechu, ten grains of powdered opium, in a little gruel; or, give small and repeated doses of Epsom and Glauber salts, in equal quantities, — half an ounce of the two, in a little warm water, two or three times a day; this will remove the cause of the disease, and soon effect a cure.

A Cure for Poison. — Administer one pound of salt in a quart of water-gruel, or a pint to a pint of linseed-oil.

Sting of the Adder. — Apply immediately strong spirits of hartshorn. For sting of wasps, apply chalk or whiting, mixed with vinegar.

Cholic. — One pint of linseed-oil, mixed with $1\frac{1}{2}$ oz. of laudanum.

Sprains. — One ounce of sweet-oil, four ounces of spirits of hartshorn, half an ounce of oil of thyme.

Choking. — The following method of relieving neat cattle when choked by a turnip, or potatoes, has been tried, and found successful in every instance. Pour into the throat of the animal, from a junk bottle, a pint or so of lamp-oil, or any kind of oil, at the same time rubbing the throat briskly with the hand. Immediate relief will follow.

Cows. — *Milk Fever or Garget.* — Two ounces of brimstone, two ounces of diapente, one ounce of powdered nitrate. Give this daily in a little gruel, and well rub the udder with a little goose-grease.

Drying off Cows. — Take an ounce of powdered alum, boil it in two quarts of milk till it turns to whey; then take a large handful of sage, and boil it in the whey till you reduce it to one quart; rub the udder of the cow with a little of it, and give her the rest by way of a drink; milk her clean before you give it to her, and as you see need, repeat it. Draw a little milk from her every second or third day, lest her udder be overcharged.

Another. — This disorder is very frequent in cows after ceasing to be milked; it affects the glands of the udder with hard swellings, and often arises from the animal not being clean milked. It may be removed by anointing the part three times a day with a little ointment composed of camphor and blue ointment. Half a drachm or more of calomel may be given in warm beer, from a horn or bottle, for three or four mornings, if the disorder is violent.

A Hint. — A friend, in a description of Norway, says, that when the cows drink at the hot-springs, they give more milk than those that drink cold water. Cows drink so much at a time, that there is no doubt, when the water is nearly at freezing, they must feel sensibly cooled all over, which will naturally affect their produce of milk. I would therefore propose the experiment of warming the water for milch cows, in cold weather.

CALVES. — *Cure for Worms and Insects in the Stomach of Calves.* — Take 1 pint of spirits of turpentine, 1 pint of train-oil, 2 oz. spirits of vitriol, 2 oz. assafoetida, 2 oz. hartshorn. Mix the whole together in a bottle, and shake it well before it is used. Pour a table-spoonful down each nostril of every calf for three successive mornings; the calves must be kept *fasting* the night previous to giving the dose. Should the first trial not succeed, repeat the dose in the course of a week or ten days.

Cure for the Scours in Calves. — When the calf is attacked, it should be put in a warm, dry stable, and not be permitted to suck more than half the quantity of milk it is wont to do; but should be put to the cow regularly three times a day. Make tea of equal portions of white-oak, beech, dogwood, and slippery-elm bark, and give small doses twice a day, and the calf will soon recover.

Another. — Break two eggs into a basin, beat them up, and pour

them, by means of a tin funnel, down the calf's throat; repeat this twice or thrice; it has been found an almost infallible cure.

Another. — Epsom and Glauber salts in equal quantities; half an ounce of the two, in a little warm water, repeated two or three times a day, according to the violence of the distemper.

Another. — Laudanum, bark, &c., though they stop the disease, frequently kill the patient; the salts, on the contrary, remove the cause of disease, without producing costiveness.

SECTION II.

SHEEP AND LAMBS.

Lambs. — Cure for Ticks. — Lambs often suffer much from ticks, after the sheep are sheared, as the ticks which are driven from the old sheep take refuge with the lambs. The cure may be effected as follows. Three gallons of tar; three gallons of green or train oil, boiled together; to which add three pounds of roll brimstone, powdered and stirred in; this is sufficient for ninety sheep.

Sheep. — Cure for Cold. — When sheep have colds, and discharge mucus from the nose, good feeding, together with pine boughs, given occasionally, will cure them; or tar, spread over a board, over which a little fine salt is strewed, will induce the sheep to lick up the tar, and this will cure a cold.

To prevent Sheep from taking Cold after being Shorn. — Sheep are often exposed to cold winds and rains immediately after shearing, and thereby frequently take cold. Those farmers who have access to the sea should plunge them into the salt water; those who have not that opportunity, and whose flocks are not very large, may mix salt with water and rub them all over, which will in a great measure prevent any mishap befalling the animal after having been stripped of its coat.

Head-Fly. — It is very common in the months of June and July for some kinds of sheep, especially the fine Leicester breed, which are commonly thin-skinned about the head, to be struck with a kind of fly, and by scratching the place with their feet they make it sore and raw. To prevent this, take tar, train-oil, and salt, boil them together, and when cold, put a little of it on

the part affected. This application keeps off the flies, and likewise heals the sore. The salt should be in very small quantity, or powdered sulphur may be used instead of it.

Foot Rot. — Preventive and Cure. — This disease is not only contagious, but also infectious in the highest degree, and oftentimes so violent as to produce caries in the bone after the hoof is destroyed. A good remedy is a poultice of dough, or fat, loamy clay, which should be applied to the foot by means of a little bag, but not tied hard to the ankle, and kept constantly wet with vinegar, till a swelling appears on the upper side of the foot, or in the cleft of the hoof. This should then be opened with a sharp knife, and the dead hoof pared off. The wound must be washed with cold water, and sprinkled with dry vitriol.

Mouth Distemper. — The best remedy for this complaint is to bathe the parts affected with a strong decoction of sage, mixed with an equal quantity of vinegar and a little honey. If the blisters continue to spread, half an ounce of blue vitriol should be added to a quart of this mixture.

Scab in Sheep. — This disorder is dreaded more than any other, and, in fact, did more damage in many districts than any other, until the proper mode of treatment was discovered. The scab is certainly contagious, and may readily be propagated by merely touching the skin of a healthy animal with matter from a pustule on another sheep; but as far as my observation has extended, the infection is not conveyed through the atmosphere, though it often seems to be epidemic, and particularly in very damp summers, which affect sheep in many other ways so unfavorably.

Symptoms. — It is discovered by the animal's constantly rubbing or scratching itself, and making at the same time a peculiar motion with the lips; the scabs are sometimes dry, and sometimes moist, and spread rapidly, though the animal continues healthy in other respects, and generally more lively than before. Afterwards, however, the disorder becomes internal, the sheep becomes emaciated, and dies from weakness and pain.

Remedies. — One of the best remedies is a strong decoction of tobacco, to be applied to the diseased parts after scratching off the scabs with a comb, or other instrument. The decoction of tobacco mixed with lime-water and oil of vitriol, and used constantly for some time, will generally effect a radical cure.

Another. — Another excellent remedy is a decoction of hellebore, mixed with vinegar, sulphur, and spirits of turpentine. In-

ternal remedies are of no use, except when the disorder has induced other complaints by weakening the general health.

To cure Sheep Pox. — This disorder is contagious, and propagates itself by exhalation from the sick to the healthy animal. The only care necessary during the progress of this disorder is to keep the sheep in a cool and airy situation. Bathe the sores often with a strong infusion of camomile-flowers, in which a little blue vitriol has been previously dissolved, and afterwards dress with a salve made with yolks of eggs and turpentine, mixed with a little powdered charcoal.

Rot in Sheep. — This disorder is unquestionably caused by feeding in swampy grounds, and a few hours are sufficient to fix it upon a sheep. It is increased by damp, foggy weather, while, on the other hand, dry, warm weather, and high pasture, especially where there are many aromatic herbs, are sometimes sufficient to counteract the first symptoms and effect a cure. Horse-chestnuts are an excellent article for fodder in this case; also a mixture of juniper-berries, wormwood, sage, gentian, angelica roots, willow-bark, and other bitter herbs, with a little salt and grain.

Reeling Sickness. — Lambs and yearlings only are usually liable to this disorder, and very rarely sheep over two years old. The seat of the disorder is always to be discovered on the brain, where one or more blisters are formed, and filled with a watery secretion. The origin of this complaint, and of course the proper preventive treatment, remains as yet undiscovered.

Best Remedy. — A cure is sometimes effected by an operation through the skull to let off the water. The first step in this case is to examine the skull carefully in search of a soft spot in the bone, which usually indicates the spot affected. The skull is then perforated with a trocar, accompanied by a tube through which the water may escape; after which the tube also is withdrawn, and a few drops of the essence of myrrh applied to the aperture. This operation is sometimes successful, but more often the reverse. If it succeeds, however, in only one cure out of five, it seems worth the trial, since, without some relief, the sheep must certainly perish.

Swelled Paunch. — If this disease is taken in season, it may be cured by violent friction of the back and belly, and driving the sheep rapidly.

Worms in the Head of Sheep. — It is said by some writers, that, if sheep are kept in good condition, there is no danger of

their suffering greatly from worms in the head ; as they will be strong enough to expel the insects by sneezing.

Remedies. — To effect a cure in this disease, take a handful of Scotch snuff, and pour upon it two quarts of boiling water, stir it, and let it stand till cool ; inject about a table-spoonful of this liquid and sediment up each nostril of the sheep with a syringe. This must be repeated three or four times, at proper intervals, from the middle of October to the first of January.

Instead of Scotch snuff, a decoction of tobacco will answer the purpose. A gentleman who owns a large flock of sheep informs us that he has used it with perfect success.

Mr. Alexander Reed, of Washington, Pennsylvania, in an article on the management of sheep, observes, that “ daubing the sheep’s nose with tar is considered as a protection against this enemy.” What experience I have had is rather calculated to strengthen this opinion. I have always made free use of tar among my sheep, and I do not know that I ever lost one by the worms in the head.

Maggots in Sheep. — Mix with one quart of spring-water a table-spoonful of the spirits of turpentine, and as much of the sublimate powder as will lie upon a shilling. Shake them well together, and cork up in a bottle, with a quill through the cork, so that the liquid may come out of the bottle in small quantities at once. The bottle must always be well shaken when it is to be used. When the spot is observed where the maggots are, do not disturb them, but pour a little of the mixture upon the spot, as much as will wet the wool and the maggots. In a few minutes after the liquor is applied, the maggots will all creep to the top of the wool, and in a short time drop off dead. The sheep must, however, be inspected next day, and if any of the maggots remain undestroyed, shake them off, or touch them with a little more of the mixture.

A little train-oil may be applied after the maggots are removed, as sometimes the skin will be hard by applying too much of the liquid. Besides, the fly is not so apt to strike when it finds the smell of the oil, which may prevent a second attack.

This method of destroying maggots is superior to any other, and it prevents the animal from being disfigured by clipping off the wool, which is a common practice in some countries.

Water in Sheep’s Heads. — With regard to the causes inducing water in the heads of sheep, there is but one opinion entertained among shepherds, which is that it is occasioned by a

chillness in the back of the animal, on account of its being exposed to the winds and the sleety showers of winter. The following facts clearly indicate the truth of this opinion.

1. It is always most general after a windy and sleety winter.
 2. It is always most destructive on farms that are ill-sheltered, and on which the sheep are most exposed to those blasts and showers.

3. It preys only on sheep rising their first year; the wool then separates above, leaving the back quite exposed to the wet and cold.

4. If a piece of cloth or hide is sewed to the wool, so as to cover the back, such sheep will not be affected with the disease. The experiment is a safe, cheap, and an easy one; and, exclusive of its good effects in preventing the fatal disease under consideration, it is the most beneficial to a young sheep that is not over high in condition, and administers the most to its comfort during the winter, of any thing that I know. One pair of old blankets, of the value of four or five shillings, will furnish coats for forty sheep; and if these are carefully taken off on the return of spring, and laid aside, they will serve the same purpose for two or three successive years.

SECTION III.

DISEASES OF HORSES, COLTS, &C.

Cure for Bots.—When a horse has bots, it may often be known by his biting his sides; when he has many, they often throw him into great pain, and he lies down, rolls, and, if not cured soon, dies. When it is believed that a horse has bots, by the above symptoms, give a pint of sweetened milk, which the bots are fond of, and they will let go their hold on the horse and feast on the milk. Immediately give the horse a small quantity of oats or other provender, in which put two thirds of a common fig of tobacco pulverized. If he refuses the provender thus mixed, steep the same quantity of tobacco in a pint of boiling or warm water until the strength is out, as we say; then put in enough cold water, so that the whole will fill a common junk bottle, and turn it into the horse. When it reaches the bots, it kills them, as all will believe who have ever spit tobacco-juice

upon a worm or similar insect. The horse in less than twenty hours will void all his bots. There is no mistake in this, though no patent has been obtained. The writer would not have it tried on an old, poor horse, in the fall, or first of winter, for he would certainly recover, to the damage of his owner. If one worth curing is affected with bots, and the symptoms are severe, never stop for the milk, but in with the tobacco;—this is the *kill-all*.

Another.—The following treatment is recommended, which is pronounced a sure remedy. Give a quart of warm sage tea; in half an hour repeat the dose. After another half-hour, give a gill of tar; and half an hour afterwards, administer a purgative.

A branch of sage chopped into the feed for horses once a week, will prevent the bots altogether.

Ring-bone.—Ring-bone commences in the lower pastern, and usually in the joint, but it rapidly spreads, and embraces not only the pastern bones, but the cartilages of the foot. There is at first a slight enlargement of bony swelling, on each side of the foot, and just above the coronet. It is more frequent in the hind feet than in the fore, because there is more violent exertion in these than the fore; yet the lameness is not so great, because these bones are not liable to so much injury; in its early stages it is not impossible to remove the disease by active blistering, or by the hot iron. Ring-bone is one of the most serious lamenesses with which horses can be afflicted. The animal is unsound when it exists in the slightest degree; for when the bony deposit begins to spread, the disease is incurable.

Remedy.—In slight cases, rubbing the swelling night and morning with a drachm of mercurial ointment, rubbing it well in, and afterwards applying a blister, and in two or three weeks another, will be of benefit.

Cholic.—Relief may be afforded by rubbing the breast of the horse with spirits of turpentine. If this does not succeed, a small quantity should be given internally. Horses should never be put to severe work on a full stomach. Great injury is done to them by heavy feeding when on the road, and hard driving immediately after.

Pole Evil and Fistula.—A friend gives the following recipe for the cure of these diseases, which he says is a universal and never-failing cure.

Take a lump of salt, say as large as an egg, the same quantity of hard soap; then take a quantity of poke-root and boil it sepa-

ately until it becomes a sirup, (in quantity a pint,) then mix the salt and soap with it so as to make a ball. Wash the place every morning for a week, and a cure is effected.

Another. — These diseases may be cured by putting a seton in the lower part of the sore, which will discharge the pus. Then inject soap-suds, if it is to be had, frequently in one day. Then inject a weak solution of oil of vitriol, two or three times a day for one or two days. After this, wash with soap-suds, and a cure will be effected.

Stifle. — A handful of sumach bark and a handful of white-oak bark, boiled in a gallon of water, down to two quarts; bathe the stifle with this lotion twice a day for three days; then put a salve made of the white of an egg and rosin, and bathe the same in with a hot shovel (held at a short distance off, we suppose) two or three times a day, and the horse is cured.

Heaves. — To cure heaves, take one pound and a half of good ginger, for a horse. Give two table-spoonfuls a day, one in the morning and the other in the evening, mixed with wheat-bran. It seldom fails of curing the disease.

Cough. — An experienced farmer tells us, that he has never found any thing so effectual for a bad cough as human urine, given a few times, by discharging into a bucket of water and letting them drink it, or on their food, and letting them eat it.

Another. — Smart-weed, green or dry, is an excellent medicine for horses in several diseases, particularly for a cough. Feed them as with grass or hay. Every farmer who has this weed or herb growing on his premises should cut, dry, and save against time of need.

Saliva. — *A Slabbering.* — Saliva in the horse can be cured by mixing a table-spoonful of flour of sulphur in the salt that is given them.

Another. — A friend recommends, that when horses slabber on being pastured in clover, they be turned into dry or old pasture, or fed with hay or oats.

Swelling. — To scatter swellings on horses or other cattle, take two quarts of proof whiskey, or other proof spirits, warm it over coals, but not to blaze; dissolve in it a pint of soft soap; when cool, put it in a bottle, and add one ounce of camphor. When dissolved, it will form a liquid opodeldoc, and is then ready for application, forming a cheap and useful remedy. When the swelling is on the leg, or any part that will receive a bandage, such bandage should be applied, and wet with the opodeldoc.

Wounds and Bruises. — Take one quarter of a pound of saltpetre, half a pint of spirits of turpentine; put them together in a bottle, and shake up before using. Apply it to the wound with a feather three times a day.

Lockjaw. — It is said that pouring water along the back from a watering-pot, for a considerable time without intermission, will effect a cure of the lockjaw in horses.

Scratches. — Wash the feet of the horse with the scratches in strong soap-suds, and bind them up in warm cow-dung, two or three nights, and the cure is effectual. The remedy is good, but the great secret of keeping scratches from the feet of horses is to keep their legs clean and free from fever.

Another. — The sprinkling of plaster of Paris on stable floors is not only an excellent plan for arresting the fertilizing gas of ammonia for manure, but it prevents horses having the scratches, or sore heels. Mix white lead and linseed-oil in such proportions as will render the application convenient, and I never have known more than two or three applications necessary to effect a common cure.

To cure a Choked Horse. — To relieve a choked horse, the writer recommends bleeding in the mouth. As he swallows the blood the obstruction goes down.

To cure Sore Backs of Horses. — White lead, moistened with milk or sweet-oil, is the best remedy for sore backs of horses, and, if applied in the early stage of the wound, is always efficacious.

To take Film from a Horse's Eye. — Blow loaf-sugar and a little salt into the inflamed eye, and in most cases it will be relieved. Sassafras-buds, pounded and put in water, to stand till it becomes nearly as thick as cream, applied to the eye, is an excellent remedy for inflammation.

Receipt for Horse Liniment. — 1 oz. spirits turpentine, 1 oz. gum camphor, 1 oz. oil spike, 2 oz. oraganum, 2 oz. sweet-oil, 2 oz. spirits nitre, 2 oz. hartshorn, mixed together.

Wind Galls. — These swellings appear on each side of the back sinew, above the fetlock. It is dangerous to puncture them, as is sometimes done, as it may produce an incurable lameness. Tight bandages, and moistening the parts frequently with a strong solution of sal ammoniac in vinegar, may do some good.

Hoof-bound. — Cut down several lines from the coronet down to the toe, all around the hoof, and fill the cuts with tallow and soap mixed. 'Take off' the shoes, and (if you can spare him)

turn the animal into a wet meadow, where his feet will be kept moist. Never remove the sole nor burn the lines down, as this increases the evil.

Strangles. — This is known by a swelling between the jaw-bone and the root of the tongue. If a large tumor appear under the jaw, apply the suppurating poultice. When it is ripe, open it, squeeze out the matter, and reapply a warm poultice. In a few days it will run off. Give warm bran mash and gentle exercise.

Foundered Feet. — This is known by the contraction of the hoof, which will appear considerably smaller than the sound one. The horse just touches the ground with the toe of the foundered foot on account of the pain, and stands in such a tottering way that you may shove him over with your hand.

Cure. — Take off the shoe, bleed freely from the thigh vein, and purge two or three times. Keep the hair close trimmed, and the parts clean.

Blood Spavin. — Clip off the hair from the swelling, and rub all round outside of the swelling with a piece of hard brown soap, then apply to the swelling a blister made of the following blistering ointment: Hog's lard, half an ounce; beeswax, three drachms; sublimate, in fine powder, half a drachm; Spanish flies, two drachms. Mix all well, and spread on white leather and apply to the spavin.

Bone Spavin. — This may be treated like the former; it is, however, generally incurable. The operation of firing (which should be done by a professed farrier), and turning to grass, afford the only reasonable chances of relief.

Wart. — Tie a strong silk, or two or three horse-hairs, round the neck of the wart, tightening it gradually till it falls away. Then dip a piece of tow in alum-water and bind it on the spot for a whole day. Heal the sore with the green ointment.

Strangury. — Take away a quart of blood, and throw up a laxative clyster; then give one ounce of saltpetre, and one fluid ounce of sweet spirits of nitre in a pint of water.

Thrush. — Remove the shoe and pare off all the ragged parts, so as to expose the diseased parts; after cleaning the frog nicely, apply a solution of blue vitriol, and shortly after pour some melted tar ointment into the cleft of the frog and cover its whole surface with tow soaked in the same; on the tow fit a flat piece of wood about the width of the frog, one of its ends passing under the toe of the shoe, the other extending to the back part of

the frog, and bound down by cross pieces of wood, the ends of which are placed under the shoe. Repeat the dressing every day.

Corns. — Let the farrier cut them out with a sharp knife. Should they show a disposition to grow again, touch them with oil of vitriol or caustic, and dress them with green ointment. Be careful in shoeing not to let the shoe press on the corn.

SECTION IV.

DISEASES OF SWINE.

To cure the Measles in Swine. — It sometimes happens, though seldom, that swine have the measles; while they are in this state, their flesh is very unwholesome food. This disorder is not easily discovered while the animal is alive, and can only be known by its not thriving or fattening as the others. After the animal is killed and cut up, its fat is full of little kernels, about the size of the roe or eggs of a salmon. When this is the case, put into the food of each hog, once or twice a week, as much crude pounded antimony as will lie on a shilling. This is very proper for any feeding swine, even though they have no disorder. A small quantity of the flour of brimstone, also, may be given among their food when they are not thriving, which will be found of great service to them. But the best method of preventing disorders in swine is to keep their sties perfectly clean and dry, and to allow them air, exercise, and plenty of clean straw.

Rupture. — Where a number of swine are bred, it will frequently happen that some of the pigs will have what is called a "rupture"; i. e. a hole broken in the rim of the belly, where part of the guts come out and lodge betwixt the rim of the belly and the skin, having an appearance similar to a swelling in the testicles. The male pigs are more liable to this disorder than the females.

Cure. — Geld the pig affected, and cause it to be held up with its head downwards; flay back the skin from the swollen place, and, from the position in which the pig is held, the guts will naturally return to their proper place. Sew up the hole with a needle, which must have a square point, and also a bend in it, as the disease often happens between the hinder legs, where a straight needle cannot be used. After this is done, replace the

skin that was flayed back, and sew it up, when the operation is finished. The pig should not have much food for several days afterward, until the wound begins to heal.

Sore Throat in Swine. — Turn animals so affected into an open pasture, where there is fresh feed and ground to root. It is a disease resulting generally from confinement. Pounded charcoal mixed with food, where pasture cannot be had, or room for exercise, is one of the best preventives for disease in swine.

Staggers in Swine. — To cure this disease, De Grauchy recommends cutting a knot in the roof of the mouth till the animal bleeds liberally, and then rubbing it with powdered loam and salt, and giving it a little urine to drink. Pigs have openings on the inside of the fore legs below the knee, from which, when in health, a small discharge is kept up. A stoppage of these orifices is supposed to be one cause of the staggers; and rubbing them open with a cob, or other rough material, will usually effect a cure.

SECTION V.

DISEASES OF DOGS, &c.

Debility. — Flour of sulphur, 6 oz.; nitre, 1 oz.; treacle enough to make it as thick as dough. Give the dog a piece the size of a medium walnut.

Inflammation of the Bowels. — Give 2 oz. castor-oil, and 1 oz. sirup of buckthorn, or molasses, and put the dog into a warm bath.

Distemper in Dogs. — Give an emetic, followed by a dose of castor-oil.

Weak Eyes. — Apply for a wash the following: White vitriol, 8 grains; soft water, $\frac{1}{2}$ pint. Mix well, and apply it with a rag several times a day.

Sore Ears. — Make an ointment as follows, and apply it to the sores: Yellow resin, 2 oz.; yellow wax, 1 oz.; sweet-oil, $\frac{1}{2}$ pint. As it cools, stir in 4 oz. of powdered calomel.

Costiveness. — A dose of castor-oil is best. If it continues, and is severe, give an injection of oil and warm water.

Cholic Pains. — Give a dose of physic, together with some warm herb-tea. Bathe the bowels with hot-drops.

Mange. — Rub upon the affected part an ointment made as

follows: Flour of sulphur, $\frac{1}{2}$ lb.; soft soap, 2 oz.; oil of tar, $\frac{1}{2}$ oz.; train-oil, $\frac{1}{4}$ pt.

Worms. — Give for a drench, spirits turpentine, 1 to 4 dr.; castor-oil, 2 to 8 dr. Mix for a dose, and give according to the age and size of the dog.

Wounds. — Tincture of myrrh and aloes, 2 oz.; friar's balsam, 1 oz. Mix and keep for use.

Hydrophobia. — Mix a small portion of the flour of sulphur with their food or drink. This has been known in Europe for centuries, and is used to prevent this disease from breaking out among the packs of hounds upon the estates of English noblemen.

CHAPTER IV.

THE TRUE POULTRY-YARD: OR, FOWL-BREEDER'S GUIDE.

SECTION I.

GENERAL REMARKS, &c.

Poultry-House. — A poultry-house need not be expensive, and yet be as good for the farmer as one with fancy fixings that no one knows the use of. Of whatever shape, it is better to have it too small than too large, in winter, especially. For if too large, the hens get together in one corner in order to keep themselves warm. While, if of the right size, they can promenade as much as they please, and have the proper amount of exercise.

If you have plenty of room in your stable or barn, a room partitioned off there will do. Having built the partition, all the cracks should be well battened up to make it warm. It should have good-sized windows, fronting toward the south, if possible, and it should be well whitewashed, both for neatness and to make it lighter. Then divide it into two apartments; one to be used for the roosting-room, the other for their occupation during the day. It would be better if they had no access to the roosts in the day. The day-room should be furnished with gravel, chalk, old mortar, and other such materials, to assist in making the shells to their eggs. Also sand and ashes, which are good for a dust bath, put into shallow boxes, so that the room may not be made untidy. The room should have a good plank floor, which should be often swept.

Laying in Winter. — If you wish them to lay in winter, they must be furnished with animal food, and vegetables, every few days, besides their regular supply of grain, which, in my opinion, had better be kept in hoppers constantly before them.

Nests, &c. — Nests can be made in a great many different ways. Some use barrels, which answer well; small boxes, however, are just as good, and take up less room. They should be filled with good clean straw, with one nest-egg (better artificial); as soon as laid, the eggs should be taken from the nest, or at least as often as once a day.

Summer Yards. — In summer, if your fowls have a large yard to roam in, it will not be found necessary to furnish them either with meat or materials to make the shells of their eggs, for they will get them from the earth.

Spring Yards. — In the spring a yard should be fenced off for them, in which they will thrive better without doing any mischief than if they were allowed to run at large, in which case they are often very troublesome in newly-sowed fields. The roosting-room should be thoroughly cleaned as often as once or twice a week, and the floor sprinkled with lime.

If these few directions are carefully attended to, we will insure an abundance of eggs.

Hen-Ladder. — The *hen-ladder*, which may be easily constructed by an ascending scale of perches, is essential to every poultry-house. Many valuable fowls have been lost for the want of this little arrangement.

Selection of Stock for Breeding. — In choosing a cock, take especial care that he is in perfect health, feathers close and rather short, chest compact and firm, full in the girth, lofty and elastic gait, large and firm thigh, beak short, and thick at its insertion.

Next to health and strength, age is to be duly considered. Neither select a cock that is too old, nor one that is too young; let the age be from a year and a half to three years and a half. Some cocks retain their vigor till they are even past six years old, and some make a display of unquestionable virility at the premature age of five or six months.

Number of Hens with a Cock. — The number of hens with each cock should not exceed four; even less than four is better than to exceed that number; as, in the progeny, the females will exceed or fall short of the males as the number of hens is increased or diminished; and the strength of the chicks will be according to the number of hens put with the cock.

Choice of Hens for Sitting. — In the choice of a hen for sitting, look for a large bird, with large, wide-spreading wings. Though *large*, however, she must not be heavy nor *leggy*. No one of any judgment would sit a Malay, as, in such case, not only would many eggs remain uncovered, but many also would be trampled upon and broken. Elderly hens will be found more willing to sit than young and giddy pullets; indeed, the latter should never be allowed to sit until at least the second year of their laying.

Selecting Eggs for Sitting. — In selecting eggs for sitting, bear in mind what has been said as to the number of hens that the cock should associate with; and choose such eggs as you have reason to know, or believe, to have been rendered productive. Those of medium size, i. e. the average size that the hen lays, are most apt to prove productive. Sketchley tells us, that he has always found the round egg to contain the female chick, and that of oblong shape, the male.

Number of Eggs to a Hen. — The number of eggs to be placed under a hen is from nine to eleven. The number is, however, of course, dependent on the size of both eggs and hen; an *odd number* is to be preferred, as being better adapted to the *covering* in the nest. Be sure that they are all fresh; and carefully note down the day on which you place them beneath the hen. Never turn the eggs; the hen can do that better than you.

Best Age of Sitting. — The best age for sitting a hen is from two to five years; and you should remark which hens make the best breeders, and keep those to laying who are giddy and careless of their young. In justice to the animal creation, however, it must be observed, there are but few instances of bad parents for the time their nursing is necessary.

Hens sit twenty days. Convenient places should be provided for their laying, as these will be proper for sitting likewise. If the hen-house is not secured from vermin, the eggs will be sucked and the fowls destroyed.

Best Breed, &c. — In order to have fine fowls, it is necessary to choose a good breed, and have proper care taken of them. The Canton breed is thought highly of; and it is certainly desirable to have a fine, large kind, but people differ in their opinion which is best. It is as important to cross the breeds of fowls as of other animals; hence it is improper to save males and females from the same sitting of eggs, if they are to be kept for propagation. The black kind are very juicy, but do not answer so well for boiling, as their legs partake of their color.

How to keep a Good Stock.—Those hens are usually preferred which have tufts or feathers on their heads; those that crow are not looked upon as profitable. Some fine young fowls should be reared every year, to keep up a stock of good breeders; and by this attention, and removing bad layers and careless nurses, you will have a chance of a good stock.

Let the hens lay some time before you sit them, which should be done from the end of February to the beginning of May. While hens are laying, feed them well, and sometimes with oats.

Broods of chickens are hatched all through summer, but those that come out very late require much care till they have gained some strength.

Feeding Poultry.—They should be fed as nearly as possible at the same hour and place. Potatoes boiled, unskinned, in a little water, and then cut, and either wet with unskimmed milk or not, form one of the best foods. Turkeys and fowls thrive amazingly on them. The milk must not be sour.

Corn and oats, with plenty of fresh water, should be kept before them at all times. They will eat no more than by occasional feeding, and they thrive better. Meat, mash, &c. may be fed out at regular intervals.

A Rule for Sitting Hens on Turkeys' or Ducks' Eggs.—If the eggs of any sort are put under a hen with some of her own, observe to add her own as many days after the others as there is difference in the length of their sitting. The turkey and duck sit thirty days. Choose large, clear eggs to put her upon, and such a number as she can properly cover. Twelve is the best number.

Poultry for the Market.—The article of poultry is readily converted into money, and is probably quite as readily prepared for market as any other article of stock produced on the farm. The expense of feeding the best stock is no more than would be the expense of feeding and rearing the poorest dunghill fowl, while the return shows a heavy balance in favor of the large-bodied and fine-meated fowl, with little offal.

SECTION II.

ORIGIN, VARIETIES, AND QUALITIES OF DOMESTIC POULTRY.

Dunghill or Barn-door Fowl.—The dunghill fowl is seldom met with in its pure state, having been so often crossed with

other varieties. We think highly of this stock for our climate, both for eggs and table use; they excel also as sitters. Crossed in with the Cochin China, they constitute, in our judgment, the very best stock that can be reared.

Dorking. — The color of the Dorking is pure white, and their principal peculiarity is their having *five toes*. This fowl is of recent account in this country, and is a native of Dorking, Surrey, England. They make an excellent stock for the farm or market. They fat well, lay well, and rear well; are handsome alive, and show delicately white when prepared for cooking. General opinion has accorded to this breed the highest character for laying, and also for arriving at early maturity. Their eggs are of a large size, clear, white, and of excellent quality.

The cocks are magnificent; variegated in color, with a surpassing brilliancy of plumage, rarely equalled by other kinds. The hens are pheasant-shaped, with a clear and beautiful head and throat, and a deep, heavy crop. The young are easily reared.

I may add, that, when crossed with larger breeds, they invariably improve the form; and while the quality of the meat is also improved, the amount of offal is much reduced.

Cochin China. — This fowl is, comparatively speaking, new in this country, yet they are well known to fowl-fanciers. But few of those which pass under this name in the New England States are of pure stock. Their prevailing color is rich, glossy brown. In strength they surpass most other varieties.

The flesh is white and delicate. The eggs are large, of a chocolate color, and possess a very delicate flavor. They are prolific, frequently laying two, and occasionally three eggs on the same day, and within a few moments of each other. This has been disputed, but not successfully.

Bolton Grays. — The *Bolton Grays* are a small-sized, plump, and short-legged fowl. They excel almost every other breed as layers. Dr. Kittridge, of Portsmouth, N. H., says that he had, from two hens of this breed, 41 eggs in twenty-two days, and 95 eggs in fifty-four days. He adds, that they are a hardy fowl, and he values them more than any he has. It should not be forgotten, however, that they are poor sitters.

Polish. — The two varieties of this fowl are the *Spangled Polish*, a beautiful bird, and the well-known black fowl, with a white tuft on the crown.

In the pure breed, the cock has two small horns in place of the

comb, and the crests or tufts of the male, as well as the female, *must be entirely white*. Mixed colors in the crest *invariably* denote a cross.

They are excellent layers, and if kept warm will continue to lay nearly the whole year. They are poor sitters, and their flesh is of the meanest quality.

Guelderlands. — The breed of fowls known as the Guelderland were imported from the North of Holland, some years since, by Captain John Devereau, of Marblehead. The principal mark of distinction is the absence of a comb. Instead of this ornament, it has got two little, hard peaks, or, as some call them, horns, on its crest.

This fowl is clad in a beautiful blue-black plumage, and its flesh is white, tender, and juicy. Besides the peaks, or small horny substances on its crest, mentioned above, the Guelderland cock has unusually large, red wattles. The breed are of good size in body, and are great layers, but seldom or never show an inclination to sit. On the whole, they may be described as bright, active birds, and are held by those acquainted with them to be unsurpassed, as to beauty or utility, by any breed at present known in the United States.

Malay Fowl. — This fowl, which is sometimes called the *Chittagong*, came originally from the southern part of India. It is very large, standing high upon its legs, is long-necked, and serpent-headed. It is sometimes white, but generally of a dark-brown color, with yellow streaks.

Character. — The Malay fowl is not such as we recommend to breeders; they are not considered as good layers or sitters, and are a long time in coming to maturity. They attain to a large size, however, often weighing ten or twelve pounds, and the flesh is of a very fair quality. More recent importations of this fowl do better than the early stock as layers and sitters, and crossed with the Dunghill or Dorking, they make a very large and tolerably profitable stock.

Spangled Hamburg. — There are two principal varieties of this fowl; the *golden* and *silver*. It is a fowl of great beauty, is well and neatly made, has a good body, and very little offal. On the crest, immediately above the beak, are two small, fleshy horns, resembling, to some extent, an abortive comb. Above this crest, and occupying the position of a comb, is a large brown or yellowish tuft, the feathers composing it darkening towards the extremities. The varieties are termed *golden* or *sil-*

ver according to their prevailing color. They are inferior to our common poultry, both as to flesh and as layers.

Spanish Fowl.—One of the most striking characteristics of this fowl is a *white cheek*, and the comb and wattles are singularly large, simple, and of a very high color; the feet and legs are of a leaden color, except the soles of the feet, which are of a dirty fleshy hue.

As table birds they hold a place in the very first rank, their flesh being particularly white, tender, and juicy, and the *skin* possessing that beautifully clear, white hue, so essentially a requisite for birds designed for the consumption of the gormand. The hens are likewise layers of the first order; and of all naturalized or indigenous varieties of fowl, with the exception of the Columbian, these lay the largest and the best-flavored eggs. They are, besides, prolific, extremely easily fed, and most commendable to the breeder.

Java Fowl.—This fowl resembles in many respects the Malay, and is supposed to be a cross between that and the Dorking or Spanish breeds. It has a smooth and serpent-like head, without comb or wattles. It stands high on its legs, has a long and pointed tail, and is of an auburn color. It is supposed that the English game-cock originated from this variety. Being very pugnacious, they are valued chiefly as fighters.

Game Fowl.—The game fowl is one of the most beautifully colored and elegantly formed of our domestic poultry. He exhibits the most daring courage and pride of character. They are difficult to rear, on account of their fighting propensity, as nearly half of the brood will be killed or blinded ere they are half feathered. They are very good layers, and though the eggs are not quite as large as our average yield, yet they are of excellent flavor.

Bantam Fowl.—The Bantam is a small, handsomely tinted, and beautifully formed fowl, and without doubt somewhat allied to the game breed. They are good layers and sitters, but altogether too small for profit, and are kept mostly for ornament. The cock has generally a strange propensity to suck the eggs, and the hen is naturally a secret layer.

We have given above the principal breeds which are considered worthy the fowl-breeder's attention. Those which follow receive only a passing notice.

Creepers.—This is a variety of the Bantam,—very short-legged.

Jumper. — This is a dwarf fowl, so short-legged that it progresses by jumps. They are prolific, and excellent sitters.

Turkish Fowl. — This is a variety of Bantam, with whitish body, belly black, legs bluish, and body streaked with *gold* and *silver*.

Columbian Fowl. — This is a valuable fowl, and though a distinct breed, yet has the appearance of a cross between the Spanish and Malay. They are not great layers, but their eggs are very large.

Dutch Fowl. — This is a good fowl as a layer, and for table use.

Dutch Every-day Layers. — These fowl have received the name of "Every-day," or "Everlasting Layers," from the circumstance of their unwillingness to hatch, in consequence of which they lay an egg daily nearly all the year through; and, if properly cared for, and warmly housed, even amid the frost and snow of the most inclement winter. Some say that the eggs of this fowl are not in general so large as those of ordinary poultry, nor equally substantial and nutritious.

Barbary Fowl. — This is a very homely looking fowl. It is booted and feathered to its toes, like the Bantam; is very bold and confident in its appearance.

Rumpkin Fowl. — This is a fowl without a tail. It is good for nothing for the table, or as a layer, and not deserving any attention.

Sussex Fowl. — This is a fowl in its general appearance like the Dorking, though destitute of the *fifth* toe; some think it a superior fowl.

Frizzled Fowl. — This fowl is a native of Java, Japan, and other parts of Eastern Asia; it is smaller than our common fowl, is very susceptible of cold, and is, on that account, very difficult to rear. Their flesh is very delicate and firm.

Silky Fowl. — This fowl is a native of China, and remarkable for its silky plumage, and is of white or cream color. They are good layers, but are not worth rearing.

Siberian Fowl. — This fowl is a native of Russia. They vary in color; some are white, some blue or black, and others are colored like the game fowl. The flesh of this variety is white and good. They are, likewise, good layers, are hardy, and easily fed.

Bankiva Fowl. — This fowl is a native of Java, and resembles our Bantam, being often feathered to the toes. They are very

wild, and in their native state inhabit the skirts of woods, forests, and other unfrequented places.

Negro Fowl. — This is a native of Africa, and is distinguished by having black comb, wattles, skin, bones, and feathers. The flesh is, however, white and tender. They are an unprofitable stock to keep, and will soon deteriorate your good stock by crossing.

Shakebag Fowl. — In all probability, this fowl has been completely divested of all distinctive characteristics through crossing with other breeds. The variety now known as the Shakebag is a cross between the Dorking and Spanish.

Guinea Hen. — As a source of profit, we cannot recommend this fowl; the eggs are very small, three of them being scarcely equal to an ordinary hen's egg, and the flesh not being likely to please every palate.

This fowl dislikes confinement, and will not thrive unless it has free liberty; where such, therefore, cannot be afforded, it is useless to attempt keeping it.

They are prolific; the hen commences laying in May, and lays throughout the entire summer; for the table, they are in season from February to June. The period of incubation is twenty-eight days. You must keep the male bird away, or he will, like the pheasant, destroy the eggs. We should also observe that they are secret layers.

To the above we may add the Golden Pheasants, which are very handsome, and good layers, though rather wild and secret in their movements.

SECTION III.

TURKEYS, GEESE, DUCKS, DOVES, &c.

TURKEYS. — *General Management, &c.* — Turkeys should have a large, roomy shed, protected from wet and cold weather, their perches should be with a good ladder to reach them. In warm seasons they may be allowed to select their own roosting-places on the trees about the farm. The turkey needs but little feeding, as it will mostly provide for itself when at liberty. They are ruinous in the grain fields.

Qualities. — In selecting the cock, see that he is large and

majestic. The cock is in his prime at three, and the hen in her second year.

Laying.—Turkeys usually begin to lay in March. A nest should be prepared, as they are secret layers; they usually lay in the morning. Keep the cock away while the hen is laying.

Sitting.—Let them have a quiet, dark place for sitting, with clean nests of straw.

Hatching.—On the thirty-first day the chicks will begin to chip and break their shells. They should be left alone, as the hen will best manage her young.

Treatment of the Young.—The early feeding of turkeys is much the same as for common poultry. Egg is a good food, also soaked bread, and for the drooping ones a few drops of wine, or, which is better, Cayenne pepper. When they begin to *shoot the red*, as it is called, they require high feeding. After two months they may be let out to roam at large, and they mostly provide for themselves. The young are to be particularly guarded from wet and cold, by always having a good shelter at hand.

Fattening.—After six months, turkeys may be crammed like other fowls. Six weeks' time will suffice to make them fit for market. If you want large turkeys, the cocks should be kept over, but young hen turkeys are the best flavored.

Varieties.—The variety of color constitutes the chief difference in this bird. They are known as the *white*, the *copper-colored*, the *brown*, the *bronze*, *dusky-gray*, *black*, &c. The black are the best variety, and mostly reared.

GEESE.—*General Management.*—*The Toulouse Goose.*—The latest variety introduced, and perhaps the best for size and capacity, and carrying flesh, has been imported from the Mediterranean, and is known by the name of the "Toulouse goose." This bird is chiefly remarkable for its vast size,—a property in which it casts every other known breed far into the shade; it is, indeed, the MAMMOTH of geese, and is to be regarded as the most valuable addition to our stock. They are recommended highly to cross with the *common goose*.

The Bremen Goose.—This is a large and splendid fowl, of a pure white color, having orange legs and bill. They lay in February; sit and hatch with more certainty than barn-yard geese; and will, in many instances, when young, double the weight of the barn-yard kinds. They also yield double the quantity of feathers the other kinds do. Their superior properties are great size, being easily fed, remarkable hardiness when young, and the production of flesh of a superior quality.

Common Goose. — There are but two kinds of the common goose; the *large* and *small*, or the *white* and *gray*. The best kinds are those which vary least in color. *Gray* is the best color, as coming nearest to the original Gray-lag; white is not quite so good; but avoid *mixed* colors.

Breeding. — These birds, as has been ascertained by M. St. Genis, will *pair* like pigeons; and even if the number of ganders exceeds that of the geese, no noise or riot takes place, and mutual choice is evidently the ruling principle.

For the purpose of hatching, a gander should be mated with, at most, three geese. Let his size be large, his gait active, his eye lively and clear, his voice ever ready and *hoarse*, and his demeanor full of boldness and impudence. Select the goose for her *weight of body*, steadiness of deportment, and *breadth of foot*. If eggs alone is the desire, then one gander may run with six or eight geese.

Laying. — The goose begins usually to lay about the end of February or beginning of March. When about to lay, they will be seen with straws in their beaks for making their nests. They should be made to lay their first eggs in some particular place, and they will be sure to deposit all the rest in the same place. The goose drops from ten to twenty eggs at one litter, but will go on to thirty or forty if the eggs are removed.

Sitting. — The inclination of the goose to sit may be known by her sitting longer on the egg after laying than usual. Twelve eggs are as many as is profitable to sit under an ordinary-sized goose. The gander will do no harm to go in and out as he pleases, but will rather act as a vigilant guardian.

Nests and Food. — The nests should be built of straw, and lined with soft hay, and food and drink should be kept near during the period of sitting.

Goslings, &c. — The twenty-ninth day the goslings begin to chip the shell. The goose will sit two months if allowed; eggs should be of equal freshness, so as to have them hatch at the same time. Let the goslings have the sun, but do not feed them for twelve hours after they are hatched. Their food may be like that given to young turkeys.

Yards, &c. — A good yard, in which geese may be shut up as occasion requires, is essential, though they should have the largest liberty allowable, as they will subsist upon grass, nettles, brakes, &c., and thus save the owner's pocket. Market gardeners should never be without geese, which would consume all

their refuse, and bring money into their masters' pockets in return for their consumption of what would otherwise be wasted.

Ducks. — Varieties. — There are several varieties, but only two kinds deserving the attention of fanciers.

Aylesbury White. — This is a large, handsome duck, and is a great favorite. Their flesh is of a delicate flavor, hardly excelled by that of the chicken.

Rouen Duck. — This is very prolific, and lays large eggs. It is a native of France. In rearing, the large size should be sought for.

Muscovy. — This duck makes a fair stock. It is of every variety of color, is easily fattened, a prolific breeder, but a voracious feeder.

Water. — Without water, it is useless to endeavor to keep these fowls; but even a very small supply will suffice. Some parties have kept them with success, and fattened the ordinary duck to the weight of eight pounds, with no further supply of water than what was afforded by a large tub sunk in the ground.

Laying. — The duck does not lay during the day, but generally in the night; exceptions, regulated by circumstances, will, of course, occasionally occur. While laying, the duck requires more attention than the hen, until she is accustomed to resort to a regular nest for depositing her eggs; once, however, that this is effected, she will no longer require your attendance.

Hatching. — The duck is a bad *hatcher*; she is too fond of the water, and is, consequently, too apt to suffer her eggs to get cold; she will, also, no matter what sort of weather it be, bring the ducklings to the water the moment they break the shell.

The eggs of the duck are thirty-one days in hatching; during incubation, they require no turning, or other attention; and when hatched, only require to be kept from water for a day or two.

Ducklings. — Their first food may be boiled eggs, nettles, and a little barley; in a few days they demand no care, being perfectly able to shift for themselves. Boiled potatoes are very good feeding, and are still better if a little grain be mixed through them; Indian meal will be found both economical and nutritive, but should be used sparingly at first.

Ducks' Eggs. — The egg of the duck is by some people very much relished, having a rich piquancy of flavor, which gives it a decided superiority over the egg of the common fowl; and these qualities render it much in request with the pastry-cook and con-

fectioner, three duck eggs being equal in culinary value to six hen eggs.

Ducks in Gardens. — In a garden, ducks will do good service, voraciously consuming slugs, frogs, and insects, nothing coming amiss to them; not being *scratchers*, they do not, like other poultry, commit such a degree of mischief in return as to counterbalance their usefulness.

DOVES. — But little attention is paid to the propagation of this bird. They are profitable only to those who keep hotels, and have large stables, or to those who have waste offal. They multiply fast, and, when fed, soon eat up the value of their bodies.

SECTION IV.

DISEASES OF POULTRY. — THEIR SYMPTOMS AND CURE.

THE remedies for the diseases are few, and when properly applied are generally effectual. We give below the results of our own experience, and believe it to be a safe guide.

Asthma. — The *symptoms* of this disease are *gaping*, *panting*, and difficulty in breathing. *Cure.* — Give repeated doses of sulphur and Cayenne, and keep the fowl warm.

Apoplexy. — The *symptoms* are a staggering and drunken appearance, shaking the head, &c. The *remedy* is a light diet, with a little Cayenne or ginger. A leech or two applied to the fowl will be found of service.

Costiveness. — Give a dose of castor-oil, and keep the fowl on a low diet.

Consumption. — Give Cayenne with the food. Let the fowl be kept warm and dry, and give fresh meat every day.

Bloody Flux. — Boiled rice, or starch with milk, will soon effect a cure.

Corns. — Remove the callous part with a sharp knife, and touch with lunar caustic.

Diarrhœa. — Give thick porridge warm, to which is added a little starch and Cayenne. If it becomes very severe, a little prepared chalk may be given.

Fever. — Give a little castor-oil; change the food to a light diet; give plenty of fresh air and water.

Gout. — Frequent doses of sulphur may be given in this complaint.

Indigestion. — Mix powdered gentian and Cayenne with the food, which should also be decreased.

Moulting. — This is a natural process, and cannot, therefore, be called a disease. The judicious use of Cayenne with the food is all that is necessary. Keep the fowls warm, with plenty of fresh water, and exercise in open air.

Pip. — A disease to which young fowls are peculiarly liable, and that, too, chiefly in hot weather.

The symptoms are a thickening of the membrane of the tongue, especially towards its tip. This speedily becomes an obstruction of sufficient magnitude to impede the breathing; this produces gasping for breath; and at this stage the beak will often be held open.

Cure. — Most writers recommend the immediate removal of the thickened membrane. Rather anoint the part with fresh butter or cream. Prick the scab with a needle if you like; and give internally a pill about the size of a marble, composed of equal parts of scraped garlic and horseradish, and as much Cayenne pepper as will outweigh a grain of wheat. Mix with fresh butter, and give it every morning, keeping the fowl warm. Keep the bird supplied with plenty of fresh water; preserve it from molestation, by keeping it by itself, and you will generally find it get well.

Roup. — The true roup is a disease extremely analogous to influenza in man, or even more so to the well-known distemper among dogs; and, in some forms, perhaps to the *glanders* of the horse.

The proper treatment of this disease is plenty of fresh water and open-air exercise. For pullets give as follows: — Powdered gentian, 1 part; powdered ginger, 1 do.; Epsom salts, 1½ do.; flour of sulphur, ½ do. Make up with butter, and give every morning.

If the discharge should become fetid, the mouth, nostrils, and eyes may be bathed with a weak solution, composed of equal parts of chloride of lime and acetate of lead.

The other infection, that improperly passed under this name, viz. swelling of the tail gland, may be treated as a *boil*. If it become inconveniently hard and *ripe*, let the *pus* or *matter* out with a penknife, and it will soon get well.

The proper combination of Cayenne, gentian, sulphur, and castor-oil, according to the disease, is all the medicine that is essential for poultry. Give plenty of fresh water, open-air exercise, and feed with meat and vegetables.

CHAPTER V.

THE FAMILY GARDENER.

SECTION I.

MANAGEMENT OF THE KITCHEN GARDEN.

REMARKS. — There are many persons who live in the vicinity of cities, and throughout the country generally, who possess the means of cultivating a garden, and who would find both health and pleasure in the pursuit; but not being disposed to keep a gardener, they are deterred from the pursuit altogether for the want of the requisite knowledge. By the aid we offer in this chapter, almost any person may undertake the management of a garden with good hope of success.

The Proper Situation of a Garden. — The chief points to be attended to are a proper degree of shelter from cutting winds, and full exposure to the influence of the sun. The winds principally to be guarded against, are the north, north-east, and north-west, as it is from those points that our coldest winds proceed. It is an invariable rule, that there should never be any trees of a considerable height on the south side of a garden; for during the winter, and early in the spring, they throw their lengthened shadows into the garden, at a time when every sunbeam is valuable. On the east, also, the trees should be sufficiently removed, so as to admit the early morning rays.

A good aspect for a garden is universally allowed to be that which has a gentle declivity towards the south, and inclining rather to the east, in order that it may receive the benefit of the morning sun. A north aspect is unfavorable for general purposes, it being always cold and late.

The inclination of a garden towards the south, if artificially made, should not exceed one foot in twenty; but if the inclination of it be naturally greater, no good reason can exist for making any alteration in it, for the ground which has a considerable slope towards the south is always the warmest.

The Requisite Soils, &c. — It is admitted by all gardeners, that the soil best calculated for general garden purposes should be of rather a light, rich, friable, loamy texture, dry, mellow, and capable of being wrought at all seasons, and of a good depth, that is, from two feet to three feet and a half; and that the worst kinds

are those of the very light sandy and stiff clayey texture. A loam of a middling texture, rather inclining to sand, will be found the most suitable for the majority of kitchen vegetables. Gravelly soils are not suited to garden grounds, being sterile, hard to be enriched, and easily washed out by rains. Mould for improving soil should be taken from the surface, as it is, in fact, the true vegetable earth; the fuller it is of fibrous matter, the better.

Manures. — *Their Kinds and Qualities.* — Many kinds are in use, but the dung of horses, if not the best, is the most common. Next to the dung of horses, that of oxen and cattle is in the greatest request, and, if slightly fermented, is an excellent manure for light, hot soils; it is also well calculated for soils of a dry, absorbent nature, as it retains its moisture for a greater length of time than most others.

Sea-weeds, where they can be procured, make excellent manure for most vegetables, but particularly for sea-kale, artichokes, and asparagus. This manure, however, is very transient in its effects, and does not last more than for a single crop.

The dung of birds, either wild or domesticated, affords a powerful manure, particularly that of the former. Pigeons' dung was, and still is, in great repute; but it should only be used as a compound. The ashes of wood, if not too much burnt, are considered to be a lasting manure; they are generally used amongst turnips, and are supposed to be of use in protecting them from the fly.

Of all mineral manures, lime is most known, and generally used; it should, however, never be applied with animal manures, unless they be too rich, or for the purpose of preventing noxious effluviæ. It is injurious when mixed with any common dung.

SECTION II.

RAISING GARDEN VEGETABLES.

VEGETABLE ROOTS. — *Turnips.* — Early crops should have a good aspect for warmth, light and dry soil, and should be sown as soon as possible after the frost has left the ground. Sow after a rain, and rake in the seed. Early Dutch is good seed for summer. Ruta-baga makes the best for winter use. For the late turnip, sow from July to September.

Beets. — For very early crops, sow the seed about the 15th of March; for winter use, sow until the month of June. They do best in drills, well manured. Sow four inches apart, and put two or three seeds in a hole, so as to make sure of a good root, as the weakest are to be removed, leaving only one stalk standing.

Carrots. — This root requires a light soil and an open situation. Sow by the first of April, and be sure to make the ground fine and deep-spaded. The Early Horn is good for the early crop, but the Long Orange for the winter stock.

Parsnips. — This is a very nutritious root; it should be sown in drills in the month of April. The sugar parsnip is considered the best. They require good manure. Frost does not harm them in the least.

Onions. — Onions require a rich, mellow soil. The ground should be well dug over early in spring, and thrown up to the action of the sun. The beds require to be well manured with a fine rich dung. The Silver-skinned is usually preferred; but if a crop the first season is desired, sow the *Red*.

Potatoes. — A rich, sandy loam, with plenty of stable or cow manure, is best adapted to the potato. For an early crop, plant about the 20th of March; but for the main crop, the 15th of April will be seasonable. The Peach-blossom, Chenango, and Canada White are the varieties now in demand.

Horseradish. — This is a valuable root, and is propagated by cuttings. The ground should be dug deep, and well manured, and the cuttings laid along in trenches. It should be done in the fall, and the second season will give good roots.

Radish. — The early scarlet short-topped radish may be sown as early as the 20th of March. The seed should be sown tolerably thick, and raked in; let the bed be made very fine, and suitably enriched. If frost is anticipated, the beds should be covered in with straw, mats, or other coverings. The Yellow Turnip-rooted and Summer White make the best late crops. An ounce of seed for a bed three feet broad and nine feet long is enough.

Oyster Plant. — This root is much like the parsnip. It should be sown in drills about the 20th of April, in well-tilled land; sow the seed thick, as many of them will not vegetate, and let the plants stand about six inches apart. It is a hardy plant, and worthy of cultivation.

VEGETABLE PLANTS. — *Corn.* — The sugar corn, from its be-

ing very early, milky, and sweet till autumn, is the best for the garden culture. It may be planted at intervals of two or three weeks, from the 15th of April to the 15th of July. Plant in hills, and leave two or three stalks in a hill. Manure well, and dig deep.

Beans. — The *Kidney Bean* is a valuable vegetable; it may be planted about the 20th of April. The *Scarlet Runners* are more valued as ornaments than for use. The *Lima* and *Civy Beans* are good varieties. But the *Horticultural* is considered the best and most profitable of the whole family.

The mode of culture is to form hills slightly elevated, in which a liberal quantity of well-decomposed manure has been incorporated; in these hills half a dozen beans are planted to secure a sufficiency; but three vines at most, in each hill, should stand; at the time of forming the hills, or subsequently, as may be most convenient, insert securely a stout pole, nine or ten feet in height, to which assist the vine in its efforts to adhere; when it has got firm hold, it will take care of itself. But little culture can be given this crop, further than to keep down weeds.

Pease. — Pease are most productive in a light, but at the same time a rich soil; they may, however, be grown with care upon almost any other kind of soil, if it be well manured when too poor or dry, and well drained if inclined to be wet.

To secure a regular supply, successive sowings should be made every three weeks during the months of March, April, and May, and twice in each of the months of June, July, and August. The seed should not be more than two years old, and a pint will be sufficient to sow four rows, each five yards long.

There are many varieties of pease, but the *Early Dwarf* and *Marrowfats* are the best suited to our climate.

Squash. — This fruit is in general use, few gardens being destitute of it in its seasons; there are many varieties, but for summer use those most grown are the *Large Green* and *Early Bush*, or patty-pan shaped; the latter, from its compact mode of growth, is generally preferred.

The mode of culture is very simple, all that is requisite being to deeply dig patches of earth, at the distance of four or five feet each way, and incorporate with the soil a good portion of well-decomposed manure; in each patch or mound of earth, plant half a dozen or more seeds, and when the plants are well established, remove all but two or three of the strongest. The seed need not be planted before the middle of spring (15th

April), as the squash is susceptible of cold, and will make no headway until the weather becomes mild.

Cucumbers. — For an early crop for table use, start some plants in pots about the middle of spring (15th April), and when all probability of frost is over, set them out on a well-sheltered border, in hills, with a spadeful of well-rotted manure incorporated with the soil of each hill; at the same time, the seed for a succeeding crop may be planted. For pickles plant middle of summer (20th July). The Early Frame is the best variety for table use, and the Long Green for pickling. The cucumber, like the squash, is liable to be preyed upon by yellow bugs, which are very destructive; to counteract them, prepare a mixture of air-slacked lime and wood-ashes, which sprinkle freely over the leaves and stems whilst the dew is on, that it may adhere.

Cabbages. — Cabbages will thrive well in any richly manured soil, provided it be not too dry. A deep, mellow loam is better suited to them than a sandy or gravelly one.

The better kinds for the early crops are the Large Early York, Landreth's Large York, and Sugar-loaf. The Bullock-heart is a superior variety, but, from being exceedingly tender, is kept with difficulty through the winter. There are many other early sorts scarcely distinguishable, *except by name*, but the above are the more desirable.

For the late autumn and main winter supply, the seed may be sown about the middle of spring (10th to 15th April), and the transplantation may be at various times from the early part to middle of summer (20th June to 20th July). The sorts best adapted for late crops are Drumhead, Flat Dutch, or Bergen, Drumhead Savoy, and Curled Savoy.

The *Red Cabbage* seed may be sown at the same time with the Drumhead, &c., and treated in the same manner; they are used solely for pickling.

Asparagus. — In making a bed, select a light, pliable soil, and spade it deep and fine, with plenty of manure. Select good, thrifty roots, and plant them in trenches, three feet each way, six inches deep. The second year some buds may be cut for use. Keep the beds clear of weeds.

Cauliflowers. — To have cauliflowers in the autumn, the seed should be sown in the middle of spring (15th April). These plants should be transplanted into rows two feet or two feet and a half distant, the plants being from eighteen to twenty inches apart in the rows. The cauliflower is at the best an uncertain

vegetable in this climate, and the only mode of culture in which success may be relied on is in hot-beds, where the temperature most congenial to them can be secured by artificial means.

Celery. — Very early in the spring (1st to 15th March), if the frost is out of the ground, prepare a small bed of light, rich earth, in a warm, sheltered situation, in which the seed must be sown for an early crop. Break the mould very fine, as the seed is small, and rake the surface even; sow the seed, but not too thickly, and cover with light, rich mould, about a quarter of an inch deep. The plants should be kept thin in the seed-bed, and pricked out, when fit, upon a surface of fresh earth, well manured. They should be watered and shaded until they take root; and, in drawing from the seed-bed, let some of the strongest plants remain, to be put out for an early drill. The plants may be planted out in richly manured trenches about the 20th of June. Cultivate with the hoe, always leaving about six inches of the plant above the soil.

Cress. — A small quantity should, in the salad season, be sown every six or eight days, for it should be cut before it comes into the rough leaf. It is sown in shallow drills, and covered slightly with very fine earth. The common Garden Cress is generally not cut till the fourth or fifth leaf has made its appearance, but the Curled Cress will remain good for a considerable length of time, if the outside leaves only be picked off, as it will soon produce more, and in this respect bears a great similarity to parsley.

One ounce of seed will be sufficient for a bed three feet broad and five feet long.

Egg Plant. — The original species is *white*, but the varieties most cultivated are the *smooth-stemmed purple*, and the *prickly-stemmed purple*; both grow large, and are equally good; but the smooth-stemmed is the earlier. To have them early, it is requisite to sow them in a hot-bed, very early in the spring (15th March), transplanting them into another when they attain the height of three or four inches. They should not be put out in the open ground before the weather becomes mild (middle of May), because the plants are very tender, and should they even escape frost, may become stunted from long-continued cold weather. When about to plant them in the open ground, choose a well-cultivated spot, and if not rich, or even if in good condition, add plenty of thoroughly rotted stable-manure; allow the plants three feet space each way.

Lettuce. — If the weather be mild and dry towards the early

part of spring (15th March), the seed of lettuce may be sown. A rich, light soil, and an early warm spot, are to be chosen. The Brown Dutch, the Early Cabbage, the White Cos and Green Cos, are the kinds most proper for this sowing. Let the seed be sown rather thickly; let it be lightly covered, and raked in smoothly and neatly; the seeds must not be trodden nor beaten in. When the plants come up, thin them quickly to four inches apart; when they have attained the height of about four or five inches, leave one and take up two throughout all the rows, and then hoe the ground nicely between the remaining plants, having previously made another bed to receive the plants thus taken up; plant these in rows across a bed, the rows fifteen inches apart, and the plants fifteen inches apart in the row.

Melon. — The mode of culture in the garden is precisely as directed for early cucumber. The soil should be somewhat lighter, if practicable, especially for the water-melon, and the plantations should be made apart from those of squashes, cucumbers, and other plants of the same family, which are peculiarly liable to hybridize. The best varieties for the garden are the *Nutmeg*, *Citron*, and *Minorca*. They should be started under glass.

Rhubarb. — The seed should be sown in the middle of spring (15th April), in a border with a northern aspect, and scattered thinly in drills of about two inches in depth, and a foot apart, and slightly covered with soil. When the plants appear, they should be thinned out to about six inches of each other, and afterwards to a foot. Rhubarb should always be planted in a shaded or northern situation, as their stems will be finer and better when not too much exposed to the sun. Any rich soil will grow good rhubarb, which will require an annual top-dressing of well-rotted manure. This should be applied in autumn.

As seedling plants do not produce stems fit for use till two years after the time for sowing, if plants are desired to be obtained sooner than they can thus be brought into use, the old roots may be taken up and separated into as many parts as there are crowns or eyes, leaving a portion of the root to each; these may be planted out when desired, and they will soon produce stems sufficiently strong for any required purpose.

Tomato. — The plants are usually started in hot-beds, very early in the spring (1st March), and as they advance in growth transplanted to more roomy quarters, still under glass; and by the time it is prudent to expose them to the open garden, they have become strong and vigorous; indeed, after they are set out,

shelter is still afforded in unfavorable weather, usually by small boxes, each having a light of glass in the top.

The common method of culture is to prepare the ground by deep digging (market gardeners use the plough), and incorporate into the soil plenty of thoroughly rotted manure. It is not advisable, however, that the manure should be in excess, else, though the plants will grow vigorously, the fruit will be less abundant.

It is a good plan to cover the surface of the earth around each clump with straw or litter, which prevents rapid evaporation during the hot weather, and also keeps the fruit from injury by heavy rain. Some brushwood stuck around the plants to support them, is also useful.

Parsley. — Method of Culture. — Parsley may be sown either in rows or beds, middle of spring (15th April), and deeply raked. The seed does not vegetate under two or three weeks, unless previously soaked, which we would recommend being done in warm water for twelve hours immediately before sowing. During the season of growth, the cultivator will of course keep it free from weeds, and the ground in a proper condition.

SECTION III.

THE HERBALIST: OR THE CULTURE OF CULINARY AND MEDICINAL HERBS.

CULINARY HERBS. — *Marjoram.* — This is sown about the middle of April, in drills, in fine and rich ground. The drills should be mere marks to guide the hand in sowing. Keep down the weeds, and culture with the hoe.

Thyme. — There are two varieties, the *Common* and the *Lemon*. They may be propagated by seed, or cuttings of the root. Protection from the severity of winter is essential.

Savory. — There are two kinds, the *Summer* and *Winter*. They may be propagated from seed or offsets. The *Summer* is the best, and is cultivated like the *marjoram*.

Sage. — You may propagate this by *seed*, *cuttings*, or *slips* of the root. The seed may be sown in the middle of April; the cuttings may be propagated in the end of July, and the slips in April. A light soil is preferable. The green and purple kinds are only used in the kitchen.

Caraway. — The seed should be sown in March. Plough and harrow well; a clayey loam is the best soil. Hoe two or three times, and cut in July.

Coriander. — Sow in the fall, in a light, rich soil, with fresh seed; thin out the plants to six or eight inches each way; cut and gather the seed in August.

MEDICINAL HERBS. — *Pennyroyal.* — There are two varieties of this herb, the *Trailing* and the *Upright*. It is easily grown in a strong, moist soil. It is a valuable herb, and worthy of cultivation.

Camomile. — This is a creeping plant, cultivated for its flowers. It may be propagated by the seed, or by parting the roots. The double-flowered variety is best. Plant in rows a foot apart, in poor soil, if you choose, and hoe between. It flowers from June to September.

Hyssop. — This is propagated from seed sown in April, or from cuttings in the spring or fall. It has always been considered by elderly people a valuable medicinal shrub. The flower spikes are used fresh or dry.

Balm. — This herb is propagated from seed or from offsets. It needs no culture of importance; transplant when it has reached the height of a few inches.

Wormwood. — This herb may be propagated from the seeds, slips, or offsets. It needs but little culture. Its leaves should be cut when green, and dried for use. It is a valuable herb.

Hoarhound. — Any common soil will answer for the culture of this herb, and it may be propagated by the seeds, or division of the roots.

Lavender. — This plant grows large, and should have room. It may be propagated from seeds, but will do better by slips taken off in early spring and planted in moist, shady ground. Let the plants stand three feet apart.

Tansy. — This plant is productive, and will thrive in poor soil; it may be raised by rooted slips, or by dividing its roots. Plant out in spring or autumn, in rows a foot apart each way. The *double tansey* is the best.

Saffron. — This is a medicinal plant of great value. It should be planted out in July, in rows six inches apart, and three inches distant in the rows. Gather the flowers in September.

SECTION IV.

GERMAN HOT-BEDS FOR FORCING GARDEN VEGETABLES, HERBS,
FLOWERS, &c.

TAKE white cotton cloth of a close texture, stretch it, and nail it on frames of any size you wish; mix two ounces of lime-water, four ounces of linseed-oil, one ounce white of egg separately, two ounces of yolk of eggs; mix the lime and oil with a very gentle heat; beat the eggs separately, and mix with the former. Spread this mixture with a paint-brush over the cotton, allowing each coat to dry before applying another, until they are water-proof. The following are some of the advantages these shades possess over glass ones.

1. The cost is hardly one fourth as much.
2. Repairs are easily and cheaply made.
3. They are light; they do not require watering; no matter how intense the heat of the sun, the plants are never struck down, or burnt, or faded, or checked in growth; neither do they grow up long, sick, and weakly, as they do under glass, and still there is abundance of light.
4. The heat, entirely arising from below, is more equable and temperate, which is a great object. The vapor arising from the manure and earth is condensed by the cool air passing over the surface of the shade, and hangs in drops upon the outside, and therefore the plants do not require so frequent watering. If the frames or stretchers are made large, they should be intersected with crossbars about a foot square, to support the cloth. These articles are just the things to bring forward flower-seeds in season for transplanting.

CHAPTER VI.

THE FLOWER-GARDEN.

SECTION I.

THE GREEN-HOUSE; DESCRIPTION OF FLOWERS; SHRUBS; MODE
OF CULTURE, &c.

Water for Green-House Plants. — All green-house plants, &c., kept in rooms, must be constantly supplied with water, which

should be always applied on the tops of the pots, and from no consideration whatever should any be suffered to remain in the water-pans under the pots, particularly in the winter season, when they must also be kept clean from dead leaves, &c.

To make Plants Bushy and Handsome. — When the plants begin to draw, which will be discovered by their weak and sickly appearance, and the branches growing long and weak, the tops of the shoots should be just nipped off with the finger and thumb, or a pair of scissors, which will cause them to grow bushy and handsome; and be sure not to forget to fumigate them when there is any appearance of insects.

Air for Plants, &c. — With respect to air, the plants should have a good share in fine, warm weather. Many people open the under sash windows where the plants stand, which is a very bad practice, as they are then exposed to the draft, which injures them more than if they were entirely exposed to the open air.

Changing to larger Pots. — All green-house plants should be shifted every year, about the month of May, into larger pots, in light, rich, sandy compost, such as is recommended for hyacinths, as most of them thrive well in it.

Geraniums raised by Cuttings and Seed. — The different sorts of geraniums are generally raised by cuttings, which strike very free, and are planted and treated the same as the heliotrope; or many of the sorts may be raised by seed sown in March, in pots of fine, light mould. By these means new varieties are often obtained.

HERBAL PLANTS. — As to the cultivation of herbaceous plants and shrubs in pots, a few directions may be necessary.

1. The earth should be kept moderately moist. The mould on the top should be dry before additional water be given.

2. The pots should be frequently turned round, or the plants will grow crooked by reason of their inclining towards the sun or light.

3. If the plants are to stand in pots year after year, the balls of earth should be taken out in October, and the sides and bottom shaved off with a sharp knife to the depth of an inch, more or less, according to the size, and then replaced, and the pot filled with some fresh compost or very rich earth made very fine.

4. Two thirds of good, rich earth, and one third of old, rotten yard-manure, well incorporated, make a good compost for most plants, except the bulbous-rooted, which require some sand.

5. Herbal plants should be covered in the winter with straw, or coarse hay, to afford them protection.

BULBOUS FLOWER-ROOTS. — No class of plants is more interesting than this.

Situation. — A southern exposure, free from north winds, not too wet or dry, is best.

Soil. — Equal parts of *sand, old, rotten yard-manure, and good, rich earth*, made fine and mixed together, make the best soil for *bulbous roots*. Raise the beds four or five inches above the level of the walks.

Transplanting. — *August, September, and October* is the season for transplanting most bulbous roots. Delicate and tender bulbs may be potted in November. *Tulips* and *Hyacinths* should be taken up and air-dried, and replanted annually, in order to preserve their beauty.

Depths and Distances. — Large bulbs should be planted to the depth of four inches; smaller ones from two to three inches. The rows should be ten or twelve inches asunder, and the roots from four to six inches apart, according to their size.

Protection in the Winter. — Bulbous roots should be covered in the winter, to the depth of four inches, with some light substance, such as straw, or tanners' bark, which should be removed early in spring.

Management of Bulbous Roots in Pots. — Bulbs intended for blooming in the winter should be potted in October or November, and left out till it begins to freeze, and then placed in a warm room. They will want, occasionally, a little water, until they begin to grow; then they should have both air and sun, and plenty of water from the saucers or pans underneath the pots.

GARDEN FLOWER-PLANTS, SHRUBS, &c. — *Explanation.* — Flowers are divided into *annuals*, which flower and die the year they are sown; *biennials*, which flower the second year, and then die; and *perennials*, which do not generally flower the first year, but die down to the ground annually, and spring up again every succeeding spring for a number of years.

Situation. — Select a level plat, with a southern aspect, sheltered from the north and northeast winds.

Soil. — The ground in a garden must be kept rich, and often stirred. It ought to be manured every year. A compost made of decayed vegetables, yard-manure, rotten leaves, ashes, and mould from any place where it can be had, is proper for a garden.

Sowing and Planting. — Flower-seeds should be sown in April and May; cover small seeds with fine earth half an inch,

large seeds in proportion. The beds should be raised three or four inches above the walks, and make the rows ten or twelve inches apart.

Transplanting. — *Annuals* should be transplanted in June; *biennials* and *perennials* in September. Take up plenty of earth with them; select a cloudy day, and see that the roots stand in their natural position.

Cultivation. — Plants should be properly thinned, so as to let the air and sun hasten their perfection. Keep the earth loose about the plants, and in a dry season spread about them some old hay, so as to retain moisture.

Weeds. — No weeds should be suffered to remain in the flower-garden, as they injure its beauty, and check the growth of the plants.

Shrubbery. — The chief work among shrubbery is to keep down the weeds, stir the earth about the roots, to prune out the dead and decaying branches, and to keep down the suckers.

Cuttings. — Cuttings are pieces cut from trees, shrubs, or plants, of the last growth, and should generally retain a small piece of the growth immediately preceding the last or ripened wood. They should be taken when the sap is active, and about six joints or buds are sufficient.

If the cutting be planted in a flower-pot, place the pot in the earth, in a shady place, and cover the cutting with an inverted glass for a short time, to preserve a moist atmosphere about it. If they send out roots they will also send out branches, otherwise they die.

Layers. — Layers are branches left on the parent plant or shrub, and bent down and fastened several inches below the surface of the earth, leaving the extreme part out of the ground. A flat stone placed on the earth immediately above the layer is useful to keep the earth cool, and to retain the moisture. When they have taken sufficient root, sever them from the parent stock, and at any proper time they may be transplanted.

Gravel-walks and *edgings* are the best, and indeed only proper divisions of the flower-garden.

Box is perhaps dear at first, but it is eventually the cheapest, as well as the best border you can have, being undoubtedly the prettiest thing for the purpose. It may be kept to any width or height; it has great durability, and thrives in all sorts of soils, though much the best in dry, and under all aspects. This plant is of very easy propagation.

SECTION II.

GREEN-HOUSE AND PARLOR PLANTS.

Anemones. — The single *anemone*, or *wind-flower*, may be raised in great variety from seed sown in March, in beds four feet wide. Cover the seed not more than the eighth of an inch, and spread a mat over it, which should be watered till it is up; then expose it to the sun by degrees, with frequent waterings. The double kinds are propagated by parting the roots.

The Camellia Japonica, or *Japan Rose*. — This plant is adapted to the *room*, *green-house*, or *hot-house*. The most common varieties are the Single and Double Red, Double White, and the Double Striped. They require a fine, rich loam, large pots, and should be shifted every year in the beginning of summer. They are propagated by seed, layers, or cuttings.

Lilies of the Valley. — These do well in common mould; each crown blows only once in three years; the best time for potting them is from January to March.

White Lilies. — These are beautiful plants for rooms; they may be taken up in January or February. Keep them in a warm, sunny window, and give plenty of water. After the bloom is over, they may be planted out in the garden-border.

Mignonette. — These may be sown thick in pots or boxes a any season of the year; should be transplanted when in the rough leaf. They require a light, rich mould, a sunny window, with plenty of water.

Persian Iris. — The iris is propagated by the offsets from old roots. They succeed well in a dry situation, with natural soil. Plant them out in small pots of sandy loam. It is a beautiful flower, and a few pots will scent a large room.

Roses. — *Varieties of, &c.* — The *White Province*, *Common Province*, and the *Moss Rose* are the best for forcing, and they do well in pots. Pot them in the fall as soon as the leaves are off. The qucen fly, so destructive, may be destroyed by fumigating with tobacco. Roses are propagated by *cuttings*, *layers*, *suckers*, &c. The *China* or *Monthly Rose* is a beautiful plant for the room.

Single and Double Jonquils. — These are to be treated like the *hyacinth*. They should be planted in the ground or in pots, from October to January. Six or eight roots in a pot, with light,

rich, garden mould, is the rule. Give plenty of water, and a warm room, and they will blow finely.

Tuberoses. — These are of the double and single variety; they are very fragrant, and easily brought to perfection. Plant in April or May, in fine, rich compost, in medium pots; plant one root in the centre of the pot.

* *The Verbena Trifoliata, or Sweet Vervain*. — This plant will live in the open ground, and is propagated by *slips* or *cuttings*, in summer. Plant them in large pots, give plenty of water, and they will strike root in a month. They are beautiful room plants, especially for summer.

SECTION III.

GARDEN FLOWER-PLANTS; SHRUBBERY.

ANNUALS AND PERENNIALS. — *Almond, Double Flowering*. — This is propagated by suckers, and, when in bloom, is a very superior shrub. It blooms in the spring, with beautiful flowers resembling roses.

Amaranth. — Annual; plant in May; flowers late, and is tender.

Aster, China. — Sow the seed in early spring; flowers late, and will endure some frost. There are many species, and they are beautifully variegated.

Box. — Small, delicate shrub, and may be pruned to any shape. It is an evergreen, and well suited to borders; is propagated by cuttings and dividing the roots.

Brier, Sweet. — This is a bush of the rose family, very hardy; bright and fragrant foliage, and will grow in poor ground.

Carnation. — There are several varieties. Best propagated by layers; tender as to frost. Put them in large pots. They are beautiful and fragrant.

Catalpa. — This is propagated by seed. It is a beautiful tree, and is much admired for its foliage and showy flowers.

Cherry. — This is one of the most beautiful trees in the flower-garden.

Chrysanthemum. — This is a beautiful flower; will stand the frost; should be potted in August or September. There are many varieties, which may be propagated by dividing the roots.

Columbine.—Very common; is pretty and ornamental. There are many species. Perennial.

Convolvulus, or Morning-Glory.—This is a great runner, of variegated colors. Sow the seed in early spring.

Crocus.—Propagated by bulbs; is of various colors; very hardy and early.

Dahlia.—This is an autumnal flowering plant. There are several varieties, single and double; will grow in almost any soil; propagated by seed and dividing the roots; sow the seed in March, in pots.

Daisy.—This is propagated by offsets; is hardy, and well suited to rooms. It produces beautiful flowers, in summer or winter.

Geranium.—This is one of the finest plants in the floral kingdom, except that it is tender. There are many varieties; some have flowers, others none; some are very fragrant, while others are beautiful leaved. Propagated by cuttings.

Golden Corcopsis.—This is easily raised from seed;—is a splendid annual plant, and produces a profusion of variegated flowers.

Hollyhock.—This is a showy plant for shrubbery, and has many varieties. It is perennial and hardy.

Honeysuckle.—This is a valuable climbing plant, and forms most beautiful arbors and bowers; it blooms in clusters. There are several varieties which are very fragrant. They may be propagated by seed, cuttings, or layers.

Hyacinth.—This is a perennial and bulbous plant. It flowers early and is fragrant. There are many varieties, both single and double, and are best propagated by offsets.

Hydrangea.—This is a small shrub, with large, changeable flowers. It is a house-plant, but will bear some frost, and is propagated by cuttings.

Ice Plant.—This is an annual of an icy appearance. The seed should be sown in pots early in the spring.

Iris, or Flower-de-Luce.—This is a large, hardy plant. It is a perennial, and of many varieties; shows well in a border, and may be propagated by dividing the roots.

Laurel.—This is an evergreen shrub, which bears flowers of great delicacy, being white, tinged with red.

Larkspur.—This plant is easily propagated by seed. It is an annual of variegated colors, but no fragrance.

Lilac.—This is a large, fragrant shrub, very hardy, and

blooms early. The white and the purple are the varieties of value. It is propagated by suckers.

Morning Bride.—The seed should be planted early in spring. It is an annual plant, of beautiful flowers, but which fades in a few hours.

Mountain Ash.—This is a beautiful ornamental tree, admired for its foliage and scarlet berries. It is propagated from the seed.

Myrtle.—This is a valuable evergreen vine, bearing blue flowers. There are several varieties, and all very pretty.

Nasturtium.—This is an annual plant, with showy flowers. The seeds are used for pickling. Sow the seed early, and support the plants by sticks.

Passion-Flower.—This is a perennial vine of beautiful flowers, most suited to the green-house, and is propagated from cuttings.

Peony.—This plant is propagated by offsets. It has a grand flower, but of brief existence. There are several varieties.

Pink.—There are many varieties of this plant, all of which are fragrant in flower. They are ornamental in the garden, and are easily propagated by seed, layers, and by dividing the roots.

Polyanthus.—There are many varieties. It is hardy, has many flowers, and blooms best in a shady situation. Propagated by dividing the roots.

Poppy.—This is an annual plant, of very handsome double and single flowers. Its properties are medicinal.

Roses (Rosa).—This favorite flower is worthy of all the care and attention that can be paid to it. There are many varieties, as to size, singularity, foliage, beauty, and fragrance. No class of plants yields more intrinsic delights than this. It is unrivalled. To describe the beauties and excellence of the various species would fill a volume.

They may be propagated from seed, but as the seed seldom comes up till the second year, the usual mode of propagation is by suckers, which come out near the old stems, during the summer. The suckers, when planted out, should be cut down to four or five inches of the ground. The time for planting is either in the months of October and November, or in April. As to the management, the ground should be kept good, and dug every autumn. They should, except when trained against a wall, be kept cut down to a certain height, according to their natural size; for when they get long stems and limbs, they pro-

duce fewer flowers. All the weak, dead, or dying wood should be pruned out close, without leaving any ugly stubs.

Siberian Crab. — This is a small tree, valued for its large, fragrant flowers and small fruit.

Snowball-Tree. — This is a most beautiful shrub in bloom, and may be propagated by suckers.

Snowberry. — A small shrub which, in the fall, produces clusters of white fruit. Propagated by suckers.

Spiræa. — A small shrub which blooms full of delicate flowers in its season. Propagated by suckers.

Syringa. — A shrub which flowers like the orange, and is propagated by suckers.

Strawberry-Tree (*Euonymus*). — A handsome shrub, which yields abundant fruit in the autumn resembling strawberry. Propagated by seed and suckers.

Sweet Pea. — This produces many clusters of showy and fragrant flowers. The seed should be planted early in spring.

Sweet William, or Poetic Pink. — This is a plant which produces handsome flowers of small size. Propagated by seed, or dividing the roots. From the seed new varieties come by chance.

Tulips. — The family of tulips are very numerous. There is one garden in New York where more than six hundred varieties are cultivated. They may be raised from seed, but are best cultivated from bulbs.

The Smoke-Tree. — This is a very singular, though beautiful tree, which is loaded in summer with tufts of russet-colored down. It is quite ornamental to the garden. Propagated by layers and suckers.

Violet. Blue Fragrant. — This plant blooms early in the season, and continues some time in flower. It is perennial, flowers blue, double, and fragrant. Propagated by dividing the roots.

We close the flower-garden by remarking that the cultivation of flowers is an appropriate and healthy amusement for young ladies. It teaches neatness, cultivates a correct taste, and furnishes the mind with many pleasing ideas.

CHAPTER VII.

BOOK OF HORTICULTURE.

SECTION I.

HORTICULTURAL OPERATIONS.

Grafting. — Grafting fruit-trees is a delicate operation, and for private gardens we would recommend the purchase of trees all ready for planting out.

Stocks. — Stocks should always stand one summer in a given place before grafting, but not longer, lest the roots become too large.

Operation of Grafting. — The operation of grafting consists in removing a branch from one tree, and inserting it on the stem of another, in such a way that the stock on which the cutting is placed sends up its sap into the cutting, and thus nourishes and makes it grow into a tree occupying the place of the natural head of the stock, which has been removed to make way for the graft. When a cutting is thus applied it is called a scion.

Time of Grafting. — Grafting is generally performed some time between the beginning of February and the end of March. But the proper period of grafting depends on the nature of the season, whether it be a late or early one, and must be determined by the fulness and bursting appearance of the buds on the stocks, and should be regulated by the mildness of the weather, which, with occasional showers, is favorable for this operation.

April is a good season for grafting. Cherries, plums, and apricots should be set first. They generally succeed well, if set by the middle or the 20th of the month. Pears do better if set tolerably early; but if scions are in good condition, any time in the month or the first of May is in season. Apple scions may be set any time in this month or in May. Young stocks grafted late at the ground are apt to bleed and fail, and in all cases of late grafting there will, of course, be less growth; and for this reason some graft in June, lest the scions grow too rank.

Scions. — Select your scions in February from the last year's growth of a healthy tree. Bury these branches to the middle in dry mould, and keep them till the time of grafting. Each scion should have from three to six buds. Do not apply water to them.

Principle of Grafting. — The principle of grafting is bringing the under or inner bark of the scion in exact contact with the bark of the stock, and the nicety of the operation consists in fixing these two barks so closely one to the other, that the sap may proceed into the scion just as it would have flowed into the branch which has been removed.

Kinds of Grafting. — There are several modes of grafting practised, but those most in use are *tongue and cleft grafting*.

Budding. — Budding is a species of grafting, and is performed for the same purpose. The method usually employed is that called the T, or shield budding; the first designation being taken from the form of the two cuts that are made in the bark, the second from the form the piece of bark assumes which is cut off, containing the bud when it is ready to be inserted within the stock.

Time of Budding. — Budding is usually performed from the latter end of July to the latter end of August, the exact time being determined by the plump appearance of the bud formed on the spring shoot of the same year, and a readiness in the bark of the stock to separate from the wood.

Advantages of Budding. — Budding has several advantages over grafting; it is not only more applicable to the whole race of stoned fruits, but it may be performed in July, when the grafting has failed in March or April. Stone fruits, which have been budded, are less given to gum than when grafted, and gumming is often very detrimental. You may also put two or more branches upon a stock by budding, that would be too weak to take more than one by grafting. The only disadvantage attendant on budding is, that the trees are a year longer in coming to bear by this process than by grafting.

Inarching. — Inarching, or grafting by approach, is used only for particular trees that do not propagate freely by any other method. It is mostly practised on exotic plants, and is performed in various ways, according to the kind or condition of the plant operated upon. It is usually performed by cutting similar slices of bark and wood off both stock and graft, applying one to the other, and then binding them neatly together.

Root Grafting. — Root grafting is only resorted to when there is a want of suitable stocks, particularly in the propagation of rare plants. From such a one a root may sometimes be spared, to which one of its own shoots may be united without injury to the original, and thus two trees be obtained.

Pruning Trees. — August is one of the best, if not the best month, for this operation. The bark does not readily start from the wood, and as the tree is in foliage, the operator can see to thin the limbs judiciously. But the great advantage in pruning at this time is, that where the limb is cut off, the trunk remains sound, whether it heals over soon or not.

Pruning Stone-Fruit-Trees. — It has been but a few years since the cultivators of fruit have been in the habit of pruning peach-trees at the extremities of the branches, instead of cutting off limbs at the trunk. This system of shortening in, as it is called, is gaining ground, and it is a great improvement. The reasons for this mode of pruning are evident on examination. Most kinds of stone fruit grow rapidly, and bear the greater part of their fruit on new wood, which is, of course, near the ends of the limbs. In this way a tree spreads over much land, and has naked branches near the trunk; and pruning at the trunk causes the gum to ooze out, which sometimes endangers the health of the tree.

On the contrary, by pruning at the ends of the branches, the tree is confined to a small space, the wounds have no unfavorable effect, or only affect the twigs, and not the trunk, and much new wood is produced for the production of fruit.

On Setting Fruit-Trees. — In any location where winds generally prevail in one direction, there is an advantage in setting the tree leaning a little to the windward; and in case the wind is in a southern direction, there is the additional advantage of avoiding the powerful effects of the sun on the trunk. But this effect of the sun is less on the apple than on the cherry and pear.

Training Fruit-Trees. — The training and pruning the apple-tree in garden culture is an art but little practised in this country; in Europe, on the contrary, every garden, however limited its extent, has a few trees trained on espaliers beside the walks, or against the walls and fences. It would surprise those unacquainted with that mode of culture, to be told the quantity of fruit, of the finest quality, thus obtained.

Modes of Training. — Apple-trees are trained in three different ways: first, as standards, which is the method pursued in orchards and large gardens; then, as espaliers, which is a very advantageous method for small gardens, but trees so trained require very constant attention to keep them in good order; but when they are properly attended to, perhaps more fruit is obtained

thus than by any other method. Some kinds of apples will succeed against a wall, but as a general rule it is by no means a good method; when it is resorted to, they may be either trained horizontally, or by the fan-training; the latter is best where the wall is more than six feet high, as the tree will thus sooner fill its allotted space.

Espalier Training. — Espaliers are very convenient in small gardens, as they form a kind of hedge on each side of a path, thus occupying but little room, and generally bearing well. The trees should first be trained to one central shoot; and this must be constantly headed down till it throws out a sufficient number of lateral shoots, which are to be spread out in a horizontal direction; never being stopped till they have attained the length you choose them finally to occupy, when the end should be cut off, which will cause them to throw out other laterals and fruit-spurs. In planting a tree which you design to train as an espalier, select one which has a good, strong shoot coming up from the graft.

New Method of training Apple-Trees. — A new and very successful method of training apple-trees, similar to that employed for the red currant, has been recently adopted. All the lateral branches are cut off as they arise, to within one or two inches of the main branches; after a few years these become well furnished with fruit-bearing spurs, and trees thus trained not only occupy much less room than espaliers, but are more productive.

SECTION II.

APPLE, PEAR, PLUM, CHERRY, PEACH, QUINCE, &c.

APPLES. — There are a great variety of apples now cultivated, but we offer only the following list; they are all unimpeachably good fruits for all situations and sections of the country.

Early Harvest. — This is a very tender, juicy, sub-acid flavored apple, excellent for cooking. It is ripe the first of August.

Early Strawberry. — This is a good sort to cultivate. It is a good bearer, and of delicate taste, slightly acid, rather small, and is ripe in August.

Williams Favorite. — This apple ripens in August; is a slow grower, but excellent bearer; pleasant taste, large, and bright red; very profitable variety.

Gravenstein. — This apple is very valuable, and holds rank with the Porter; some prefer it. Is ripe late in September; rather acid.

Porter. — This is a good grower and bearer, and excellent flavored; good for cooking and the dessert; is ripe in September, and forms the principal apple in the markets of its season.

Baldwin. — This is a valuable winter apple, of a rich flavor, well suited to purposes of cooking or market retailing. It is a prodigious grower and bearer, and ripens in November; it is the most valuable of all our winter fruit.

Ladies' Sweeting. — This is one of the finest sweetings; juicy and crispy, good flavor, large fruit, and a vigorous and productive tree; promises to become the most popular of the late sweet apples.

Rhode Island Greening. — This is a rapid and stout grower, a great bearer of excellent eating or cooking fruit; succeeds well on light, sandy soil, and is always reliable as a main crop. It is, in fact, a standard apple.

Roxbury Russet. — This is a valuable fruit, as it will keep sound into the following summer; good for cooking, and the tree is a great bearer. Its flavor is slightly acid, and pleasant when fully ripe.

The following list are all good varieties, and worthy the attention of *fruit-growers* : —

American Golden Russet, English Pearmain, Garden Royal, Hubbardston Nonesuch, Newtown Pippin, Porter's Sweeting, Pumpkin Sweeting, Red Astrachan, Cole's Quince, Esopus Spitzenberg.

PEARS. — We recommend the following list of pears as very choice, hardy fruit, and well worthy of cultivation.

Bartlett. — This pear, on account of its great growth, early bearing, delicacy of flavor, &c., ranks highest among pears. It is rather tender, and not as well adapted to a northern climate as some other kinds. Ripens best indoors.

Beurre Bosc. — This is a foreign fruit, of uniform good quality, and bears the highest character; should be worked on quince. Delicious flavor, and slightly perfumed.

Dix. — This is one of the most splendid of all pears, when perfected, but is quite uncertain in its yield. Very juicy, rich, and sugary, of fine flavor and fragrance; bears early.

Fondante de Automne. — This is a foreign pear, hardy, and a good bearer; requires a warm soil and good season. But few excel it in richness and flavor.

Gray Dayenne. — This pear is much esteemed in the Middle States, but is apt to blast in the East. It is of a rich, cinnamon flavor, and a good bearer.

Louise Bon de Jersey. — This pear is of excellent flavor, rich and juicy, and considered by some equal to the Bartlett. It is a good bearer, and does well on the quince.

Seckel. — This pear does well on the thorn-root, apple, and even mountain-ash. It is a slow grower, but great bearer; has a rich, sweet, buttery flavor; requires high culture.

Beurre de Aremberg. — This is called a good winter pear by those who like a smart champagne flavor. It is hardy and productive, but rather variable.

Winter Nelis. — This is a highly luscious-flavored pear, of musky perfume. It is a good grower, productive, and its fruit uniformly good. It is the best winter pear.

There are many other valuable pears, among which we will only refer to the following: —

Bell, Dearborn's Seedlings, Flemish Beauty, Vicar of Wakefield, Washington, D. N. B. Pear.

We do not remember to have seen this last-named pear in any of our catalogues, yet from our own experience we can speak of it as one of the most juicy and best flavored of any we are acquainted with. It originated with Joseph Moulton, Esq., of Lynn, Mass., of whom it can be obtained.

PLUMS. — We recommend the following as our choice list of plums.

Bleecker's Gage. — This is a very popular plum; good bearer, thrifty, and hardy; sweet, luscious flavor.

Coe's Golden Drops. — This is a very large, late plum; beautiful flavor, and a good bearer. Best adapted to the Middle States, though in warm locations it does well in the North.

Diapree Rouge. — This is a juicy and delicious plum, a good bearer, and the fruit hangs well; first-rate plum.

Green Gage. — This plum is a standard of excellence. It is a good bearer, and not excelled in flavor.

Jefferson. — This is a good bearer; fruit hangs long, and is not liable to rot; nearly equal to the Gage, and is very large.

Lawrence's Favorite. — This is a good grower and bearer; delicious flavor, resembling and almost equal to the Green Gage, though larger.

Smith's Orleans. — This is a hardy and vigorous tree, and

adapted to a variety of soil and climate; fruit of a vinous, sprightly flavor; excellent for market.

Purple Favorite.—This plum is very juicy and melting, hardy, and a good bearer, with a dwarfish habit. Rather large, with a long stem.

There are many other varieties, of which we cannot speak, but the above are all reliable, and sufficient for moderate garden purposes.

CHERRIES.—The following is our favorite list of cherries; they are *right in every respect*.

Baumann's May.—Dark red; tender and juicy, sweet and good; great bearer, and very early.

Black Tartarean.—Very large plum, and is ripe about the first of July. Upright grower, and a good bearer. Fruit very salable on account of its size.

Black Eagle.—This is a standard of excellence; quite large, of the finest flavor, and ripens last of June. Good bearer, is hardy, and suited to the North.

Downer's Late.—This is a very hardy tree, and a great and sure bearer; ripens about the 12th of July; extremely juicy and good-flavored.

Downton.—Very hardy, and suited to the climate of Maine; rich, delicious flavor, and ripens last of June.

Bigarreau.—This is a hardy tree, of vigorous growth and a great bearer; flesh firm and juicy, with rich flavor; a fine market cherry; apt to rot in a wet season.

Elton.—A vigorous tree, but moderate bearer; fruit very large, and of the finest quality; ripens the latter part of June.

May Duke.—This is one of the best early cherries, and suited to a variety of soil and climate; tree large, and a great bearer; well suited to the State of Maine. Slightly acid; ripens in June.

The above we consider the best assortment in growth; persons wishing a large variety, are referred to Cole's Fruit Book for a choice catalogue.

PEACHES.—The following we offer as our choice list of peaches.

Early York.—This is a very beautiful and delicious-flavored peach, of medium size. It ranks among the finest of our early kinds; ripens the last of August.

George the Fourth.—This is one of the best variety for garden culture. It is large, and ripens early in September.

Gross Mignonne. — This is a good fruit, flesh whitish, but red at the stone; vinous flavor; large, and ripens early in September.

Coolidge's Favorite. — This is a vigorous, hardy, and productive tree; the fruit is rich, and of the finest character; too tender for market purposes, but not excelled for garden culture; ripens early in September.

Bergen's Yellow. — This is among the very best for general culture; a rich and excellent flavor; good grower and bearer; ripens about the 28th of September, and is very large.

Early Chelmsford. — This is a very hardy, vigorous, and productive tree; very large fruit, of excellent flesh and flavor, and one of the very handsomest of the early kind. Ripens 20th of August.

Oldmixon Freestone. — This is a large fruit, of excellent flesh and flavor; one of the best for the market. Ripens about the middle of September.

Large White Clingstone. — This is a long-lived, hardy, vigorous, and productive tree; is one of the best for orchard culture in the North. Ripens about the middle of September, and is valuable for preserves.

There are many other varieties of the peach, which we have not room to mention; for a full catalogue, we would refer the reader to *Cole's Fruit Book*.

THE QUINCE. — It is thought by many that there is only one kind of the quince, the apparent variety being modifications of the one stock. There are only four kinds worthy of attention, and used for cooking purposes. We will mention them in the order of value.

Apple Quince. — The flesh of this quince is firm, but tender when cooked, and is of good flavor. It is earlier than the pear, but will not keep as well.

Pear-shaped. — Color, golden yellow; flesh firm and astringent; a fine, aromatic flavor, and highly prized for cooking; fair bearer, and ripens in October.

Portugal Quince. — This fruit is largest in the middle, not very fragrant, but flesh rather tender; is a shy bearer.

Musk Quince. — Very small, but of high flavor; but little cultivated, and on account of their size not fit for market.

There are several ornamental varieties, such as the *Chinese*, *Japan*, *Blush Japan*, &c.

APRICOTS. — We shall recommend only two kinds for garden culture; these are reliable and satisfactory.

Moorpark. — This fruit is of English origin, slow growth, but an enormous bearer; should have a sheltered location in the climate of New England. Rich flavor, and ripens early in August.

Breda. — This fruit is of a rich, juicy, pleasant, vinous flavor, excellent for preserves; ripens early in August. Originated in Africa, and is vigorous and productive.

There are many other kinds, such as *Brown's Early*, *Newhall's Early*, *Dubois's Early Golden*, *Hemskirke*, *Large Early*, *Peach*, *Roman*, &c., but we give the best, in our opinion, for culture, and refer the general reader to more extensive fruit catalogues.

NECTARINES. — *Elruge*. — This is one of the finest nectarines, rich, juicy, melting, and of beautiful flavor. Originated in England; is very productive, and ripens early in September.

Early Violet. — This fruit is of a superior size, beauty, and finish. Will do well in a New England climate.

The *Boston* and *Hunt's Tawney* are also good varieties and worthy of attention.

SECTION III.

SHRUB AND VINE FRUITS.

CURRENTS. — These are the favorite fruits of our cottage gardens, and are distinguished as *white*, *red*, and *black*.

Soil, Propagation, Culture, &c. — The currant will flourish on almost any soil, but will do best in a moist, rich, deep loam. Cuttings may be set early in spring, in good soil; in two years they will be large enough to plant out. If propagated by off-sets, they will give a fair crop the first year. They will grow either in a warm situation, or in the shade. Perhaps it is as well to have some placed in each of these situations, as those in the warm spot will, of course, come to maturity the earliest, but those grown in the shade will be the largest, and of the finest flavor, being free from that disagreeable sharpness often found in currants grown in a warm or a too sunny spot. The currant will thrive and bear fruit well under the shade of other trees.

Varieties. — The common, small currant is well known, though in comparison with the cultivated fruit they are hardly worthy of attention.

1. *Large Red Dutch*. — Grows in large clusters, is less acid than the common red, and much larger.

2. *White Dutch*. — This is a very hardy bush, and will flourish in the cold climate of Maine. Its fruit is large, yellowish-white, and is much less acid than the red.

There are many other varieties, such as the *Champagne*, *Knight's Early Red*, *Knight's Sweet Red*, *May's Victoria*, *Cherry*, *Black Naples*, *Common Black*, &c.

Besides these, there are several ornamental kinds, such as the *Missouri*, from the Rocky Mountains, very fragrant, with yellow blossoms, the *Red Flowering Currant*, &c.

GOOSEBERRY. — *Soil, Propagation, Culture*. — This is a fruit which, like the currant, with which it is generally associated, will grow in nearly any soil, and is found in almost every garden; it may be propagated either by cuttings or from seed. The best time for taking cuttings is in November; they will, however, grow, if planted any time between that month and March or April, but those planted in November or December produce the best plants, and are least liable to fail. Cuttings must not be taken from the root-suckers of the same year, but from shoots of a medium size, taken off about a foot or more in length; the top must be cut off, as must all the buds but four. Two or three shallow notches are to be made in the bark at the root end; these cause root-fibres to sprout out.

Varieties. — 1. *Houghton's Seedling*. — This is a very hardy bush, and a prodigious bearer. Fruit rather small, but very tender and sweet; excellent for the dessert. Originated with Abel Houghton, of Lynn, Massachusetts.

2. *Crown Bob*. — This is a large, oval, red currant, of the first quality; spreading branches, and of easy culture.

3. *Whitesmith*. — This is a large, roundish-oblong, white, downy currant, of the first quality. Its branches are erect and handsome, its culture easy.

We give the above, as best adapted, in our judgment, to garden culture, though there are many other good varieties, such as the *Red Warrington*, *Roaring Lion*, *Parkinson's Laurel*, *Keene's Seedling*, *Early Sulphur*, *Green Walnut*, *Yellow Champagne*, *Venus*, *Red Champagne*.

RASPBERRY. — *Soil, Propagation, Culture*. — The raspberry will thrive best in deep, rich, moist, sandy loam. It is propagated by offsets containing two or three sprouts. Set them five feet between the rows, and three and a half feet between the hills.

Varieties.—1. *American Black.*—This variety is well known, as it grows spontaneously on new and old lands. It is vigorous and productive; improves greatly by cultivation; excellent for pies, and other cooking purposes. Ripens late, and is long in its season, or succession.

2. *American White.*—This is much like the black, excepting the color. The bush is more vigorous.

3. *American Red.*—This is the common red, of natural growth; quite early, and is much used for flavoring liquors.

4. *Ohio Everbearing.*—This is much like the American Black, except that it is more fruitful, and bears late, even to November, and is valuable to keep up a long succession.

The above varieties are very hardy, and need no protection. They are the best for a Northern climate, and they greatly improve by cultivation. Our choice varieties are foreign, and need protection in winter. The *Franconia* is tolerably hardy, and well adapted to Northern culture. It ripens the last of July, and is superior for preserves.

For a list of foreign varieties we refer to more extensive catalogues.

STRAWBERRY.—*Soil, Manure, Culture, Varieties, &c.*—This fruit grows well on any good tillage, either moist or dry; deep, friable loam is best. Wood-ashes, bone-manure, plaster, or stable-manure may be used. The plants will propagate themselves very fast by runners. August is considered the best month for setting the plants. There are but three or four varieties worthy of garden culture.

1. *Early Virginia.*—This is an excellent early fruit, very vigorous, and a great bearer; very juicy, and of superior flavor; good for the market. Ripens in June.

2. *Hovey's Seedling.*—This is the best strawberry known in Massachusetts; a great bearer, sprightly flavor, very large, and ripens early in June.

3. *Boston Pine.*—This is a little later than the Early Virginia. It is a great bearer, and the fruit is of excellent quality, large size, juicy, and of good flavor.

4. *Swainstone's Seedling.*—This is a good fruit, of fine flavor; size large; flesh solid; vigorous grower and moderate bearer; matures gradually; foreign.

There are many other kinds, but we do not recommend their culture, as they are not certain. The above specimens bear the best character, having been thoroughly tested.

CRANBERRY.—The cranberry grows wild in the marshes and meadows of *New England*. It is also common in *Michigan*, and other parts of the *West*. It has been found growing spontaneously in some places, on high land. The cultivation of the cranberry on upland has been usually very successful. When attempted, the plan is to plough deep, or remove the top soil or sod previous to setting the plants, and the poorest kind of soil is the best, provided it will stand a drought tolerably fair, and mulch the first year, stirring the soil well with the cultivator, or hoe between the drills.

BARBERRY.—This is a shrub but little cultivated, though the fruit is, in some sections, much esteemed for preserving, on account of its agreeable acidity. The Shakers, at Lebanon, N. Y., have paid some attention to it, and send the fruit to the city of New York for sale. It is raised from the seed, or from suckers of the parent plant; requires but little cultivation, and should be planted in the outer part of the garden, under the shelter of taller trees, or the shade of a hedge, as the rays of a hot sun prevent the fruit attaining a large size.

BLACKBERRY.—The blackberry is a native of this country, and grows spontaneously, producing large crops of superior fruit on new lands. It ripens long in succession, coming in after the raspberry. It grows well, when cultivated in a rich, mellow soil.

1. *High Bush.*—This fruit is large and juicy, of excellent flavor, making a valuable dessert.

2. *Low Bush.*—Excellent fruit; reddish-black; pleasant tart, and good flavor.

GRAPE.—The *grape-vine* is propagated from *cuttings* or from *layers*.

1. *Layers.*—A layer is a shoot from the vine, laid into the ground, having a sloping cut made in the under side of it through a joint. When the slit is properly made, and the shoot laid into the ground, the fore part of the shoot is then to be tacked to the wall, or to a stake driven into the ground for that purpose. This operation is to be performed in the spring, and in the fall of the year it will have become a young vine, with a good root to it.

2. *Cuttings.*—Vines are also propagated by cuttings, which should be taken for this purpose before the middle of February, and should be shoots of the last summer, with an inch or two of the last year's wood at the bottom of them, though this is not indispensable; but the cuttings must have four or five buds or joints. The ground to receive the cuttings must be made rich and fine,

ing deep, and well prepared. Then each cutting is to be put in with a setting-stick, leaving only two buds or joints above the ground; the cutting must be planted firmly in the ground.

Another Method of Propagating by Cuttings. — There is another method of propagating by cuttings, but it is not so commonly adopted. At about the same time you would take a cutting in the manner last directed, take a bud of the last year's wood, cutting all the wood away, except about half an inch above and as much below the bud; shave off the bark and a little way into the wood at the back of the bud of this inch-long cutting; then bury it two inches deep in a pot of good earth, taking care to keep the bud in an upright position; you need not hesitate to cover the bud over, as it will shoot through the mould, and the place where you scraped off the bark will send out vigorous roots, and thus produce a healthy young vine, to be managed in the manner directed for cuttings above.

Pruning. — Vines may be pruned in the fall of the year, when the sap is completely down, but not left unpruned beyond February, or the sap will have begun to rise. When you commence pruning, always make choice of the strongest and longest shoots, leaving them as long as you find the eyes good and plump, and the wood sound; the shoots that have borne fruit should be cut out the following year, except when you want to fill the wall, and the shoots are very strong; never leave any but fine, strong wood, always cutting at the second, third, or fourth eye, rubbing the lowest bud off, and that which comes out of the joint between the new and last year's wood; always leave two or three of the strongest shoots for next year's bearing-wood, and never top them. When vines by accident have been pruned too late, the ends of the vines can be coated over with white lead.

Summer Pruning. — Vines require summer as well as winter pruning, and by the latter end of May those against walls should be looked over, as by this time, in a forward season, numerous spring shoots will be advancing, and the useless ones should be removed, as the small shoots from the old wood seldom produce grapes, and should therefore be rubbed off, except in places where a supply of new wood is required. But leave, at this time, all the shoots which spring from the last year's wood; and if two shoots arise on one joint, rub off clean, with the finger, the smaller of the two. Train the remaining shoots, as they attain length, close to the wall, regularly, so that they and the fruit may enjoy both sun and air.

August Pruning. — In August it is requisite to look over the vines again, and clear them from useless branches. Examine, also, all the bearing and other proper shoots, and see that they are well fastened to the wall. This is the season to top the shoots that have fruit on them, and others of too great growth.

Varieties. — The European varieties do not succeed well in this country, unless in the warm, dry atmosphere of cities. For general cultivation in our country, we recommend the following as worthy the attention of the gardener.

1. *Elsinburgh.* — This is a good table grape, tender and sweet, bluish color, large bunches; hardy, and a moderate bearer. Much cultivated in the Middle States.

2. *Catawba.* — This is one of the best grapes for the table, and for wine, in the Middle States and the West. It is hardy, vigorous, and productive. Native of Virginia.

3. *Isabella.* — This, also, is one of the best grapes known, though it is apt to fail of its crop in the Eastern States. It is hardy, vigorous, and a great bearer, often yielding ten bushels to a vine. Ripens in New England the last of September.

There are many other varieties, both *foreign* and *native*, which are good vines, but we think the list we have given far best for garden culture, especially in a Northern climate.

CHAPTER VIII.

THE APIARIAN'S GUIDE:

OR PRACTICAL DETAILS ON THE EASY AND PROFITABLE MANAGEMENT OF BEES.

1. *The Queen Bee.* — The queen bee may be known by her having a longer body than the other bees, which is of a blackish color above, and yellowish beneath. There is never but one of these bees allowed in the hive, and she is sovereign of all the rest; the rest are devoted to her protection and comfort. The queen bee begins to deposit her eggs when five days old, and lays till late in the fall nearly two hundred eggs a day.

2. *The Drone.* — These bees are larger than the others, and have no sting. They are the males of the hive, and remain in

idleness about the hive till August, when they are destroyed or driven away by the working bees.

3. *The Working Bee.* — This is the smallest, but the most interesting of the bees. It collects the honey and pollen, forms the cells, cleans the hive, takes care of the queen, expels the drones, &c. They are of no sex.

4. *Situation of the Hive, &c.* — The best aspect for the hive is southwesterly, though it may be varied to meet the changing seasons. The soil about the hive should be dry and sandy. Let the hive slope a little towards the front, so as to let off the rain; it should also be sheltered on the back and east side. Water should be set near the hive in very shallow pans, and be changed every day; put some pebble-stones in the pans for the bees to rest on. The hive should not be exposed to the hot sun, as it will melt and waste the honey, and lead to premature swarming. Hives should not be set too near each other, as the bees are apt to quarrel.

5. *Spring Stock.* — The *spring* is considered the best season for obtaining stock, though it is rather more difficult to ascertain the exact condition of the stock than in the *fall*. The purchaser should examine their habits for industry before buying, and if they are obtained before swarming it will be better.

6. *Fall Stock.* — Before purchasing, observe the habits of the bees as above, and also be sure that the drones have been expelled. See that the hive is new and clean, and the comb clear and white.

7. *To obtain Good Hives.* — Be sure and obtain the first swarm, as they are by far the best. The summer is a poor time to purchase bees, on account of the heat, which softens the wax, &c. When a swarm is removed in the working season, it should be done in the night, and the bees kept in a day.

8. *Time of Swarming.* — If the parent stock is sufficiently strong in numbers, they may be allowed to swarm in April or May; otherwise, it will prove injurious to those who go, as well as to those who remain.

9. *Signs of Swarming.* — When bees design to swarm, they generally hang about the hive, often forming a heavy cluster, and hang down a foot or more from the mouth of the hive or alighting-board; they neglect their work, and their hum is hushed. The old queen leads off the first swarm.

10. *To prevent Swarming.* — They may be showered with a 12 oz. syringe with vagina tube; they dread the water, and will

not go forth in showery weather. After they have left the hive, they may be brought down by throwing sand in the air, or firing a gun. A hive properly coated with honey should be left near, as they will often take to it.

11. *To save a Swarm that has settled.*—If they alight on a tree, hold a hive under them and tap on the branch, and they will drop into it; then syringe them with ale and molasses, or honey, and keep them shut in for twenty-four hours. Wherever they alight, pursue the same plan.

12. *Food for Bees.*—The following will be found to be a very suitable food for bees in times of necessity: Boil to a sirup $1\frac{1}{2}$ lb. of sugar in a quart of ale; skim as it boils, and add about a teaspoonful of salt to a quart. Honey is best, when you have it; avoid the necessity of feeding if possible.

13. *Winter Management.*—See in the fall that they have plenty of food; each hive should have left in it twenty-five pounds, at least, of clear honey. The weight of the hives should always be marked. See that they are sufficiently strong in numbers; if not, unite the weak stocks so as to form strong ones.

14. *Closing the Hive, and Covering.*—As the cold weather approaches, the mouth of the hive should be gradually closed down, so as only to admit one bee at a time, and about the last of November the hive should be almost entirely closed. The hives should be carefully covered up with matting, so as to keep them from the frost and rains. They may be opened, and the coverings removed, early in March.

15. *To make the Wax.*—Put the combs into a clean kettle, with as much soft water as they will float in. Hang it over the fire, and stir till the combs become liquid; then strain through a canvas bag into a tub of cold water; after the water has run through, press the bag till you get all the wax through.

16. *Hives*—There are a great variety of hives in use, many of them of about equal value. We have used the common box hive, with drawers, and it answers an excellent purpose. They are easily made, and easily managed.

CHAPTER IX.

THE BIRD-FANCIER'S COMPANION:

WITH PLAIN AND SIMPLE DIRECTIONS FOR THE MANAGEMENT OF
CANARIES, NATIVE AND EXOTIC SONGSTERS.

THE CANARY-BIRD. — The Canary excels all other birds in its good qualities; particularly, first, in the sweetness and melody of its song, which lasts most of the year. Second, by its rich and beautiful plumage, of seven or eight colors, and from which the varieties are named. Third, by its docility, and ability to learn many amusing little tricks. It will also learn airs by means of a *flageolet*, or *bird-organ*, and preserve the time as correctly as a skilful musician.

Pairing Canaries. — The time of pairing begins about the latter part of March. Select the cock and hen, and put them together in a small cage; if they quarrel at first, no matter, they will soon match. While they are pairing, feed them with boiled egg, grated fine, with bread crumbs and a little maw-seed. They will pair in ten days. They should have a little lettuce-seed while breeding.

Situation of the Breeding-Cage. — This is a particular point, in order to insure success in breeding. If the cage is hung in a dark room, where the sun shines but little, the young birds will be weakly, dull, and small. If you wish good birds, set the cage in a room which enjoys the morning sun, and in which it shines the best part of the forenoon.

Nests, Boxes, &c. — Nothing is so good for nests as a little fine hay and cow's hair. The best nest-boxes are those made of wicker or wooden sides, with wire bottoms, so that the dust can fall through.

Period of Sitting. — The Canary sits fourteen days. Two days before they hatch, clean the perch, fill the seed-box and water-fountain, so that they may not be disturbed for several days afterwards.

Bathing-Pans. — They should have clean water, in warm weather, once a day, to bathe and wash in, which greatly refreshes them.

To distinguish the Male from the Female. — The cock has a

streak of bright yellow over the eyes and under the throat; his head is wider and longer than the hen's; he is much higher colored, and his feet are larger. Another way to distinguish the male is, that he often begins to *warble* and *peck* at a month old. He is quicker, more taper and sprightly, than the hen.

Moulting, or Casting their Feathers. — This is a dangerous period; it attacks young birds when about six weeks old, and lasts two months. At this time they require nourishing food, and warmth; they are very dull and melancholy, and lose their song. Biscuit, soaked in sherry wine, is good to feed with; also some refined liquorice in their water; a few grits make them cast their feathers.

Red Mites. — To avoid these, clean the cage three times a week, if needful.

Swelling of the Stomach. — To prevent this, keep a rusty nail in the water, or give them a little lettuce-seed; this will generally give relief.

Egg-bound. — When they become egg-bound, rub gently on the lower part of the body the oil of sweet almonds.

AMERICAN YELLOW-BIRD. — This bird is very common in the Middle States, and partakes much of the nature of the Canary. If placed near a Canary, it will acquire many of its notes. It should be an old, established singing Canary, otherwise he will take the yellow-bird's song to the detriment of his own. They should be fed with Canary and hemp-seed; two thirds of the former. A leaf of lettuce, cabbage, or a piece of apple, is of service. The male bird is of a brilliant chrome-yellow, with the crown of the head, wings, and tail glossy black, the two latter tinged with white. The female is of a dark color.

CARDINAL GROSBEEK. — This is a magnificent bird, celebrated for the splendor of its colors and the richness of its tone. It abounds in the Middle and Southern States. It possesses considerable powers of mimicking, and is a long-lived bird.

AMERICAN MOCKING-BIRD. — This is the "*bird of many voices*," the "*nightingale of America*," and is justly valued for its vocal powers. His powers of mimicry are immense, imitating at pleasure the scream of the eagle, the warble of the blue-bird, the moan of the turtle-dove, the whistle of the red-bird, the scolding of the wren, the cry of the Katy-did, the shrill Canary, the quarrelling of cats, the cackling of hens, or a watchman's rattle. The treatment of the mocking-bird is not difficult; feed them regularly every morning with Indian meal mixed with

milk ; give this as a standard food, but vary the diet according to the season.

They begin moulting early in August, and continue till November, during which time they should receive extra care.

The male is distinguished by a regular line of white feathers in the wing, which, in a fine bird, forms a regular curve from the shoulder to the tip of the wing.

THE SKYLARK. — This beautiful songster is a native of Europe. The male is scarcely distinguishable. They subsist upon seed. In a wild state they give their song as they rise almost perpendicularly in the air, until lost from sight in the blue vaults above. They do not breed in confinement.

PURPLE FINCH, OR LINNET. — This is a native bird, and much superior to the Canary as a songster. They winter South, but return North about the 1st of May to breed. They fly in vast flocks, and are easily taken in trap-cages. They soon become tame, but often refuse to sing in confinement. They are to be treated the same as the Canary.

AMERICAN ROBIN. — This is a favorite native bird, esteemed for its richness of song and delicacy of taste. It is so well known as not to require description ; should be treated the same as the mocking-bird. This bird is easily trained to follow its owner, and if the cage is left open, it will go and come at pleasure.

ENGLISH THRUSH. — This is a delightful songster, and is to be treated precisely as the robin and mocking-bird. They are readily kept in confinement.

REED-BIRD, OR BOB-O'-LINK. — This is a native bird, and a favorite with all, especially the whistling plough-boy and the sturdy farmer. They arrive in the Middle States early in May, and proceed North to breed. They are easily taken in trap-cages, and will sing well in confinement. Should be treated the same as the linnet.

RED-WING, OR SWAMP BLACKBIRD. — A fellow-wanderer with the preceding, and quite as noisy a songster ; readily tamed, and may be taught to repeat words like a parrot, with careful instruction. Precisely the same treatment as the foregoing, with the exception of a little green corn in season. They become very amusing and docile in confinement.

CHAPTER X.

SECTION I.

FAMILY MEDICINE,

BY MEANS OF WHICH EVERY PERSON CAN DOCTOR HIMSELF IN ALL KINDS OF SICKNESS, IN A SIMPLE AND SAFE MANNER.

It is also the SAILOR AND EMIGRANT'S GUIDE, both at Sea, and in Travels abroad.

The Use of the Pulse.—The pulse is the thermometer of the body, determining its state of health. In a state of good health, the pulsations are about seventy to a minute. In children it is more rapid; in old persons more slow.

THE FIRST THING TO BE DONE IN SICKNESS IS TO EXAMINE THE PULSE.

1. If the pulse is small and feeble, and the tongue dark, with a general languor, give nourishing food, wine, tonics, &c.

2. If the pulse is quick, hard, full, and strong, foul tongue, hot skin, headache, &c., give physic, or an emetic, and sweat according to circumstances.

CLASS I. DIGESTIVE ORGANS.

The *mouth, stomach, liver, intestines, and kidneys* are all concerned in the process of digestion.

Our plan is to enumerate each form of disease in the several classes, and prescribe such simple remedies as are always at hand in every family.

Indigestion.—Keep the bowels open with castor-oil, or rhubarb. If attended with severe pain, apply a strong mustard poultice.

Costiveness.—If essential, take a dose of rhubarb twice a week. Two handfuls a day of wheat-bran, stirred into a bowl of hot water, and eaten, is a certain remedy in most cases.

Bad Appetite.—First clear the stomach by a dose of physic. Then prepare a $\frac{1}{2}$ oz. quassia, $\frac{1}{2}$ oz. gentian, by steeping till the strength is out in a pint of water; strain, and add a pint of good brandy, with sugar. Dose, half a wine-glass before breakfast and dinner.

Heartburn.—The common remedies are pearlash or soda, half a teaspoonful dissolved in water; this will give relief. But a more simple remedy is to eat a small piece of a raw carrot; it will give certain relief. Don't laugh at its simplicity, but *try it*.

Wind.—Drink hot red-pepper tea, or peppermint-water. 20 drops of vitriol in a glass of water, twice a day, will give permanent relief.

Cholic.—Give a dose of physic, soak the feet in hot water, apply mustard poultices to the bowels, give an injection, &c. Painters should eat mustard with their food to prevent the cholic.

Diarrhœa.—Live a few days upon a light, dry diet, with moderate exercise. Take pepper-tea, and use a little rhubarb as an aperient medicine.

Dysentery.—Take $3\frac{1}{2}$ oz. gum Arabic, and dissolve it in a pint of best brandy; then add loaf-sugar, and half a pint of water. Dose, a table-spoonful five or six times a day. Use also, once in a day or two, a little tincture of rhubarb.

Cholera.—In the first attack prepare some warm drink,—brandy and water is the best in this case,—and drink it, and at the same time wrap up the whole body in warm flannel. Rub the arms and legs briskly; while doing this, send also for a good doctor.

Nettle-Rash.—Give a dose of castor-oil, and drink freely of herb or saffron tea to keep up perspiration.

Toothache.—Wet a piece of cotton with the oil of tar and clove. It will give almost immediate relief.

Worms.—For a child six years old, give 12 or 15 drops of spirits of turpentine in some warm catnip tea, in the form of an injection. Then give, in about twelve hours after, a dose of pink and senna.

Jaundice.—Take blue flagroot $\frac{1}{2}$ oz.; yellow dock $\frac{1}{2}$ oz., mandrake $\frac{1}{2}$ oz., and steep in a pint of water; strain, and add one pint of gin, and sugar to taste. Dose, half a wineglass twice a day. Almost certain.

Gravel.—Use hot fomentations, warm bath, and drink freely of cleavers tea, or a tea of juniper-berries.

Piles.—Keep the bowels open, and anoint the external parts with cod-liver oil. A new, but excellent remedy.

Fistula.—Keep the bowels open, and the ulcer clean. Use cod-liver oil as an ointment.

CLASS II. ORGANS OF BREATHING.

The organs of breathing include the *lungs*, the *chest*, the *nose*, and *windpipe*.

Cold in the Head. — Keep the bowels open ; soak the feet in hot water, and drink herb tea.

Cough. — Drink freely of life-everlasting tea, or, if it is obstinate, take 1 oz. sirup squills, and 1 oz. of paregoric. Take an occasional spoonful.

Loss of Voice. — Apply flannels, wrung out in hot water, and drink freely of hot composition tea.

Whooping-Cough. — Keep the bowels open, and let the child drink freely of *flax-seed tea*. If needful, poultice the chest with mustard poultice.

Winter Cough. — Take 1 oz. powdered liquorice, 1 gill molasses, 1 gill rum ; add alum the size of a walnut. Dose, spoonful five or six times a day.

Croup. — Apply flannels, wrung out in hot water, over the neck ; onion poultices on the chest and feet ; give an emetic, and send for the doctor.

Asthma. — Soak brown paper in a strong solution of saltpetre ; let it dry, and set it on fire, so that the smoke may be inhaled by the patient.

Consumption of the Lungs. — There is no remedy so good as cod-liver oil ; some combine it with phosphate of lime. Can be had of any apothecary.

CLASS III. THE BLOOD, OR ORGANS OF CIRCULATION.

The organs of circulation include the veins and arteries, the heart, the course of the blood, and the source of animal heat.

Fevers. — Nearly all fevers require about the same treatment. First, cleanse the stomach and bowels, and afterwards keep up a moderate perspiration all over the body, by drinking herb tea.

Ague. — Give a little Epsom salts every other day, and drink freely of herb tea. When the fever is run down, give tonic medicines.

Typhus Fever. — Pursue the same course as in ague. You may give yeast in this disease with good success. A physician should always be called in.

Scarlet Fever. — In the first stages give a dose of physic, and

put the patient to bed in a quiet room. Keep up a perspiration upon the surface of the body. Very light diet.

Small-Pox. — In the distinct form, give an emetic, followed by a dose of castor-oil; then use sweating remedies, and let the patient have plenty of fresh air. Sponge the body with warm or cool water.

Erysipelas. — Be sure and keep the bowels open with Epsom salts; then create a perspiration by warm teas; apply a mustard poultice above the seat of the disease, and dust arrowroot or flour on the sores.

Measles. — Keep the bowels open with castor-oil; drink herb tea; flax-seed tea for the cough, and saffron tea to keep out the humor.

Influenza. — Take a dose of physic, drink hot herb tea, soak the feet in hot water, and go to bed for a sweat.

Chicken-Pox. — Take a dose of castor-oil, and drink freely of saffron tea, and keep indoors.

Itch. — Take sulphur and molasses two or three times; also anoint the whole body with melted sulphur before a hot fire. This is not so pleasant, but more certain than any other remedy.

Ring-worm, Shingles, &c. — The ring-worm is easily cured by wetting it a few times in very strong tobacco-spittle, and letting it dry in. For the shingles, take Epsom salts and warm teas, to keep out the eruption.

Scald Head. — Remove the loose, dry scabs, and wash the head with a decoction of tobacco. Give physic and saffron tea.

Scurvy. — This disease, incident to sailors, must be mainly cured by proper diet, exercise, and a cheerful mind. Keep clean. Use, if possible, such articles as fresh vegetables, oranges, lemons, vinegar, cider, &c. Harden the gums by a little vitriol-water.

Putrid Sore Throat. — Keep the bowels open, and the body in a perspiring condition. Keep the throat bandaged with flannels wet in hot-drops; *above all*, gargle the throat often with the following: $\frac{1}{2}$ cup of vinegar, $\frac{1}{2}$ cup of water, spoonful table-salt, and $\frac{1}{4}$ teaspoonful of best Cayenne. This is the course for all forms of sore throat.

Pleurisy. — In this dangerous disease, go immediately to bed and take a sweat; put a mustard poultice over the seat of the pain; live on gruel a few days, till its severity is over; then wear a large pitch-plaster over the spot, to protect it from cold.

Inflammation of the Lungs. — Pursue a course similar to

treatment for pleurisy. You must keep the bowels open, and, if very severe, apply several leeches.

Inflammation of the Stomach. — To be treated nearly the same as inflammation of the lungs. The liquids taken must be very mild, and in small quantity.

Inflammation of the Liver. — Take a good smart dose of salts and senna, and apply a strong mustard plaster over the seat of the pain. A physician should be called.

Inflammation of the Bowels. — Apply hot fomentations of hops to the bowels, and take a dose of castor-oil. It is a dangerous disease, and medical help should be obtained.

Inflammation of the Urinary Organs. — Take physic, abstain from food, and apply hot fomentations of hops over the seat of the pain.

Rheumatism. — Take the tincture of guaiacum in teaspoonful doses, five or six times a day. A first-rate remedy.

Gout. — In ordinary cases take physic often, and reduce the diet. In old people the treatment should be more tonic and generous.

Scrofula. — Cod-liver oil is a good remedy; also a preparation of dock, mandrake, cohosh, and blue-flag, equal parts, prepared in gin.

Dropsy. — Take plenty of exercise, and frequent doses of rhubarb; drink freely of mountain-cranberry tea; drachm doses of cream of tartar every three hours. This is an excellent remedy.

Water in the Chest. — Treatment the same as for dropsy, as it is a species of that disease.

Water in the Head. — Apply blisters to the back of the head, and give occasional doses of rhubarb. Seldom cured.

CLASS IV. DISEASES OF THE BRAIN AND NERVES.

Tic-Douloureux. — Steam the face with a bag of hops, wrung out in hot vinegar.

Nervous Headache. — Soak the feet in warm water, and apply cold bandages to the head.

Sick Headache. — Take a dose of senna and salts; soak the feet in warm water, and abstain some days from food.

Giddiness of the Head. — Equalize the circulation by warm herb tea, soaking the feet in warm water, and, if needful, apply a few leeches to the back of the head.

Inflammation of the Brain. — This disease requires the best of medical skill. Do not tamper with it an hour.

Lockjaw.—Powerful sweating is the most reliable remedy in this disorder. Bathe the jaws also with turpentine.

Hysteric Fits.—During the fit, sprinkle the face with cold water or vinegar. Apply pungents to the nose, and warm friction to the body.

Convulsive Fits in Children.—Adopt the same means as in hysteric fits. The body may be washed all over with hot water.

Fainting.—Pursue the course above recommended for fits, only varying according to circumstances.

Apoplexy.—Loosen the neckcloth, and give fresh air. Restore the balance of the body by warm applications, and putting the feet into very warm water. Get a doctor, and bleed from the head.

CLASS V.

Common Accidents, and how to treat them.

☞ *Where Persons seem to be dead.*

Drowning.—Strive to inflate the lungs by means of a pair of bellows; use injections of warm water, and the warm bath; camphor as a pungent.

Hanging.—Make use of the same means as in drowning; in both cases it will be well to take a few ounces of blood.

Suffocation.—Avoid excitement; take good exercise, and use vegetable diet, so as to keep the bowels open.

Choking.—In these accidents use such artificial means as the case demands. Tickle the throat so as to cause vomiting.

Exposure to Cold.—Produce a glow by rubbing the body, and bring the sufferer to the fire gradually.

Stroke of Lightning.—Use the warm bath and friction; keep the patient quiet, and take a few ounces of blood.

Drunkenness.—“Touch not, taste not, handle not.”

Accidents by Poisoning.

1. *Those Poisons which produce Mortification.*

Alkaline Poisons.—Give vinegar, and other vegetable acids, to neutralize the poison.

Verdigris, Lunar Caustic, and Corrosive Stimulate.—Give the white of an egg in water, every two minutes, to produce vomiting and to absorb the poison; or milk in large quantities may be drunk, or linseed tea, or sugar and water.

Gamboge, Croton-Oil, and Cantharides.—Drink sugar and water, milk, or linseed tea very freely.

2. *Poisons acting through the Blood.*

These poisons include arsenic, Prussic acid, opium, henbane, hemlock, and most vegetable poisons.

Arsenic. — The same as for gamboge, &c. Lime-water, or chalk and water, if the poison swallowed was liquid.

Prussic Acid. — Give warm, stimulating drinks, to rouse the system. Give also a powerful emetic.

Hemlock, Laudanum, Nightshade, and other Vegetable Poisons. — Give an emetic, and use every effort to rouse up the system by hot baths, stimulant drinks, &c., so that an emetic will take hold. Give no acids so long as any poison remains.

3. *Poisons which act upon the Nerves and Brain.*

Among this class of poisons may be named *tobacco, alcohol, Croton-oil, lead, oil of almonds, &c.*

The remedies are so simple that they need not be pointed out.

Accidents by Injuries to the Skin.

These accidents include the following: —

Burns, scalds, grazed or ruffled skin, galling, excoriation, and chafing; blows, bruises, and contusions; parts frost-bitten; cuts and wounds; chilblains and kibes.

These accidents are cured by poultices, ointments, &c. *Cod-liver oil* is of itself the very best ointment. It can be mixed with tallow for convenience.

Accidental Injuries relating to the Limbs, Eye, and Ear.

Sprains. — Sprains are most common in the ankle and the wrist, the soft parts around the joints being stretched, and sinews sometimes more or less torn.

Treatment. — In a recent sprain, inflammation may be partly prevented by a lotion composed of one part of alcohol, one of laudanum, and three parts of cold water. In some cases it will be proper to apply leeches. The bowels should be kept open with Epsom salts.

Limbs put out of Joint, or Dislocated. — *Treatment.* — The limb must be forcibly pulled to counteract the drawing of the muscles; the extending force is to be gradually increased, and is to be applied at first in the direction in which the bone may be displaced; but by degrees it is to be brought to a line parallel

with the centre axis of the socket. At the same time, some one is to endeavor to raise the head of the bone over the edge of the cavity.

Broken Bones.—If a person be found lying on the ground speechless, do not hastily endeavor to raise him, but first search whether any of the limbs are broken, lest in raising him the injury be increased by the ends of the broken bones being forced through the flesh and skin. If the thigh or leg be broken, attempt not to raise him till some mode has been provided of conveying him to his bed, remembering that, being laid on a door or shutter, and thus conveyed by two or four men, he will suffer much less injury than if conveyed in any kind of carriage. If the arm be broken in the upper part, let it be supported in a sling, with the palm of the hand turned to the body. If the person continues senseless, the head has probably received some serious injury, demanding great care in his removal, and the immediate attention of some experienced surgeon.

If after a blow, by a fall or otherwise, on the side, considerable pain is felt, and the breathing rendered difficult, it is almost certain one or more of the ribs is broken. Free bleeding and absolute rest will be demanded in this case, which very frequently terminates fatally from want of being treated from the first with that decided firmness it demands.

Motes, Sand, and other Substances, in the Eyes.—The substance may either lie loose on the surface, or, having penetrated the outer coat, may there remain fixed. In the former case it is easily removed by means of a camel-hair pencil dipped in oil, or, what is better, a piece of paper rolled into the size of a quill and softened in the mouth. When the substance is fixed in the coats of the eye, then a surgical operation may be necessary to remove it.

Peas, Insects, and other Substances in the Ear.—The opening into the outer ear, as far as the drum, is only about half an inch, and is defended by a sort of down, as well as a sort of wax. Peas, bits of slate-pencil among boys at school, and other things, sometimes get into the ear, and give no little uneasiness. They may be extracted by means of a small pair of forceps, having previously injected some of the oil of almonds. Occasionally, ants and caterpillars have found their way in, and even insects have been known to deposit their eggs there. We sometimes succeed in removing them by introducing into the ear a piece of lint dipped in honey. Camphorated oil may also be tried.

Cramp in Swimming. — If a person is attacked with cramp while swimming, he should suddenly dart the limb out with great force ; should both legs be affected at the same instant, his only chance is to throw himself upon his back, and to make a similar effort with both at once.

Bleeding at the Lungs. — A teaspoonful of dry salt, given at short intervals, will stop profuse bleeding at the lungs. The herb called *golden rod*, dried and made into tea, will have the same effect. A tumblerful should be taken every half-hour. This remedy has been found very efficacious.

When struck by Lightning. — Place the person who has been struck in an erect posture, and dash a pail or two of cold water over his head. Then rub the body till it is thoroughly dry ; after which, apply strong mustard poultices to the stomach. If the body is cold, omit the water, and seek to restore its natural temperature by friction and warm applications.

Fainting Fit. — Loosen the clothes of the person who has fainted, place him in the fresh air, and sprinkle cold water upon the face. A person in a fainting fit should always be laid upon his back, with the head on a level with the feet. Chafe the palms of the hands and temples with the hand, and apply harts-horn to the nostrils.

SECTION II.

THE SICK MAN'S DOCTOR :

OR, MEDICATED FLANNEL.

This extraordinary method of curing disease was kept for many years a profound secret, by an eminent physician of Massachusetts, who, in his old age, sold out the right to a worthy lady in practice for FIVE HUNDRED DOLLARS. We now offer it to you for FIFTY CENTS !!

NEARLY all kinds of disease are occasioned by cold in the system. It is so in inflammations, fevers, diseases of the bowels, lungs, head, &c. Almost every form of acute disease can be easily cured by the *saleratus sweat* and *medicated flannel*. Every family has the means at hand, and can dispense with drugs and doctors, for it has saved many lives when physicians have despaired.

Saleratus Sweat.—First put the patient in bed, then wash him all over with a *large spoonful* of saleratus added to a *half-pint* of soft water, as hot as he can bear it; repeat it three or four times, and leave as much water on the body as you can with the saturated cloth. During this operation of washing, drink freely of pennyroyal or other warm herb tea. Then cover the patient well with flannels in bed, and let him sleep an hour or two, according to his strength; then wipe him off hard with a crash towel, and finally wash off and wipe dry with new rum. Have ready some clean clothes to change. Let the sick person enjoy quiet sleep.

If this course should be resorted to in all cases of sudden colds, more than *two thirds* of the fevers which now occur, and often result in death, would be prevented. In settled fever, the patient should be washed daily with weak saleratus-water. This sweat acts in harmony with nature, and proves her greatest help.

Medicated Flannel.—One of the best remedies for curing disease by external application is the *medicated flannel*. In all cases of pain in the stomach, back, side, and shoulders, or cramp, colic, spasms, rheumatism, spinal diseases, dysentery, cholera-morbus, &c., there is nothing in comparison with it. No family can afford to do without the knowledge of its use, as it will save them a great amount of suffering and expense. Let not its simplicity be despised, as it may save your life when other remedies will not avail.

Mode of Preparing the Flannel.—Split of fresh box-raisins enough to cover over the flannel; next cover over a layer of ground allspice, then of powdered camphor, ground cloves, and cinnamon, with a little Cayenne pepper; where the pain is very severe, sprinkle over some fine opium. Place the whole between a double flannel, and quilt it all over. The size of the flannel should be according to the part diseased.

Directions for Using the Flannel.—Let the patient first take a saleratus sweat, according to directions. To prepare the part affected for applying the flannel, first rub it all over smartly with the rheumatic oil. The oil, being quite powerful, should be used sparingly. Then rub again in the same manner with the *soothing lotion*. Dampen the flannel all over its surface with the lotion, before applying it. After wearing the flannel two days, wet it again with the lotion, and sprinkle on a little of the powder with which the flannel is medicated, in order to keep up an irritation

Pursue this course for a week or two in chronic cases, and it will bring out a humor, which will give immediate relief. In severe and sudden cases use the *oil* more freely, and wet the flannel once in fifteen minutes with the lotion till relief is obtained.

Receipts for Making the Oil and Lotion.—These preparations should be made and kept on hand by every family. The expense is but little, and in sudden cases the patient may die before they can be obtained; and besides, age improves their quality, provided they are kept from the air by being tightly corked in bottles.

Rheumatic Oil.—This is made by taking two ounces of sweet oil, and one of cajeput, and shaking them well together.

Soothing Lotion.—Two quarts of alcohol, six ounces fine Castile soap, one ounce of camphor, one ounce of laudanum, one ounce of rosemary.

Remark.—In all cases of sudden disease, the state of the bowels is to be considered. It is most generally safe to administer a dose of *salts and senna, castor-oil, or rhubarb.*

SECTION III.

RULES AND SUGGESTIONS BY WHICH ANY PERSON OF GOOD NATURAL CONSTITUTION MAY LIVE IN GOOD HEALTH A HUNDRED YEARS.

WHAT IS GOOD HEALTH? — We usually consider the body in *good health* when it performs all its bodily functions, voluntary and involuntary, with ease, and suffers no interruption. So also, when we do not feel ourselves encumbered with the weight of our frame, and are not disposed to reflect with uneasiness and solicitude upon its physical condition, we may consider ourselves as in a very perfect state.

Certain Conditions which are Essential to Long Life.

1. A certain bodily and mental disposition to longevity. This is not easily explained, but is well understood, and many persons with this requisite have lived to old age, under very unfavorable circumstances.

2. An hereditary disposition to long life. It will be found that the parents and ancestors of aged persons generally lived to an advanced life.

3. A perfect birth of the child, and proper subsequent conduct on the part of the mother. Those children which nearest resemble their mother are apt to have the strongest claim to long life.

4. A gradual culture of the physical, mental, and intellectual faculties. The age of man bears a certain proportion to the growth of his powers, and the longer we can protract the different stages of life, the more extended will be the period of our existence.

5. A steady and equal progress through life is essential to secure the object. He whom neither violent joy convulses, nor deep melancholy corrodes, whose life is not checkered by too sudden vicissitudes, may reasonably expect a long life.

6. A sound state of digestion is essential to the attainment of advanced age. We find in almost every aged person the organs of digestion in a sound and healthy state. In fact, there is no surer sign of decay than a defect in this respect.

7. A quiet and peaceful state of the mind, — at peace with itself, its God, and all mankind. Nothing conduces more to long life than this equable condition of the mind.

8. Finally, such professional or business pursuits in life as serve to please, rather than perplex and harass the mind, tend greatly to longevity.

9. Lastly, we remark that but very few people ever yet attained to a great age who were not more than ordinarily particular in their *diet and manner of life*.

SECTION IV.

EFFECTS OF THE DIFFERENT ARTS, TRADES, AND PROFESSIONS UPON HEALTH;

WITH HINTS ON THE SELECTION OF EMPLOYMENTS AND SITUATIONS ADAPTED TO THE CONSTITUTIONS OF YOUNG PEOPLE.

Accountants, Book-keepers, and Clerks. — This class of people suffer from confined atmosphere and a fixed position of the body. Their digestive organs suffer most. Fresh air, and full, muscular exercise, are very essential.

Architects, Civil Engineers, and Surveyors. — Though confined occasionally to the desk, yet they travel frequently in the

country, and thus enjoy fresh air and exercise, which contributes greatly to their comfort and health. They are not unhealthy pursuits.

Attorneys. — The profession in its detail is mostly sedentary. They are often kept for a long time in a bad position, with limbs fixed and the chest bent forward. The functions of the stomach become disordered, the tongue foul, and the face pale and sallow. To lessen these evils, the practitioner should by all means exercise two hours each day in open air, and adapt his diet to his situation.

Bakers. — This class of tradesmen are subject to disorders of the stomach, coughs, and rheumatism. They suffer from the fact that their work comes more in the night than day. The heat to which they are exposed induces a susceptibility to disease.

Bone-turners. — Bone-turners inhale a considerable quantity of bone-dust, but it is not considered unhealthy, but rather grateful.

Bookbinders and Pocketbook-makers. — This work is quite easy, and free from any unhealthy annoyance. The laborers suffer more from a close atmosphere than any other cause.

Brass-workers. — This is considered an unhealthy employment. It creates tenderness of the eyes, short-sightedness, &c.

Brewers. — Brewers are often afflicted with chronic diseases of the bowels. The business is not considered unhealthy, but brewers often form the habit of taking too frequent potations of beer.

Brushmakers. — This is considered a healthy trade. The occupation is sedentary, but the workmen have a free use of their hands and arms. A vapor also arises from the pitch, which has a good effect in bronchial and asthmatic complaints.

Bricklayers. — Bricklayers are exposed to lime-dust. This frequently excites diseases of the skin.

Brickmakers. — This is a cold, wet, and disagreeable employment, yet it is by no means unhealthy. Persons of this trade often live to a great age.

Butchers. — This is one of the healthiest of all employments. They have much active exercise in the open air, both on foot, horseback, &c.

Cabinetmakers. — This is a healthy trade, though indoors. Its only drawback is the dust arising from sawing particular kinds of wood.

Carvers and Gilders.—Those employed at these trades often suffer much from headache. They are kept in a leaning posture and in a confined atmosphere too long to be very healthy.

Cart-drivers, or Truckmen.—These persons are much exposed to changes of weather, yet they are healthy from the very nature of the employment, which is active and in open air.

Carpenters, Joiners, Wheelwrights, Millwrights.—These employments are very healthy, though somewhat laborious. Sudden changes of the weather should be guarded against.

Chemists and Druggists.—Persons employed in these professions are often sickly, and subject to affections of the lungs. They generally die young. Care and exercise in the air would tend to abate the effects of the baneful agents.

Clergymen.—People of this profession are often troubled with diseases of the chest and throat, spitting of blood, &c. They should take regular exercise, and guard against loud speaking and long sermons.

Clock and Watch-makers.—Persons engaged in this trade often suffer in their digestive organs and lungs. Their posture, sitting all day bent forward, is of necessity injurious. It tends also to injure the eyes. They rarely attain old age.

Coachmen, Stage-drivers, &c.—These employments, on the whole, are rather healthy, though it is not to be concealed that stage-drivers are subject to congestion of the abdomen and brain.

Coach-builders.—This is a healthy employment, affording good exercise and generally pure air. Subject to but few diseases.

Coffee-roasters.—This employment leads to oppression of the chest, difficulty of breathing, cough, and asthma, caused by the odor or vapor which the heat eliminates from the berry.

Colliers and Well-sinkers.—These employments are very unhealthy, and those employed in these pursuits are generally short-lived. The bad gases to which they are exposed bring on premature decay.

Cooks and Confectioners.—Cooks are subjected to too much heat, and are more unhealthy than housemaids. Their digestive organs are often disordered, and they become irritable in temper, and suffer much with the headache.

Coopers.—This employment, though objectional in some respects, is tolerably healthy. The posture of the body is bad, and often affects the head unfavorably.

Coppersmiths.—This is not considered a healthy employment. Those who work at it are generally unhealthy, suffering from diseases similar to those of brass-founders.

Curriers and Leather-dressers.—Those who follow these employments are generally healthy, and live to old age. The bent posture in shaving is unfavorable, and sometimes affects the head.

Dressmakers, Milliners, and Straw-Bonnet-makers.—These employments are unhealthy from several causes: 1. small and ill-ventilated rooms; 2. too many hours' labor; 3. posture of the body; 4. offensive vapors in bleaching bonnets. To avoid the bad effects of these causes, rise early, take out-door exercise, work less hours.

Dyers.—This is regarded as a healthy pursuit. It is followed with little interruption from early boyhood to old age.

Fishermen.—This class of people are exposed to all kinds of weather, yet they are hardy, enjoy good health, and live to a "good old age."

Glassblowers.—This class of laborers are exposed to great heat, and are usually bathed in sweat, yet they are generally healthy and attain to considerable age. Catarrhs and coughs are common among them, and they sometimes die suddenly.

Grocers.—This employment is healthy in general, except that the frequent handling of sugar, &c., occasions diseases of the skin.

Hatters.—The hatter's trade is considered very unhealthy. Their hands are often immersed in a solution of sulphuric acid in the process of felting, which corrodes the hands and makes them sore. They are exposed also to alternate changes of hot steam and cold air.

Iron-founders.—There is, perhaps, no class of people so much exposed to sudden transitions of heat and cold as founders, and yet, on the whole, the trade is not considered unhealthy. They have a pallid countenance and thin face, occasioned by cellular absorption, and often impaired appetite. They generally die young, but few living beyond the age of fifty.

Machinists.—Those who follow this trade suffer greatly from bronchial irritation, occasioned by the dust they inhale. The trade is not healthy, and those who follow it generally die young.

Masons, or Stonecutters.—The principal objection to this trade is the inhaling of the particles of sand and dust which arise from the chippings of the stone. The bronchial membrane often becomes diseased, and consumption ends the race of life.

From their active muscular exercise, they have good color and figure.

Millers. — Those who follow this employment are generally pale and sickly, have a morning cough, and are inclined to asthma. Their diseases are occasioned by inhaling the particles of flour-dust, &c., with which the atmosphere is loaded.

Physicians and Surgeons. — This class of professional men are not very healthy. Anxiety, night exposure, study, and exposure to diseases, often sap their constitution, and lessen their chances of life. Yet their out-door exercise has a continual tendency to invigorate their health.

Painters. — This is regarded as an unhealthy trade. The laborers are constantly exposed to deleterious agents, and are subject to dizziness, vomiting, colic, &c.

Paper-makers. — This class of persons are much exposed to cold and wet, both at the vat and in the drying-room. They are usually clothed lightly, and, as a consequence, are subject to asthma, pain in the limbs, swelling of the joints, &c.

Plasterers, Whitewashers, &c. — These people are much exposed to lime-dust, and are usually somewhat pallid, yet in the main are healthy. The trade is not objectionable.

Pavers. — These laborers have strong, muscular exercise in the open air, and though subject to the frequent changes of weather, yet suffer but little from acute diseases.

Plumbers. — This is certainly to be set down as among the list of unhealthy employments. Those who follow it are generally sickly and short-lived. The fumes which arise from the metal in casting are very deleterious.

Potters. — This is not a very unhealthy employment, though the workmen often suffer much from colic and indigestion.

Printers. — This we regard as an unhealthy pursuit. The workmen are kept in a confined atmosphere, and have but little exercise. The close confinement of eyes, their long, standing posture, tend to injure the digestive organs. Consumption is frequent; few enjoy good health.

Rope-makers. — The only objection of consequence to this trade is the stooping posture of the workmen.

Saddlers. — Those who follow this trade are often subject to headache and indigestion, on account of their confined position of bending forward.

Shoemakers. — To say that this is a ruinous and most unhealthy employment, would only be to affirm what is well known

to every one. Their posture is such as to compress the stomach and liver; the secretion of bile is unhealthy, and bowel complaints are frequent. The digestion and circulation are usually impaired. But few live to old age, and there is often a hollow at the breast-bone, made by the last.

Shop-keepers. — Trades-people are usually too much confined in-doors to be healthy; always on their feet, yet exercise it can hardly be called. They should get fresh air, as well as look for customers, and their meals should be taken regularly.

Smiths. — This pursuit tends to an increase of muscular power. Youths of a strong constitution can have no better employment. They are rarely sick, or subject to diseases.

Snuff, Tobacco, and Cigar-makers. — These employments of necessity are injurious. The workmen are exposed to a strong narcotic odor, and breathe an atmosphere strongly impregnated with a poisonous substance. Disorders of the head, the air-tube, and stomach are common.

Tailors. — Of all trades, we consider this the most unhealthy. Sitting all day in a confined atmosphere, with the legs crossed and the spine bowed, they cannot have respiration, circulation, or digestion well performed. Consumption, disorders of the stomach and bowels, are frequent and obstinate.

Tallow-chandlers. — This class of people, though subjected to an offensive animal odor, enjoy health, and attain to a good age.

Tanners. — In this employment the workmen are often exposed to unhealthy odors, and are constantly exposed to wet feet; yet they are healthy, and subject to but few diseases. Consumption is rare, and they generally attain to long life.

Tinplate-workers. — The laborers at this business are usually healthy, and attain to considerable age. The chief objection is to the fumes of soldering, which, however, seem to be more annoying than injurious.

Wood-turners. — There can be no objection to this employment except the dust, which is apt to be inhaled too freely.

HINTS ON SELECTING TRADES, &c.

1. For the delicate and dyspeptic, where there is no disposition to consumption, a choice from the occupations of husbandry, gardening, or travelling is most advisable.

2. Where, on the contrary, there is a predisposition, either hereditary or acquired, to consumption, the country is generally preferable. A trade should be chosen from among the muscular out-door callings, such as carpenters, &c.

SECTION V.

BOOK OF HERBS;

THEIR PROPERTIES AND USES IN SICKNESS EXPLAINED.

☞ "There are herbs to cure all diseases, though not everywhere known." — *Dr. Ray.*

Avens Root. — Astringent and strengthening.

Alder. — This is an astringent, useful in bleeding at the lungs, or as a wash for ulcers.

Burdock. — This is a cathartic; it will produce perspiration. The leaves are good, in fevers, to bind upon the head and feet.

Blackberry. — This is astringent; — very valuable in the dysentery.

Blueflag. — Useful in fevers, or to expel humors from the system. Dose, half a teaspoonful three times a day.

Catnip. — Valuable for injections. In fevers it promotes perspiration without raising the heat of the body.

Comfrey. — This is mucilaginous; valuable in coughs and all consumptive complaints.

Clivers. — To promote the discharge of urine.

Golden Thread. — This is useful in bitters; simmered in lard, it makes a good ointment for sore lips, hands, &c.

Golden Seal. — This corrects the bile, restores the organs of digestion, and promotes a discharge of urine.

Hardhack. — This is astringent; useful in the diarrhœa and dysentery.

Hoarhound. — This is valuable, combined with thoroughwort, for coughs, colds, and all lung complaints.

Life Everlasting. — This is the most efficacious of all herbs in breaking up a long-standing cough, drunk in the form of tea, and sweetened with molasses.

Mountain Cranberry. — Very useful in bleeding at the lungs.

Motherwort. — This will ease the pain in the nervous headache.

Peppermint. — Valuable for the colic; to prevent sickness at the stomach, &c.

Plantain. — Good, combined with lard, for the salt-rheum; its juice will cure the bite of snakes.

Pennyroyal. — This is a stimulant; it should always be given to assist the operation of the lobelia emetic.

... — This is tonic ; useful in biliousness.

Skunk Cabbage. — Promotes expectoration, quiets the nerves ; is very useful in asthma.

Sassafras. — Steeped in water, it is an excellent wash for all kinds of humors

Sage. — Useful in fevers, and for worms in children.

Saffron. — Makes a valuable tea for children afflicted with the measles, chicken-pox, and all eruptive diseases.

Slippery Elm. — A good drink in sore throat, dysentery, and is the best article known to poultice humors and sores.

Thoroughwort. — This herb is both physical and emetic ; very valuable in fevers, colds, coughs, &c. ; good in bitters.

Unicorn-Root. — This is a powerful strengthener, taking a half-teaspoonful in powder, in a gill of warm water, three times a day.

Valerian. — Good in all nervous complaints ; a swallow or two taken occasionally will produce the same effect as paregoric, and is every way preferable to it.

Wormwood. — Valuable in sprains and bruises ; drank as a tea, it will cleanse the stomach, and create an appetite.

Wintergreen. — This is cleansing to the blood ; may be taken as a tea or as a syrup.

Yellow Dock. — This is physical and bracing ; valuable in the piles ; it will purify the blood and expel bad humors from the system.

Yarrow. — This is useful in blood-spitting, dysentery, piles, &c.

☞ Most roots should be collected either late in the fall, or early in the spring. Herbs should be gathered while in blossom. They should be dried in the shade, and packed up in paper as soon as they are dry. Herb-tea, to do any *good*, should be made very strong.

MEASURE OF MEDICINES.

The following tables will often be found useful in measuring doses for the sick.

Liquids.

A Pint	contains	Sixteen Ounces.
A Teacup	"	A Gill.
A Wineglass	"	Two Ounces.
A Table-spoonful	"	Half an Ounce.
A Teaspoonful	"	Sixty Drops.
Four Teaspoonfuls are equal to One Table-spoonful.		

Powders, &c.

A Table-spoonful contains Four Drachms, or Half an Ounce.

A Teaspoonful " One Drachm.

The Family Medicine-Chest.

The following simple medicines should be kept in every family, in case of sudden sickness. They form a complete *family medicine-chest*, and will save, if judiciously used, a great amount of trouble and expense.

Hot-Drops. — Dose, a half-teaspoonful for a child.

Sweet Tincture of Rhubarb. — Dose, a table-spoonful for a child.

Wine Ipecac. — Dose, to act as an emetic, fifteen drops, repeated every fifteen minutes, till it operates; for an adult, a teaspoonful, repeated as above.

Sirup Squills. — Dose for a child, half a teaspoonful.

Castor-Oil. — Dose for an adult, a table-spoonful; for a child, a teaspoonful.

Camphor. — Dose, a teaspoonful.

Composition. — Dose, a teaspoonful.

Cranesbill. — For canker.

Paregoric. — Dose for a child, five to twenty drops.

Lobelia, or Bloodroot Tincture. — Dose, a teaspoonful for a child, once in fifteen minutes, till it vomits.

USEFUL HERBS. — *Pennyroyal.* — For colds.

Red Raspberry Leaves. — For canker, dysentery, &c.

Mullen-Leaves. — For poultices and fomentations.

Wormiwood. — For bruises and wounds.

Sage, spearmint, burdock-leaves, thoroughwort, horseradish-leaves, hoarhound, catnip, valerian, yarrow.

OTHER ARTICLES. — *Senna.* — Dose, a table-spoonful of the leaves steeped, for a child.

White Lily Root. — For canker and cough.

Slippery Elm. — For poultices, &c.

Ground Mustard.

Rhubarb in Powder. — Dose, a teaspoonful.

Hops. — To ease pain by external application.

Dover's Powders. — To promote sleep.

The doses of medicine recommended for an adult may be varied to the age of the patient according to the following rule: Two thirds of the dose for a person from fourteen to sixteen; one half, from seven to ten; one third, from four to six; one fourth, to one of three years old; and one eighth, to one of a year old.

In the recipes or prescriptions, where it is not convenient to obtain all the articles specified, others of the same nature may be substituted.

USEFUL ARTICLES TO KEEP ON HAND IN EVERY FAMILY.

1. A two-ounce graduating glass.
2. A thin, flat knife to spread plasters, ointments, &c.
3. A set of small weights and scales.
4. A six or eight syringe.
5. A small iron mortar and pestle.

The above articles will be found very convenient to those who reside in the country.

CHAPTER XI.

PARTICULARLY USEFUL TO THE APOTHECARY, PHYSICIAN,
MANUFACTURER OF PATENT MEDICINES, PERFUMERY, ETC.

SIGNS USED BY PHYSICIANS IN WRITING PRESCRIPTIONS.

℔ denotes a pound.	ij., two of any thing.
℥, an ounce.	ijj., three of any thing.
ʒ, a drachm.	iv., four of any thing.
ʒ, a scruple.	x., ten of any thing.
gr., a grain.	xij., twelve of any thing.
℞, recipe.	f. prefixed to <i>dr.</i> or <i>oz.</i> denotes
ana, of each alike.	fluid drachm, or ounce.
Coch., a spoonful.	gtt., a drop.
P. Æ., equal quantities.	℥ iv. v., a cupful.
ss., half of any thing.	℥ iss., to ℥ ij., a wineglassful.
iss., one and a half of any thing.	f. ℥ ss., a table-spoonful.
q. s., sufficient quantity.	f. ℥ ij., a dessert-spoonful.
q. pl., as much as you please.	f. ℥ j., a teaspoonful.
O., a pint.	<i>Pugillas</i> , as much as can be
M., 60th part of a fluid drachm.	held between the thumb
j., one of any thing.	and finger.

DICTIONARY OF MEDICAL TERMS USEFUL TO EVERYBODY.

ACRID, caustic, biting.

ALTERATIVE, establishing healthy functions.

ANODYNE, easing pain, quieting.
 ANTI-BILIOUS, correcting the bile.
 ANTI-LITHIC, preventing the formation of gravel or stone.
 ANTI-SCORBUTIC, good against scurvy.
 ANTI-SEPTIC, preventing mortification.
 ANTI-SPASMODIC, relieving spasms.
 APERIENT, opening, mildly laxative.
 AROMATIC, spicy, fragrant.
 ASTRINGENT, binding, contracting the fibres.
 BALSAMIC, mild, healing.
 CARMINATIVE, expelling wind.
 CATHARTIC, purgative, cleansing the bowels.
 DEMULCENT, mollifying, lubricating.
 DEOBRUENT, resolving viscosity, correcting the secretions.
 DIAPHORETIC, producing insensible perspiration.
 DISCUTIENT, dissolving, discussing.
 DIURETIC, increasing the discharge of urine.
 EMETIC, causing vomiting.
 EMOLLIENT, softening.
 EPISPASTIC, blistering.
 ERRHINE, producing discharge at the nostrils.
 EXPECTORANT, producing expectoration.
 HERPETIC, curing diseases of the skin.
 NARCOTIC, producing stupor, causing sleep.
 NERVINE, strengthening the nerves.
 PECTORAL, relieving diseases of the chest and lungs.
 REFRIGERANT, cooling.
 RUBEFACIENT, producing heat and redness of the skin.
 STIMULANT, exciting action.
 STOMACHIC, producing action of the stomach.
 STYPTIC, preventing bleeding.
 SUDORIFIC, causing sweat.
 TONIC, strengthening.
 VERMIFUGE, expelling or destroying worms.

Medical Receipts.

CLASS I.

Tincture of Lobelia.—This is made by putting 2 oz. of the dried herb and seeds together, in a pint of common gin. Let it stand a week, when it will be fit for use. For children, from one to two teaspoonfuls is a dose; and for adults, from a

half to a whole wineglassful, always repeating the dose every fifteen or twenty minutes, till it vomits. A little warm saleratus-water will promote the operation of it, whenever desired.

Sweet Tincture of Rhubarb.—Rhubarb, in coarse powder, 2 oz., liquorice root 1 oz., anise-seed bruised 1 oz., fine white sugar 2 oz., new rum 3 pints. Digest in a warm place one week, then strain. Dose, for an adult, from a half to a whole wineglassful.

Liniment of most excellent kind is made by incorporating 2 oz. of camphor, 6 oz. of spirits of wine, and then adding 2 oz. of spirits of sal ammoniac, and 2 drachms of oil of lavender.

Bard's Opodeldoc.—Take Venetian soap 2 oz., camphor gum 1 oz., brandy 1 pint. The soap is to be dissolved in the brandy by a slow heat, and after its solution the camphor is to be added.

Worm Elixir. Take 1 oz. of saffron, 1 oz. of aloes, 1 oz. of myrrh; steep the myrrh four days in half a pint of rum or brandy, then add the saffron and aloes. Dose, give a teaspoonful once a month to children, and they will never be troubled with worms.

British Oil.—Take of sulphuretted oil 1 oz., oil of petroleum or rock-oil $\frac{1}{2}$ oz., purified oil of amber 2 drachms, oil of turpentine 4 oz.; mix. Dose, from fifteen to twenty drops, morning and evening.

Composition.—Take 1 lb. of bayberry bark, 8 oz. of ginger, 2 oz. of cloves, 2 oz. of Cayenne, and mix them well together.

Harlem Oil.—Take balsam of sulphur 2 parts, spirits of turpentine 1 part. I have found this compound to be one of the best remedies to bathe for the rheumatism.

Nerve Ointment.—Neatsfoot oil a gill, spirits of turpentine 1 oz., beef's gall 1 oz., brandy half a pint. Simmer till mixed, and bottle for use.

Patent Medicines.

CLASS II.

To make Brandreth's Pills.—Aloes 3 oz., gamboge 2 oz., colocynth 1 oz., oil of peppermint 2 scruples, cream of tartar $1\frac{1}{2}$ oz.; mix well into a pill mass, with sirup or soap.

Lee's Anti-Bilious Pills.—Take of aloes, gamboge, each 5 oz., scammony 2 oz., sal nitre, elixir pro., each 1 oz., mucilage of gum Arabic $\frac{1}{2}$ oz., Castile soap 6 oz., and beat into a mass, of which divide 3 drachms into thirty pills. Dose, from one to four.

Powder the dry articles, and beat in a mortar with soap; add the elixir pro. and mucilage.

The above was taken from the Patent-Office.

To make Morrison's Hygean Pills.—No. 1. Pill. Equal parts aloes and cream of tartar, with quant. suff. mucilage to form a pill mass.

No. 2. Pill. Gamboge 2 drachms, aloes 3 drachms, colocynth 1 drachm, cream of tartar 4 drachms, sirup to mix into a pill mass. Dose, from five to fifteen grains.

To make Anderson's Scotch Pills.—Take pulv. aloes 12 oz., colocynth 1 oz., gamboge 1 oz., oil of anise 4 drachms; use soap and sirup to form a mass, and divide into pills of 3 grains each.

To make Lady Webster Dinner Pills.—Take pulv. aloes 6 drachms, pulv. mastich and red roses, each 2 drachms; use soap and sirup to beat into a mass, and make into 3 grain pills.

To make Peters's Pills.—Aloes, jalap, scammony, and gamboge, each 2 drachms, calomel 1 drachm. Beat into a mass with rectified spirits of wine. A powerful cathartic.

Hooper's Female Pills.—Take of aloes 8 oz., sulphate of iron (copperas) dried $2\frac{1}{4}$ oz., canella, ginger, Castile soap, each 1 oz., myrrh, extract of black hellebore, each 2 oz. Powder the dry articles, and beat the whole into a mass with sirup, and divide into pills of $2\frac{1}{2}$ grains each. Dose, three to four.

Hull's Physic.—Take of myrrh, cinnamon, mace, cloves, saffron, and ginger, each 1 oz., aloes 8 oz., sal nitre 2 oz. Powder, mix, and sift. Dose, $\frac{1}{2}$ drachm. Good in colic, &c.

To make Stoughton's Bitters.—Take bruised gentian root and orange peel each 1 lb., red sanders 2 oz.; mix with 2 gallons of diluted alcohol. Let it stand a fortnight.

To make Dalby's Carminative.—Take oils of caraway, fennel, and peppermint, each 10 drops; rub them up with 10 oz. of white sugar and 5 oz. of carbonate or lump magnesia, then add $1\frac{1}{2}$ drachms of sal tartar and 2 oz. of laudanum. Mix with $3\frac{1}{2}$ pints of water.

To make Hill's Balsam of Honey.—Take gum benzoin 4 oz., tolu 1 oz., honey $\frac{1}{2}$ lb., and mix with 2 quarts of alcohol. Let it stand for a couple of weeks, frequently shaking it well; then filter it.

To make Scidlitz Powders.—Mix 1 lb. of Rochelle salts with $\frac{1}{4}$ lb. super. carb. soda; put 2 drachms of this mixture in each blue paper; and put in each white paper 30 grains tartaric acid.

Dr. Monroe's Recipe.—Paregoric $1\frac{1}{2}$ oz., sulphuric ether and

tinct. tolu, each $\frac{1}{4}$ oz.; mix. Dose, a teaspoonful night and morning, or when the cough is troublesome, in a little warm water.

To make Dr. Gedding's Piles Ointment. — Carbonate of lead 4 drachms, sulphate of morphia 15 grains, stramonium ointment 1 oz., olive-oil q. s.

Godfrey's Cordial. — Dissolve $2\frac{1}{2}$ drachms of sal tartar in $3\frac{1}{4}$ pints of water; to which add 1 pint of thick sugar-house molasses, and afterwards 3 oz. of laudanum. Dissolve $\frac{1}{2}$ a drachm of oil of sassafras in 4 oz. of alcohol, and add to the above; shake well, and it is ready for use.

Eye-Water. — Take of sulphate of zinc 10 grains, sugar of lead 20 grains, rose-water 1 pint. Dissolve each separately, and mix. Turn off the clear liquor for use.

Various Essences. — Almost all kinds of essences for retailing from the shelves of shops are essential oils of the kind wanted, dissolved in alcohol, in the proportion of 2 drachms to the pint. In essences made for peddlers, the oils are still more diluted.

Perfumery, Cosmetics, Soaps, &c.

CLASS III.

Cologne Water. — Take of oil of rosemary and lemon each 60 drops, oil of garden lavender 90 drops, otto of rose and oil nevoli each 10 drops, rectified oil of amber 30 drops, extract of vanilla 20 drops, alcohol 1 quart. Be sure that the oils are fresh and pure.

Another. — Oil of garden lavender $\frac{1}{2}$ oz., oil of bergamot and essence of musk, each 60 drops; oil of cinnamon 2 drops, otto of roses 8 drops, alcohol $1\frac{1}{2}$ pints.

To make Mille-Fleur Extract. — Take 2 oz. of proof spirit, add 5 oz. of essence of musk, 10 drops of otto of rose, and 1 drachm of oil of jessamine.

Extract of Vanilla. — Take of Vanilla beans $\frac{1}{2}$ oz., cut in small pieces and bruised, Tongva beans 1 ounce, best French brandy $1\frac{1}{2}$ pints. Digest for two weeks, frequently shaking.

Shaving Soap. — A very nice soap for shaving may be made by mixing $\frac{1}{4}$ of a pound of Castile soap, 1 cake of old Windsor soap, a gill of lavender wafer, the same of Cologne water, and a very little alcohol. Boil all these together until thoroughly mixed.

To make Verbena Cream. — Take plain white soap and dissolve it in as small a quantity of alcohol as can be used, by means of a water bath, and perfume the mass with oil of bergamot.

Preston's Smelling Salts. — Take bruised carbonate or muriate of ammonia, and mix with it one quarter of its bulk of sal tartar; perfume the mass with oil of lemon, if required to keep white, and if dark, perfume with oil of cloves. Bottle it quickly, and add to each bottle a few drops of strong spirits of hartshorn to moisten it.

Ox-marrow Pomatum for the Hair. — Melt 4 oz. of beef marrow, 1 oz. of yellow wax, and 6 oz. of lard; perfume while cooling with oil of bergamot or the essential oil of almonds.

Cosmetic for Sunburnt Face and Hands. — Take of ox gall 1 lb., burnt alum and camphor each 1 drachm, rock-salt $\frac{1}{2}$ oz., rock-candy 1 oz., borax 2 drachms.

To make Chlorine Tooth Wash. — Mix a solution of chloride of soda, 1 oz., with 1 quart of water; bottle it well, and shake it occasionally.

Patey's Orris Tooth Paste. — Take 1 lb. of Paris white, $\frac{1}{2}$ lb. of rose pink, 3 oz. of orris root, alum $\frac{1}{2}$ oz., oil of cloves and nutmegs each 1 drachm. Use honey enough to form a paste.

Tooth Powder. — Take of cuttle-fish bone 2 oz., fresh orris-root 4 oz., cream of tartar 1 oz., drop lake 2 drachms, oil of cloves 16 drops. Powder, mix, and sift.

CHAPTER XII.

BREYMER'S TWENTY-FIVE READY WAYS TO MAKE MONEY;

BEING TWENTY-FIVE ORIGINAL RECEIPTS FOR THE MANUFACTURE OF USEFUL ARTICLES WHICH COMMAND A QUICK SALE AND INSURE A FULL POCKET.

Formerly sold for \$5; but now included in this work, and the whole for 50 cents.

1. *Cologne.* — Take 1 gallon of Cologne spirits, 90 per cent. proof; add of the oil of lemon, orange, and bergamot, each a table-spoonful; add also of the extract of vanilla 40 drops; shake until the oils are cut up, then add a pint and a half of soft water.

Remark. — This will be found equal to the best French Cologne. The longer it stands the better it will be. Be sure and use Cologne spirits, and not common alcohol.

2. *Hair-Oil.* — Take 1 gallon of Cologne spirits, 90 per cent.

proof, and add 1 quart of best castor-oil, or as much as the spirit will cut up. Add 1 ounce of oil of cinnamon, or as much as will bring it to the desired flavor.

Remark.—This is the best article in use for the hair. It should not be colored. A good common article, which can be sold cheap, can be made as follows:—

3. Take 1 gallon of lard-oil in a vessel; tie up 1 ounce of alkanet in a straining-cloth and suspend it in the oil a few days, until it comes to the right shade of color. Then flavor with 1 ounce of essential oil to suit.

4. *Ox-marrow Pomatum.*—Take 2 ounces of yellow wax, 12 ounces of lard, and 8 ounces of beef-marrow; melt all together, and, when sufficiently cool, perfume it with the essential oil of almonds.

Remark.—This article is equal to any imported from France; it is excellent for the hair, and sells well in the market.

5. *Freckle-Lotion; for the Cure of Freckles, Tan, or Sunburnt Face and Hands.*—Take half a pound of clean ox-gall, half a drachm each of camphor and burnt alum, 1 drachm borax, half an ounce each of rock-salt and rock-candy. This should be mixed, and shaken well several times a day for three weeks, until the gall becomes transparent. Then strain it very carefully through filtering-paper. Apply it to the skin during the day, and wash it off at night.

Remark.—This article, if properly made, will not fail of its purpose. It will sell very readily, and command a good price.

6. *Hair-Restorative.*—Take 1 drachm of lac-sulphur, 1 drachm of sugar of lead, 4 ounces of rose-water; mix, and shake the phial on using the mixture. Bathe the hair twice a day for a week.

Remark.—This preparation does not dye the hair, but operates upon the roots and restores its original color.

7. *Liquid for making the Hair curl, and changing a Sandy to a pleasing Color.*—Take 2 ounces of scrapings of lead, a quarter-ounce of litharge of gold, 1 drachm of camphor. Boil the whole for half an hour in a pint of soft water. When cold, pour off the liquid, and add to it a drachm of the sugar of lead, and a drachm of rosemary-flowers. Boil these up together, and strain off the liquid, when it is ready for use.

Remark.—There is no preparation ever yet discovered so good for curling the hair and changing its color. It is perfectly harmless also.

8. *Water for Thickening the Hair, and to prevent its Falling off.* — Take 4 ounces of rosemary, 1 pound of grape-vine tendrils, 1 ounce of honey. Boil these half an hour in 2 quarts of new milk, and same quantity of soft water. Then filter carefully through a sponge, and flavor with essence of bergamot. Add enough Cologne spirits to keep it from growing sour.

Remark. — From experience we know this to be a most valuable article. If it could be distilled, instead of boiled, it would be better.

9. *Another Excellent Article to prevent the Hair from Falling out.* — Take a half-pint of French brandy, a table-spoonful of fine salt, a teaspoonful of powdered alum. Let these be mixed and well shaken until they are dissolved. Then filter, and it is ready for use. If used every day, it may be diluted with soft water.

Remark. — This receipt was obtained from a barber long patronized by the nobility of France; and he declared it to be the most valuable article for the purpose ever used.

10. *Turkish Rouge.* — Take a half-pound of best Brazil-wood, fine, and of golden-red color; infuse four days in a quart of best white-wine vinegar; then boil them together for half an hour, strain through a linen cloth, and place the liquid again over the fire. Having in the mean time dissolved a quarter of a pound of alum in a pint of white-wine vinegar, mix the two liquids and stir them well together. The scum which now arises should be taken carefully off, and gradually dried and powdered.

Remark. — This makes a most beautiful, delicate, and perfectly inoffensive rouge or carmine, and will give perfect satisfaction.

11. *Another Beautiful and Cheaper Rouge Wash.* — Take 1 ounce of alkanet and infuse it in a pint of Cologne spirits, until it comes to the right shade of color.

Remark. — This may be applied to the cheeks by a linen cloth wet in the mixture. It will easily wash off, but is, nevertheless, very cheap and beautiful, and cannot be detected on the face.

12. *Tooth-Powder.* — Take prepared chalk 2 ounces, gum-myrre in fine powder 1 drachm, Peruvian-bark half an ounce, white sugar 1 ounce, rose-pink 1 ounce. Mix well.

Remark. — This is one of the best tooth-powders in use; it cleans the teeth, hardens the gums, and sweetens the breath, and can be made and sold at a moderate price.

13. *Extract of Vanilla.* — This beautiful flavor is made by taking a quart of pure French brandy, cutting up fine 1 ounce of vanilla-beans, and 2 ounces of Tongva, bruised. Add these to

the brandy, and let it digest for two weeks, frequently shaking. Then filter carefully, and it is ready for use.

Remark. — This article is in great demand for flavoring pies, cakes, puddings, &c., and sells readily at a good price both in families and at the grocer's.

14. *Ice-Cream.* — Take of new milk and cream, each 2 quarts, 2 pounds sugar, and 12 eggs. Dissolve the sugar in the milk, beat the eggs to a froth and add to the whole; strain and bring to a scald, but be careful not to burn it. When cool, flavor with extract of vanilla or oil of lemon.

Pack the tin freezer in a deep tub with broken ice and salt; whirl the freezer, and occasionally scrape down from the side what gathers on. The proportions are 1 quart of salt to every pail of ice.

Remark. — This is one of the best recipes for this desirable luxury; the directions are simple, so that every family can make for themselves, or prepare it for sale.

15. *Indelible Marking-Inks, of Various Colors.* — Take half an ounce of vermilion and a drachm of salt of steel. Powder them very fine in linseed-oil to the thickness required.

Remark. — This ink can be used with types, hair-pencil, or pen; it resists the action of acids or alkalies. The color may be varied by using different articles.

16. *Writing-Inks, — Black, Blue, and Red.* — Take a quarter-pound of copperas and the same of logwood, a half-pound fine-powdered nutgalls, 2 ounces gum Arabic, and 1 gallon of soft water. Boil the galls first till the strength is out; then add and boil the other articles. More water may be added, as it will bear. Let it all settle, and dip and strain it clear.

Remark. — This makes a beautiful and popular ink.

17. *Blue Ink.* — Take soft Prussian-blue and oxalic acid in equal parts, powder them finely, and then add soft water to bring it to a thin paste. Let it stand two or three days, then add soft water to make the desired shade of color.

18. *Best Red Ink.* — Take best carmine (Nakarot) 2 grains, rain-water half an ounce, water of ammonia 20 drops.

Remark. — This is a beautiful ruling-ink for ledgers and bank purposes. All these ink receipts are of the very best kind, and have never failed to give the most perfect satisfaction.

19. *Oil Paste-Blacking.* — Take oil of vitriol 2 ounces, tanner's oil 5 ounces, ivory-black 1 pound, molasses 5 ounces. Mix the vitriol and oil together and let it stand a day; then add the

ivory-black and molasses, and stir it well together to a thick paste.

Remark. — This makes the best blacking for boots and shoes in use; will give a bright polish, and will not injure the leather. It never fails to give satisfaction.

20. *Shaving-Soap.* — Take 2 pounds of best white bar-soap, and half a pound of good common bar-soap; scrape them up fine, so that they will dissolve readily. Put the soap into a copper kettle with a quart of soft water, or as little water as it can be dissolved in without burning. Set it over the fire, and, when it is dissolved by boiling, add 1 pint of alcohol, 1 gill of beef's gall, half a gill of spirits of turpentine; these boil all together for five minutes. Stir while boiling. While it is cooling, flavor it with oil of sassafras to suit, and color it with fine vermilion.

Remark. — This soap was invented by a clergyman, and is the best article known. It makes a rich lather, softens the face, and can be made cheap.

21. *Shaving-Oil.* — Take 1 pound of soft soap in a jar, and add to it 1 quart of high-proof Cologne spirits. Set the jar in a vessel of boiling water, or water-bath, until the soap is dissolved; perfume with essential oil to suit.

Remark. — This is a good article for shaving, especially for those troubled with pimples on the skin; — it softens the face and cures the humors. Two or three drops rubbed upon the face with the end of the finger is enough for shaving. Dip the end of the brush in hot water and brush the face briskly, and it will raise a rich lather.

22. *Corn-Salve.* — Take the extract of Belladonna 4 drachms, peroxide of manganese 3 ounces, potash 5 pounds. Pulverize the potash in an iron kettle and let it stand in the open air twenty-four hours, then mix the whole together.

How to use it. — Shave the corn down with a sharp knife, and then apply for ten minutes the salve; wash it off and soak the corn in sweet-oil. This is the article sold about the country, and on the corners of the streets in Boston, New York, &c., for twenty-five and fifty cents a drachm phial.

23. *Collodion, or Liquid Cuticle.* — Take gun-cotton and dissolve it in sulphuric ether; thicken it with gum-mucilage.

Remark. — This article touched upon a cut or bruise forms immediately an artificial flesh, which cannot be washed off. It is useful for mechanics, as it obviates the necessity of finger-cots or bandages.

24. *Crockery Cement, which is Transparent.* — Take 1 pound of white shellac, pulverized, and 2 ounces of clean gum-mastic; put these into a bottle, and add a half-pound of pure sulphuric ether. Let it stand half an hour, and then add half a gallon of 90 per cent. alcohol. Shake occasionally, till it is dissolved.

Remark. — Heat the edges of the article to be mended, and apply the cement with a pencil-brush; hold the article firmly together until the cement cools.

25. *Powder for Cleaning and Polishing Tin, Britannia, Silver, and Brass Ware.* — Take half a pound of ground pumice-stone, and a quarter of a pound of red chalk; mix them evenly together. This is for tin, brass, &c.

For silver and fine ware, take half a pound of red chalk and a quarter of a pound of pumice. Mix very evenly.

Remark. — Use these articles dry with a piece of oiled wash-leather. They are the best cleaning-powders ever invented, and very salable.

26. *Original and only Genuine Silver-Plating Fluid. — Galvanism Simplified.* — Dissolve 1 ounce of nitrate of silver in crystal, in 20 ounces of soft water; then dissolve in the water 2 ounces of cyanuret of potash. Shake the whole together, and let it stand till it becomes clear. Have ready some half-ounce phials, and fill them half full of Paris-white or fine whiting, and then fill up the bottles with the liquid, and it is ready for use.

Remark. — 1. The silver should be obtained in crystal, because its purity is more certain. 2. The materials to make this article can be obtained of any wholesale druggist in Boston or New York. 3. The whiting does not increase the coating power; it only helps to clean the articles, and to save the silver fluid by half filling the bottles. 4. The above quantity of materials will cost about \$1.61, so that the fluid will only cost about three cents a bottle.

27. *French Chemical Soap.* — Take 5 pounds of Castile, or white bar-soap, cut fine, 1 pint of alcohol, 1 pint of soft water, 2 ounces of aquafortis, a half-ounce of lampblack, 2 ounces of saltpetre, 3 ounces of potash, 1 ounce of camphor, and 4 ounces of cinnamon in powder.

First dissolve the soap, potash, and saltpetre, by boiling, then add all the other articles, and continue to stir till it cools; then pour it into a box and let it stand twenty-four hours, and cut it into cakes.

Remark. — No article of cleansing-soap ever yet excelled this;

and no person or family will do without it when they know its value.

28. Washing and Bleaching Liquid. — Take a quarter-pound of unslacked lime and pour upon it 6 quarts of boiling water; stir it all up, and when it has stood long enough to entirely settle, strain off the clear water and dissolve in this water, by boiling, half a pound of sal soda. After this has dissolved and settled, cut up 10 ounces of common bar-soap; strain the solution upon it, and mix thoroughly. Great care must be taken that no particles of the lime are poured upon the soap. Prepare this mixture the evening before washing.

Remark. — For washing, put in the boiler 6 or 8 gallons of water, and add to it 1 quart of the liquid. The clothes must be put in soak the night before washing, for twelve hours, taking care to rub all the stains and other dirt-spots with soap. Then boil them with liquid for 35 minutes. They are then to be drawn and put into a tub, and clear boiling water to be poured over them. Then rub them out, rinse them well, and they are ready for drying.

The liquid can be made stronger, so as to take only a gill or half a pint to a washing.

There are many kinds of receipts for washing-fluid, but this is the only really valuable one; it is cheap, handy to make, and truly labor-saving.

29. Matches. — The ends of the tapers, or wood, should be very dry, and then dipped into hot melted sulphur and laid aside to dry; then take 4 parts of glue, dissolve it, and, when hot, add 1 part of phosphorus, and stir in a few spoonfuls of fine whiting to bring it to the proper thickness.

Remark. — This preparation should be kept hot by being suspended over a lamp while dipping the wood or tapers. Color the ends of the matches by adding a little vermilion, lampblack, or Prussian-blue, to the mass. Be careful not to ignite the compound while dipping.

30. The Genuine Hot-Drops. — Take three quarters of a pound of fine gum-myrrh, 1 ounce of best African Cayenne, a quarter-pound of golden seal. Digest the whole in 1 gallon of best cherry spirits for 1 month.

Remark. — Nearly all the hot-drops on sale are of a most miserable quality, and scarcely fit to use in any form. The above is the genuine, and may be taken by the teaspoonful, for a dose, in a little sweetened water. It is very valuable in coughs,

colds, pains in the stomach, bowels, &c. Excellent, also, for a bath in cramp, cold feet, toothache, headache, rheumatism, &c.

CONCLUSION. — We think any person of energy who will undertake the compound of any one of these articles, and follow out the sale of them, can make a good living, and money beside. And no one who does this will ever feel that he has paid too much for them.

CHAPTER XIII.

THE POCKET LAWYER;

OR FORMS IN LAW, CORRECTLY DRAWN AND ADAPTED TO
GENERAL USE.

PLAN OF BOOK-KEEPING.

Day-Book.

The Day-Book is the foundation of business accounts. All transactions, however simple, should be entered in it. Every entry should be plainly written, and expressed in a distinct manner. Write the names of persons in full, in a case of special bargain, and note all the particulars. The quantity and price of every article should be carefully set down.

Plan of Opening a Day-Book.

Boston, March 4, 1852.

March 9	George Hooker,	Dr.		
	To 100 Books, 5,		5	00
	" 6 boxes Tooth-Powder, 10,			60
			5	60
April 6	William Rogers,	Dr.		
	To 1 bush. Potatoes, 30,			30
	" 18 pounds Beef, 8,		1	44
			1	74

Leger.

Each person with whom you deal should have a separate page in the Leger. As often as once in a week the entries in the Day-Book should be transferred to the Leger. It will not be necessary to carry forward the items; the gross amount is all that is essential.

Manner of Opening a Leger.

Boston, March 18, 1852.

<i>Dr.</i>		WILLIAM MANSFIELD.		<i>Cr.</i>	
April 8	To Stock, .	4 30	April 12	By Cash, . .	3 00
" 18	To Sundries,	10 00	" 20	By Goods, . .	8 30
		<hr/>	" 24	By Cash, . .	3 00
		14 30			<hr/>
					14 30

*NOTES.**Facts which all should know in Regard to Notes.*

1. A negotiable note is one which is made payable to A. B. *or order*. It is otherwise, when these words are omitted.

2. By indorsing a note is understood, that the person to whom it is payable writes his name on the back of it. For additional security, any other person may afterwards indorse it.

3. If the note be made payable to A. B. or order (see note 1), then A. B. can sell said note, provided he indorse it; and the purchaser may lawfully demand payment of the indorser.

4. If the note be made payable to A. B. (see note 2), then the signer only is responsible to any one who may purchase it.

5. Unless a note be written payable on some specific future time, it should be written on demand; but should the words "on demand" be omitted, the note is supposed to be recoverable by law.

6. When a note, payable at a future day, becomes due, it is considered on interest from that time till paid, though no mention be made of interest.

7. No mention need be made in a note of the rate of interest; that particular is settled by law, and will be collected according

to the laws of the State where the note is dated. In some States it is 6 per cent, in others, 7.

8. If two persons, jointly and severally (see note 3), sign a note, it may be collected by law of either.

9. A note is not valid unless the words *for value received* be expressed.

10. When a note is given, payable in any article of merchandise, or property other than money, deliverable on a specified time, such articles should be tendered in payment at said time, otherwise the holder of the note may demand the value in money.

NOTE. — If, when a note of hand is given, it is not expected that it will soon be paid, it is expedient that it should be attested by a witness; for, in general, the statutes of limitation of the several States limit the right to sue for and recover simple interest debts to suits commenced within six years after they are respectively due, but except witnessed notes of hand from the operation of the statutes.

FORM OF NOTES.

On Time.

\$1,000. Boston, March 5, 1852.

For value received, I promise to pay C. D. or order, one thousand dollars, in three months from date. A. B.

On Demand, with Interest.

\$100. Lynn, April 8, 1852.

For value received, I promise to pay C. D. or order, one hundred dollars, on demand, with interest. A. B.

On Time, with Interest.

\$500. Salem, May 7, 1852.

For value received, I promise to pay C. D. or order, five hundred dollars, in sixty days, with interest. A. B.

Payable by Instalments, with Periodical Interest.

\$2,000. Roxbury, February 2, 1852.

For value received, I promise to pay C. D. or order, two thousand dollars, in the following manner, viz.: five hundred dollars in one year; five hundred dollars in two years; five hundred dollars in three years; and five hundred dollars in four

years from the date hereof with interest on all said sums, payable semiannually. A. B.

Payable in Stock, with Interest.

\$ 50. Lowell, April 10, 1852.

For value received, I promise to pay C. D. or order, fifty dollars, in stock, at my residence, with interest. A. B.

Note by Two Persons.

\$ 500. Concord, March 8, 1852.

For value received, we, jointly and severally, promise to pay C. D. or order, on demand, five hundred dollars, with interest. J. H.
H. W.

Note at Bank.

\$ 150. Waltham, April 14, 1852.

Ninety days from date, I promise to pay C. D. or order, at the Phoenix Bank, one hundred and fifty dollars, for value received. A. B.

RECEIPTS.

A General Form.

\$ 500. Weston, April 5, 1852.

Received of C. D. five hundred dollars, in full of all demands, notes, or accounts against him. A. B.

A Receipt for Money on Account.

\$ 20. Boston, December 1, 1852.

Received of C. D. twenty dollars on account. A. B.

Receipt for Money paid on a Note.

\$ 75. Boston, January 1, 1852.

Received of C. D. seventy-five dollars, on his note for the sum of one hundred dollars, and dated at Dover, December 20th, 1851. A. B.

For Money paid by another Person.

\$ 300. Charlestown, January 1, 1852.

Received of C. D., by the hands of W. T., three hundred dollars, in full payment for a chaise by me sold and delivered to the said C. D. A. B.

For Money received for Another.

\$700.

Boston, May 1, 1852.

Received of C. D. seven hundred dollars, it being for the balance of account due from said C. D. to E. F. A. B.

For a Quarter's Rent.

\$150.

Chelsea, May 3, 1852.

Received of C. D. one hundred and fifty dollars, being one quarter's rent, due this day, for my dwelling-house and estate, No. 1 — Street, now occupied by said C. D. A. B.

ORDERS.

An Order for Goods.

Bristol, April 3, 1847.

Mr. John Stone :

Pay J. N. or order, twenty-five dollars, in goods from your store, and charge Your obedient servant, A. B.

An Order for Money.

Danvers, March 7, 1847.

Messrs. A. T. & Co. :

Pay O. P. or order, eleven dollars, and this shall be your receipt for the same, it being for value received. A. B.

Deeds.

The circumstances attendant upon a deed are the following : — 1. It must be written or printed on parchment or paper. 2. There must be sufficient parties. 3. A proper subject-matter, which is the object of the grant. 4. A sufficient consideration. 5. An agreement properly set forth. 6. It must be read, if desired. 7. It must be signed and sealed. 8. It must be delivered. 9. And attested by witnesses. 10. It should be acknowledged before a competent officer. 11. It ought to be recorded. 12. It is required, in some of the States, that the wife sign the deed, to free the estate conveyed from her right of dower.

Form of a Common Deed.

Know all men by these presents, That I, A. B., of Vernon, for the

consideration of one thousand dollars, received, to my full satisfaction, of C. D., of Tolland, do give, grant, bargain, sell, and confirm unto the said C. D., his heirs and assigns, a certain tract of land described as follows: [here describe the land.] To have and to hold the above granted and bargained premises, with the appurtenances thereof, unto him, the said C. D., his heirs and assigns for ever, to his and their own proper use and behoof. And also, I, the said A. B., do, for myself, my heirs, executors, and administrators, covenant with the said C. D., his heirs and assigns, that at and until the ensembling of these presents, I am well seized of the premises, as a good and indefeasible estate in fee simple, and have good right to bargain and sell the same, in manner and form as is above written, and that the same is free from all encumbrances whatsoever. And furthermore, I, the said A. B., do, by these presents, bind myself and my heirs for ever, to warrant and defend the above granted and bargained premises, to him, the said C. D., his heirs and assigns, against all claims and demands whatsoever.

In witness whereof, I have hereunto set my hand and seal, the first day of November, A. D. one thousand eight hundred and fifty-two.

A. B. [L. s.]

Signed, sealed, and delivered }
in the presence of A. H. }
S. Y. }
N. O. }

Mortgage Deed.

Know all men by these presents, That I, Gerard Astor, of Cambridge, in the County of Middlesex, and State of Massachusetts, yeoman, for and in consideration of ——— dollars, paid by Lawrence Howard, of Boston, in the county of Suffolk, merchant, the receipt whereof I do hereby acknowledge, have given, granted, bargained, sold, and conveyed, and do hereby give, grant, bargain, sell, and convey unto the said Howard and his heirs and assigns for ever [and here follows a description of the premises].

To have and to hold the afore-granted premises to the said Howard, his heirs and assigns, to his and their use and behoof for ever. And I do hereby, for myself, my heirs, executors, and administrators, covenant and engage to and with the said Howard and his heirs and assigns, that I am lawfully seized in fee of the afore-granted premises; that they are free of all encumbrances;

that I have good right to sell and convey the same to the said Howard; and that I will, and my heirs, executors, and administrators shall, warrant and defend the same premises to the said Howard, his heirs and assigns for ever, against the lawful claims and demands of all persons.

Provided, nevertheless, That if the said Gerard Astor, his heirs, executors, administrators, or assigns, pay to the said Howard, his heirs, executors, administrators, or assigns, the sum of seventy-five hundred dollars, in three years from this date, then this deed, as also a certain note bearing even date with these presents, given by the said Astor to the said Howard, to pay the same sum at the time aforesaid, shall be void and of no effect, otherwise shall remain in full force and virtue.

In witness whereof, I, the said Astor, have hereunto set my hand and seal, this eighteenth day of November, in the year of our Lord one thousand eight hundred and fifty-two.

GERARD ASTOR. [L. s.]

Signed, sealed, and delivered in presence of us, MATTHEW HODGES,
SETH B. FREEMAN.

Quitclaim Deed.

Know all men by these presents, That we, Abner Bowman, John Bowman, Henry Bowman, all of Pepperell, in the County of Middlesex, farmers, and Adelaide Bowman, also of said Pepperell, single woman, in consideration of two thousand dollars to us paid by Henry Smith, of said Pepperell, trader, the receipt whereof is hereby acknowledged, do hereby grant, remise, release, and for ever quitclaim unto the said Henry Smith, his heirs and assigns, a certain farm and tract of land, consisting of about fourteen acres, more or less, with all the buildings thereon standing, known as the Bowman Farm; and being the same which descended to us from our father, Abner Bowman, deceased.

To have and to hold the afore-mentioned premises, with all the privileges and appurtenances thereunto belonging, to him the said Henry Smith, his heirs and assigns, for ever; so that neither we, the said grantors, nor our heirs, or any other person or persons claiming from or under us or them, or in the name, right, or stead of us or them, shall or will, by any way or means, have, claim, or demand any right or title to the aforesaid premises, or their appurtenances, or to any part or parcel thereof, for ever.

That we will warrant and defend the same from all encumbrances, so far as made by us, but not otherwise.

In witness whereof, We, the said Abner Bowman, John Bowman, Henry Bowman, and Adelaide Bowman have hereunto set our hands and seals, this tenth day of March, in the year of our Lord eighteen hundred and fifty-two.

ABNER BOWMAN,	[L. S.]
JOHN BOWMAN,	[L. S.]
HENRY BOWMAN,	[L. S.]
ADELAIDE BOWMAN.	[L. S.]

Signed, sealed, and delivered in presence of us, }
 ICHABOD JOHNSON,
 EDWARD CARNER. }

Warranty Deed.

Know all men by these presents, That I, Royal Ballard, of Dedham, in the County of Norfolk, and State of Massachusetts, merchant, for and in consideration of three thousand six hundred dollars, paid by Timothy Alger, of Framingham, County of Middlesex, farmer, the receipt whereof is hereby acknowledged, do hereby give, grant, bargain, sell, and convey unto the said Timothy Alger [and here follows a description of the premises].

To have and to hold the above premises, with the privileges and appurtenances thereto belonging, to the said Timothy Alger, his heirs and assigns, to his and their use and behoof for ever.

And I, the said Royal Ballard, for myself, my heirs, executors, and administrators, do covenant with the said Timothy Alger, his heirs and assigns, that I am lawfully seized in fee of the afore-granted premises; that they are free from all encumbrances; that I have a good right to sell and convey the same to the said Timothy Alger, as aforesaid; and that I will, and my heirs, executors, and administrators shall, warrant and defend the same to the said Timothy Alger, his heirs and assigns, for ever, against the lawful claim and demands of all persons.

In witness whereof, I, the said Royal Ballard, and Mary Ballard, wife of said Royal Ballard, in token of her relinquishment of her right of dower, have hereunto set our hand and seal, this first day of April, in the year of our Lord eighteen hundred and fifty-two.

ROYAL BALLARD,	[L. S.]
MARY BALLARD.	[L. S.]

Signed, sealed, and delivered in presence of us, }
 GIDEON WHEELER,
 LOUIS SEARS. }

FORM OF A WILL.

Be it remembered, that I, A. B., of Lynn, County of Essex, State of Massachusetts, farmer, being weak in body, but sound in mind and memory, do make and publish this my last will and testament, in manner following, to wit: [Here state the disposition of the property, personal, notes, cash, real estate, &c.] And lastly, I appoint T. H. the executor of this my last will and testament.

In witness whereof, I hereby set my hand and seal, this tenth day of May, in the year of our Lord one thousand eight hundred and fifty-two. A. B. [L. s.]

Signed, sealed, and acknowledged }
in presence of C. D. }
E. F. }

GENERAL FORM OF AN AGREEMENT.

Articles of agreement, indented, made, and concluded this — day of —, A. D. 18—, by and between A. B., of —, in the county of —, of the one part, and C. D., of —, in the county of —, on the other part.

The said A. B.; for the consideration hereinafter mentioned, doth hereby covenant and agree that [Here state the agreement].

And the said C. D. doth hereby covenant and agree that [Here again state the agreement].

To the true performance of the several covenants and agreement aforesaid, the said parties do hereby respectively bind themselves, and their respective heirs, executors, and administrators, in the penal sum of — dollars.

In testimony whereof, they have hereto interchangeably set their hands and seals, the day and year above written.

Signed, sealed, and delivered } A. B. [seal.]
in presence of E. F. } C. D. [seal.]
G. H. }

A BILL OF SALE.

Know all men by these presents, That I, Cyrus Ingalls, of the town of Greenfield, County of Franklin, and State of Massachusetts, trader, for and in consideration of the sum of twenty-five hundred dollars, to me in hand paid by Mark Moseman, of the

same place, at and before the sealing and delivery of these presents, the receipt whereof is hereby acknowledged, have bargained, sold, and delivered, and by these presents do bargain, sell, and deliver, unto the said Mark Moseman, [here insert the particulars of the goods sold,] to have and to hold the said goods unto the said Mark Moseman, his executors, administrators, and assigns, to his and their own proper use and benefit, for ever. And I, the said Cyrus Ingalls, for myself, my heirs, executors, and administrators, will warrant and defend the said bargained goods, unto the said Mark Moseman, his executors, administrators, and assigns, from and against all persons whomsoever.

BONDS.

Bonds are of two kinds, *simple* and *penal*. A *simple bond* is an obligation to pay a certain amount of money, or to perform, or not to perform, some specified act. A *penal bond* is given to secure the performance of some agreement, and a condition, annexed to the bond, contains the terms of it.

Form of a Simple Bond.

Know all men by these presents, That I, A. B., of Somers, am holden and firmly bound to C. D., of Vernon, in the sum of five thousand dollars, to be paid to the said C. D., or his certain attorney, executors, or administrators, or assigns; for which payment, well and truly to be made, I bind myself, my heirs, executors, and administrators firmly by these presents. Signed with my hand, sealed with my seal, and dated Nov. 1st, 1850.

ALFRED BOND. [L. S.]

Signed, sealed, and delivered in the }
presence of JOHN H. CUNE. }

POWER OF ATTORNEY.

An *attorney* is a person legally authorized to act instead of another.

Know all men by these presents, That I, A. B., of Tolland, do hereby ordain, constitute, and appoint C. D., of Vernon, my true and lawful attorney, for me, and in my name, to demand, sue for, recover, and receive, from all persons whatever, all sums of money and debts due to me, and all claims and demands, and to give sufficient acquittances therefor; and to adjust, settle, or

compound all debts or demands due to me, and to institute proper suits for the recovery thereof, and the same to pursue to final judgment and execution; and I hereby ratify and confirm what my said attorney shall lawfully do in the premises.

In witness whereof, I have hereunto set my hand and seal, the
 — day of —, A. D. —. A. B. [L. s.]

LETTER OF CREDIT.

Tolland, Nov. 1st, 1850.

Theodore Stearns & Co.:

Please to deliver to C. D., of Vernon, or his order, goods and merchandise to an amount not exceeding one hundred dollars in value; and, on your doing so, I hereby hold myself accountable to you for the payment of the same, in case the said C. D. should not be able so to do, or should make default, of which default you are required to give me reasonable and pr per notice.

Your obedient servant,

A. B.

SIMPLE FORMS OF LEASE.

Landlord's Agreement.

This is to certify, that I, A. B., of Hartford, Hartford County, and State of Connecticut, have this day let and rented unto B. C., of said Hartford, a certain dwelling-house or tenement, situated in said Hartford, (No. 1 Main Street,) now or lately in the occupation of C. D., with all the shops, cellars, and appurtenances, and the sole and uninterrupted use and occupation thereof for the term of one year, to commence on the first day of April, A. D. 1850, at the yearly rent of three hundred dollars, payable quarterly. Said premises not to be underlet, but by the consent and permission of the lessor.

In witness whereof, I have hereunto set my hand and seal, the twentieth day of March, Anno Domini 1850.

A. B. [seal.]

Signed, sealed, and delivered }
 in presence of D. E.
 F. G.

Tenant's Agreement.

This is to certify, that I, B. C., of Hartford, Hartford County,

and State of Connecticut, have hired and taken from A. B., of said Hartford, a certain dwelling-house or tenement, situated in said Hartford, (No. 1 Main Street,) now or lately in the occupation of C. D., with all the shops, cellars, and appurtenances, and the sole and uninterrupted use and occupation thereof, for the term of one year, to commence the first day of April, A. D. 1850, at the yearly rent of three hundred dollars, payable quarterly. And I do hereby promise to make punctual payment of the rent in manner aforesaid, and quit and surrender the premises, at the expiration of the said term, in as good state and condition as reasonable use and wear thereof will permit, dangers by the elements excepted. And provided said rent shall remain unpaid twenty days after the same falls due, said lessor shall be at liberty to reënter and take possession of said premises without notice, and said lease shall thereby become void.

B. C.

Hartford, March 20th, A. D. 1850.

Surety.

In consideration of the letting of the premises above described, and for the sum of one dollar, I hereby become surety for the punctual payment of the rent, and performance of the above written agreement, to be paid and performed by said lessee; and if any default shall be made therein, I do hereby promise and agree to pay unto the above-named lessor such sum or sums of money as will be sufficient to make up such deficiency, and fully satisfy the conditions of the said agreement, without requiring any notice of non-payment, or proof of demand being made.

Hartford, March 20th, A. D. 1850.

G. H.

Assignment of a Lease.

Know all men by these presents, That I, Benjamin Roberts, the lessee within named, for and in consideration of three hundred and seventy-five dollars, to me in hand paid by Matthew Lincoln the receipt whereof I do hereby acknowledge, have granted, assigned, and set over, and by these presents do grant, assign, and set over, to Matthew Lincoln, his heirs and assigns, the within indenture or lease, together with all and singular the premises hereby demised, with appurtenances; to have and to hold the same unto the said Matthew Lincoln, his heirs and assigns, for the residue of the term within mentioned, under the yearly rents and covenants within reserved and contained on my part to be done,

kept, and performed. Witness my hand and seal, the first day of April, one thousand eight hundred and forty-four.

BENJAMIN ROBERTS. [L. S.]

Sealed and delivered in the
presence of A. B.
C. D. }

Notice to a Tenant to quit.

Sir: Being in possession of a certain house and lot of ground, with the appurtenances belonging to me, situate in Summer Street, in Boston, which was demised to you by me for the term of five years, which said term will expire on the twenty-first day of March, I hereby notify you that it is my desire to have again and repossess the said premises, and I do hereby require and demand you to leave the same.

Witness my hand, this first day of March, 1847. T. P.

AGREEMENT OF COPARTNERSHIP.

A. B., of —, and C. D., of —, agree as follows: The parties agree to become partners for the purpose of buying and selling such goods as are usually kept for sale or purchased at a retail store, in the town of —, for five years from this date.

1. The style of said copartnership shall be, &c.

2. Said parties have each contributed — dollars, as the capital of said firm (or as the case may be).

3. All profits shall be equally divided; and all expenses of the business, and losses, shall be equally borne in common.

4. Both parties shall give all their time and attention to the business of said firm, for the common benefit; and neither party shall engage in any trade or business for his private benefit.

5. An account of stock shall be taken, and the accounts between said parties shall be settled as often as once in every year, and oftener, if requested in writing by either party.

6. At the close of the partnership, the stock, property, and debts shall be equally divided, after paying the debts and liabilities of the firm. [Here insert any other conditions desired.]

Witness our hands and seals, this — day of —, A. D. 18—.

A. B. [seal.]

C. D. [seal.]

Signed, sealed, and delivered
in presence of E. F.
G. H. }

LEGAL RELATION OF HUSBAND AND WIFE;

Showing the Rights of Married Women in Regard to Holding Property, &c.

The effect produced by marriage on the legal rights of the parties is important to be known in every family.

1. In law, husband and wife are considered one person; and on this principle all civil duties and disabilities rest.

2. The wife cannot sue in her own name.

3. If she suffers injury or wrong in her person or property, she can, with her husband's aid and concurrence, prosecute for redress; but the husband must always be the plaintiff. In criminal cases, however, the relation assumes a new form. The wife may, in criminal cases, be prosecuted and punished.

4. The wife can make no contract with the husband, nor the husband with the wife. The disability is involved in the first principle, which makes them legally one. But they may contract through the agency of trustees, the wife being under the protection of the husband.

5. All contracts made between them before marriage are, of course, dissolved on that event.

6. The husband cannot convey lands or rent estates to his wife directly; but he may settle them on her through a trusteeship. The wife may release her dower to his grantee. As it respects the bequest, the husband can always devise real estate to his wife.

7. Upon marriage, the husband becomes possessed of all right and title to her property, whether personal or real, and at the same time he becomes liable for all her debts, and must fulfil all her contracts made prior to the union.

8. If the wife die before the husband, and there be issue, his heirs succeed to her real estate.

9. But in case of no issue, the husband remains in possession of her land during her lifetime only, and at her demise, they go to the heirs of his wife.

10. All debts due to the wife become, after marriage, the property of the husband, who becomes invested with power to sue on bond, note, or any other obligation whatever, to his own and exclusive use. The powers of discharge and assignment, and change of securities, are, of course, devolved in the leading principle.

11. If he die before the recovery of the money, or the change of securities, the wife becomes entitled to the debts in her own right.

12. All personal property of the wife, such as money, goods, movables, and stocks, becomes absolutely the property of the husband upon marriage ; and on his death goes to his heirs.

13. Property may be secured to the use of the wife, by deeds of marriage settlements, in order to secure the wife a comfortable competence against the vicissitudes of life, or the cruelty of her husband.

14. Property may be settled on the wife after marriage by the husband, provided he be solvent at the time, and the transfer not made with a view to defraud creditors. The wife, of course, cannot devise lands, but any personal or real estates settled upon her in trust, she may bequeath ; or any savings from property given to her separate use.

15. The husband is bound to provide his wife with all necessaries suited to her condition in life ; and of course becomes liable for debts contracted by her for superfluities or extravagancies.

16. The husband and wife cannot be witnesses against each other, in either civil or criminal prosecutions.

17. One exception to this rule exists, where the law respecting the personal safety and life of the wife permits her to give testimony for her protection.

18. In Massachusetts, a wife may hold property not subject to the control of her present or any future husband.

MODE OF PROCURING PATENTS IN THE UNITED STATES.

The Details explained.

Caveat. — This is an instrument very little understood, and in most cases is uselessly and ignorantly obtained under the erroneous belief that it *secures* the invention. Let it be understood that an invention is never secured by *law* until the *patent issues*. The caveat is merely a notice of time, and when brought into play, is simply a proof of its own *date and of its own contents*.

The moment an inventor conceives a novel *idea*, promising utility and value, let him decide how soon he will or *can* bring it out, and secondly how *privately*. If he cannot do it speedily, though in private, let him at once get his *caveat* prepared and

entered. If he delays, or noises his idea about, the caveat can scarcely prove of more value than *waste paper*.

Models. — As soon as arrangements are made to start the invention, the patent papers should be forwarded. If the case requires to be illustrated by a model, one should be prepared. This should be as small as a distinct representation of the machine by it will permit. Inventors often err grossly in preparing their models, making them usually much too large, and oftentimes needlessly expensive. Whenever they have a doubt on this point they should seek competent advice, as often the most costly models are rejected at the Patent-Office.

Drawings. — This part of a patent should always be made by the party who prepares the specification. The best draughtsman has in this no advantage over the poorest, unless he is fully competent to complete the business, or is under the immediate instruction and supervision of him who is to do so, for he must know what to represent, and what parts to leave out, as unless these are perfect, they may invalidate the power of the best specification that can be written. They are not required to be elaborate, as works of art, but, on the contrary, as simple as the nature of the case will permit.

Specifications and Claim. — On this it is not deemed necessary to enlarge. No inventor can possibly be ignorant of the essential requisites in these parts of a patent, as in these are the life of the instrument. Show to a jury its defects, and it is so broken that its beauties too often fall with the weak points. All the aid an inventor may avail himself of to render perfect this part of his patent, is clearly gain, whatever he may pay for it; for the patent is less likely to be infringed; lawsuits are saved, and, if he wishes to sell, it will command a higher price.

Extension of Patents beyond Fourteen Years. — Patentees not having been sufficiently rewarded during the term of their patent, may obtain an extension of the same for seven years, under Act of Congress (Patent Laws, p. 186). This extension excludes all assignees under the original patent, unless there were covenants of like renewals to them. The petition for this extension must be made before the patent expires, or it cannot be effected: and as there is much form involved, and many papers to be prepared in making the petition, ample time should be taken; say about one year before the expiration of the term. It can be done in less time, but the delay incurs increased risk, and preparing patent matters in haste is always prejudicial to complete security.

It may be well to remember that the heirs of an inventor are entitled to obtain an extension of the patent, in every case in which it would be allowed to the party himself, were he still living.

Additional Improvements. — Whenever an inventor makes an improvement on any work for which he has obtained a patent, the law provides for the addition of it to the patent; and when the improvement is made soon after the date of the original, it is a less expensive course than to obtain a new patent; but the exclusive title to the improvement will expire with the term of the original grant. The proceedings required to procure these additions are special; the preparation of the documents involving the same care as for original applications, and with particular references to the case on which they are based.

CHAPTER XIV.

CHAIRMAN'S DIRECTORY:

OR GUIDE TO THE RULES OF PUBLIC DEBATE.

Choice of a Chairman.

1. THE chairman selected should be a man held in respect.
2. He should be a man of maturity and commanding personal appearance.
3. He should possess a fitness for the office. This includes standing in society, intelligence, business tact, self-possession, &c.
4. The chairman should be chosen in small meetings by nomination; and each person named, the motion being seconded, should be voted for until a choice is made.
5. The chairman chosen should always be properly conducted to the chair, and he may be introduced to the meeting in a brief speech.
6. On taking the chair, a few words of remark on the part of the chairman is in order, and generally expected.

The Rights and Duties of the Chairman.

7. In a public meeting, the chairman should be elevated above the assembly.

8. It is improper for the chairman to hold conversation with any person while the floor is occupied by a speaker.

9. No person should accept the office of chairman unless he is prepared to resign all thoughts of promoting any private views of his own.

10. When a motion is presented to the meeting, it should be read by the chairman, and objections called for; there being none, the motion should be put to the meeting, and decided by a majority of votes.

11. Persons wishing to advocate the motion should be allowed to do so.

12. If there be an objection, it must take one of the following shapes; it must be an *amendment*, or *negative*, or to *postpone*, or for the *previous question*, or to *adjourn the meeting*.

13. The right of reply, as it is termed, exists in the mover of an original proposition; but belongs not to the mover of an amendment.

14. The rule of speaking is one speech for each person, on each motion.

15. If a vote be doubted, it will be the duty of the chairman to "divide the *house*," and decide the question by count.

16. If there be amendments to an original motion, the amendments must be acted upon first.

17. At an adjourned meeting, the chairman should cause the minutes of the last meeting to be read.

18. If it is desirable to get rid of a chairman, it may be done, 1st, by refusing to do any business; or 2d, by an adjournment of the meeting *sine die*.

19. No speaker should be interrupted while speaking, unless called to a point of order by the chairman.

20. When a point of order is raised, the person speaking should cease, and await the decision of the chairman.

21. When several persons rise to speak at the same time, the preference should be given to the one whose eye was first caught by the *chairman*.

CHAPTER XV.

THE LADIES' MIRROR OF COOKERY:

CONTAINING FULL DIRECTIONS FOR THE COOKERY OF MEATS, VEGETABLES, PUDDINGS, PIES, BREAD, CAKES, ETC., IN ALL THEIR VARIETY.

CARVING. — 1. In carving, use a *light, sharp knife*, and grasp it firmly.

2. Have the dish near you, so as to render the task easy.

3. A portion of the best and poorer pieces should be served together.

COOKING MEAT. — 1. *Roast Beef*. — The sirloin is the best for roasting. From fifteen to twenty minutes to the pound is the rule for roasting.

2. *Boiled Beef*. — The flank and brisket are good boiling pieces. Boil slow from two to three hours.

3. *Beefsteak*. — Rump or sirloin is the best for steak. Broil quick over hot coals.

4. *Roast Pork*. — Take a leg, season and stuff it; then roast three hours for eight pounds.

Cook the shoulder, loin, and sparerib in the same way.

5. *Pork Steaks*. — Cook them over a clear fire, and season with salt and pepper while cooking.

6. *Broiled Ham*. — Soak the slices in cold water before broiling. Serve with fried eggs.

7. *Sausages*. — Fry them till they are brown, over a slow fire.

8. *Roast Mutton*. — Prepare it the same as beef. Cook over a good fire, six pounds to one hour.

9. *Roast Veal*. — The same as pork, till it comes to a good brown color.

These general directions will serve as a guide, to be varied from according to circumstances and judgment of the cook.

10. FOR BOILING. — All kinds of boiled meats require a quarter of an hour to a pound. Fresh meat must be put into hot water, and salt meat into cold.

11. *Eggs*. — Three minutes boils an egg soft; in four minutes the white will be cooked; in ten it will be hard enough for salad.

POULTRY. — Poultry requires a quick fire. Baste often, till it is done.

1. *Turkey*.—A good-sized turkey requires two hours roasting; slow at first. Make the stuffing of cracker, pork, sage, savory, and egg; season with pepper.

2. *Boiled Turkey*.—Stuff the crop, and sew it up; boil slowly till it is done. Put a little salt in the water.

3. *Roast Ducks and Geese*.—Stuff as usual, only add an onion and more sage. Roast till it is done brown. Use only pepper and salt in the gravy for teal, pigeons, and all wild fowl.

4. *Roast Chicken*.—Manage chickens same as turkey, only roast about half the time.

5. *Boiled Chicken*.—The same as turkey, only boil a longer time,—say thirty-five minutes.

6. *Broiled Chicken*.—Slit them down the back, and broil over clear coals; turn and broil to a fine brown. Season with pepper and salt.

7. *Boiled Pigeons*.—Boil fifteen minutes, and serve with boiled bacon and melted butter. They may be roasted or broiled. Cover the breast with slices of pork.

GRAVIES.—The gravy which flows from the meat is best. Thicken with a little flour and water, with seasoning.

For a fowl, stew the neck, gizzard, and liver in a little water; then add melted butter and seasoning to suit.

SOUPS.—1. *Beef Soup*.—Cut three pounds of beef in fine pieces, four quarts of water, a handful of sifted bread, and season with salt, pepper, turnips, onions, and a little celery. Stew four hours.

2. *Oyster Soup*.—Take a pint of oysters, and stew five minutes in their own water; season with salt, pepper, and nutmeg; thicken with pounded cracker.

FISH.—In choosing, see that the gills are red, the eyes full, and the flesh firm.

1. *Boiled Fish*.—Boil over a slow fire, and skim frequently. Be careful that the water does not boil away. Put a little salt in the water.

2. *Halibut*.—This fish may be *baked*, *boiled*, or *fried*. The baked and boiled should be served with melted butter.

3. *Pan Fish*.—Fry them in sweet pork fat till they are well browned.

VEGETABLES.—In boiling vegetables, the water should be hot before putting them in. It is always better to boil each separately when convenient. Some kinds require more cooking than others. A good judgment, joined with experience, will soon regulate the time.

FRUITS, JELLIES, PRESERVES, &c. — Acid fruits should always be cooked in bright tin, or brass, and poured out as soon as done.

Strong Apple-Sauce. — Boil down new, sweet cider till it is nearly as thick, when cold, as molasses. Pare and quarter your apples, and put them into some hot sirup. Cover and do them over a slow fire, until tender. Put some molasses with the sirup, unless a part of the apples are sweet. This will keep good through the winter.

Boiled Pears and Apples. — Boil them whole in a small quantity of water, until they begin to soften; then add a little sugar or molasses, and finish.

Raspberry Jam. — Weigh equal quantities of fruit and sugar. Put the fruit into a preserving pan, and mash them with a silver or wooden spoon. Let it boil up, then add the sugar. Stir it well.

Cranberry Jelly. — To one quart of berries, put one pint of water and one pint of sugar, and let them boil half an hour without stirring; then take off the jelly with a spoon, and what remains makes good sauce.

Preserved Citron. — Pare and cut open the citron; clean all out except the rind; boil till soft. To a pound of citron add one pound of sugar, and a lemon to each pound; put the sugar and lemon together, and boil it till it becomes a sirup, skimming it well; then put the sirup and citron together, and boil it an hour.

BISCUITS. — *Soda Biscuit.* — Take one quart of flour, two teaspoonfuls of cream of tartar, one teaspoonful of salt, one of saleratus or soda, and a small piece of butter for shortening. Mix with water.

TO MAKE GOOD BROWN BREAD. — Take one quart of Indian meal, and three pints of rye meal; put it into a pan and turn a half-cupful of molasses and two teaspoonfuls of ginger into it. Take some saleratus and dissolve it in warm water, enough to mix the meal rather soft; let it remain in the pan to rise over night. When light enough, put it into pans and bake it. Bread made thus will not sour so quick as when yeast is put into it.

SUPERIOR INDIAN CAKE. — Take two cups of Indian meal, one table-spoonful of molasses, two cups of milk, a little salt, a handful of flour, and a little saleratus; mix thin, and pour it into a buttered bake-pan, and bake half an hour.

BAKERS' GINGERBREAD. — Three fourths of a pound of flour, one quart of molasses, one fourth of a pound of butter, one ounce of saleratus, and one ounce of ginger.

SAUCES AND CREAMS FOR PUDDINGS. — 1. Take equal quantities of sugar and molasses, boil them together, and stir in a little flour.

2. Take the juice of an orange, a cup of sugar, and the same of good cream.

PUDDINGS. — *Baked Indian Pudding.* — Scald a quart of milk, and stir in seven table-spoonfuls of Indian meal, a teaspoonful of salt, a teacup of molasses, and a table-spoonful of ginger or cinnamon. Bake three or four hours. If you want whey, you must pour in a little cold milk after it is all mixed.

Plum Pudding Baked. — Pound six crackers, and soak them over night in milk enough to cover them; then add three pints of milk, four or five eggs, one half-pound of raisins, and spice it with nutmeg; sweeten it with sugar and molasses. Bake about two hours.

Custard Pudding Baked. — Take five eggs to a quart of milk, sweetened with brown sugar or molasses; spice with cassia or nutmeg; a little salt. Bake fifteen or twenty minutes.

Tapioca Pudding. — Pick and wash a coffee-cupful of tapioca, and pour upon it a pint of boiling milk. After standing half an hour, add another pint of cold milk, with sugar, and raisins if you like.

Baked Rice Pudding. — Put half a pound of rice into a deep dish, with half a gallon of milk, a quarter of a pound of sugar, half that quantity of butter, and a little powdered allspice. Bake slowly.

Bread Pudding. — Pour boiling water over some thin slices of bread, and cover close; when well soaked, beat it fine, add three eggs well beaten, a little nutmeg, and sugar to taste. Put it into a basin, tie it over with a floured cloth, and put it into boiling water; serve with melted butter.

Batter Pudding. — Rub smooth three spoonfuls of fine flour into a pint of milk, simmer till it thickens, and stir in two ounces of butter; set it to cool, add the yolks of three eggs, and put it into a buttered basin; tie it tight, plunge it bottom upwards into boiling water, and boil an hour and a half.

RULES IN MAKING CAKES. — 1. In making cakes, if you wish them to be pleasing to the eye, as well as the palate, use double-refined white sugar; although clean brown sugar makes an equally good cake.

2. None but good, sweet butter should be used for cake-making; if the butter should be a little salt, it will do no harm. Butter in the least degree rancid or strong will spoil any cake.

3. Cake mixture cannot be beaten too much.

4. An oven, to bake well, must have a regular heat throughout.

CAKES. — *Wedding Cake.* — Four pounds of flour, three pounds of butter, three pounds of sugar, four pounds of currants, two pounds of raisins, twenty-four eggs, half a pint of brandy, one ounce of mace, three nutmegs, half a pound of citron, and a little molasses. Bake from two to three hours.

Icing for Cakes. — Beat the whites of eggs to an entire froth; to each egg add five spoonfuls of sifted loaf-sugar; gradually beat it a great while. Put it on while your cake is hot, and set it in a warm oven to dry..

Pound Cake. — One pound of flour, one of sugar, one of butter, eight eggs, three spoonfuls of rose-water, or one nutmeg.

Loaf Cake. — Two pounds of flour, half a pound of sugar, quarter of a pound of butter, two eggs, a gill of sweet yeast, a large spoonful of lemon, brandy, or rose-water, a little cinnamon, nutmeg, or cloves; if it is not as thin as white-bread dough, add a little milk.

Sponge Cake. — Ten ounces of flour, a pound of powdered loaf-sugar, twelve eggs, rose-water, lemon, or nutmeg for spice, and a teaspoonful of saleratus.

Election Cake. — Four pounds of flour, three quarters of a pound of butter, four eggs, one pound of sugar, one pound of currants, or raisins, half a pint of good yeast; wet it with milk as soft as it can be, and be moulded on a board. Set it to rise over night, in winter; in warm weather, three hours is usually enough for it to rise.

PIES. — *Mince Pies.* — Take one quart of wheat or rye bread, and one quart of sour apples, after they are chopped fine, one pint of sugar-house molasses, one pint of cream or milk, one pint of chopped raisins, two large spoonfuls of cinnamon, one teaspoonful of salt, the juice of six lemons, and the rind of one grated.

Apple Pies. — Peel and stew the apples, mash them fine with sugar, a little butter, and grated nutmeg or lemon-peel; bake in a rich crust and quick oven, but not hot enough to scorch.

Custard Pies. — Allow six or eight beaten eggs to a quart of milk, and sweeten with sugar. Do not bake them too much. It is a good plan to put the crust on the plates, prick and bake them, before pouring in the custard.

Cranberry Tarts. — Put two pounds of sugar into two quarts of cranberries, wet with water, and stew them until done. When wanted for use, put them on a puff-paste crust.

Squash Pies. — Boil and sift the squash, and make them exactly like pumpkin pies.

PICKLES AND CATCHUPS. — A method of pickling cucumbers, which is good, is to put them in salt and water as you pick them, changing the salt and water once in three or four days. When you have done collecting your cucumbers for pickling, take them out of the salt and water, turn on scalding hot vinegar, with alum and salt in it.

To Pickle Vegetables. — Soak them for about one day in brine, then drain them, put them into bottles, and pour on them boiling vinegar, until quite covered. Cork immediately.

Tomato Pickles. — Take one peck of tomatoes gathered green, and one third as many peppers; soak them in cold water twenty-four hours; cold, sharp vinegar enough to cover, with one ounce of bruised cloves to a gallon of vinegar. Tomatoes pickled in this way will keep one year.

Peppers. — Take those that are fresh and green, soak them in salt and water eight or nine days, changing the brine each day, and keeping them in a warm place. If they are not wanted very fiery, make a slit in them and extract the seeds.

Tomato Catchup. — Take six pounds of tomatoes, and sprinkle with salt; let them remain a day or two, then boil, and press through a coarse sieve or colander. Put into the liquor half a pint of vinegar, cloves, pepper, ginger, and cinnamon; boil them one third away. Bottle tight. It should be shaken before being used.

YEASTS. — *Potato Yeast.* — Boil potatoes soft, peel and mash them, and add as much water as will make them of the consistence of common yeast; while the potatoes are warm, put in half a teacupful of molasses, and two table-spoonfuls of yeast. Let it stand near the fire until done fermenting, when it will be fit for use.

Hop Yeast. — In two quarts of water boil a handful of hops, strain, and pour the liquor hot upon half a teacupful of wheat flour. When about milk-warm, add a teacupful of yeast. Let it ferment, when it will be ready for use and may be bottled.

A REFRESHING DRINK IN A FEVER. — Put a little tea-sage, two sprigs of balm, a *little* wood-sorrel, into a stone jug, having first washed and dried them; peel thin a small lemon, and clear from the white; slice it, and put a bit of the peel in; then pour in three pints of boiling water, sweeten, and cover it close.

CHAPTER XVI.

THE LADY'S LOOKING-GLASS OF FASHION AND POLITENESS.

1. A LETTER of introduction, note of invitation, or reply, should always be inclosed in an envelope.
2. A letter of introduction should always inclose the card and address of the person introduced.
3. Notes of invitation should always be sent in the name of the lady of the house.
4. Invitations should be answered within two days.
5. Notes of invitation should not be sealed.
6. Figured and colored paper is out of style; pure white paper, with gilt edges, is more strictly in good taste.
7. It is considered a mark of respect to commence a letter towards the middle of the page.
8. Printed cards should be used when the party is large.
9. All letters should be sealed and subscribed so as to give room for the postmark without defacing the superscription.

Models of Invitation Cards and Notes.

The usual form is simply:—

Mrs. —— requests the pleasure of Mr. and Mrs. ——'s company on Thursday evening, at eight o'clock.

Separate notes should be sent to the sons and daughters, if their company is wished.

The answer should be as follows:—

Mr. and Mrs. —— accept with pleasure Mrs. ——'s invitation for Thursday evening next.

If a refusal is sent, it should be expressed thus:—

Mr. and Mrs. —— regret that it will not be in their power to accept Mr. and Mrs. ——'s invitation for Thursday evening next.

The date should always be put at the bottom of the note on the left-hand side.

How to Address a Lady.

We address a married lady, or widow as Madam, or by

name, as Missis or Mistress Jones. In answering a question, we contract the madam to ma'am, as, "Yes, ma'am,"—"No, ma'am,"—"Very fine day, ma'am."

A young lady, if the eldest of the family, unmarried, is entitled to the surname, as Miss Smith, while her younger sisters are called Miss Mary, Miss Julia, &c. The term "Miss," used by itself, is very inelegant.

Rules to be observed in Conversation.

1. Address yourself to the capacity of those to whom you speak.
2. Direct your conversation to such subjects as you know to be agreeable to the company.
3. Good humor and wit is the charm of conversation.
4. It is not impolite to laugh, in company, when there is any thing amusing going in.
5. Nothing is more annoying than to be frequently interrupted in conversation.
6. Contradiction is the greatest rudeness any person can be guilty of.
7. Whispering in company is highly improper.
8. Never attempt to take the lead in conversation.
9. It is not good taste for a lady to say, "Yes, Sir," and "No, Sir," to a gentleman.
10. Due deference should always be paid to the aged.

The Styles of Dress best suited to Different Complexions.

Every lady should study and determine what dress and hat best become her form and complexion. In America there is not the distinction made in the style of dress it is necessary there should be, between a tall and a short, or a slender and a thick person, or a dark or light complexion, but all must dress in the latest fashion, however unbecoming it may be.

1. *The Hat.*—A delicate pale complexion should wear a pink lining, but where there is color with it, blue or straw-color should be worn. A brunette or dark complexion should wear white lining, with a delicate rose trimming; never black, unless unavoidable. A large person, with prominent features, should never wear a small hat. The reverse with small persons. An extremely red or yellow complexion should not wear high colors. Yellow, lilac, and red are the most trying colors to the complex-

ion. A close cottage is generally becoming, and never considered unfashionable.

2. *The Dress.* — Suit the dress to the complexion, the same as the hat. A short figure should not wear so full a skirt as a tall one. Every species of drapery is graceful to a tall figure, and may be worn to advantage. Tight sleeves without trimmings are becoming to full forms, the medium height, or below it. To a tall, slender figure, with long arms, they are very ungraceful, unless trimmed with folds or drapery.

3. *Flounces.* — Flounces are graceful upon tall persons, whether slender or otherwise, but never upon diminutive ones.

4. *Tucks.* — Tucks are equally graceful upon both, and never look out of fashion. A couple of wide tucks, which give the appearance of two skirts, are very beautiful for an evening dress, made of delicate materials. Any species of trimming down the front or sides of the skirt increases the apparent height. Capes are only becoming to persons with falling shoulders, unless made to fit the form.

5. *High-neck Dresses.* — High-neck dresses are simple and generally becoming; upon a very high-shouldered person a low-necked dress is more appropriate, and if the shoulders are only moderately high, the neck may still be covered and the dress finished off about the throat with a narrow piece of lace, instead of a collar. Dresses with loose backs are only becoming upon very fine and slender figures.

6. *Evening Dresses.* — Evening dresses of transparent materials look well when made high in the neck; but upon very young girls it is more graceful to cut the dresses low, leaving part of the shoulders exposed. A dress should always be made loose over the chest and tight over the shoulder-blades. Long sashes fastened in front are more becoming than belts, unless there is much trimming upon the dress. Cuffs or narrow lace at the wrist finish the dress, and give the hands a small appearance. The effect of a well-made tournure (or bustle) is to make the waist look round and delicate. An extremely small and waspish-looking waist can never be considered handsome. It is exceedingly hurtful to those who attain it by tight-lacing, and doubly ungraceful, since it prevents all graceful movements.

7. *Short Cloaks.* — Short cloaks are very unbecoming to short and clumsily built persons, but to a tall figure the reverse.

Various Styles of Dressing the Hair.

1. *Dressing the Hair.* — Light hair is generally most becoming when curled. For an oval face, long and thick ringlets are suitable; but if the face is thin and sharp, the ringlets should be light, and not too long. Open braids are very beautiful when made of dark hair. A simple and graceful mode of arranging the hair, is to fold the front locks behind the ears, permitting the ends to fall in a couple of ringlets on either side behind. Great care should be taken to part the hair directly in the centre of the forehead. Persons with very long, narrow heads may wear the hair knotted very low at the back of the neck. If the head is long, but not very narrow, the back hair may be drawn to one side, braided in a thick braid, and wound around the head. When the head is round, the hair should be formed in a braid in the middle of the back of the head. If the braid is made to resemble a basket, and a few curls permitted to fall from within it, the shape of the head is much improved.

2. *Caps.* — Caps are becoming to most ladies, but they should be trimmed with as few bows and as little lace as possible. Upon a long head they look well with a narrow border of lace lying close to the face and forehead.

Style of Dress suited to a Gentleman.

1. The importance of dressing properly can scarcely be over-rated. It not only influences the opinions of others in regard to us, but governs our own self-respect. A shabbily-dressed man is likely to feel shabbily, and to commit shabby actions. A man with his coat out at the elbows, a shocking bad hat, and boots run down at the heel, will do things, of which, in his dressed moments, he would be heartily ashamed.

2. A dandy farmer, an over-dressed mechanic, and a finical tradesman are ridiculous; but there is no reason why people of all employments should not wear clean linen and dress with perfect neatness.

3. A plain, simple style is most proper for people of every class,—the richest as well as the poorest. Flashy dresses, fancy colors, and excess of ornament are the distinguishing marks of blacklegs and prostitutes.

Full dress, for gentlemen, admits of but two colors, black and white. Undress allows of grays, browns, olives, indigos, and other quiet colors.

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