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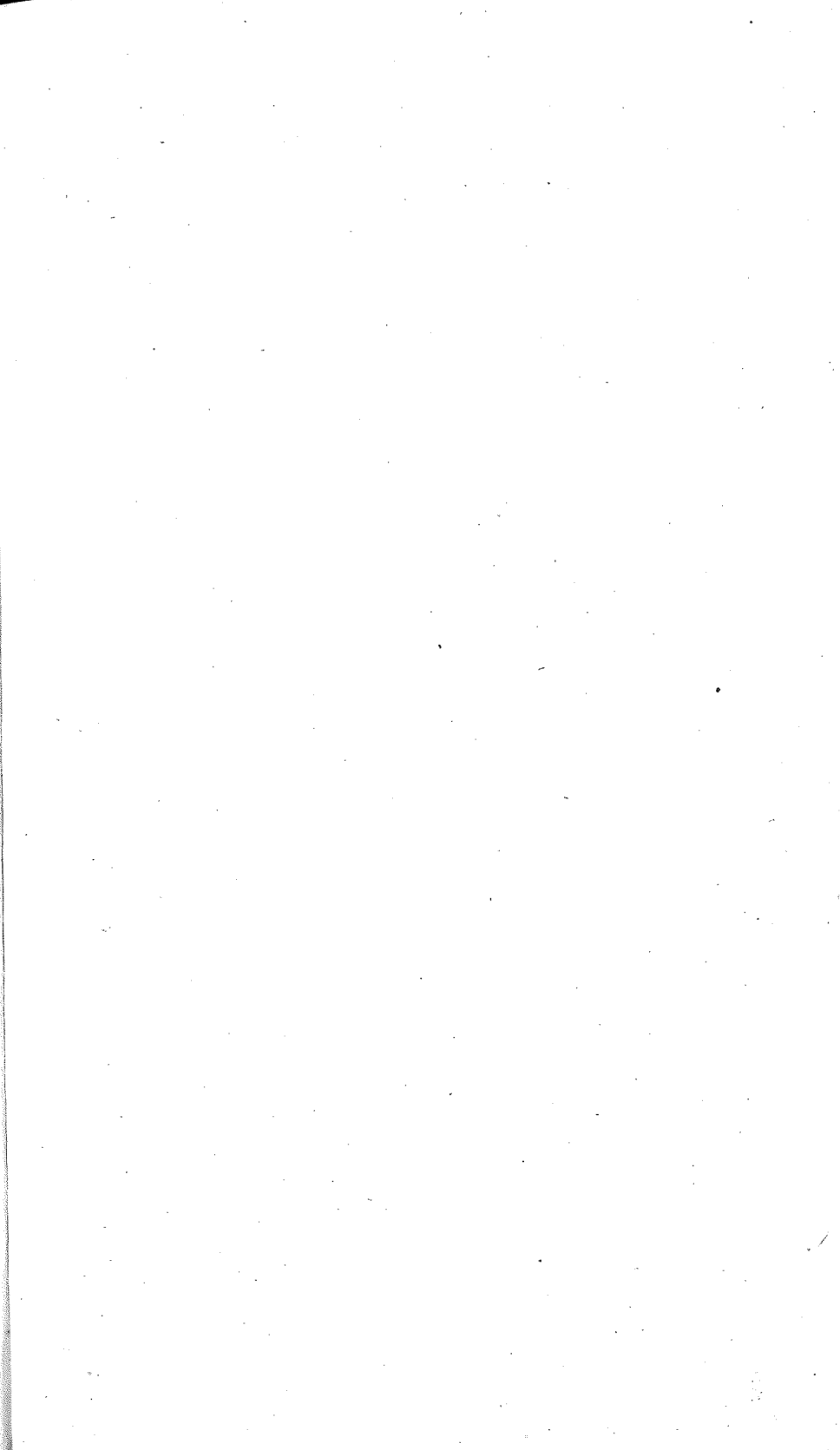
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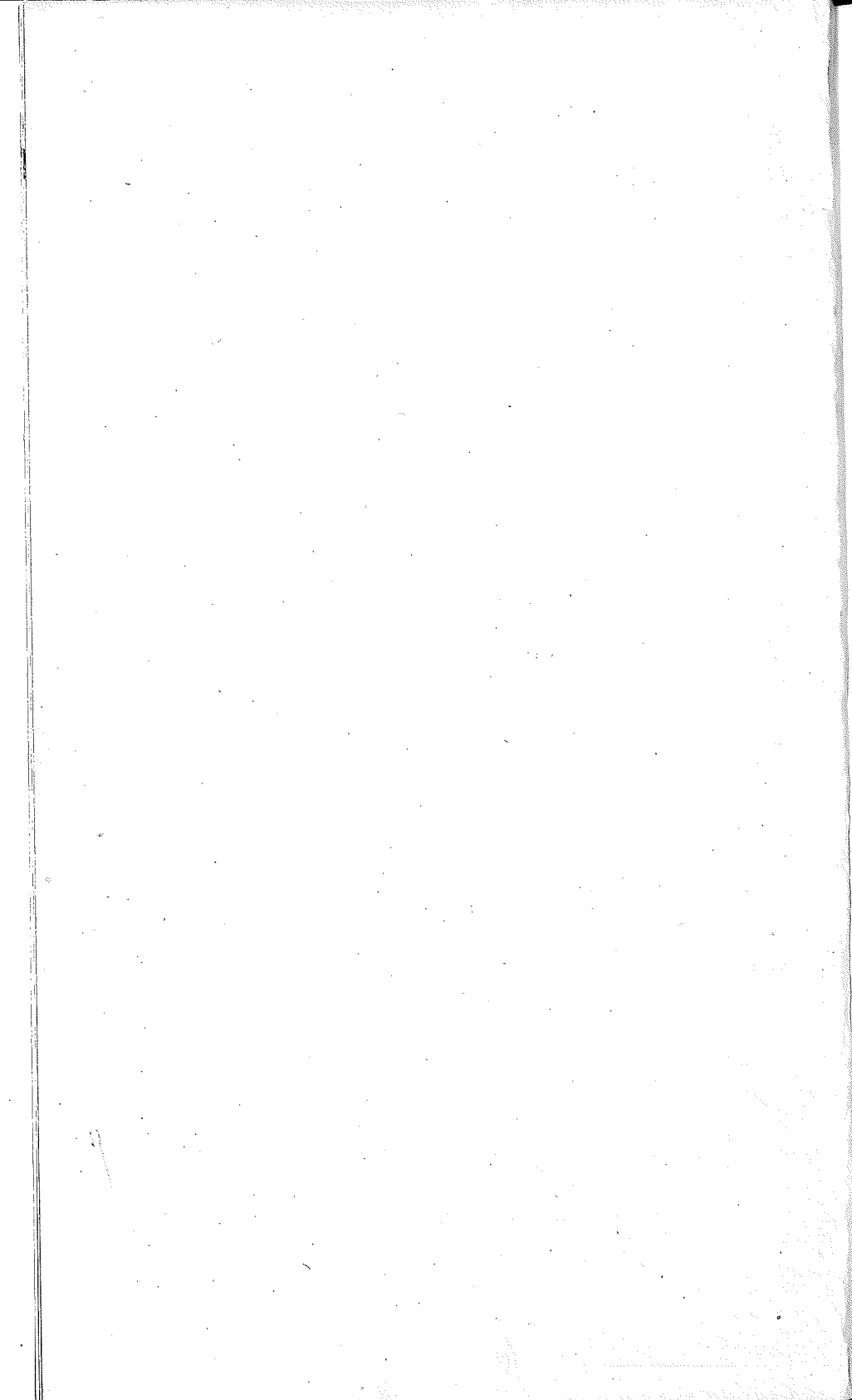
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PLANTS OF MAINE  
OUR NATIVE FLORA  
NOTES ON MAINE CATTLE



TAKEN FROM

**Agriculture of Maine 1874-5**

19th ANNUAL REPORT OF THE SEC-  
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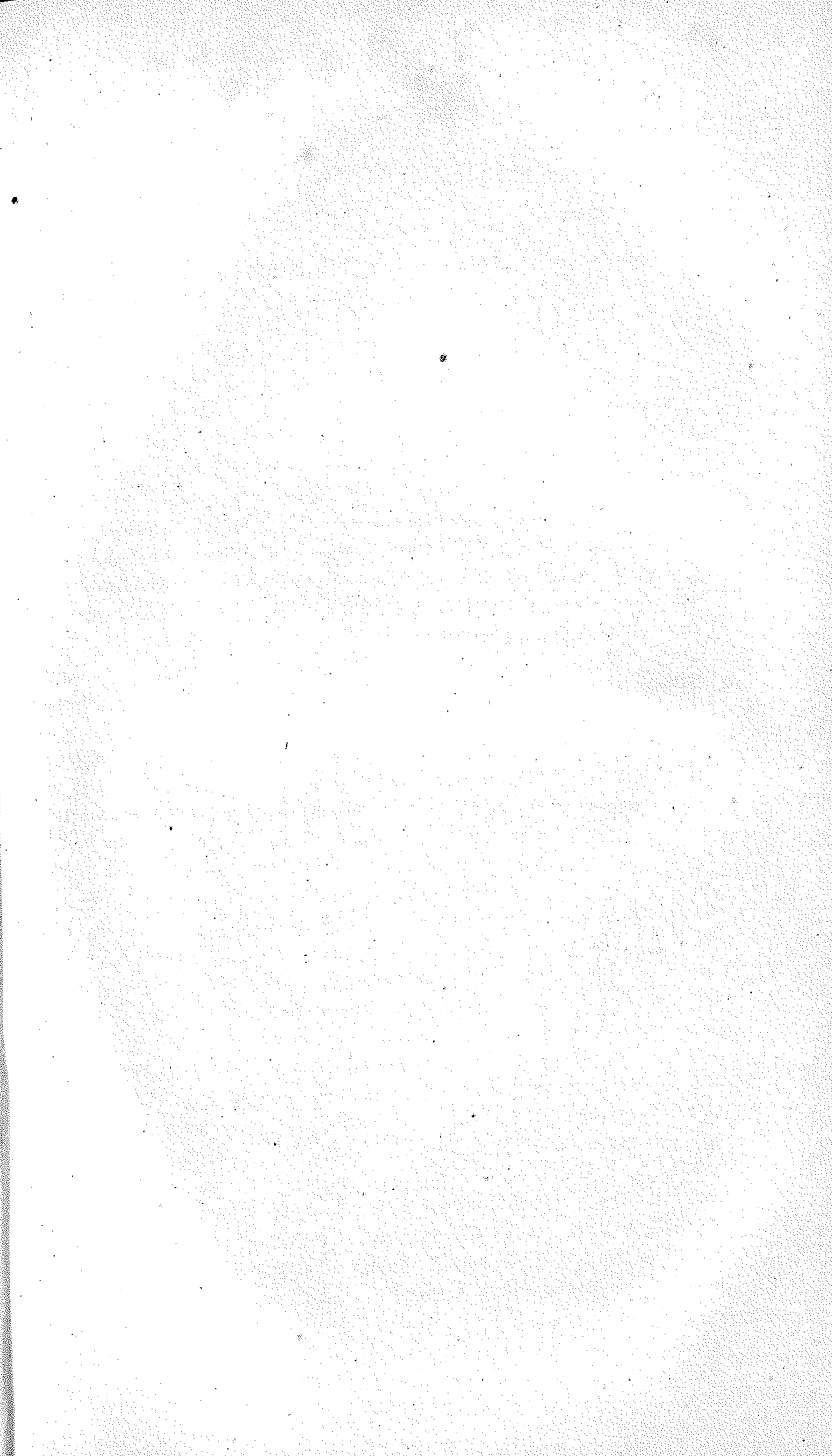
## OUR NATIVE FLORA.

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The flora of our State is rich both in useful and ornamental trees, and in shrubs and plants that are well adapted for rendering our homes and grounds attractive and pleasant. At the present day, as in the past, one great source of wealth in our State is its immense forests of pine, hemlock and spruce; while the value of other kinds of timber is rising as the demand for it increases in consequence of its uses in the arts. The maple and beech are being sought for the manufacture of furniture, ash for cars and agricultural implements, oak and hackmatack for ships, birch for spools, shoe pegs and other products, poplar for wood, and alder for charcoal. So far as the smaller shrubs and ornamental plants and climbers are concerned, we have large numbers now growing wild and unobserved in their native habitats, which would succeed well if removed to our cultivated grounds, and which possess characteristics entitling them to conspicuous places about our dwellings and in our gardens. But as a general thing, our people lack information in regard to the habits, uses and history of our native plants: not but what they are possessed of good intelligence, but knowledge upon this subject is generally confined to books, to which they do not have access; and hence they are ignorant concerning the trees and plants and shrubs which beautify our forests and farms, and afford the means of wealth to so many of our citizens. The opportunity given, however, for becoming acquainted, both scientifically and practically, with our native flora—and hundreds will take advantage of it, and study the subject in both these relations, who would never think of pursuing botany as a specialty, by the aid of more elaborate and expensive works. As an evidence of this eagerness on the part of our agriculturists, especially our young and reading farmers, to become acquainted with the natural history of our State, it may be remarked that the paper on the "Weeds of Maine," published in the Report of the State Board of Agriculture for 1869, excited general interest throughout the State; and among all the calls for back volumes

of our reports, more are received for that year than all others, mention being made that it is wanted for the article in question. Besides, numerous letters have been received testifying to its scientific interest and practical value; and many have been led to pursue the study of botany still farther, by having their interest in the subject excited through the perusal of this little treatise.

In the hope of contributing to a knowledge of the natural history of the State, the following paper on the "Ornamental and Useful Plants of Maine," is submitted to the public. The subject treated is one eminently apposite to the work which the Board of Agriculture has been carrying out, and the execution of it has been placed in the competent hands of the author of the "Weeds of Maine," to which reference has been made. Mr. Scribner is a young and enthusiastic botanist, who is already well known to the people of the State by his various contributions to a knowledge of our local flora, through the public press. He is a graduate of the State College at Orono, has travelled extensively through Maine, having twice ascended Mt. Katahdin, and by practical observation and thorough study is fully qualified to treat the subject he has in hand, the first part of which is now submitted to the public. It has been found necessary, on account of the length of this paper, to divide it; the second part of which will be issued at a subsequent time. A copy-right of the treatise has been secured to the author.





AMERICAN ATRAGENE.—PAGE 160.



# ORNAMENTAL AND USEFUL PLANTS OF MAINE.

BY F. LAMSON SCRIBNER, B. S.

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“A Prophet is not without honor save in his own country;” true is this saying when rendered—A plant is not wanting admiration save in its native land. Very many of our wild flowers are among the choicest plants of English and European gardens. There exists among us what seems a studied neglect of the many rare and curious plants which brighten the depths of the silent wood with their beautiful blooms, or adorn the margins of our wild water-courses with their graceful forms and perfumed flowers. Our ignorance and neglect of the floral wealth which abounds in our field and forest lands is the marvel of foreigners, and justly have they rebuked us by exclaiming: “And so in a country of Azaleas, Kalmias, Rhododendrons, Cyripediums and Magnolias—the loveliest flowers, shrubs and trees which the temperate clime affords,—you never put them in your gardens, but send every year over the waters for thousands of dollars’ worth of English Larches and Dutch Hyacinths!” We find an account of an American, who, desiring to beautify his grounds, consults his catalogues for some ornamental shrubs. In the lists of some French florist he finds a plant having the desired number of adjectives applied to it, and makes his order. The plants arrive, and when in bloom there is not in all his collection anything more beautiful than are these, exciting the admiration and delight of all who see them. Now the shrubs this man imported at no small cost, grew wild in a neighboring field, and might have been had for the transplanting; for they were none other than a species of Laurel or Kalmia. What excuse is there for such ignorance existing amongst us? There are many wild flowers desirable in every respect for garden culture, which to many lovers of plants are quite unknown. Let not our native plants be left to bloom and fade in all their beauty, “and waste their fragrance on the desert air;” but let us “consider the lilies of the field,” and bring under our fostering care

these wildlings of the fields and wooded dells. We know not what loveliness may be developed from plants of but passing beauty, for by culture are the works of nature often greatly improved. Nature creates, but man adorns. Their culture will afford a pleasure innocent and refined, cheaply purchased and within the reach of all. To patriotic hearts there is a finer pleasure in growing our native productions than in the culture of perhaps more gaudy exotics. Ought we not to be proud of a land so rich in native trees of every description of beauty—the graceful Elm, the stately Beech, the noble Oak and the majestic Pine? To us no foreign flower is more dear than the modest Sweet White Violet, none of more resplendent beauty than the Scarlet Lobelia, and none of purer loveliness than the White Pond Lily. What distant lands yield more beautiful shrubs than our Laurels or native Rhododendrons—and where shall we look for finer or more useful trees than those the Pine Tree State afford? The value of our timber lands cannot be over-estimated, and the preservation of our forest trees is a subject of vital and national importance. Every year our forests are being sadly diminished, and the size and quality of our cut timber is greatly deteriorating.

In view of this, the writer has been led to compile the following pages upon the "Ornamental and Useful Plants" of the State, giving to the trees especial prominence. It is hoped that by this account of our native plants a knowledge of them will be extended and their values better appreciated. No claim is laid to originality—that were almost impossible for the subject is one which has been exhaustively treated by many writers. With few exceptions the writer is familiar with every plant here mentioned as it grows in its native haunts. Like friends are they to him and he takes great pleasure in praising them, or speaking of their virtues. Many of these wild flowers he has either grown himself, or seen under cultivation. Other cultural notes when given, are taken from the most trustworthy authorities. Observations upon the families and genera have been compiled from sources of unquestioned accuracy, and no pains have been spared in collecting facts of interest concerning the species, from reliable writings at command. For convenience, and that an idea of the natural classification of plants may be imparted, the arrangement of orders adopted by Dr. Asa Gray, has been followed. Technical terms have been studiously avoided, as they tend only to confuse those unacquainted with them. It has been the constant endeavor to

present in as popular a manner as possible a plain and easy account of the more desirable of our native plants. Certain species have been included which some would have omitted:—others may have been omitted which some would have included. In a case like this it has been no easy matter to make a line of distinction where one must be more or less guided by his own knowledge and predilections.

To Mr. S. L. Boardman the writer is under great obligations for the free use of his most excellent library, and for much valuable assistance. To Mr. J. S. Hobbs, State Librarian, he is also indebted for the kindly loan of works from the State Library. The works chiefly consulted are the following: Gray's Manual of Botany of the Northern United States, Flora Cestricea, Darlington's Weeds and Useful Plants, Systematic Botany of Le Maout and Decaisne, Evelyn's Sylva, Emerson's Trees and Shrubs of Massachusetts, etc. When other writers have been consulted, due credit has been given.

AUGUSTA, September, 1874.

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## PART I.

### POLYPETALOUS EXOGENS.

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#### **BUTTERCUP FAMILY—ORDER, RANUNCULACEÆ.**

Herbs, or in *Clematis*, woody climbers. The parts of the flower all distinct and unconnected.

A large family, numbering about a thousand species, very many of which are cultivated for ornament. The plants of the entire order have a watery, acrid juice, which in some species—Monk's-hood—is extremely poisonous. In drying the acrid properties are destroyed. Among the exotics, well known in gardens, are species of *Clematis*, *Anemone*, *Columbine*, *Larkspur*, *Pæony*, &c.

#### **VIRGIN'S BOWER, CLEMATIS.** (Ancient Greek name.)

A genus of highly ornamental climbers, which of late have received much attention by the Florists, and very many beautiful varieties have been produced by hybridizing. *C. patens*, from Japan, has blue or purple flowers, five to seven inches across. There are native with us two species.

**American Atragene, *C. verticillaris*, D.C.** (Figured in this work). *Root* perennial. *Stem* 5 to 10 feet long, half woody, slender. *Leaves* composed of three ovate leaflets. *Flowers* solitary, about 3 inches across, bluish purple. *May*.

This vine stands first among our ornamental plants, as it does in the natural classification of species. It occurs from Canada to Virginia, but is, however, very scarce. It is found at Orono, growing in profusion on rocky banks, climbing, by means of its long leaf-stocks, over bushes and small trees, to the height of 9 or 10 feet. When in full bloom, about the last of May, its appearance is truly beautiful, the graceful, slender stems, clothed with light green foliage, and ornamented with large rose purple flowers, gracefully pending from the surrounding shrubbery. Each flower is succeeded by a tuft of silvery plumose, or feathery fruit. The Atragene resembles in general appearance the more common Virgin's Bower, though it is by no means so rampant a grower. It is hardy, easy to grow and manage, free from disease and the attacks of insects, but quite difficult to obtain, unless one happens to know its native localities. We do not know that it can be procured from any American nurserymen. Several European cultivators have it in their collections. The early blooms and ease with which it is cultivated, make it especially desirable. Besides the locality mentioned above the Atragene is also found in Orland.

**White Clematis, Virgin's Bower. *C. Virginiana*, L.** *Root* perennial. *Stem* 8 to 25 feet long, shrubby. *Leaves* composed of three ovate leaflets, which have their margins cut or lobed. *Flowers* dioecious or polygamous, arranged in a panicle, numerous, dull white. *Fruit* with a long plumose tail. *Plant* climbing by means of twisting leaf-stalks. *July, August*.

This climber is found throughout the border States from Canada to Georgia, and west to the Mississippi river, being very abundant in certain districts. It delights in a moist, rich soil, and is usually found growing over thickets along the borders of streams. It will grow very well on dry uplands if the soil be good.

The nearly white flowers are arranged in large clusters, and, owing to their abundance, are showy and attractive; they are sweet scented and multitudes of insects constantly hover about them. The flowers soon fall off, and in the female plants, are succeeded by conspicuous, silken, feathery tufts of fruit, which remain on the vine after the leaves have fallen in autumn, and give the plants a striking and pleasing appearance. The stems thus adorned make beautiful trimmings for sitting-room or parlor, and are much sought for this purpose. Like the last species, this vine is a leaf-climber.

Dr. W. J. Beal, in the *American Naturalist*, speaking of the climbing of the Clematis, says, that in addition to this mode of holding fast, the leaf stalks are sensitive to the touch, slowly bending into the form of hooks, and if successful in catching a stick, they clasp it firmly and soon become greatly enlarged and strengthened by an extra growth of woody fibre. If they come in contact with no object, after a short time they resume their original position, which is ever afterwards retained.

The Virgin's Bower is easily transplanted either in the fall or spring, doing well even after vigorous growth has commenced. Female plants should be selected.

**LIVERLEAF**, *HEPATICA*, *Dillenius*. (A Greek word, meaning of the liver, from a fancied resemblance of the leaves to that organ.)

Immediately below the flower are three small leaflets, forming an *involucre*, which, from its appearance and position might be mistaken for a *Calyx*; *Corolla* none.

**Three-lobed Hepatica, Liverwort, Liver-leaf**, *H. triloba*, *Chaix*.

*Roots* perennial fibrous. *Stem* not apparent (*acaulescent*). *Leaves* on long *petioles*, broadly heart-shaped in outline, with three obtuse lobes—whence the specific name, *Flowers* blue, purple, rose or white, formed of the petal like *sepals*. *April, May*.

Earliest among our native spring flowers is the Hepatica. With what eagerness do we search for the blooms of this little plant upon the sunny slopes of wooded hills where the snow disappears soonest, and with what a thrill of delight does the first sight of its delicately tinted blue or rose-purple flowers fill us! In its bright blooms we behold the awakening of a new life, which the warming sun has brought forth from the earth, long buried under the cold snows of winter. The older leaves are in themselves pretty objects, either being of a fine green color or beautifully variegated with deep, rich purple.

The Liver-leaf is much improved by garden culture, often producing a profusion of elegant double flowers. It has quite a medicinal reputation among the "herb doctors;" an infusion of the leaves forms an astringent drink given in cases of lung disease.

Another species of the Hepatica with acute leaf lobes may be found upon northern hill-slopes, especially in the western part of the State.

**WIND-FLOWER**, *ANEMONE*. (A name given by the Ancients, either because the plants grow in windy localities, or because they were supposed to bloom only in the windy seasons).

The Anemones have been much cultivated by the florist, so that now some of our handsomest, hardy autumnal plants are of this genus. Our native species are early bloomers.



WIND ANEMONE.



**Wood Anemone, Wind-flower.** *A. nemorosa*, L. (Figured in this work).

*Root-stalk* slender, creeping. *Stem* slender, smooth, without branches, 4 to 10 inches high, bearing near the summit 3 tri-foliate *leaves*, which form an involucre to the single, white or rose colored *flower* terminating the stem. *May*.

"All wan and shivering in the leafless glade,  
The sad Anemone reclined her head;  
Grief on her cheek had paled the roseate hue,  
And her sweet eyelids dropp'd with pearly dew."—(Darwin).

The little Wood Anemone is a delicate and graceful plant, growing in rich clayey loam along the borders of thickets and in open woods. The bright white or rose-tinted flowers, and the elegant tri-foliate involucre render our plant attractive in the extreme, so that it takes rank among the handsomest of spring flowers. The slightest breath of wind sets the whole plant in lively, graceful motion. The plant is easily grown in gardens, and though beautiful under cultivation, we are better pleased with it in its native haunts.

**MEADOW RUE, THALICTRUM.** (Origin of the name obscure.)

The Tall Meadow Rue, common in wet meadows and along streams, though a very pretty plant, takes rank among our weeds.

**Rue Anemone, *T. Anemonoides*, Mx.**

The Rue Anemone is a neat little woodland species, in habit much resembling the Wood Anemone, with which it is usually associated, though a far less common plant in Maine. The flowers are white or pink, about the size of those of the Wood Anemone, opening at nearly the same time, early spring. The leaves are smaller, and more delicate than those of the last named plant. The roots are formed of a cluster of small tubers. The Early Meadow Rue, *T. dioicum*, L. is a much larger plant, of very graceful appearance. It is quite common in rich, rocky woods and ravines. Blooms in May.

**BUTTERCUPS, RANUNCULUS.** (A Latin word for a little frog, the plants usually growing where these animals most abound.)

These plants, owing to their active rubefacient and caustic properties have some medicinal value. In Europe, Alpine hunters frequently chew the leaves of *R. alpestris*, to keep off giddiness and to strengthen them.

The Common Buttercups, *R. acris*, enlivens our fields and meadows with its rich yellow flowers. It is, however, generally considered a nuisance by good farmers, as it forms a very poor fodder. When green it is very acrid and bitter, so that cattle

will not eat it. A variety of this plant with full double flowers, is cultivated in gardens.

**MARSH MARIGOLD, CALTHA.** (A Greek word meaning a goblet, from the cup-like form of the flowers).

Parts of the *calyx* (*sepals*) 5 to 9, colored and petal-like. *Corolla* none.

**Marsh Caltha, Marsh Marigold, Cowslip.** *C. palustris, L.*

*Roots* perennial. *Stem* 5 to 10 inches high, hollow, succulent, smooth. *Leaves* large, round, heart-shaped, or kidney-shaped, often broader than long. *Flowers* bright golden yellow, an inch or more in diameter. Common in wet meadows. *May*.

The Marsh Marigold when fresh, possesses very astringent properties, which, however, are destroyed in cooking, and the plant is largely gathered for "greens" in localities where it abounds. There is a double-flowered variety in cultivation.

**GOLDTHREAD. COPTIS, Salisb.** (Name from a Greek word meaning to *chop* or *cut*, alluding to the cut or divided leaves.)

This genus includes plants found in Europe, Asia, and North America, having white flowers, and singular, narrow or club-shaped petals, which are hollow at the apex.

**Three-leaved Coptis, Goldthread, Mouth-root.** *C. trifolia, Salisb.*

The specific name refers to the three parted or *trifoliate* leaves. The Coptis is well known by its long, bright yellow and thread-like roots, which are highly prized for their medicinal virtues. The Shakers supply the trade by gathering the roots and leaves, and pressing them into small, square packages. The taste of the roots is bitter, and preparations from them, acting as a tonic, are used in convalescence and in dyspepsia. The name Mouth-root, is derived from the reputed powers of the root in curing canker or sore mouth. The plant is common in bog lands, and along the mossy borders of woods, rich in vegetable mould, extending from Labrador to Pennsylvania. The white flowers, and glossy, deep green leaves, render this little plant very attractive, and those who especially like to see our wild flowers growing under their care have cultivated it in gardens with success.

**COLUMBINE, AQUILEGIA, L.** (Name from Latin, *aquila*, an eagle, the spurs of the petals having a fancied resemblance to the talons of that bird).

Perennial plants with graceful, twice or thrice divided leaves, and showy flowers. A Rocky Mountain species, *A. cœrulea*, is perhaps unrivalled in grace and beauty by any others of the genus. In Wyoming there is found a remarkable dwarf species. It is a stemless plant, bearing a single blue flower on a scape one to three inches in height.



**Wild Columbine, *A. Canadensis*, L.**

*Stem* branching, about one foot high. *Flowers* numerous, drooping, outside scarlet, yellow inside. *Stamens* and *styles* yellow, conspicuous. The *petals* are curiously formed into long curved tubes, or spurs.



WILD COLUMBINE.

An exceedingly showy and attractive plant, very common on rocky hills and high river banks. The bright, pendulous flowers,

more beautiful than the commonly cultivated *A. vulgaris*, together with its fine foliage, than which no cultivated species is more graceful, render this a plant especially desirable for garden ornament. Transferred to the garden it soon makes itself at home, and is much improved, both in leaf and flower by the change.

**BANEERRY**, *ΑΝΤΕΛΑ*. (Name from the Greek, meaning *Elder*, so called on account of a resemblance between the leaves of these plants.)

Herbaceous plants, with perennial spindle-shaped roots, smooth, erect stems, and compound leaves. Flowers white, in a single roundish or elongated cluster.

In rich deciduous woods one often meets this plant, beautiful both for its foliage and its bright cherry-red, or clear, shining white berries. Among our herbaceous plants we have none more attractive, when in fruit, than the Baneberry. The kind having white berries blooms a week or two later (early in June) than the red berried sort, from which it is considered distinct. The berries though so beautiful, have a bad character, being highly poisonous.

**BUGBANE**, *ΚΙΜΙΟΪΦΥΓΑ*, L. (Name from two Latin words, meaning to drive away bugs; some species having been employed as a bugbane.)

Herbs, much resembling the Baneberry in growth and habit.

**Black Snakeroot, Cohosh, Rich-weed.** *C. racemosa*, Ell. (The specific name has reference to the arrangement of the flowers.)

*Root-stock* thick and knotted, externally black, with a white interior, having a sharp bitter taste and slight odor. *Stem* 3 to 8 feet high. *Leaves* compound. *Flowers* white, very numerous, arranged in a wand-like raceme.

This plant is not common in Maine, but is abundant in the Western N. E. States. It is valued chiefly for its medical virtues. In action it is anti-spasmodic and narcotic. It is sometimes employed in cases of chronic rheumatism. "An infusion of the bruised root is generally regarded as a sort of *panacea* for stock—especially for sick cows."

### **BARBERRY FAMILY—ORDER, BERBERIDACEÆ.**

Herbs, or climbing or erect shrubs, with alternate leaves and chiefly yellow flowers.

Not a large family, but one of extended distribution, being found throughout the northern temperate regions, and in South America. Properties astringent. Malic acid is found in the fruit and leaves of most of the species. Some beautiful varieties are found in cultivation.

**BAEBERRY, BERBERIS, L.** (Name supposed to be derived from *Berberys*, the Arabic name for the fruit.)

Shrubby plants, many of which are highly ornamental, as *B. Darwinii* and *Japonica*, much grown in European gardens. The bark of the stem, and the wood and bark of the roots afford a yellow dye.

**Berberry, Barberry, Pipperidge Bush.** *B. vulgaris, L.* (Common Berberis.) Figured in Darlington's Weeds and Useful Plants, p. 37. Audubon's Birds, II, plate 188. London's Ency. of Plants, fig. 4922.

*Stem* shrubby, 4 to 10 feet high, producing many suckers. *Leaves* scattered on the fresh shoots of the season, mostly reduced to sharp triple or branched spines, from which the next season proceed rosettes or fascicles of ovate-oblong, bristly-toothed leaves.—(Gray). *Flowers* yellow, profuse, in slender drooping racemes, having a disagreeable odor. Fruit of oblong-oval berries, ripe in October, when they are of a showy orange-red or scarlet color, very sour. Barren pastures and by the wayside, chiefly in the southwestern part of the State. *June*.

Though a native of the Eastern Continent, the Barberry is thoroughly at home in many parts of New England. In the middle and southern part of this State it is often seen in stony pastures and along by-ways, far removed from cultivation.

There is not among the shrubs of Maine a species more useful, and we would almost add, ornamental, than the Barberry. The slender stems, clothed in light gray bark, many branched and gracefully arched above, give the plant a most pleasing outline. In early summer the drooping branches are graced with pendant racemes of golden flowers, finely displayed by the cheerful green tint of the clustered foliage. Nor does the beauty of the Barberry cease with its blooms, for in autumn our shrub is ornamented with scarlet, coral-like berries, imparting to it a most showy appearance. These berries often remain on the plant during the winter. Before the leaves fall in autumn, they change to an orange scarlet color, greatly increasing the charms of the plant. If the many suckers be removed from around the main stem, and the side buds be pinched off, the Barberry will assume the form of a small but beautiful tree, and if well cared for will grow to the height of ten or twelve feet. This shrub possesses almost every quality desirable in a hedge plant. Besides its highly ornamental character, it is a thick, and when young, a rapid grower, sending up a host of shoots thickly covered with sharp thorns. It is hardy, *very long lived*, easily transplanted, or grown from cuttings or seeds, and will bear all necessary pruning.

It does seem strange that so many people will take such pains to send out of the State to nurserymen, and pay high prices for

shrubs whose appearance will by no means compare in elegance and beauty with this and many other of our native species, so easily obtained, growing close about us, yet wholly unknown.

There is a prejudice in Europe, and entertained by some in this country, against growing the Barberry, as it is thought to produce mildew or blight in grain grown in its vicinity. If there is any damage done at all to surrounding crops it must be by the free growing roots which may impoverish the soil. Upon examining the leaves of the Barberry in midsummer, one will generally find upon the under surface many little golden yellow patches formed by a very pretty fungus called *cluster-cups*, so named on account of its appearance under the microscope, which is that of an assemblage of minute cups. Botanists call this fungus *Æcidium berberdis*, but it is considered by authorities to be an entirely distinct plant from that which infests grain under the name of blight. It is certainly very different in appearance.

In the Barberry we have exhibited a remarkable instance of vegetable-irritability and movement, which almost leads one to believe that *some* plants at least possess a *nervous force*, similar, if not identical with that more evidently displayed by animals. This power of movement lies in the stamens of the flower, which when touched near the base on the inside with the point of a pin make a sudden movement forward towards the pistil, generally discharging some pollen upon the stigma in the process. After a few moments the stamens gradually assume their erect position. This action is best observed in warm, dry weather, for the stamens seem to have lost their power of movement after a rain.

The berries of the Barberry are extremely sour; properly prepared, however, they form a delicious and wholesome jelly, and when candied with sugar make excellent preserves. A cooling and refreshing drink in fevers is made by steeping the bruised berries, or by mixing the jelly in water. When green the berries are sometimes pickled in vinegar and used as capers. "In some countries in the north of Europe the berries are used instead of lemon in flavoring punch." The leaves are quite acid, and have been used for salad. Medicinally the Barberry acts as a tonic and purgative. In some of its parts it is powerfully astringent, and a decoction of the bark has a reputation for strengthening the gums. The bark abounds in tannin, and in common with the wood, and the bark of the long, irregular roots, contains a yellow coloring principle. These parts are often used, especially in Europe, to tan

and color leather. Dr. Emmerson says, that in Massachusetts the Barberry is employed to give leather a yellow color. The wood of this shrub is hard, brittle, fine-grained, and of a beautiful yellow color. On account of this last, unusual property, it is sometimes employed in fancy wood-work.

When grown especially for its berries, the Barberry should be cultivated in a deep and well manured soil, and all the suckers should be removed. There are several varieties, having different colored berries.

### **WATER-LILY FAMILY**—ORDER, NYMPHÆACEÆ.

Aquatic herbs, mostly with floating heart-shaped or peltate leaves, arising from a large prostrate rootstock or rhizoma. This family is widely distributed, having representatives in all the continents, both north and south. It includes the beautiful *Victoria regia*—a native of tropical South America—remarkable for its gigantic size. The round leaves are from three to five feet in diameter, having an upturned edge or rim, two to six inches high. The magnificent flowers—more than thirty inches in circumference—are at first white but rapidly change through pale pink to bright red. The fruit is about the size of an apple, and the seeds which are rich in starch, are roasted by the natives who consider them excellent food. Our common water shield *Brasenia peltata*—singular in having its leaf and flower stems, and the under surface of the leaves coated with a clear, jelly-like substance—possesses mild astringent properties.

**WHITE POND LILY**, NYMPHÆA. (Dedicated by the Greeks to the Water-Nymphs.)

Our plants of this genus have large, prostrate rootstocks, often several inches in diameter. The rounded leaves float upon the surface of the water. The large and beautiful flowers have a multitude of pure white or rose-tinted petals, which are displayed during the middle portion of the day, except when cloudy, during the summer months.

**Water-Lily, White Pond Lily**, *N. odorata*, *Ait.*

Mrs. Hemans has thus beautifully described this plant:

“Know that the Lilies have spread their bells  
O'er all the pools in our forest dells;  
Stilly and lightly their vases rest  
On the quivering sleep of the water's breast,  
Catching the sunshine through leaves that throw



To their scented bosoms an emerald glow;  
 And a star from the depth of each pearly cup,  
 A golden star unto heaven looks up,  
 As if seeking its kindred where bright they lie,  
 Set in the blue of the summer sky."

Upon bright summer mornings, what can afford more pleasure than to stroll away from the haunts of men and seek some hill-embosomed lake, where upon the rippling surface of the waters gently rests this most beautiful emblem of silence—the White Pond Lily, fittingly dedicated to the Goddess of the waters? Where grows there a sweeter bloom of purer loveliness?

"For beautiful thou art,  
 Thou sculpture-like and stately River Queen!  
 Crowning the depths with the light serene  
 Of a pure heart."

We often see large extents of Lake surface whitened by the flowers of the Pond Lily mixed with the rich yellow blooms of the *Nuphar*, and the splendid blue flowers of the *Pontederia*. The peculiar charms of this aquatic make it especially desirable for cultivation where one has upon his premises a proper body of water. The plant bears transplanting well, and is often much improved in the size of its flowers by the change. It requires a rich, muddy bottom. When the large rootstocks are obtained, which may require considerable labor, they can be sunk in the place desired by attaching stones to them. This plant was included in the "*Floral clock*" of Linnæus, as the flowers have nearly fixed times for expanding and closing. A brown colored dye is obtained from the rhizoma. Its properties are styptic and tonic.

• **YELLOW POND LILY, NUPHAR.** (From its Arabic name, *Neufar*.)

Aquatic plants, with showy petal-like sepals, and numerous stamen-like petals.

**Yellow Pond Lily, Spatterdock, Cow Lily, Frog Lily.** *N. advena*, Aiton.

A very common and well known plant, delighting in the muddy shores of lakes and in sluggish streams. By no means so beautiful as the last, yet the rather large globular flowers of this species are very curious and quite attractive, making it worthy of attention. If the large rhizoma be cut with a steel knife it quickly turns black. In domestic practice it is sometimes used as a tonic, and in a bruised form the rootstock is applied as a poultice.

**PITCHER-PLANT FAMILY—****ORDER, SARRACENIACEÆ.**

A little family of wholly American plants, growing in turfy, spongy bogs, and remarkable for the peculiar formation of their leaf-stalks or petiole, which are hollow and pitcher or urn-shaped.

**SIDE-SADDLE-FLOWER**, *SARRACENIA*, Tourn. (Named in honor of Dr. Sarrazen, of Quebec.)

A genus of six species, five of which belong to the Southern States.

**Side-Saddle-Flower, Pitcher Plant, Huntsman's Cup, Adam's Drinking Cup.** *S. purpurea*, L.

*Root* perennial fibrous. *Leaves* radical, evergreen, composed of a hollow pitcher-formed petiole, the blade of the leaf forms a heart-shaped, erect hood above the pitcher. *Flowers* large, deep purple, nodding, born singly on tall scapes. Peat bogs. *June*.

There are few plants more singular or interesting than this denizen of our northern bogs. It also possesses much beauty. The pitcher-shaped leaves grow in a rosulate cluster around the root, and are made showy by their bright purple veins. The whole leaf when much in the sun, often becomes deeply colored. The inside of the "hood," or true blade of the leaf, is covered with stiff hairs pointing downwards. The leaves, which are generally partially filled with water, are perfect insect traps, for small insects seem to be attracted to them, and when once within the pitcher the stiff hairs of the hood prevent their escape, so that vast numbers find within a watery grave. Beside dead insects, the water of the pitchers often contains living larvæ. Owing to their singular shape the leaves form elegant designs for vases and like articles of ornament. The flowers are quite showy, and when fully expanded are pretty if not elegant objects. Some parts of the flower are hardly less peculiar than the leaves. In color they are deep reddish-brown or purple, with a greenish-yellow centre.

We have several times seen it stated that the Pitcher plant is an efficient remedy for small pox. These statements have no foundation in fact, as has been proved by direct experiment.

Owing to its unique and attractive appearance this plant is desirable for cultivation. Though common, it often forms a subject of wonder and admiration, to those even who do not live in cities. If one has not a suitable spot out of doors for growing this plant, it will do very well in pots if a sufficient quantity of bog earth is taken up with the roots and they be well supplied with water. We have seen this plant growing finely in a fern case, and sending up flower buds in the month of March.

**POPPY FAMILY**—ORDER, PAPAVERACEÆ.

Herbs with a milky or colored juice, either narcotic or acrid. From the milky juice of *Papaver somniferum* two well known and valuable drugs, morphine and opium, are obtained.

**BLOODROOT**, SANGUINARIA, Dill. (Name from Latin, *Sanguis*, blood, alluding to the color of the juice.)

There is but one species, a native of North America.

**Canadian S., Bloodroot, Puccoon.** *S. Canadensis*, L.

*Root-stock* 2 or 3 inches long and about one-half inch in diameter. *Leaves* at time of flowering small, finally they are 4 to 5 inches wide and nearly as long. *Flowers* an inch to an inch and a half in diameter, composed of 8 to 12 pure white petals, and two sepals which soon fall off. Rich, wooded ravines, common. *April, May.*

The elegant, pure white blooms make this a prettier plant for garden culture than many a foreign species upon which much care is bestowed. It grows readily upon transplanting, and when made into a bed, the early flowers of snowy whiteness, present a most pleasing spectacle. In spring the delicate buds are tenderly enfolded in the young leaves. Besides its beauty, the Bloodroot has a well established medicinal value, having active emetic and narcotic properties. It has been used in cases of rheumatism and in inflammation of the lungs. In some parts of the country the leaves are given to horses to promote the shedding of the hair, and the roots are given to destroy bots.

**FUMITORY FAMILY**—ORDER, FUMARIACEÆ.

Herbaceous plants, with alternate, cut leaves and irregular terminal flowers. *Fumaria officinalis* or Common Fumitory is a very delicate and pretty little plant, but it has become so common about some gardens that it ranks as a weed.

**DUTCHMAN'S BREECHES**, DIOENTRA, *Bork.* (Name from the Greek, meaning two-spurred, referring to the shape of the corolla.)

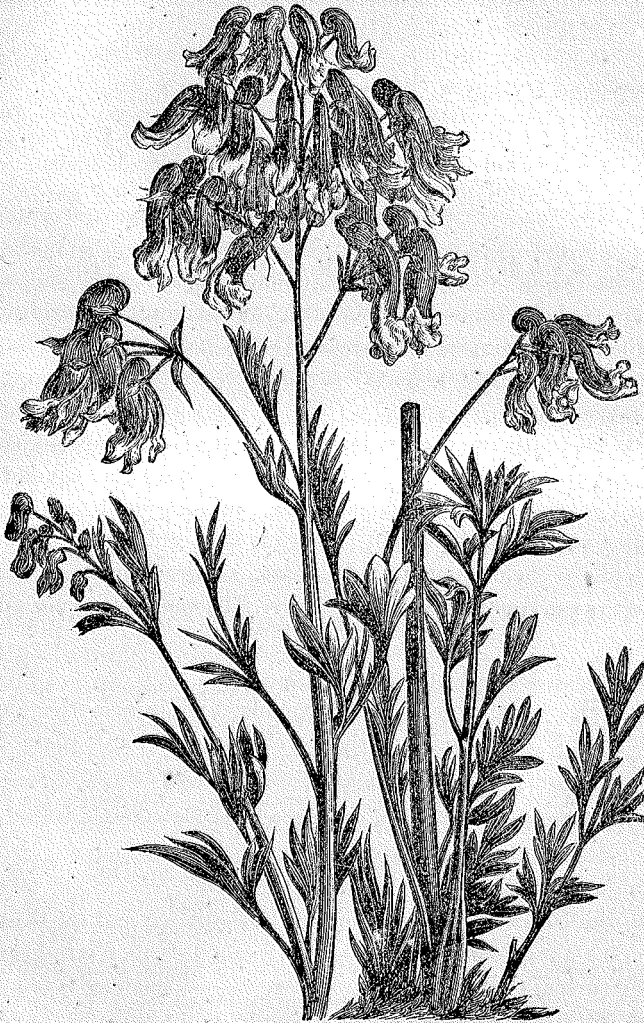
*D. spectabilis*, or Bleeding Heart, is a very elegant and well known garden plant.

Both the Dutchman's Breeches, *D. Cucullaria*, and the Squirrel Corn, *D. Canadensis*, are sometimes found in this State growing in the rich leaf mold of deciduous woods. The former is a very delicate little plant arising from a granular scaly bulb, having very singular white flowers, tipped with yellow. The latter species has, instead of a scaly bulb, scattered grain-like yellow tubes resembling in appearance grains of Indian corn. This plant is very ornamental, having the same habits and general appearance



of the Dutchman's Breeches, except in its flowers, which have the perfume of Hyacinths and a delicate rose or flesh color. The spurs of the corollar are also much shorter. The Squirrel Corn grows in the vicinity of Waterville.

Another very pretty and attractive plant of this family is the **Pale Corydalis**, *C. glauca*.



PALE CORYDALIS.

The plant is herbaceous, varying in height from 6 inches to 3 or 4 feet, and covered with a glaucous bloom. The flowers appear from May to August; they are numerous, and though small are

rather showy, being beautifully variegated with shades of yellow and pink. They resemble the flowers of the *dicentra*, excepting that they have but one spur.

"Among the many wild flowers that we have introduced into the garden none have given us more pleasure than this. It is a biennial, which ripens its seeds and drops them early, and the young plants from them acquire sufficient size the same season to flower the next."—(*American Agriculturist*.) The *Corydalis* grows in rocky places, especially about newly cleared lands.

The climbing *Fumitory*, *Adlumia*, is said to be a native of this State. It is a beautiful climbing plant, with most delicate foliage and drooping purplish flowers. It is often seen in the gardens.

### MUSTARD FAMILY—ORDER, CRUCIFERÆ.

A clearly defined family, of about 1,200 species, possessing well known acrid or pungent properties. The calyx and corolla are each composed of four parts, arranged crosswise, whence the name of the order, *Cruciferæ*. To the market-gardener this family is one of the most important, for to it belong the numerous varieties of turnip, radish, cress, cabbage, &c. We have several introduced species which rank as weeds, and are described in the *Agricultural Report* for 1869. There is also quite a list of ornamental plants belonging to this order, as the *TEN-WEEK STOCK*, *WALL FLOWER*, *HONESTY* and *CANDYTUFT*. The native species either for use or ornament are few.

**Winter Cress or Scurvy Grass**, *Barbarea vulgaris*.

This is frequently met in low grounds, and is sometimes used as a salad. The flowers are bright yellow, leaves and plant deep green.

**Pepper-root**,—*Dentaria diphylla*, and a species of Rock Cress,—*Arabis Drummondii*.

The above are perhaps our prettiest native species. The first is not uncommon in rich woods and moist meadows. It has quite large white flowers, in a terminal raceme, opening in May. The pungent, aromatic root-stock is from 5 to 10 inches long, and beset with teeth. The second is a rare plant, with very pretty rose-colored flowers, quite conspicuous. The plant is a biennial, with an erect, wand-like stem, one or two feet high. The writer has observed this plant in the vicinity of Orono, and it is said to occur near Lewiston.

*Oakile Americana* is a peculiar fleshy species with purple flowers, growing along the sea-shore.

### VIOLET FAMILY—ORDER, VIOLACEÆ.

A family of wide distribution, known to us by the many beautiful cultivated and wild species of the genus Violets, or *Viola* in the language of the old Romans.

The Violets are easily recognized, and so well known that special descriptions are deemed unnecessary. All the species are attractive and ornamental. Especially prized is the *Sweet White Violet*, that opens its delicate and sweetly scented flowers so early in the spring. We have another white flowered species with narrow lanceolate leaves, which is quite common along the borders of ponds and moist river banks. Common in moist deciduous woods, we find the *Early Yellow* or *Round-leaved Violet*, and

“When beechen buds begin to swell,  
And woods the Bluebird’s warble know,  
The Yellow Violet’s modest bell  
Peeps from the last year’s leaves below.”

One is filled with delight when first he sees the bright and beautiful purple-veined petals of this “wee” flower, just springing into the light, and cheerfully reflecting to the warming sun its golden rays.

“Of all her train the hands of Spring  
First plant thee in the watery mold,  
And I have seen thee blossoming  
Beside the snow-bank’s edges cold.”

We have another yellow flowered species, called the *Downy Yellow Violet*. The whole plant, which is from 6 to 12 inches high, is covered with a soft pubescence. With us it blooms about the last of May. The most conspicuous of our Violets are those with violet blooms—

“Gleaming like amethyst in the dewy moss.”

There is the small *Selkirk’s Violet*, with its heart-shaped leaves, lying flat on the ground, and beardless petals. Then there is the arrow-leaved species common in sandy fields and on dry hill-sides. More prevalent still is the common Blue Violet, *V. cucullata*. It grows everywhere in moist, low grounds, and is the tallest among the species with blue flowers. Most beautiful of our natives is the Bird-foot Violet, which is found, though rarely, in sandy fields and pastures. Its numerous leaves are all neatly divided into three or five narrow lobes, and above them is displayed in rich

profusion the large (one inch across), lilac-purple or blue flowers. There is an occasional variety with the two upper petals deep violet in color and of a soft velvety texture, like the Pansy. Of all the thirteen species occurring in Maine this is the most desirable for cultivation. Almost any of them, however, are an improvement on many garden plants from the Florists.

### ROCK-ROSE FAMILY—ORDER, CISTACEÆ.

A small family of low herbs or shrubs with regular flowers and alternate leaves, chiefly natives of the south of Europe. *Ladanum*, a balsamic resin used in perfumery, is the product of a species of *Cisti*.

**ROCK-ROSE, HELIANTHEMUM, Tourn.** (Name from Greek words meaning *sun* and *flower*, the blossoms opening only in sunshine.)

Low, somewhat shrubby plants with yellow flowers. There are about thirty known species, a number of which are highly ornamental, are much cultivated in rock-work for which their habits especially adapt them.

**Canada Sun Rose, Common Frost Plant, *H. Canadense*, Mx.** (Figured in Sweet's Cistaceæ, plate 21).

*Root*-perennial. *Stem* erect, downy, 8 to 12 inches high. *Leaves* nearly an inch long and 1-4 as wide, whitish beneath. *Flowers* of two sorts—the *primary*, which are terminal and have a showy yellow corolla about an inch wide, and the *secondary* flowers, which are without petals and form inconspicuous clusters in the axils of the leaves.

This rather ornamental plant is found in this State, (Orono) though probably not frequent, growing in dry sandy or gravelly places. It receives the name frost weed from the peculiar circumstance that late in the fall crystals of ice shoot from the cracked bark at the root.

The genus HUDSONIA, (named in honor of Wm. Hudson), presents two very pretty heath-like shrubs, not unfrequent on sandy seashores. The Downy Hudsonia, *H. tomentosa*, is beautifully figured in Torrey's Botany of New York, Vol. I, plate 9. It is much branched, assumes a pleasing shape, grows to the height of from 3 to 6 inches, and has very small, white-downy leaves closely embracing the stem. The whole plant has a singular grayish appearance. In June it is truly a pretty object, for then it is made showy by being completely covered with small but bright golden-yellow blooms.

*Hudsonia ericoides* is a more delicate and has a greener and more heath-like aspect than the last. The flowers and habits of the



plant are much the same. Both these species are found at Hunnewell's Point, in the southern part of Phippsburg.

### SUNDEW FAMILY—ORDER, DROSERACEÆ.

Bog plants with perfect, regular flowers, and with leaves covered with scattered hairs, which exude at their tips minute globules of a viscid, sticky fluid. The species, which are perhaps more curious than ornamental or useful, are widely distributed, being especially frequent in South Africa and Australia. The Venus Fly-trap—*Dioncæa*—found near Wilmington, North Carolina, is remarkable for the irritability of its leaves, which, when touched, close suddenly and with sufficient force to capture small insects. Our species possess this irritability though in a much less degree.

**SUNDEW, DROSERA, L.** (Name from a Greek word meaning *dewy*—the clear sparkling drops, exuded by the hairs, give the plant a dewy appearance.)

“Queen of the marsh, imperial *Drosera* treads  
Rush fingered banks and moss embroidered beds.”

Our more common species has greenish or bright red leaves, lying close upon the ground, and forming a perfect rosette, from the centre of which arises the delicate little flower-scape, uncoiling as it grows like the mainspring of a watch.

“Redundant folds of glossy silk surround  
Her slender waist and trail upon the ground.”

The *Drosera* blooms in the warmest summer months—the flowers opening one by one as the uncoiling goes on—displaying their pure white petals only during the hours when the sun shines most brightly. The *Drosera* is well worth a place among our winter house-plants or in the fernery, not only on account of its colored leaves “glittering with many a crystal gem,” but also for its peculiar habits, as it is a veritable little “fly-trap.” The shining drops—most conspicuous in the hottest sunshine—appearing so cool and inviting, cause the death of many a heedless fly who seeks to refresh himself upon them. When once the insect meets the sticky fluid tipping each of the hairs, he is made a fast prisoner and his struggles for freedom only tend the more firmly to secure him. If the hairs which lie beyond those directly in contact with the insect be patiently watched, they will be seen to incline or slowly bend inward towards the cause of disturbance, and if the distance be not too great, will come into contact with it. By some it is affirmed that the object of the Sundew is thus capturing

insects, is to secure nourishment for itself by imbibing the juices of the insect.

In transplanting the Sundew sufficient earth should be taken with the roots to fill the pot in which it is to be placed. For a house plant there are few things more unique or interesting. It requires to be watered freely and placed well in the sun.

There is another species, *Dosera longifolia*, more especially confined to bogs, which has the appearance of *D. rotundifolia*, but the leaves are narrower and more loosely arranged about the stem.

### ST. JOHN'S-WORT FAMILY—

ORDER, HYPERICACEÆ.

A family of widely distributed species, having the opposite, entire and simple leaves minutely punctate with translucent, and commonly some blackish dots. The flowers are usually yellow, and the numerous stamens are arranged in several—three or five—clusters.

**St. JOHN'S-WORT**, *HYPERICUM*, L. (Origin of name unknown.)

Common plants of little or no agricultural value, with showy yellow flowers, blooming in summer.

The Common St. Johns-wort, *H. perforatum*, is an introduced species, and with us has the character of a weed. "This plant is called St. John's-wort, because it was supposed in olden times to have the power of keeping off evil spirits, which were supposed to be particularly busy on St. John's night." There are other powers which superstition seems to have given this plant, for we hear that formerly in England,

"The young maiden stole through the cottage door,  
And blushed as she saw the plant of power;  
Thou silver glow-worm, Oh! lend me thy light,  
I must gather the mystic *St. John's-wort* to-night;  
The wonderful herb, whose leaf will decide  
If the coming year shall make me a bride."

A valuable crimson or red dye is said to be afforded by the juice of the tops and flowers of this plant.

There are five native species. *H. corymbosum* and *H. ellipticum*, growing in damp soil are the largest and most showy; the three other sorts are less conspicuous, though perhaps prettier plants.

The Marsh St. John's-wort, *Elodes Virginica*, found in wet bogs has purple-veined leaves and flesh-colored flowers arranged in close clusters near the summit of the stem.

**PINK FAMILY—ORDER, CARYOPHYLLACEÆ.**

Herbaceous or rarely shrubby plants with opposite, entire leaves and regular flowers. The stem and branches are generally swollen at the nodes, and sometimes jointed. There are many hundred varieties grown by the florist, they are among the most fragrant and beautiful of cultivated plants. Our native species have little value either for ornament or use. Formerly some of the *Caryophyllaceæ* were employed for their refreshing and demulcent properties, but now they are out of use. A peculiar syrup is prepared from the sweet scented petals of *Dianthus Caryophyllus*. Under the name of Clove-Giliflower, this plant is mentioned in the songs of Chaucer:

“Ther Springen herbs, great and small,  
The Licoris and the Stetewall,  
And many a Clove-Giliflore to put in ale  
Whether it be moist or stale.”

**Common Soap-wort, *Saponaria officinalis*.**

“That fluffy flower of dainty pink,  
Called ‘Bouncing Bet,’ \* \*”

Should be mentioned here. It has a smooth, jointed stem about one foot high, and opposite, lanceolate leaves one to three inches long. The flowers are showy pink or light rose-colored and commonly double. This plant possesses highly demulcent properties, and the gummy, soft resinous matters contained in the leaves and roots form a froth or lather when swashed about in water. Water thus treated affords a wash which gives much relief and often entirely cures the blisters produced by “Mercury,” or Poison Ivy. The Soap-wort is an introduced plant.

“A wild and ever roving flower,  
Which hardy fights conditions sour,  
With straggling growth and reckless power;  
Still blooming early, blooming late,  
By village road and farm-yard gate.  
\* \* \* \* \*  
If its rank growth it would condense,  
And stay within the garden fence,  
Some undeveloped excellence,  
Within its petals might be set;  
And in new grace, we might forget  
Its slighting nickname, ‘Bouncing Bet.’”—E. M. FORD.

**CAMPION, SILENE, L.** (Name from the Greek, meaning *saliva*, because in many species there is a viscid excretion.)

This viscid matter is so sticky in some of the species as to hold small insects; hence the English name *Catchfly*. Several species are cultivated for ornament.

**Moss Campion**, *S. acaulis*, L. Stem dwarf, tufted and moss-like, 1 to 2 inches high. Leaves very numerous and narrow, one-half an inch long. Flowers purple.

A very pretty little moss-like plant, growing on the summits of high mountains.

**SANDWORT**, *ARENARIA*, L. (Name from the Latin, meaning *sand*, as most of the species grow where it is sandy.)

The Sandworts are chiefly low tufted herbs, with small white flowers.

**Mountain Sandwort**, *A. Grœnlandica*, Spreng. Stems very slender, erect, growing in dense tufts, two to four inches high.

The flowers are white and quite large and showy for so small a plant.

This interesting and attractive little Sandwort grows in great profusion upon Mt. Katahdin, and also upon high, rocky river banks near the coast, especially at Bath.

**SAND SPURRY**, *SPURGULARIA*, Pers. (Name from the likeness of the plants to those of the genus *Spergula*.)

Low spreading herbs mostly growing near the seashore, blooming all summer.

**Red Sand Spurry**, *S. rubra*. Stem prostrate, forming tufts. Leaves small and very narrow. Flowers small, numerous, of a pink-red color, opening about noon during bright sunshine.

This is a very pleasing little species common by gravelly roadsides and along sandy paths. It occurs in great abundance at Orono, Augusta, etc.

## PURSLANE FAMILY—ORDER, PORTULACACEÆ.

Herbaceous, succulent plants, with entire leaves and regular flowers, which expand only in sunshine. The species are widely distributed, delighting in the driest places. The properties of the order are not very marked. Common Purslane, or as some old people say, "Pusley," *Portulaca oleracea*, one of our commonest and most troublesome weeds, is sometimes eaten as salad. It is reported to be sedative, refreshing and antiscorbutic.

**SPRING BEAUTY**, *CLAYTONIA*. (Named in honor of one of our earliest botanists, Dr. Clayton).

Spring blooming, fleshy plants, arising from a small tuber.

**Common Spring Beauty**, *C. Virginica*, L. Root a deep, perennial tuber. Stem slender, unbranched, bearing two opposite, lanceolate leaves, 3 to 6 inches long. Flowers in a loose raceme, rose-colored with deeper veins. Moist open woods and banks. May.



The Spring Beauty is a well named plant, for it is truly one of our prettiest spring flowers, and were it less common it would be highly prized by the florist. As it is, it well deserves a spot in



SPRING BEAUTY.

the garden along with the Blood-root and Squirrel Corn. This plant grows abundantly in Bangor, Bucksport and Madison.

*Claytonia Caroliniana* has white flowers slightly tinged with red and beautifully lined with purple veins. This species is less com-

mon than the last. It has been found both in Bucksport and Bangor. When transferred to the garden it should, if possible, have a shady place. The roots of both species should have an extra covering during the winter.

### MALLOW FAMILY—ORDER, MALVACEÆ.

A large family, numbering about one thousand species, found in nearly all parts of the world, except in the very coldest. They are either herbs, shrubs or sometimes trees, with alternate leaves and regular, mostly showy flowers. The numerous stamens are monadelphous or united into a tube, and are also connected with the base of the petals. Nearly all the species contain a mucilaginous principle. Many are grown in gardens for ornament. Species of *Gossypium*, cultivated largely in the Southern States, have their seed coats clothed with long and numerous hairs which furnish the cotton of commerce. Some of the largest trees in the world are members of this order, such as the celebrated Boabab trees of tropical Africa, having trunks that sometimes measure one hundred feet in circumference.

The leaves and flowers of the Common Mallow (*Malva rotundifolia*) and the High Mallow (*M. sylvestris*), and the root and flowers of the Common Marsh Mallow (*Althæa rosea*) are employed to allay irritation and to alleviate inflammatory soreness.

#### Swamp Rose Mallow, *Hibiscus Moscheutos*, L.,

Is found in brackish marshes along our seacoast. It is a tall, showy plant with a simple, erect and downy stem five to six feet high. The flowers are very large—five to six inches in diameter—of a light rose-color with a purple or crimson centre.

### LINDEN FAMILY—ORDER, TILIACEÆ.

A family of nearly forty genera and three hundred and fifty species, most abundant within the tropics. It contains many useful and ornamental plants. The jute of commerce—a common substitute for hemp, which it somewhat resembles—is produced by the Indian *Corchorus capsularis*; many thousand tons of this material are imported into England annually. The inner bark of nearly all the species is fibrous and tough, like that of Malvaceous plants, and is employed in the manufacture of cordage; from some of the species paper is made. The properties of the order are very mild, a mucilaginous, wholesome juice pervading all the species.

In some the fruit is palatable. These plants are known to us by the single genus—

**LINDEN**, *TILIA*, L. (The ancient Latin name).

Trees with pale yellow, fragrant, honey-bearing flowers; a firm but very soft and light wood, and a tough fibrous bark. To the lower half of the stalk bearing the flowers, there is united a peculiar, whitish, ribbon-like bract, which aids in extending the distribution of the seeds.

All writers upon trees have praised the beauties and dwelt upon the values of the Linden or Lime-tree of Europe, *T. Europæa*. The virtues of the bark and wood as well as the flowers are celebrated in the writings of the ancient poets.

“The stately Lime, smooth, gentle, straight and fair,  
—With which no other Dryad can compare,—  
With verdant locks and fragrant blossoms deckt,  
Does a large, even, odorate shade project.”—COULEY.

The inner bark of the Lime tree was much used by the ancients to write upon. A book formed of this material, containing some of the writings of Cicero, was purchased in 1662, by Louis XIV, for eight thousand dollars.

In the writings of Ovid is the story of Baucis, the wife of Philemon, who asked the gods the simple favor that she might die the same day as her husband. Her request was granted by changing her into a Lime tree and her husband to an Oak; since then the Lime has ever been considered an emblem of conjugal affection.

Theophrastus says that the sweet leaves were used as food for cattle; and Pliny alludes to the uses of the wood, and the value of the tree for shade. The farmers of Sweden and Norway even now gather the leaves in large quantities to feed to their cattle.

It was the custom of the Swiss and Flemings to plant a Linden on the field won in battle. The longevity of the European tree is often much shortened by the ravages of insects; there are trees, however, known to be over two hundred years old, and some that are thought to have been growing for more than six centuries. The average height of the foreign species is from thirty to fifty feet, with a diameter of eighteen inches to two feet. There are examples, however, of much larger growth; that one mentioned as growing at Knowle, near Kent, England, seems especially noticeable. This curious and immense tree shades nearly a quarter of an acre of ground. It is especially peculiar in the manner of its growth; for the wide extended branches drooped at their extremities till they

finally rested upon the ground, where they took root and sent up a circle of young trees, which in their turn spread wide their branches, that drooped after the manner of the parent tree, and eventually rooting threw up another circle of young Lindens. Under favorable circumstances the head of the Linden has reached the diameter of one hundred and twenty feet, an altitude of one hundred feet, and a circumference of twenty-four feet about the trunk. Another specimen mentioned by Evelyn, was forty-eight feet in circumference at one foot from the ground, and more than ninety feet high.

A cubic foot of dry Linden wood will weigh thirty-five pounds. It is soft and fine-grained and of great value to the carver.

"Smooth Linden best obeys  
The carver's chisel; best his curious work  
Displays in nicest touches."

In St. Paul's Cathedral there are some exquisite carvings in this wood, made in the time of Charles II., by the celebrated Gibbons. Though more than two centuries old, these carvings are still sharp and beautiful. The wood is much used by toy-makers and turners. The sap contains sugar like that of the maple, but it is not so sweet. It readily ferments, and yields an agreeable vinous liquor. The astringent mucilage contained in the inner bark of certain European varieties, is employed by the Germans as a vulnerary.

The Linden grows very abundantly in Russia, where vast quantities of the bark is used in making the so-called Russian mats, much used by gardeners to wrap up roots and plants. Besides the uses already mentioned, the bark is made into ropes, fishing nets, and coarse clothing.

The flowers of the Linden are remarkable for their rich and delightful fragrance, being not unlike that of mignonettes.

— "Sometimes  
A scent of violets and blossoming Limes  
Loitered around us; their honey cells  
Made delicate from all white flower bells."—(Keats.)

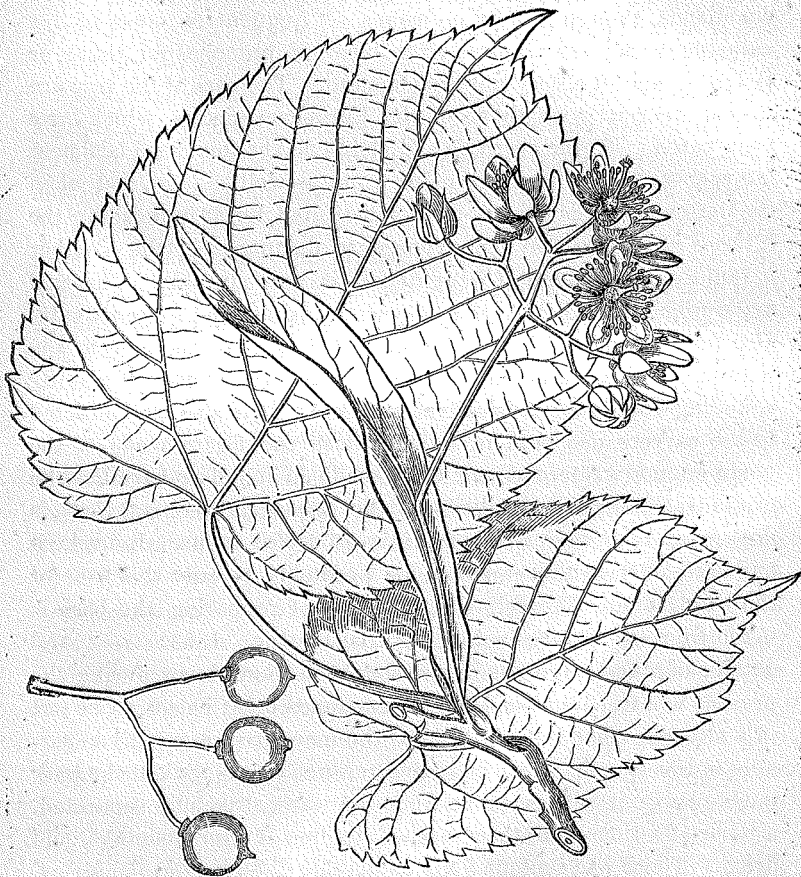
The flowers of the Linden are rich in sweets, and when in bloom are eagerly sought by bees. In Scotland the honey made from these flowers, sells for more than double the price of any other kind. It is certainly of very superior quality, and "has been used extensively in medicine, and for liquors." The odor of the Lime-tree was believed by the early English to purify the air and act as a cure for epilepsy. Although the European tree has been

much planted in this country, it has the drawback of early shedding its leaves,—

"Those virgin leaves of purest vivid green,  
Which charmed ere yet they trembled on the trees,  
Now cheer the sober landscape in decay,  
The *Lime* first fading."

The foreign sort is also more liable to the attacks of insects than our native tree.

**Basswood, Linden, American Lime.** *Tilia Americana*, L. (Figured in Michaux N. Am. Sylva, pl. 131; Selby, British Forest Trees, p. 11; Loudon, Arboretum Britannicum, V, plate 24, and in this work.)



AMERICAN LINDEN.

*Root* strong, very deep and wide-spreading. *Stem* 40 to 80 feet high, with wide-spreading and much ramified branches. *Wood* soft, light and fine-grained, very white when green, turning to a light brown in seasoning. *Bark* of young trees smooth, of a light ashen-gray color; on the trunks of old trees the bark is thick, and longitudinally cleft on the outside. *Leaves* roundish in outline, 3 to 6 inches long, with a toothed



margin, and a heart-shaped, unequally lobed base—the largest lobe nearest the branch. *Flowers* of a light honey-yellow color, in clusters of from 6 to 25 on a branched stalk, which is curiously appendaged with a ribbon-like, membranous bract, rising from the upper axil of the leaf. *Fruit* a hard, roundish and gray nut, about the size of a pea, containing *one seed*.

Rich woodlands from Canada to Georgia. Flowers late in *June* and early in *July*. Fruit *October*.

This very valuable tree is known throughout New England by the name of Basswood. It is sometimes called white-wood, but this name properly belongs to the Tulip tree, abundant in the Middle and Western States. The Basswood is common in our woodlands, though it is by no means so frequent as most of our valuable trees; the trunk is often clear of branches for thirty or forty feet and of a very uniform diameter. The uses of the tree are almost identical with those of the European species, which have been noted. To the carriage and sleigh maker this wood is almost indispensable. It receives paint quite as well as pine, and when the latter wood is scarce it is substituted for it in finishing the interior of houses. When exposed to dampness or the weather it rapidly decays, but if kept dry it is very durable. Charcoal made from Basswood is of a superior quality, and quite as valuable for the manufacture of gunpowder as that made from the willow. The wood is little liable to warp and is used in making sounding-boards for musical instruments. It is also well adapted to the carvers use, and in former times the figure-heads of the boats on our western rivers were made of it. The bark has the toughness and other qualities of the European tree, and there is no reason why we cannot make it as useful to us. Indeed, it has been affirmed that it would be profitable to raise this tree for the bark alone. The following method of preparing the bark is taken from the American Agriculturist for June, 1863:

“Young and vigorous trees should be cut down during the present month (June) and the bark stripped off. This is to be put in a stream or pond of water until the inner bark is readily separable in layers, which will be in two or three weeks; when the bark parts readily it is to be taken from the water, carefully separated, a layer at a time, and then washed to free it from mucilage, and dried. There will be found a considerable difference in the strips. The finest should be selected for tying buds and other delicate work, and the strongest and thickest left for coarse purposes. ‘Mats woven from these coarser strips, or a thatch made of it forms an excellent covering for young and tender plants.’ The flowers

contain a volatile oil, together with sugar, a mucilaginous gum and tannin. They are sometimes steeped in water, forming a tea valued for colds and hoarseness. There is much nutriment contained in the buds and young twigs. 'In severe winters when fodder is scarce, it is common for the farmers of British American provinces, as well as those of Maine, New Hampshire and Vermont, to drive their cattle into the woods in the morning and fell a Basswood or other tree on which they eagerly browse during the day.'"—(*Browne*).

The market value of good Basswood timber in the log is from \$10 to \$14 per M; when sawn into boards it is valued at from \$15 to \$35 per M, according to its quality.

The leaves of the Linden are peculiarly characteristic and have a luxuriant and healthy appearance. In neatness and symmetry of form, and in the density of its shade this tree is unsurpassed by any of the deciduous leaved sorts. It belongs to the class of round-headed trees, and, owing to its stately habits is especially fitted to line avenues and straight walks. The dust of cities, so detrimental to most trees, affects this but little, so that it is well adapted to border streets. Not only is this tree very beautiful, but it has also to recommend it, a rapid growth and perfumed flowers.

"The Lime a dewy eye  
Diffusing odors."

The flowers of the Linden are so arranged that if we wish to behold the amazing wealth of bloom which in July adorns these trees, we must go under them and look up. We view a glorious spectacle—"a very heaven of fragrant honey cups."

"The fragrance of the Linden blossom symbolize the crown and glory of summer in its most charming days of roses and hay-making, and we would not exchange the associations that cluster around it for all the 'odors of Araby the blest.'"

The Linden may be readily grown from seed or by layers. The former method is considered the better, as the young trees grow more rapidly and assume better proportions. Some dry, pleasant day in October the seeds may be gathered by beating them off the tree with a pole; they should be allowed several days to become thoroughly dry, and then be planted somewhat after the following plan, given by Hunter in his notes to Evelyn's Forest Trees:—"Procure a spot of rich garden ground, and having the mould made fine by digging and raking, let it be raked out of the beds

about one inch deep. These beds may be four feet wide and the alleys a foot and a half. After the mould is raked out the earth should be gently tapped down with the back of the spade, to make it level; then the seeds should be sown, at about an inch asunder all over the bed, gently pressing them down, and covering them about an inch deep. In the spring of the year the young plants will make their appearance, when they should be constantly kept clear from weeds, and gently watered in very dry weather. In this seminary they may stand for two years, when they will be fit to plant in the nursery; at which time they should be carefully taken up, their roots shortened, and the young side branches, if they have shot out any, taken off. They must be planted in the nursery ground in rows, two feet and a half asunder, and one foot and a half distant in the rows. Then they may stand till they are of proper size to be planted out for good."

The young shoots which spring up when an old tree is felled, make the best of layers. According to Du Hamel: "Among these they throw a quantity of soil which they allow to remain two or three years, after which they find the shoots well rooted, and of a sufficient height and strength to be planted at once where they are finally to remain."

There are several varieties of the Linden cultivated, one of which has leaves nearly a foot long. Although this tree will grow and flourish in almost any kind of soil it does best in a deep, rich loam. The following data from the report of the Illinois Horticultural Society, indicate the growth of the Linden for the first fifteen years:

At the age of 5 years 6 inches in circumference and 10 feet high.

"	10	"	18	"	"	20	"
"	15	"	40	"	"	38	"

One sometimes meets old trees that have a diameter of four or five feet near the ground.

Some English authorities mention as many as eighteen species of Lepidopterous insects alone, which feed, in their caterpillar state, upon this tree. According to Packard a species of saw-fly (See "*Guide to the Study of Insects*," page 222) *Scandria tilia*, feeds on the leaves of the Linden, and Harris, in his "*Injurious Insects*" mentions the following as boring the wood or eating the leaves: *Saperda vestita*, *Chrysomela scalaris*, *Vanessa Interrogationis*, *Apatela Americana*, and *Hybernia Tiliaria*.



**FLAX FAMILY—ORDER, LINACEÆ.**

Herbaceous or rarely shrubby plants, with sessile leaves and regular flowers. Many species are grown for ornament on account of their showy and various colored blooms. The plants of the order are remarkable for the great strength of the inner fibre of the bark.

Common Flax—*Linum usitatissimum*—one of the most useful plants to man, and cultivated from remote antiquity. It is not a native here, but has become spontaneous about fields where it has once been grown. Linen is a well known product of this plant; and from a pound of the fibrous inner bark a thread 36,000 yards long has been spun. From the seed is made linseed oil used by painters; the nutritious oil-cake; a most valuable emollient poultice; and "one of the best mucilaginous drinks for coughs and dysenteric affections."

**GERANIUM FAMILY—ORDER, GERANIACEÆ.**

A family of herbs or under-shrubs, rarely trees, with regular or irregular, mostly showy flowers. The species number about 750; they are very generally distributed, but most abundant in Africa. A large number are grown in gardens, either for their beautiful flowers, or variegated and oftentimes sweet-scented foliage. The herbage of some has a strong, disagreeable odor. The buds and young fruit of the well known garden Nasturtium—*Tropæolum majus*—a plant for South America, are frequently pickled and used as a substitute for capers.

Eight species grow wild in Maine, some of them quite ornamental.

**GERANIUM or CRANESBILL, GERANIUM.** (Name from the Greek *Geranos*, a crane; the long-beaked fruit bears some resemblance to the bill of that bird.)

*Stems* forked, often with swollen joints; *peduncles* bearing one to three regular, red or purple flowers.

**Spotted Geranium, Cranesbill, *G. maculatum*.**

*Root* perennial. *Stem* erect, 12 to 18 inches high, hairy. *Leaves* 2 to 3 inches long, with about five wedge-shaped divisions, marked with whitish spots as they grow old. *Flowers* light rose purple, about an inch across. Open woods and along fences. *May* to *July*.

This is quite a showy plant, and where it grows abundantly it may possibly be classed among the weeds. Its character is re-deemed by the valuable medicinal properties possessed by the

roots, and on account of these every one should be able to recognize the plant when seen. "The thick, fleshy root, or rather rhizoma, which should be collected in autumn, is powerfully astringent, without bitterness or unpleasant taste, and is useful in diarrhoea and other diseases where a medicine of this kind is required. Boiled in water, and mixed with sugar and milk, it is easily administered to children."—(*Darlington.*)

Herb Robert—*G. Robertianum*—is another native species, also possessing astringent properties. It is a diffusely branched, spreading plant, having very strong scented and finely cut leaves, and small, pink or red purple flowers.

**BALSAM, IMPATIENS.** (Name referring to the peculiar elasticity of the seed capsules, which, when mature, fly open at the slightest touch, widely scattering the seeds.)

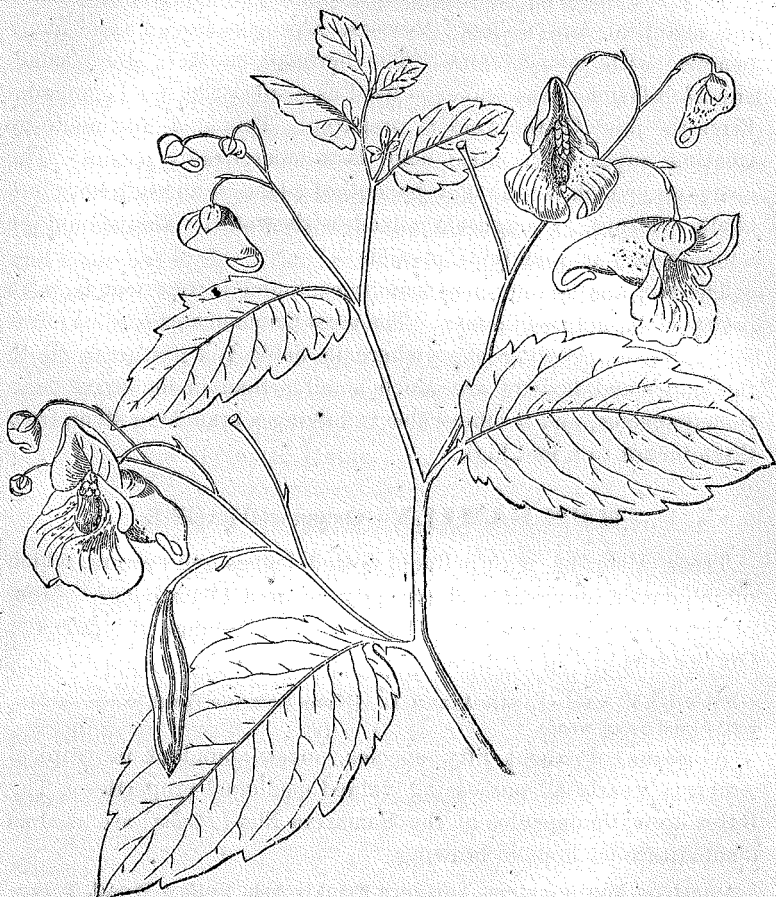
With fierce distracted eye *Impatiens* stands,  
Swellers her pale cheeks and brandishes her hands,  
With rage and hate the astonished groves alarms,  
And hurls her infants from her frantic arms.—(*Darwin.*)

The flowers are of two sorts—the irregular and showy ones, having the calyx colored like the corolla, and the very small ones which do not expand, but are fertilized in the bud. "They are forced off by the growing pod and carried upwards on its apex."

The East Indian *Impatiens Balsamea* is everywhere cultivated in gardens for its high-colored, often variegated and double flowers.

**Jewel-weed, Celandine, *I. fulva*.** (Figured on opposite page.)

This is a very common plant in swamps, and in moist, waste places about dwellings, where it properly ranks as a weed. It has a smooth, shining, juicy stem, two to four feet high, and alternate, somewhat tawny leaves. The curious orange-colored and spotted flowers are most gracefully paniced at the ends of the branches, and are truly elegant. Were it not for the somewhat weedy look which the plant has it would be considered highly ornamental. The juice of the stem possesses emollient properties; it has a supposed or real power to cure warts on both man and horses, and it affords great relief to some in cases of poisoning by "Mercury" (*Rhus*). The mature capsules or seed-vessels are a source of much amusement to children, as they burst with considerable force when touched with the thumb and finger, whence the names *Touch-me-not* and *Snap-weed*, sometimes applied to it.



OELADINE.

**WOOD-SORREL**, *OXALIS*, L. (Name from *Oxys*, a Greek word meaning *sour*, alluding to the acid taste of the leaves).

Several species are grown in Europe for their farinaceous and edible tubers. The juice has an agreeable and cooling, acid taste, owing to the presence of Binopalate of Potash, a substance "which, under the name of *Salts of Sorrel* was formerly much used for removing ink stains and spots of iron rust from linen." Several kinds from the Cape of Goodhope, with rose-tinted or yellow flowers, are grown in conservatories.

**Common Wood-Sorrel**, *O. Acetosella*, L. Rootstock perennial, creeping, scaly. Acaulescent. Leaves divided into three leaflets, which are notched at the end and fold up and droop at night. Flowers solitary on a slender scape, 2 to 5 inches high, petals white with reddish veins. Deep, rich woods. June.

This is a most elegant little plant, common in mossy woodlands; the beautiful and delicate flowers, an inch across; are finely penciled with purple veins. The herbage makes a good salad, and an infusion of the leaves is used as a substitute for Lemonade. From the juice Oxalic Acid is prepared. This acid, also made by treating sugar with nitric acid, is a most deadly poison. The antidotes, which it may not be out of place to mention here, are chalk, whiting, or magnesia mixed with water. This should be administered as quickly as possible.

There is another species sometimes found in our woods, with pretty violet-colored flowers. The most common sort is the Yellow Wood Sorrel, growing everywhere in fields and pastures. Both the leaves and flowers are much smaller than in the above mentioned species, and it differs also in having a branching stem, from three inches to a foot high.

### RUE FAMILY—ORDER, RUTACEÆ.

Trees or shrubs, with pellucid dotted leaves and flowers, which often contain pungent and strongly scented bitter juices. Most of the species are tropical. To this order belongs the *citrus* or Orange tree.

**PRICKLY ASH, XANTHOXYLUM, L.** (Name from two Greek words, *wanthos*, yellow, and *aulon*, wood).

A genus of about fifty species, most abundant in tropical America, nearly all possessing valued medicinal properties. The bitter aromatic capsules of the Samarian Elm (*Ptelea*) are used as a substitute for hops in brewing.

**American Xanthoxylum, Northern Prickly Ash, Yellow Wood, Toothache Tree.** *X. Americanum*, Mill. (Figured in Bigelow's Medical Botany, Vol. III, pl. 59; Arboretum Britannicum, Vol. I, fig. 158; Darlington's Weeds and Useful Plants, page 75).

*Root* yellow. *Stem* shrubby, 4 to 8 feet high, much branched, armed with stout prickles. *Leaves* like those of the ash tree, made up of from 3 to 13 leaflets, 1 to 2 inches long. *Flowers* greenish-yellow, arranged in close axillary clusters, appearing before the leaves early in *May*.

This shrub grows along river banks, and is said to occur in this State. It makes a small, well looking, round-headed tree when growing alone and properly trimmed. The aromatic and pungent principle of the order is strongly present in the leaves and bark, and these are much employed in medicine. The bark is sometimes chewed to cause a flow of saliva and to alleviate the sufferings of toothache,



"That un pitying pain  
Which plucks the nerves, close sealing with a frown  
Ev'n beauty's lips, which the bold Ayrshire bard  
Wished in his patriot vengeance to entail  
On Caledonia's foes, yielding its rage  
To the rough genius of that lofty tree,  
Whose yellow armour bears in countless studs  
The horrid thorn."

The Indians appear to have known the values of this plant, for "they extracted from its berries the salivating power of mercury, and made use of decoctions of the plant as strong perspiratives." (*Lawson*). "An infusion is used in domestic medicine in the treatment of rheumatism and in colic."—(*Weeds and Useful Plants*.) From some West Indian species a yellow dye is obtained, and their leaves are employed as a vulnerary. The berries of certain species are used to poison fish. The plant described above is the only species found in Maine.

#### SUMACH FAMILY—ORDER, ANACARDIACEÆ.

Trees or shrubs, with small flowers and alternate, chiefly compound leaves. The juice is milky or resinous, often acrid and poisonous, and of much commercial value. The *exhalations* merely from certain species are poisonous to some people, causing blisters and severe irritation of the skin. The Pistachio and Cashew nuts are edible, and the fruit of the Mango—*Mangifera Indica*—is most delicious. There are about forty-eight genera, mostly tropical. *Rhus* is the only North American genus.

**SUMACH**, RAUS, L. (Name the same as employed by the ancient Greeks and Romans).

This genus numbers about one hundred species—according to some eighty, and to others one hundred and fifty—very widely distributed, being found in Europe, China, Japan, and at the Cape of Good Hope, as well as in this country. The highly prized Japan and the celebrated Copal varnishes are made from the juices of *R. vernicifera* and *R. copallina*, respectively. The bark abounds in tannin, and the bark and wood yields a yellow coloring matter. The Smoke-Tree often seen in gardens, is a well known and highly ornamental shrub of this genus.

**Stag's Horn** or **Velvet Sumach**, *R. typhina*, L. (Figured in *Arboretum Britannicum*, II, fig. 224).

*Roots* wide-spreading and throwing up suckers. *Stem* 4 to 25 feet high, irregularly branched; *wood* soft, brittle, of a deep greenish-yellow color; *juice* abundant, thick,

milky. *Leaves* composed of from 8 to 20 pairs of leaflets, shining green above, changing in autumn to purplish or orange-red. *Flowers* small, yellowish-green, arranged in a dense terminal panicle 5 to 10 inches long. *Fruit* a small drupe or berry, clothed with crimson hairs. Woodlands, dry hillsides and field-borders. *June*.

This is our best known and most valued species. The wood when smoothed has a satin-like lustre, and owing to its unusual color and fine grain may well be used in ornamental work. The bark contains a large amount of tannin, and like some European species has been employed in tanning certain kinds of leather. The specific name, *typhina*, is from the Greek word *typhos*, signifying stupor or senselessness, and is applied to this plant on account of the *antifebrile* properties of the roots. The milky and adhesive juice becomes black on exposure to the air, and "the branches boiled with the berries afford a black, ink-like tincture." The acid berries are by some employed to sharpen vinegar, whence the name *vinegar-tree*, sometimes applied to this shrub.

Commonly this plant appears as a straggling, ill-shapen shrub, possessing little beauty, and, on account of its throwing up numerous suckers, is classed by thrifty farmers among the troublesome weeds. It is certainly troublesome when growing in the garden or on land that is tilled, but when grown alone upon the lawn, or in some unused corner, it becomes highly ornamental. The branches have a most irregular growth; their extremities are not small and twig-like as in most aborescent plants, but large and stiff, and densely clothed with abundant brownish hairs, giving them the appearance of *Stag's horns*, whence our common name. When grown by itself this plant assumes a tree-like form with a rounded outline. Its attractions are its multitude of graceful and shining leaves, changing to bright hues in autumn, and its conspicuous scarlet fruit, which remains on the plant throughout the winter. It is easily grown from cuttings of the root or from seed.

Though the diameter of the Sumach is generally from three to four inches, there are occasional specimens of larger size; one in particular, growing near Augusta, is twenty-seven inches in circumference at six inches from the ground. It has a large round head, and whether in flower or fruit is a very attractive object.

There are five species of Sumach or *Rhus* native to this State. The Dwarf Sumach, *R. copallina*, has much the habit of the above described species, but is a small shrub and is distinguished by having its leaf-stalk winged or margined. The Smooth Sumach, *R. glabra*, is also a low shrub growing on dry hillsides and along



river banks. The young shoots are very smooth, by which character it may at once be known. The two remaining species, though ornamental in appearance, are the most to be dreaded of all our native plants, as they are extremely poisonous to the majority of persons. The more common sort, the well known "Mercury" or Poison Ivy, *R. toxicodendron*, is a proper vine, climbing over rocks and about stumps, and often ascending the trunks of trees to a considerable height. It clings to its support by means of little rootlets which it emits along its stem, after the manner of the English Ivy. The powerful properties of this plant, so painful in their effects upon some people, are perfectly harmless to others. This difference may be owing to some constitutional diversity, or perhaps to the state or condition of the body when exposed to the action of the plant. There are those who have considered themselves wholly free from the usual effects of the Poison Ivy, and who have handled it many times with impunity, yet have been severely poisoned at last under some peculiar circumstances. Some are so susceptible to the properties of this plant that they are poisoned, especially if perspiring, by merely coming into its vicinity. Thus the air about the plant seems to be poisonous; more particularly is this the case with the Poison Sumach, *R. venenata*. Emerson calls this the most beautiful plant of the swamps; and it is indeed a fine appearing shrub, especially in autumn, when the always beautiful foliage is most brilliantly colored; but its villainous character, for it is even more poisonous than the Poison Ivy, must forever banish it from all good society. Even the charcoal of this species is said to poison some people. As with the Poison Ivy, there are those who can handle the plant or chew the leaves without injury. Dog-wood and Poison-wood are names by which this plant is known in certain localities.

Below are mentioned some of the remedies employed to relieve the irritation and blisters caused by the above named plants: Acetate of Lead and corrosive sublimate, (*Dr. Bigelow*); sweet spirits of nitre; a decoction made from the roots of Indian Poke, (*Prof. Hopkins*); a wash made from *Soapwort*, (see page 179). It is common to bathe the parts affected in hot water and then apply a very strong, warm brine. Some cover the irritated parts with a coating of soft soap, which is allowed to dry in, this is very sure to kill the effects of the poison but is rather a severe remedy.

**VINE FAMILY—ORDER, VITACEÆ.**

Our plants are woody vines, climbing by means of tendrils, with small greenish flowers arranged in clusters, opposite the leaves. The order numbers about 250 species, mostly inter-tropical. A species of *Cissus* furnishes a blue coloring matter used in dyeing cotton fabrics, but the chief value of this family is in the fruit produced by certain species of

**The GRAPE VINE, VITIS.** *Tourn.* (Name the same as employed by the ancient Romans.)

Two foreign species are cultivated for their beautifully colored foliage. From some varieties vast quantities of wine are made; others are grown for their well known and luscious fruit. The fruit of the wild growing sorts, of which there are three in Maine, is little esteemed. According to Sir James Hall, as quoted by Emerson, the leaves of the grape vine, dried in the shade form an excellent substitute for tea.

From our Northern Fox Grape—*V. Labrusca*—not unfrequent in low thickets, have been derived most of our table and wine producing varieties. The well known Isabella grape, and the Catawba, better known farther south, are said to be seedlings from this species. It is distinguished by having the young shoots and leaf and flower-stalks covered with a tawny down. The dark purple fruit, forming compact clusters, is a little more than half an inch in diameter, and filled with a tough musky-flavored pulp. The flowers appear in June, fruit ripens in September.

The Summer Grape—*V. æstivalis*—grows in similar locations as the above; it has smooth leaves, and small, nearly black berries, which ripen in October.

The Winter or Frost Grape is the only other native species. It is not so rampant a grower as the above-named, and is recognized by its very short jointed stem, thin leaves, and very acrid, small and almost black berries, ripening after the frosts. Besides for their fruit, these vines, especially the first, are highly ornamental for the trellis or arbor.

**The CREEPER, AMPELOPSIS.** *Michaux.* (Name from two Greek words, meaning like the vine.)

A small genus, considered by some as not distinct from *Vitis*.

**The Virginia Creeper, A. quinquefolia, Mx.** (Figured in Abbott's Insects of Georgia, I, plate 30.)

*Root* fibrous, extending near the surface of the ground. *Stem* climbing extensively, supported by means of tendrils. *Leaves* ample, composed of five obovate, long-pointed

leaflets. *Flowers* small, inconspicuous, green tinged with red. *Fruit* dark blue, or quite black at maturity. Rocky banks and hill-sides. *July*.

This is the most valuable of all our native vines, both on account of its vigorous, hardy growth, and abundant rich green foliage, which in autumn assumes most brilliant scarlet and purple hues. No climber is so extensively grown and none more deservedly. As the roots are all near the surface of the ground, large vines can easily be transplanted without injury, so that a trellis or arbor can be covered, or an unsightly object concealed in a season. Owing to its peculiar method of climbing, this vine is especially well adapted to grow over the outer walls of buildings, as it needs little or no artificial support. The tips of the tendrils are expanded into flattened discs, which adhere to the walls most tenaciously. A disfigured tree is often transformed into a beautiful and picturesque object by being adorned with this rich growing vine. "Often in October, it may be seen mingling its scarlet and orange leaves, thirty or forty feet from the ground, with the green leaves of the still unchanged tree upon which it has climbed."

#### BUCKTHORN FAMILY—ORDER, RHAMNACEÆ.

A small family of shrubs or low trees, with slightly bitter and astringent properties. We have two species, the Alder-leaved Buckthorn and the

New Jersey Tea—*Ceanothus Americanus*—which in early times was much used as a substitute for the imported teas. "The flowers of the *Ceanothus* are white, in full and elegant clusters, without any formality of shape, having a downy appearance, always attracting attention, not so much by their beauty as by their delicacy and profusion."—(*Wilson Flagg*.) This plant grows in dry woodlands, blooming in July.

#### STAFF-TREE FAMILY—ORDER, CELESTRACEÆ.

A small family of about two hundred species, growing chiefly in the temperate regions, and possessing more or less acrid and astringent properties. A yellow dye is made from an Indian species of Spindle-tree "with which the Hindoos make the sacred mark on the forehead."

**STAFF-TREE**, CELASTRUS, L. (An ancient Greek name.)

Plants with polygamo-dioecious flowers arranged in raceme-like clusters at the ends of the branches.

**Wax-work, Climbing Bitter-sweet, *C. scandens*, L.** (Figured below.)

A beautiful twining shrub, growing over rocks, trees, &c., to the height of ten or fifteen feet.



**BITTER-SWEET.**

*Root* deep growing, with bright yellow bark. *Stem* 10 to 15 or 20 feet long, twining. *Leaves* bright green, from two to five inches long, of an ovate shape with a finely cut or toothed margin. *Flowers* small, greenish-yellow. *Fruit* about the size of peas, highly ornamental. Along river banks and on rich hill-sides. *June*.

The Bitter-sweet is one of our most elegant native climbers, prized for its vigorous growth, rich foliage, and especially for its crimson and orange-colored fruit. The yellow bark of the roots has been employed in dyeing; it is also valued as a blood purifier. Both the roots and berries have a bitter and slightly sweet taste, whence the common name. The name Wax-work probably refers to the appearance of the fruit. The abundant leaves are oval in shape and are of a fine lively green. The flowers are not showy, but the fruit which remains on the vine through the winter, is singularly attractive, hanging in orange-colored clusters from



every branch. The Bitter-sweet can be transplanted without much difficulty. To attain perfection it requires a deep rich soil and plenty of sun. Like the Morning-Glory, this plant climbs by twining, and so tightly does it coil that it checks the growth and finally kills, "strangles," the small trees about which it grows; it should, therefore, be provided with some artificial support. There is not a more pleasing vine, nor one better adapted from the nature of its habits to train around pillars supporting porticos or verandas. Besides transplanting, the Bitter-sweet readily grows from layers or seeds.

### SOAPBERRY FAMILY—ORDER, SAPINDACEÆ.

By some authorities the Maples constitute a family by themselves; but Dr. Gray, whose arrangement is here followed, classes them as a sub-order in the Soapberry Family. The magnificent and well known Horse Chestnut tree—*Æsculus*—grown both for ornament and shade, is not a native, so that no extended account of it will be given here. The Three-leaved Bladder-nut, *Staphylea trifolia*, is said to grow in this State. It is "an irregular, handsome, tall shrub or small tree, with spreading branches, growing on the borders of damp woods."—(*Emerson*).

**MAPLE**, ACER, *Tournefort*. (Name from the Celtic *ac*, hard, probably referring to the hardness of the wood of some species).

Trees or sometimes shrubs with deciduous, opposite, and lobed leaves. The flowers are polygamo-dicæcious, small, and either greenish tinged with yellow, as in the Sugar Maple, or bright red or scarlet, as in the common Red Maple. The seed is furnished with a broad wing or key which aids in its distribution. Astringent properties abound in the bark, which also affords reddish and yellow coloring principles.

The species are all beautiful in appearance, and some of them rank among the most valued forest trees. The fine and beautifully grained wood is not excelled by any of our hard-wood trees, and those species most prized for their timber also furnish a sap rich in sugar, which yields to many a large income.

Pliny in his elaborate account of these plants mentions ten different kinds, and frequent allusion is made to them by the older poets. Excepting the citron, no wood was more highly prized by the ancients than the maple. Tables made from curious grained specimens were sold for fabulous prices, one is mentioned as selling

for its weight in gold, and thrones made of this wood were deemed fit seats for the Gods. A pleasant account is given by one writer of this extravagance of the old Romans for fine tables. "One of the hobbies in which the ancient, luxurious Romans indulged (as the old-china mania was not then invented) was the acquisition, at enormous prices, of tables made from very rare and curious specimens of maple-wood. Their wives also happened to have another costly taste, for dresses, jewelry, and the like vanities, which their lords, oblivious of their own rather expensive little fancies, considered were needless extravagances, and sometimes ventured to hint as much; when the ladies, roused by this injustice, would in their turn point to the sumptuous Maple table, with an allusion to its ruinous price; and this was called '*turning the tables*' on their husbands; hence the phrase used to this day for a similar kind of retort."

Although comparatively free from insects, the Maple is subject to the attacks of borers which sometimes entirely destroy the Sugar Maple, the most valued species. The beautiful Clytus, *Clytus speciosus*, is the most injurious. The perfect insect is from nine to eleven-tenths of an inch in length and three or four-tenths inches in width; its color is black, variously marked with yellow spots and lines. The beetle lays its eggs in July and August and the larvæ bore in all directions through the tree.—(*Packard*.) There is a large Saw-Fly which also bores into the Maple. *Chrysobothris Harrisii*, a small beetle of a brilliant blue green color, does much injury to the Red Maple, by boring into the smaller limbs.

Two or three species of the Maple are grown from layers or cuttings, but our sorts are generally and best propagated by seed. The seeds may be planted in the fall, or perhaps better—on account of mice—in the spring; they should be lightly covered with earth, and the surface of the ground may be protected with a layer of leaves or straw. The White and Red Maple mature their seeds early in the summer, and they should be gathered then, but those of the other species may be left till October. The seed, if not planted till spring, should be placed in a box of slightly moistened sand and kept in a place sufficiently cool to prevent germination. A deep rich soil is best suited to the growth of these trees, though they will do well in almost any situation where it is not too wet.

There are about forty species of Maple known, of which five—including the most valuable—are native to this State. None of the species occupy exclusively any extended tract of land, but are



more or less mixed with trees of other species, as the birch, beech, &c.

**Pennsylvania Maple, Striped Maple, Dog-wood, Moose-wood, Snake-tree, *Acer Pennsylvanicum*, L.**

A tall, neat looking shrub or small tree, with smooth bark, beautifully striped longitudinally with light and dark shades of green, and large, handsome leaves. The flowers appear early in June, and owing to their slender and graceful habit add much to the beauty of the tree during their season. As commonly seen growing in the woods with larger trees the Striped Maple only appears as a slender tree or shrub, varying in height from eight to twenty-five feet; when growing in open ground, however, it assumes beautiful tree-like proportions. Brown, in his excellent work on the "Trees of America," mentions a specimen of this maple growing in Germany, that in 1835 was between thirty and forty feet high and eighteen inches in diameter. There is growing in Manchester in this State, another large specimen, that, at six inches from the ground, is three feet eight inches in circumference. It begins to ramify at about four feet from the ground, and its general appearance is that of a low (15 ft.), much branched, round-headed tree. The wood is light, fine-grained and very white—the inner wood sometimes being a flesh tint when dry. It is sometimes substituted for Holly by cabinet makers in inlaying mahogany.—(*Brown*.) According to Emerson, the leaves are successfully applied to inflamed wounds and bruises. The chief value of this tree, however, consists in its highly ornamental character, on account of which it well deserves a place in every collection. The seed ripens in September, when it may be gathered and preserved till spring, as recommended above. If the seed be preserved dry it is apt to lose its germinating power. The Striped Maple has been successfully grafted upon larger species of the genus; its size has been increased in this way three or four times.—(*Michaux*.)

**Spiked Maple, Mountain Maple, *Acer spicatum*, Lamark.**

Like the last, this is a slender, shrub-like species; it differs, however, in having a more branched and airy appearance, and it often grows in *clumps* along the rich borders of streams. The bark of the young shoots is of a light purple color, while that upon the older growth and trunk is light ashen gray. The leaves are generally smaller, narrower, and more closely toothed than

those of the Striped Maple. The small yellowish-green and delicate flowers are arranged in *erect* racemes, four to six inches long. The seeds have small, slightly diverging keys or wings. This tree is common throughout the State. "It assumes towards autumn various shades of red, and as sometimes seen, eighteen or twenty feet high, hanging over the sides of a road through woods, with its clusters of fruit beneath the leaves, turning yellowish when the leaf-stalks are scarlet, it has considerable beauty."—(*Emerson*) This species may also be grafted upon some larger sort, thereby much increasing its size. The Mountain Maple seems to be of little use except for ornament. It is well adapted for growing on low, moist lands.

**Sugar Maple, Rock Maple, *Acer saccharinum*, L.**

A handsome deciduous tree, often assuming majestic proportions.

*Roots* large, extending near the surface of the ground and finally penetrating deep into the soil. *Stem* varying from 50 to 80 or even 100 feet high, with a diameter near the ground of from three to four feet. *Leaves* smooth, three to six inches long, nearly as wide as long, 3 to 5 lobed, the sinuses obtuse. *Flowers* appearing with the leaves, yellowish green, on drooping, hair-like pedicles. *Petals* none. *Fruit* with large, slightly diverging wings, one seed of the pair always abortive. Rich woodlands, *May*. Fruit first of *October*.

This is the most valuable of all our deciduous trees, being hardly less ornamental than the Red Maple and far superior to that tree in its economic uses. The wood is hard, fine grained, receives a beautiful satin-like polish, and is durable when not exposed to the changes of the weather. It dries slowly, large timber requiring several years to season. It has the fault of "checking" badly if measures are not taken to prevent it. A cubic foot of the dry wood weighs about forty-six pounds. It is used for a vast variety of purposes where hardness and strength are required. It is largely employed in naval architecture, and is much valued for the keels of vessels, as the structure of its fibre renders it little likely to split, and it is very lasting when constantly under water.

Some specimens of Rock Maple present a peculiar structure of grain which places it among the most ornamental woods. One well known and beautiful form is the so-called Bird's-eye Maple. It is much used by cabinet-makers and car-builders in the form of veneer. Another less common form is the Curled Maple, in which the fibre takes a waving or zigzag direction. When planed this variety presents alternate bands of light and dark reflections, very pleasing in appearance. Old trees, especially those growing on wet

lands, frequently have wen-like excrescences called "Variegated Maple-knobs," upon their trunks. Most beautiful objects are made from these by skilfull workmen. It was probably from these "wens" that the costly maple tables of the ancients were constructed.

The wood of the Rock Maple differs from that of the Red or White Maple in being heavier, much harder and darker colored. There is also a chemical test, given by Michaux, which may always serve to distinguish these woods. If a few drops of sulphate of iron be poured upon the wood of the Rock Maple it turns greenish, while the woods of the Red or Silver Maples similarly treated turn to a deep blue. For fuel we have no wood superior to the Rock Maple—the Hickory growing only in limited quantities in the extreme western part of the State. It makes a valuable charcoal, and the ash is very rich in alkali.

Besides the great value of its timber, this tree yields a large revenue in the syrup and sugar obtained from its sap. The estimated amount of maple sugar made in the United States in 1860, was 38,863,568 pounds—the State of New York producing the largest quantity. The amount of syrup for the same year was aggregated at 1,944,299 gallons. Both the syrup and sugar are more esteemed than that produced by the cane, and always command high prices and ready sales. In his Report upon the "Woody Plants of Massachusetts," Emerson says, that in that State "between five and six hundred thousand pounds of sugar are annually made from the juice of the Rock Maple, valued (in 1846) at about eight cents a pound." The manufacture of Maple sugar forms quite an important industry in Maine, especially in Oxford and Aroostook counties. The annual yield of sap per tree depends upon so many circumstances, such as the length and favorableness of the season, the location of the tree and the number of openings made in it, that no special average can be given; it probably varies from eight to twenty-four gallons. A tree will sometimes yield three or four gallons in a single day, and Emerson speaks of one that upon a single instance produced a barrel of sap in twenty-four hours. The location of the tree greatly affects the richness of the sap; that from one standing in open ground being much sweeter. Four gallons of sap will produce upon the average one pound of sugar. In maple orchards, from two to four pounds of sugar per tree is all that can be safely depended on. Frequently a well located tree will produce nine pounds, and instances are

cited where twenty and even thirty-three pounds of sugar have been made from a single tree in one season. Under certain conditions of weather, the Rock Maple has been known to yield sap late in the fall. Tapping these trees for the sap, after they have arrived at the age of thirty years, does not appear to affect them injuriously in any way.

Excepting perhaps the Red Maple, the Rock Maple stands second only to the Elm as an ornamental tree. It is a fair grower, adapting itself to almost any kind of soil; its dense and rich green foliage affords a shade only surpassed by the Linden, and its varying, though somewhat massive form, is always pleasing. In the fall the leaves of this and the Red Maple assume most brilliant colorings, so that in no country is there seen such a gorgeous display of scarlet, crimson and gold as is presented by our autumnal forests.

"Tints that the Maple woods disclose,  
Like opening bud or fading rose,  
Or various as those hues that dye  
The clouds that deck the sunset sky."

**Black Maple, *A. s. var. nigrum*,**

Is a common variety of the Rock Maple. It may be recognized by its larger size and darker colored foliage. The leaves are less indented than those of the species, and are slightly downy. The Black Maple is deemed a more ornamental tree than the Rock Maple, and is thought to yield a finer quality of sugar.

Maple lumber in the form of inch boards is valued at from \$20 to \$25 per M, in the Augusta market.

**Silver Maple, River Maple, White Maple, *Acer dasycarpum*, Ehrh.**

A handsome deciduous tree, with wide extending and drooping branches.

*Stem* thirty to 60 or 90 feet high, and two, rarely 8 or 9 feet, in diameter; *branches* ascending, at length recurved, after the manner of the elm. *Leaves* of large size, 3 to 6 inches long, deeply five-lobed, silvery white, and when young downy beneath. *Flowers* greenish, appearing before the leaves, without *petals*. *Fruit* woolly when young, smooth at maturity, 2 to 3 inches long including the broad diverging wings. Alluvial river banks, *April, May*. Fruit *June*.

This tree is found from Maine to Georgia, but is most abundant in the Middle and Western States, where it is much grown as an ornamental tree. The fine, drooping habit of the branches, the play of the silvery-white and green surfaces of the leaves as they are moved by the wind, and especially its rapid growth render the Silver Maple most valuable for ornamental purposes. In fifteen years it will attain, under favorable circumstances, a height of



thirty feet, with a diameter near the ground of one foot. The autumn foliage is not especially attractive, the leaves changing to a yellow hue.

Michaux in speaking of this tree says, that it grows most luxuriant along the banks of the Ohio. "The brilliant white of the leaves beneath forms a striking contrast with the bright green above, and the alternate reflexions of the two surfaces in the water, heightening the beauty of this wonderful moving mirror, aids in forming an enchanting picture, which, during my long excursions in a canoe in these regions of solitude and silence, I contemplated with unwearied admiration."

The Silver Maple is much cultivated in Europe, having been introduced into England in 1725, by Sir Charles Wagner. In this State it is not a common tree, and therefore is but little known. The writer has observed it growing along the Stillwater river near Orono, and above along the banks of the "East Branch." It is occasionally seen in cultivated grounds, having been transplanted from the banks of some stream or river.

Though the most graceful of all the maples, it possesses but little economic value. The dry wood is lighter than any of the other species, weighing only about 38 pounds per cubic foot, which is one half the weight of the green wood. It is soft, fine-grained, very white when newly cut, brittle, and of but little durability. It makes a poor substitute for holly in in-laying black walnut and mahogany, and it is sometimes turned into bowls when more desirable woods are wanting. This wood makes a good fuel, and for this purpose the Silver Maple gives a quicker return than any other tree. The inner bark forms a black dye with the salts of iron. The sap is about one-half as rich in sugar as that of the Rock Maple.

"The seeds ripen in two or three weeks after the leaves are fully developed, and must be gathered and sown soon after. They are usually planted in drills about one inch deep. If the ground is dry it should be rolled after sowing. The plants will appear in from six to ten days. If very hot, dry weather occurs soon after sowing, the young plants are apt to be scorched by the sun as they emerge from the soil. The whole sowing is sometimes lost from this cause. This may be prevented by shading the rows with branches of trees, or lightly covering them with straw or hay till the danger is past."—(*Bryant.*)

**Red Maple, Swamp Maple, Gray Maple, White Maple,** *Acer rubrum, L.*

A medium sized, highly ornamental, deciduous tree, with bright red or yellow flowers, which appear before the leaves.

*Stem* 40 to 50, sometimes 70 or 80 feet high, with a diameter of 1 to 2, rarely 4 to 5, feet. *Leaves* divided into three more or less deeply cut and irregularly toothed lobes; they vary much in size and outline, usually light colored beneath. *Flowers* appearing before the leaves, arranged in numerous close clusters, the perfect and female flowers bright red, the male flowers have a yellowish tinge. *Fruit*, including the wing, one inch long, ripe early in summer. Woodlands, especially in swamps, common. *April*.

Wilson Flagg, in his delightful work, "*The Woods and By-Ways of New England*," thus eulogizes this tree: "Not dainty of its soil, but thriving equally well upon bog or upon a fertile river bank, by the side of a stream or upon a dry eminence; coming forth in spring, like morning in the east, arrayed in crimson and purple; bearing itself not proudly but gracefully, in modest green, among the more stately trees of summer; and, ere it bids adieu to the season, stepping forth in robes of gold, vermillion, crimson, and variegated scarlet, stands the queen of the American forest, the pride of all eyes, and the delight of every picturesque observer of nature—the Red Maple. \* \* \* It stands among the occupants of the forest like Venus among the planets, the brightest in the midst of brightness, and the most beautiful in a constellation of beauty."

Although not so extensively cultivated as the Silver or the Rock Maples, this tree can but be deemed more highly ornamental than either, for throughout the season it is a constant object of beauty. The bright flowers appearing before the leaves, are among the first of Flora's vernal tributes; the fruit continues for some time most attractive, as it retains the red colorings of the blooms; like all the maples, the summer foliage is most pleasing, and the beautiful tints of the autumnal leaves is not equalled by any of our forest trees. In speaking of the colorings of the Red Maple leaves, Emerson says: "That the surface is liable to be variegated with lines of scarlet, or to become entirely scarlet, or crimson, or orange at every season of the year. This occasionally happens to all the leaves on a tree, even in the middle of summer, forming a gorgeous contrast with the green of the rest of the forest. The differences in the leaves are accompanied by corresponding differences in the branches and general appearance of the tree; and the common opinion is, that there are several distinct varieties of this tree.



The leaves begin to change in August and are usually gone by the first of November. \* \* \* It is not an uncommon thing to see a single tree in a forest of maples turning to crimson or scarlet in July or August, while all the other trees remain green. A single brilliantly colored branch shows itself in a verdant tree; or a few scattered leaves exhibit the tints of October, while all the rest of the tree and wood have the soft greens of June. The sting of an insect, the gnawing of a worm at the pith, or the presence of minute parasitic plants, often gives the premature colors of autumn to one or a few leaves." It is evident to any one who has observed the colorings of autumnal foliage, that the action of frost has little or nothing to do with it—a fact which the weight of scientific authority also bears out.

The appearance of the Red Maple is lighter and more airy than that of the Rock Maple, and the leaves are not so deeply colored with green. The spray is finer than that of either the Rock or Silver maples, and though not so graceful as the latter tree, it is more beautiful, as the bark of the recent shoots is of a fine red color. The under surface of the leaves is pale, sometimes quite as white as those of the Silver Maple, and their play of colors when agitated by the wind is no less pleasing than that exhibited by the last named tree.

The Red Maple has a wide geographical range, extending from Canada through the Atlantic States to Florida, and west to Oregon. It is most abundant in south New England and the Middle States, attaining its maximum size in the "Maple Swamps" of Pennsylvania and New Jersey. Though delighting in moist and swampy grounds, where alone it forms extensive forests, it is not an unfrequent tree upon dry hill-sides and in open pasture lands. John Tradescant introduced the Red Maple into Europe in 1646, where it has since been much cultivated, but not so extensively as the Silver Maple. Under favorable circumstances the Red Maple will attain the height of twenty-five or thirty feet in fifteen years and from the seed. It grows but little in height after fifty or sixty years.

The wood of this tree is far less valuable than that of the Rock Maple. It is white, slightly tinted with flesh color, of little strength, and when exposed very perishable. The dry wood weighs about forty-four pounds per cubic foot, which, like the Silver Maple, is about one-half the weight of the green wood. The wood is soft, (varying much in hardness, however, according

to the location of the tree), fine-grained and lustrous when smoothly planed. It is a very superior wood for turning, and is used for a great number of purposes, such as the making of common bedsteads, bureaus, chairs, and other articles of cheap furniture, also for broom handles, shoe lasts and ox-yokes. The boards make excellent floors. In old trees the grain of the wood often takes singular and unusual directions; giving rise to the "Curled Maple," the "Mountain Maple," the "Blistered Maple," etc. "Landscape and Mountain Maple are varieties in color caused by the irregular change from sap-wood to heart-wood. These are much used for the foot and head-boards of bedsteads, and for panels of doors to wardrobes, &c."—(*Emerson.*) The "Curled Maple" is caused by the fibres taking an undulating direction. This variety occurs only in old trees, and seldom extends far into the trunk of the tree. When smoothly planed, and rubbed with sulphuric acid and linseed oil, it presents a most beautiful appearance, hardly excelled by any other native or foreign wood. The surface presents a varying succession of light and dark shades of brown, the bands bordered with lustrous lines of golden yellow, which are narrow or wide, light or dark, as the plain of the wood is varied. Blistered Maple is an uncommon form, having a remote resemblance to the Bird's-eye of the Rock Maple. The Curled Maple is extremely tough, and is much used for the stocks of rifles and fowling-pieces.

The Red Maple is much used for fuel; when dry it gives a ready fire, but it is only two-thirds as valuable for this purpose as the wood of the Rock Maple. The sap is of little value as it is but one half as rich in saccharine matter as that of Rock Maple. "The bark when used with an aluminous basis produces a lasting cinnamon color, on wool and cotton; and with sulphate or acetate of iron communicates a more intense and perfect black than even galls or any other vegetable substance known to me."—(*Bancroft.*) Darlington says, in his "*Weeds and Useful Plants*," that the bark yields a dark purplish-blue dye and makes a pretty good bluish-black ink.

There are several cultivated varieties of the Red Maple, some of them with foliage beautifully variegated with white and yellow. The seeds ripen with those of the Silver Maple, and for propagation should be similarly treated.

**MILKWORT FAMILY—ORDER, POLYGALACEÆ.**

A small order, chiefly herbaceous plants, with simple, entire leaves, and irregular flowers. "The plants yield a bitter principle with some acrid extractive matter. *Polygala senega* (Seneca Snake-root) is the most important medicinal plant of the family. Other species are employed medicinally in Brazil, Peru, Napaul, &c.; where like our own, they are reputed antidotes to the bites of venomous reptiles."—(*Gray.*) The ladies of Peru are said to use the bark of the root of *Monnina polystachya* in smoothing their hair. Several species are employed in lung troubles.

**MILKWORT, POLYGALA.** (Name from two Greek words meaning *much milk*; as the plants are supposed to increase this secretion.)

There are five species found in Maine, all small bitter herbs, with very irregular and pleasing flowers.

**Fringed Polygala, *Polygala paucifolia, L.***

A small herbaceous plant, with showy purple, rarely pure white, delicate flowers, expanding in June.

This is our most common species, growing abundantly in woods, especially where there is a mixture of Hemlock and Spruce. It has an exceedingly attractive, odd-shaped flower, and as it grows in masses over rich knolls, it presents a most pleasing appearance. The fruiting flowers are quite inconspicuous, and are borne at the surface of the ground, or just below it. Occasionally one meets a whole mass of these plants with pure white flowers.

*Polygala sanguinea* is a common species in moist fields near the coast; it has small purple flowers, disposed in a head, similar in appearance to the clover.

*Polygala polygama* is another pretty flowered species, growing in fields and pastures. The flowers are purple, in a loose terminal raceme.

**PULSE FAMILY—ORDER, LEGUMINOSÆ.**

Herbs, shrubs, or trees, with alternate, usually compound leaves, and *papilionaceous* or regular flowers.

The Pulse family has representatives in nearly all parts of the known world. It numbers more than six thousand five hundred species, of which about four hundred are natives of the United States and territories. Besides taking rank among the largest,

this is one of the most important order of plants, whether we regard the beauty or the economic value of its species. No family furnishes so many species employed in the Arts and in Medicine as this. The farmer depends largely upon it for fodder for his cattle, as well as for food for himself; and to the florist it supplies many choice and valued plants.

It may be of interest to mention a few of the best known foreign products of the family. A species of *Acacia*, growing in North-eastern Africa and Arabia, yields Gum-Arabic; from species of *Cassia* is obtained the Senna of commerce; Log-wood, used in dyeing red and black, is from a tree native of Central America and the West Indies; the much prized Rose-wood is supplied by species of *Dalbergia*, natives of Brazil, India and Africa; the Peanut, extensively cultivated in the Southern States, is a native of South America; *Indigofera tinctoria*, or Indigo Plant, yields the well known blue coloring matter of the same name; the China Aloe-wood burns with a fragrant flame; Brazil-wood is much used in coloring and tanning leather.

Of this truly Royal Family of plants Maine has thirty-one native and fifteen introduced species. It is not proposed to give space in this paper to any but native plants; however, in the case of this order, where the species introduced are of so much importance, and constitute so large a proportion of the whole, it is thought best to make a brief synopsis of the most valued.

**Wood-waxen or Dyer's Green Weed, *Genista tinctoria*.**

A low, shrubby plant, with lanceolate, simple leaves and bright yellow flowers, appearing early in summer. It is a native of Europe, but has become abundant in many parts of Massachusetts, growing upon dry hill-sides. It has some medicinal properties, but is chiefly valued for dyeing wool yellow. There are four introduced species of Clover-Trifolium.

**Stone Clover or Rabbit-foot, *T. arvense*.**

A low, much branched plant, clothed with silky down, the small, flesh-colored corolla is nearly concealed by the plumose silky calyx. This plant has no agricultural value; it is sometimes sought for bouquets, as the grayish heads are quite pretty.

**Red Clover, *T. pratense*.**

Is one of the most valuable forage plants. It is a native of Europe, and was grown in this country prior to the Revolution.

**Yellow Clover**, *T. agrarium*, and **Low Hop Clover**, *T. procumbens*.

Are yellow-flowered species, not uncommon in sandy fields and by the wayside. They have no agricultural value, but are pleasing in flower.

**Lucerne or Medick**, *Medicago sativa*.

Is a native of Spain. It has been introduced into this country and is cultivated, especially South, for green fodder.

**Locust-Tree**, *Robinia Pseudacacia*.

Is much grown in this State as an ornamental tree. "The timber is one of the most valuable, whether for strength or durability; in the former quality it ranks but little below the Oak, while its resistance to decay, even when exposed to the most destructive influences, exceeds that of the wood of any other of our forest trees."

**The Rose Acacia**, *R. hispida*.

Is a graceful and beautiful flowering species, grown for ornament.

**Wistaria**, *W. frutescens*.

Is a highly ornamental woody vine with beautiful blue-purple flowers.

**Horse Bean**, *Faba vulgaris*.

From the shores of the Caspian Sea, is sometimes cultivated for the table.

**Common Pea**, *Pisum sativum*.

Is a well known garden vegetable. Its native country is unknown.

**Vetch**, *Vicia sativa*.

Also known as Tare, is valued in Europe as a fodder for cattle. With us it seems to rank among the weeds.

The genus *Phaseolus*, yields the many varieties of Beans. The valued sorts are from the East.

**Honey Locust or Three-thorned Acacia**, *Gleditsia triacanthos*.

Is a tall, slender tree, with light airy foliage and long compound thorns. It is grown in this State for ornament.

Few of the native species have as yet any special values. The most important is perhaps the

**White or Sweet Clover**, *Trifolium repens*,

A plant too well known to require any description. It is highly prized as a forage plant, especially for pastures. The flowers are very sweet, and afford a rich harvest of honey for bees.



**The Wild Lupine, *Lupinus perennis*.**

Has showy purple flowers, late in spring, and is of value for its beauty.

**Astragalus, *A. alpinus*.**

Is a beautiful, herbaceous plant, with a diffusely branching stem and violet flowers. It is found along river banks, though rarely. Between Hallowell and Augusta it grows in profusion, forming a most pleasing spectacle. This is a most desirable plant for garden culture, and may be grown from the seed, after the manner of other species of the genus procured from the florists. A dry, somewhat sandy soil is best suited to it.

Some of the species of *Desmodium*, or Tick-treefoil, are very pretty and well deserve a place in the garden. The flowers are purplish, arranged in panicles or racemes, and appear late in summer. The pods are jointed, and adhere to the clothing and the fur and wool of animals. There is one cultivated species, *D. gyrans*, from the East Indies.

*Vicia Caroliniana* and *V. Cracca* are native species of the Vetch or Tare. Both are pretty, slender, climbing plants; the former has pale flowers, tipped with blue, opening in May; the second and more common species has deep blue flowers, in a dense raceme, appearing in July. They delight in sandy, gravelly soil along river banks, etc.

**GROUND-NUT, ARIOS.** (Name from a Greek word, meaning pear, referring to the pear-shaped tubers of the roots.)

**Ground-nut, Wild Bean, *A. tuberosa*, Mönch.**

An elegant twining herb, with beautiful deep green, compound leaves, and handsome reddish or brownish-purple flowers, arranged in dense clusters. This is a very ornamental plant and surely deserves to be grown in the garden. It grows naturally in rather moist soil in the vicinity of ponds and lakes, the twining stems climbing over bushes to the height of four to six feet. Even dried specimens of this plant are beautiful, and always call forth exclamations of delight when seen. The roots are remarkable in being furnished with large, edible, pear-shaped tubers. These tubers are fleshy, nutritious, and would perhaps be cultivated had we not the potato. The flowers appear in August.

**HOG PEA-NUT, AMPHICARPEA, Ell.** (Name from two Greek words meaning both and fruit, there being two kinds of fruit pods.)

**Hog Pea-nut, Pea Vine, *A. monoica*, Nutt.**

A delicate and most graceful twining plant, growing over bushes in moist thickets. Leaves compound, of three ovate, thin leaflets,



one to three inches long. The upper flowers are open from July to September; they are of a delicate purple color arranged in nodding racemes. If this plant can be made to grow in some shady place about the house or yard, it would be well worth while to cultivate it, as its appearance is most attractive.

### ROSE FAMILY—ORDER, ROSACEÆ.

The plants comprised in this order are either herbs, shrubs, or trees, with alternate, stipulate leaves, and regular flowers, having the free petals inserted on the calyx.

The order Rosaceæ is another large and widely distributed group of plants. Hardly less valuable than the Pulse family in economic species, it ranks among the first in medicinal products, and stands unrivalled in the multitude of its ornamental species.

In this family are classed the Cherry, the Plum, the Peach, the Apricot, the Almond, the Strawberry, the Apple, the Blackberry, the Raspberry, the Pear, the Quince, &c., &c. Among those grown for ornament are species of *Spiræa*, *Rose*, *Cratægus* or Thorn, and *Coloneaster*.

Of the one thousand species included in the order, about forty-six are native to Maine.

#### CHERRY, *PRUNUS*, L. (The Latin name for the Plum.)

Trees or shrubs, with simple deciduous leaves, white flowers, and a fleshy stone-fruit (*drupe*), mostly edible.

According to Gray, this genus includes the Almond, Peach, Apricot, Plum and Cherry. From the cultivated Plum-tree, *P. domestica*, have been derived nearly all the varieties of Plums, Gages and Damsons. There are six native species.

#### The small Sand Cherry, *P. pumila*,

Is a dwarf trailing species, with edible fruit, growing on gravelly river banks. It has been observed by the writer at Waterville and at Orono.

#### Wild Red Cherry, *P. Pennsylvanica*, L.

A small, deciduous tree, with smooth brownish bark, white flowers, and small, red fruit.

The Red Cherry is a common tree throughout the State, growing upon dry soil in woods, thickets, field-borders, &c. The bark is polished and peels from the tree at right angles to the direction of the trunk. The wood is hard, close-grained, of a reddish color, but as the tree seldom exceeds five or seven inches in diameter it

is but little used. The fruit is extremely acid, having little flesh and a large stone, and, excepting furnishing food for birds, it is of little value. The better varieties of cherries may be grafted upon this tree, and it is said to make a good stock for that purpose.

**Black Cherry, *P. serotina*, Ehrh.**

A large, handsome, deciduous tree, with white flowers in long drooping racemes, and nearly black, pleasant-flavored drupes.

The Black Cherry grows as a low shrub, as far north as latitude 62°; in Maine it attains to the height of from twenty-five to forty feet, with a diameter of one foot, but in the south-west, especially along the Ohio and in the States of Kentucky and Tennessee, it assumes magnificent proportions, often rising eighty or one hundred feet from the ground, with a trunk four to five feet in diameter. It grows far more abundantly in the Middle States than it does with us, and its valuable wood is extensively imported into this State for cabinet and car works. The timber is also imported from Canada, where there are extensive forests of this tree, but it is of smaller size and considered less valuable. The wood, as well as the bark of the tree, resembles that of the Black Birch; it is hard, richly colored and veined, and takes a fine polish. It somewhat resembles mahogany, and is used for similar purposes, but the veining is far more beautiful, especially in the wood taken from near the ramification of the trunk.

"The bark of the branches or the root is used for medicinal purposes. The latter is regarded the best. \* \* \* In its action it is tonic and invigorating in its impression upon the stomach and general system, but sedative to the circulatory and nervous systems—the former due to a bitter principle, the latter to Hydrocyanic acid. It is used in convalescence, where irritability exists, in cases of debility with nervous excitability, in dyspepsia, etc." (*J. Forbes Royle.*)

The bruised berries impart to rum and brandy a peculiar and agreeable flavor, and are much used for this purpose. Birds are extremely fond of the fruit, and the leaves of this as well as the other species of cherry, are sometimes entirely devoured by the tent caterpillar—*Olisiocampa Americana*. A species of Buprestes—*B. divaricata*—feeds in the larval state, upon the young wood. The Black Cherry holds a high rank among the ornamental trees. It was introduced into England early in the 17th century. It is an inferior shade-tree.

Though preferring a dry soil, this tree will grow in almost any locality. It is propagated by seed which may be sown as soon as ripe, with the pulp on, or may be kept till spring in sand. "It may then be sown thin, and covered with one-quarter of an inch of soil."—(*Emerson.*) This tree may be very profitably planted in protected localities, as the wood is extremely valuable for many purposes, and quite a revenue might be derived from the fruit.

**Choke Cherry, *P. Virginiana*, L.**

A common shrub, rarely a low tree, with deciduous leaves, white racemose flowers, and dark red or purple fruit of a pleasant though astringent taste.

Along neglected field borders and in dry waste grounds the Choke Cherry is very common. With us it seldom attains the height of more than fifteen feet, and often blooms when not more than two feet high. Whether we consider the plant in May, when the racemes of flowers give every spray the appearance of long white plumes, or late in summer, when loaded with drooping clusters of dark-red, shining fruit, its appearance is highly attractive and ornamental. Under cultivation its size and proportions might be much improved. The fruit of this species is little eaten, except by birds, on account of its extreme astringency.

**MEADOW-SWEET, SPIRÆA.** (Name from a Greek word, meaning to *wind*; from its fitness to form garlands.)

This genus furnishes several beautiful and well known garden plants. The species are either shrubs, or perennial-rooted herbs, with alternate leaves and white or rose-colored flowers. "They are propagated by dividing the roots, by suckers, by layers or by seed. The root and bark generally possess astringent and tonic properties and are employed in medicine and tanning."—*Emerson.* There are about fifty known species of which the two following are common to Maine. A third, highly ornamental species—*S. opulifolia*—may also be found in some sections.

**Queen of the Meadows, Meadow-sweet, *S. salicifolia*, L.**

A slender, branching, leafy shrub, with large, terminal panicles of white flowers, which appear from June to September. This is a common well known plant, growing by the roadside and upon the borders of moist grounds. It is chiefly valuable for its ornamental character, which is much improved by cultivation.

**Steeple Bush, Hardhack, *S. tomentosa*, L.**

An erect leafy shrub, two to four feet high, growing along rocky field borders and in dry pastures. "It delights in the borders of

rustic wood-paths, in lanes that conduct from the enclosures of some farm cottage to the pasture, growing all along under the loose stone-wall, where its crimson spikes may be seen waving in the wind with the nodding plumes of the Golden-rod and the blue spikes of the Vervain."—(*W. Flagg.*)

The delicate rose-colored flowers appearing in July and August, are disposed in long terminal spires, whence the name Steeple-Bush. This species is not only ornamental, but is much valued by simplers for its medicinal properties. It acts as a tonic, and it is used in dysentery, etc., and especially in those disorders incident to females.

**AVENS**, GRUM *L.* (Name from a Greek word, meaning to *taste well*, the roots having an agreeable taste.)

**Water or Purple Avens**, *G. rivale, L.*

This plant was noticed among the "Weeds of Maine," in the Report of the Board of Agriculture for 1869. It is included here on account of its reputed medicinal virtues. The plant is herbaceous, one to two feet high, with a jointed, perennial root, and nodding yellowish-purple flowers. It is quite common and conspicuous in meadows and low wet grounds. The dried roots have an astringent, bitter taste, and are employed as a domestic medicine in diarrhoea and dyspepsia. They are also used as a substitute for coffee.

**CINQUEFOIL**, POTENTILLA, *L.* (Name from the Latin *potens*, meaning *powerful*, the plants being considered highly medicinal, but they are only mild astringents.)

Mostly herbs, with showy yellow flowers, and compound leaves. There are nine native species, all of which are classed among the weeds excepting the following:

**Shrubby Cinquefoil**, *P. fruticosa, L.*

*Stem* one to three feet high, much branched; bark of the old stems light brown and peeling off in long strips like that of the Grape-vine; bark of the twigs close and dark colored. *Leaves* composed of from 5 to 7 crowded, oblong-lanceolate leaflets, each about one inch long. *Flowers* nearly one inch in diameter, bright yellow, arranged in terminal clusters. Wet grounds; not common in this State. *June to September.*

This is a pleasing, much branched, and densely leafy shrub. It grows by the wayside on Kent's Hill in Readfield, from which place specimens have been transplanted to the garden, where they have thrived exceedingly well. Their dense and peculiarly cut foliage and attractive flowers, appearing throughout the season, make them objects of especial interest. The writer has also observed this shrub along the banks of the "East Branch," above Medway.

**STRAWBERRY**, *FRAGARIA*, *Tournefort*. (Name from the Latin, meaning *fragrant*; in reference to its fragrant fruit.)

Our species are low herbs, with tri-foliolate leaves, and white flowers, which are sometimes dioecious by abortion. There is an immense number of varieties, more or less valuable, under cultivation.

**Wild Strawberry**, *F. Virginiana*, *Ehrhart*, and the **Common Strawberry** of Europe, *F. vesca*, *L.*

Are both very common in Maine. Their chief and only well marked distinction is in the fruit; that of *F. Virginiana* having the akenes or seeds sunken in deep pits in fleshy, edible receptacles, while in *F. vesca* the akenes rest upon the surface of the so-called berry. No fruit is more esteemed than the Strawberry. Our wild sorts are especially sweet and delicious, and are much sought in their season. From the *F. Virginiana* we have the "American Scarlet" and the scarlet-fruited varieties. The *F. vesca* is the original of the "Alpine Perpetual," and numerous other fine varieties, differing in size, color (some being white) and flavor. In some of these the fruit is enormous, weighing an ounce or more. The wild plants transplanted from the fields, are greatly improved, particularly in size, by proper cultivation. There is an Indian species, *F. Indica*, with handsome yellow flowers, but tasteless fruit.

**BRAMBLE**, *RUBUS*, *Tournefort*. (Name from the Celtic *Rub*, red, or the Latin *Ruber*; from the color of the fruit in some species.)

Perennial, half shrubby plants, with white, rarely red, flowers. There are eight native species.

**Mulberry, Flowering Raspberry**, *R. odoratus*, *L.*

*Stem* branching, unarmed, the young shoots clothed with clammy hairs. *Leaves* large, broadly 5-lobed. *Flowers* bright rose purple, about two inches across. *Flowers* June, July. *Fruit* August.

This is a showy and beautiful species, common on rocky hillsides and in open rocky woods. Its handsome flowers and foliage ought certainly to place it among the ornamental plants. A somewhat moist and shady place is most agreeable to it. The fruit is large, red, saucer-shaped, as it lies over the receptacle. It is edible, though not so well flavored as the common raspberry.

**Wild Red Raspberry**, *R. strigosus*, *Michaux*.

The wild Red Raspberry is too well known to require a special description. It is very common along the borders of old fields, and especially on newly cleared and burned lands. The fruit, for which alone it is valued, is red in color and sweeter and finer



flavored than most cultivated varieties. It is mature in July, and is largely collected for making raspberry syrup and raspberry jam, it being excellent for these purposes. "If the juice is squeezed from the berries and allowed to ferment twelve or twenty-four hours, according to the temperature, a thick coagulum separates from the dark clear portion, which possesses a much higher flavor than the unfermented juice. If bottled, and the bottle be filled so as to allow just room for the cork, the juice will keep in a cellar for a year or more."—*Thurber, in Darlington's Weeds and Useful Plants.*

**Common High Blackberry, *R. villosus*, Aiton.**

This is another very common and well known species, producing black, and, when fully ripe, most delicious berries. It grows with the last mentioned, but is more prevalent in neglected, rocky fields and dry thickets. The size and flavor of the fruit varies greatly, according to the location and the nature of the soil. Not only is this Bramble esteemed for its fine fruit, which affords a pleasant jam, but also for its valuable medicinal properties. The root has some astringency, and is a well known domestic remedy in cases of diarrhœa. "Even the *knots*, which are formed on the branches by the puncture of insects, were formerly carried by credulous simpletons as a sort of amulet or charm against the toothache."—(*Darlington.*)

There are several varieties of the common blackberry, and two or three other species with more or less agreeable fruit, but the best known and most esteemed sorts have been mentioned. The low Blackberry or Dew-berry, growing upon rocky hills, etc., produces hardly less excellent fruit than the common high species.

**Rose, *Rosa*, Tournefort.** (The ancient Latin name.)

This genus presents an immense number of the most beautiful and fragrant garden plants. There are two or three native species which are pretty and ornamental, but they can hardly gain a place among so many lovely and hardy exotics, creations of the Florist.

**HAWTHORN, *CRATÆGUS*, L.** (Name from a Greek word, meaning *strength*, the wood of the species being very hard and strong).

Thorny shrubs or low trees of neat habit, fine foliage, and handsome white (rarely rose-colored) flowers. Natives of India, Europe, and North America.

"Come let us rest this Hawthorn tree beneath,  
And breathe its lucious fragrance as it flies;  
And watch the tiny petals as they fall  
Circling and winnowing down our sylvian hall."

*Romance of Nature.*



The thorn tree is of classic renown, for its blooms were dedicated by the Ancient Greeks and Romans to Flora; and at their May festivities were laid upon the altar of Hymen.

Our associations with this tree are derived from the legends of England, and the frequent allusions made to it in the British pastorals. For "in the olden times of merry England, the May-pole, its top decked with the gayest garlands of these blossoms, was raised amid the shouts of the young and old assembled to celebrate this happy rustic festival." Chaucer in his Court of Love makes mention of this custom:

"Mark the fair blooming of the Hawthorne tree,  
Which finely cloathed in a robe of white,  
Fills full the wanton eye with May's delight."

The different species of thorn present a great variety in appearance and in fruit. In some the "haws" are bright scarlet, in others black, and again in others of a bright yellow color. Several species produce an edible fruit. So useful are the various species that, according to Loudon, were man to be exiled to an estate without a single shrub or tree, with permission to choose only one genus of ligneous plants to form all his plantations, shrubberies, orchards and flower gardens, it is probable that he could not find a genus that would afford him so many resources as that of the *Crataegus*. And Emerson affirms that a greater variety of beautiful small trees and ornamental shrubs can be formed of the several species of thorn than of any other kinds of tree whatever. The English Thorn, which is in no respect superior to some of our native species, is deemed of the most valuable of hedge plants, and is very extensively grown for that purpose in Europe, as well as in this country, in the vicinity of the large cities. Our fine American species are highly prized in England and on the Continent, where they are largely cultivated for ornament—ranking first among the small ornamental trees. It is surprising that plants of so much value should receive in this State so little of the attention they deserve. The smallness of the tree and the diversity of form which it may be made to assume, render it especially suitable for grounds of limited extent, and its attractive appearance make it a "most agreeable tree in composition, when it forms the under growth or thicket, peeping out in all its green freshness, gay blossoms or bright fruit from beneath and between the groups and masses of trees; where mingled with the hazel, etc., it gives a pleasing intricacy to the whole mass of foliage."—(Downing) It

is only when growing alone, however, that the different species attain their finest tree-like proportions and make the most advantageous display.

Besides its value for ornament the Thorn-tree is said to make an excellent stock for grafting the pear, apple, quince, mountain ash, etc. The wood is white, tinged with yellow, heavy, very close-grained and hard, making it difficult to work. It takes a brilliant polish, but owing to the size of the trees it can be used only for small articles, such as hammer handles, the smaller tools, and especially for walking sticks.

The Thorn is transplanted without much difficulty, or it may be readily grown from seed, which is the usual method of propagation. The haws gathered for seed must be thoroughly ripe. The pulp should be separated from the nuts by maceration in water, when they may be sown thinly in beds, the seeds being scattered so as to lie about one inch apart every way, and covered about a quarter of an inch. "At the end of the first year's growth, the strongest of the plants may be thinned out from the beds and planted in nursery lines; and in the autumn of the second year, the remaining plants may be taken up for the same purpose."—(*London.*) Another method of propagating the thorn, successfully practised in Europe and America, is thus described in the *Transactions of the London Society of Arts*: "Purchase the desired number of Thorns, and when three years old take them up and trim the roots, from each of which ten or twelve cuttings will be obtained. Plant these cuttings in rows half a yard asunder, and about four inches from each other in the row. They ought to be about four inches long, and planted with the top one-fourth inch out of the ground, and well fastened, otherwise they will not succeed so well. April (May with us) is the best time to plant the cuttings. The thick end must be planted uppermost. The advantages of this mode are, first, in case any one has raised from haws a thorn with remarkably large prickles, of good vigorous growth, or possessing any other qualification requisite to make a good fence, he may propagate it far better and sooner from roots than in any other way. Secondly, in three years he may obtain from roots a better plant than can in six years be raised from the haws, and with double the quantity of roots.

There are sixteen species and varieties of *Crataegus* growing in the United States east of the Mississippi, one of these, *C. Pyracantha*, spontaneous at Washington, and near Philadelphia, is an

evergreen species. The English Hawthorn has become more or less spontaneous in sections where it has been cultivated. Maine has three native species, which are mentioned below, with their distinctive characters.

**Scarlet-fruited Thorn, *C. coccinea*, L.**

A low, much branched, deciduous tree, with white flowers and scarlet fruit.

*Stem* much ramified, thorny, especially between the branches, 10 to 20 feet high, clothed with a light gray scaly bark. *Leaves* smooth, thin, broadly ovate, with an abrupt base and sharply toothed margin; leaf-stalks long and slender. *Flowers* showy, arranged in corymbs, often pale rose colored.

This tree is common on dry rocky hills, and along the banks of streams and rivers. It blooms the latter part of *May* or early in *June*.

**Black Thorn, *C. tomentosa*, L.**

A much branched shrub, eight or ten feet high, (sometimes it assumes the form of a low tree fifteen or twenty feet high) with large, orange-red, pear-shaped fruit.

The leaves are thickish, oval, ovate, or obovate, sharply toothed or cut, below abruptly narrowed into a margined petiole, the upper surface impressed along the main veins or ribs; flowers often one inch broad, and the fruit from two-thirds to three-fourths of an inch long, pleasant-tasted.—(*Gray*). There are several varieties, one of which—*c. l. var punctata*—may be found here, having dull-red or yellowish fruit with whitish dots. Common in thickets, blooming early in *June*.

**Cockspur Thorn, *C. Crus-galli*, L.**

A neat shrub or round-headed tree, ten to twenty feet high, with numerous thorns, two to three inches long.

*Stem* with a rough scaly bark. *Leaves* entire or slightly toothed above the middle, smooth, thick, tapering into a short petiole. *Fruit* about one-third of an inch in diameter, reddish-brown when mature.

This is considered the best species for hedges. It is common in thickets and along fence rows, expanding its flowers in *June*. The fruit is mature in *October*, when it may be gathered for planting.

**PEAR, APPLE, PYRUS, L.** (Classical name for the Pear tree).

Shrubs or trees, with simple or compound, deciduous leaves, and white, pink or rose-colored flowers, in terminal cymes.

This genus contains two of the most valued fruit trees of North America—the Pear and the Apple—both natives of Asia and Europe. These trees have yielded an immense number of varieties, differing in the size and hardiness of the tree, and in the size,

appearance and quality of the fruit produced. The Pear and Apple are not only prized for their fruit but their timber is most highly esteemed. The leaves of the Pear are said to afford a yellow dye, and may be employed to impart a greenish shade to blue cloths. There are two native species, valued only for ornament.

**Choke-berry, *P. arbutifolia*, L.**

Is a low shrub, common on bogs and in low pastures. It grows to the height of from two to four, or eight feet. The numerous leaves are from one to two inches long, with finely and sharply serrated margins. The flowers appear about the first of June; they are white or rose-tinted and impart to the plant much beauty. The small, purple fruit is quite astringent, puckering the mouth if eaten, whence the common name.

**American Mountain Ash, Round-wood, *P. Americana*, D. C.**

An elegant, slender tree, growing to the height of from fifteen to twenty feet, with compound leaves and pleasing red or scarlet fruit.

*Stem* 4 to 6 inches in diameter, with smooth, dark colored bark. *Leaves* composed of about 15 oblong-lanceolate, deeply serrated leaflets. *Flowers* small, white, in broad showy corymbs. *Fruit* red or scarlet, acid. Low woods and moist meadows. *June*.

This beautiful tree—ranking among the most ornamental of its size—is found in many parts of the State, in localities mentioned above. It occurs in Manchester, Orono, etc. At all seasons it is ornamental. In summer being clothed with rich, ash-leaved foliage, while in autumn it is brilliant with its showy fruit, which remains on the tree long after the leaves have fallen. For grounds of limited extent there is no native tree more appropriate, and in composition its effect is most pleasing. The European Mountain Ash is much grown in this State for ornament. It differs but little from the American tree excepting that the berries are brighter colored, the bark lighter colored, and habit less elegant.

The Mountain Ash may be transplanted from its native haunts or grown from seed, the latter being the method generally practiced in England. According to Loudon, the fruit should be gathered as soon as ripe, macerated in water till the seeds are separated from the pulp, when they may be immediately sown. If thus treated they will remain eighteen months in the ground before coming up. It is common, therefore, to mix the berries with light sandy soil, and spread them in a layer of ten or twelve inches in thickness in the rotting ground, covering the layer with two or

three inches of sand or ashes, and allowing them to remain in that state a year. They are then separated from the soil by sifting, and sown in beds of light, rich soil, being covered one-quarter of an inch. This should be done as late as possible in the fall. They will come up in June, and by the end of the season some of the plants will be eighteen inches high, and ready to transplant to the nursery. The seeds should be not less than two inches apart.

**Sugar Pear, June Bush, Shad-Bush, *Amelanchier Canadensis*, T. and G.**

The Shad-Bush is a well known shrub or small tree, quite ornamental in some of its varieties; especially is it so in May, when mantled with beautiful racemes of pure white flowers. At that season of the year the borders of woods and thickets are rendered attractive with the showy blooms of this tree, which form a most pleasing contrast with the fresh green of the yet half expanded foliage of the surrounding trees.

The variety *Botryapium* assumes a handsome tree-like form often attaining the height of twenty-five or thirty feet. It is said to form a good standard for the Pear. Variety *oblongifolia* is of smaller growth, generally appearing as a shrub. It is most common along river banks. It has oblong leaves which are white-downy when young. A variety (*oligocarpa*) delighting in cold, deep swamps and bogs has smooth, narrowly oblong leaves, and racemes with only two to four flowers.

Thomas Meehan in his excellent little work, "*American Handbook of Ornamental Trees*," says that the June-berry may be propagated by seeds, but in English nurseries is generally grafted on the Hawthorn, and sometimes on the Pear and Quince. Seeds produce the finest trees. The latter mode produce plants quickest. The fruit is about the size of the common Gooseberry; when ripe it is of a dark crimson color, and possesses a good flavor.

#### **SAXIFRAGE FAMILY—ORDER, SAXIFRAGACEÆ.**

Herbs, shrubs, or trees, very widely distributed. The characters of the order are not well defined. It is very closely related to the Rose family. The properties of the order are unimportant, and its value is in its ornamental species, the Currant and the Gooseberry. Among the ornamental species are Mock-orange, Drutzia, Hydrangea, Strawberry Geranium, etc. Thirteen of the forty-eight species found east of the Mississippi are multiplied in Maine. Most valued among these, are the species of Currant—



*Ribes*—which by some authors are placed in an order by themselves—the *GROSSULACEÆ*.

**CURRENT, RIBES, *Linnaeus*.** (The Arabic name for a medicinal plant.)

Low shrubs, with smooth or prickly stems, alternate leaves, small flowers, and mostly edible fruit. The Golden Currant is a well known ornamental species from the far West, having bright yellow and very fragrant blooms. The Red-flowered Currant is another ornamental species from Oregon and California. There are six species found wild in Maine, three Gooseberries and three Currants. None of these native species are of much value. The Garden Red Currant from Europe is considered identical with the *Ribes rubrum* of our swamps and bogs.

Among the other native species of this family, which deserve here a brief notice on account of their beauty, are the Early Saxifrage, *S. Virginensis*—and the False Mitre-wort, *Tiarella Cordifolia*. The former is among the earliest of spring flowers, and throughout the month of May gives beauty to our rocky river banks by its profusion of delicate blooms. It is a small herb, having upon the ground a rosette of ovate, toothed leaves, from the centre of which arises a slender scape bearing a loose cyme of small, white flowers. Certainly this plant is worthy of a place in the garden, for it is equally attractive with some of the species sent out by the florists. The False Mitre-wort is a low herb, abundant along ditches and in moist meadows. "The leaves are rounded, heart-shaped, sharply lobed and toothed;" the flowers are bright white, arranged in a short, loose raceme, on a leafless scape, and are open during the latter part of May and early in June.

#### **WITCH-HAZEL FAMILY—ORDER, HAMAMELACEÆ.**

A small but widely dispersed family of trees or shrubs, with alternate, simple leaves, and small flowers in clusters, heads, or spikes. The Liquidambar or Sweet-Gum, is a large and beautiful tree growing in low lands, from Connecticut southward. The following is the only species found in this State.

**WITCH-HAZEL, HAMAMELIS, *Linnaeus*.** (Name from the Greek *Hama*, like to, and *Melis*, an apple.)

Shrubs with straight-veined leaves, and yellow flowers, which are fertile or sterile on the same or different plants. There is but one species common to Eastern North America.

**Common Witch-Hazel**, *H. Virginica*, L. (Figured in American Agriculturist Vol. XXIII, p. 346; Barton's Flora III, plate 78.)

*Stem* 10 to 20 feet high, with a diameter of from two to five inches; *wood* white, fine-grained and flexible; *bark* smooth, gray or light ash colored. *Leaves* firm, oval in shape, 4 to 6 inches long, on short *petioles*. *Flowers* arranged in clusters four, greenish yellow, usually expanding in *October* or *November*.

Common in thickets and moist woods. As if in defiance of our rigorous climate and the approach of winter, this singular shrub puts forth its conspicuous yellow flowers when

"The rust is over the red of the clover,  
The green is under the gray,  
And down the hollow the fleet-winged swallow  
Is flying away and away."

It is not unfrequent to see the plant in full bloom long after the leaves have fallen, when the earth is clothed in her ermine mantle and the ice king has set his foot on all the lakes. Dr. Bigelow in alluding to the unusual season at which the blooms of this shrub appear, says that "among the crimson and yellow hues of the falling leaves, there is no more remarkable object than the Witch-Hazel, in the moment of parting with its foliage, putting forth a profusion of gaudy yellow blossoms and giving to November the counterfeited appearance of spring." It is from this curious habit that the Witch-Hazel is rendered desirable for cultivation. Though naturally of a straggling growth, it may be made to assume a pleasing form with little difficulty. It thrives well in almost any soil or situation, and may be propagated by seed or cuttings. It may also be directly transplanted. The oily seeds are black and shining and are discharged from the two-horned pod, when ripe, with considerable force.

The Indians are said to have employed the inner bark in allaying the pain of tumors and inflammation of various kinds, especially of the eyes.

It is thought by some that the name *Witch-Hazel* was applied to this plant on account of its unusual season of flowering, apparently reversing the order of nature, a circumstance which led the superstitious to suppose it to have some connection with witchcraft. In the American Agriculturist we find "that it is called Witch-Hazel for the reason that its twigs were used as divining rods by imposters, professing to discover hidden springs of water." Darlington says that the twigs of this native shrub have furnished a capital substitute for the divining rod of Europe, with which crafty operators were wont to impose on the credulous. The

belief in the powers of this plant are not yet obsolete even among the educated, for the writer has observed men of culture and position call to their aid old and ignorant men, with forked stick of Witch-Hazel in hand, to discover water about buildings, devoted to the dissemination of knowledge which should tend to dispel such relics of credulity and superstition.

## EVENING PRIMROSE FAMILY—

ORDER, ONAGRACEÆ.

Our plants of this order are either annual, or perennial herbs, with opposite, or alternate, simple leaves and the parts of the flowers in fours, (in twos, in the genus *Circæa*). There are many species with showy flowers well known in the gardens, such as the different varieties of the Fuchsia, Evening Primrose, Clarkia, etc. So numerous are the species of *Epilobium* in New Zeland that they are characteristic of its herbaceous vegetation—(*Hooker*). A mucous and sometimes slightly astringent principle prevades the Order. None of the species are of any agricultural value; the two following are noticed for their beauty.

**WILLOW HERB, EPILOBIUM, *Linnaeus*.** (Name compounded of three Greek words meaning *violet on a pod*.)

There are five native species.

**Willow Herb, French Willow, Fire Weed, Rose Bay, *E. angustifolium, L.***  
*Perennial.* Stem four to six feet high. Leaves two to five inches long, with purple veins. Flowers numerous, pink-purple, very showy, in a large, terminal raceme.

This species is abundant on low, waste grounds, especially on newly cleared lands, recently burnt over—whence the name *fire weed*. When the flowers are expanded in July and August the plant is showy and attractive. It deserves cultivation for ornament. There is a white flowered variety. Growing upon Mt. Katahdin is a very pretty species, eight to ten inches high, having a single large rose-purple flower.

The Common Evening Primrose—*Oenothera biennis*—is sometimes seen in gardens. The root is said to be sweet and edible. It has large, lemon-yellow flowers, two to three inches across. This species, in common with some others of the genus, does not expand its flowers till towards evening.

“Slowly the rosy dusk of eve departed,  
 And one by one the pale stars bloomed on high;  
 And one by one each folded calyx started,  
 And bared its golden petals to the sky.”

One throb from star to flower seemed pulsing through  
 The night; one living spirit blending all  
 In beauty and in mystery ever new;  
 One harmony divine through great and small."—(O. P. Cranch.)

### PARSLEY FAMILY—ORDER, UMBELLIFERÆ.

A large and well defined order of herbs, having small flowers arranged in umbels, and an inferior fruit of two seed-like, dry carpels, cohering by their inner faces. The Umbelliferae are chiefly natives of the cooler portions of the globe, most abundant in the south of Europe. About fifty-eight species are found east of the Mississippi, of which sixteen are considered natives of this State. There are several introduced species that are rank, homely weeds. Many plants of the order are poisonous or have narcotic properties. The aromatic fruit of Caraway is used to flavor bread and cheese. The Parsnip and Carrot have nutritious and edible roots. In medicine many of the species are highly valued. A few are grown for their ornamental foliage.

### GINSENG FAMILY—ORDER, ARALIACEÆ.

A small family, chiefly natives of the tropics. They are closely related to the *Umbelliferae*, and have little value except in medicine. The flowers are small, and in our species are disposed in umbels. The English Ivy—a member of this order—is highly prized as an ornamental plant. The genus *Aralia* is the only one native to Eastern North America.

Common Wild Sarsaparilla—*A. nudicaulis*—is a very common plant, having a fragrant and aromatic root which is sometimes employed as a substitute for Sarsaparilla—*Smilax officinalis*. Ginseng—*A. quinquefolia*—has been so highly esteemed by the Chinese as a panacea that it has been sold for its weight in gold. It is not a common plant in Maine. It has been found at Orono. The Ground-nut—*A. trifolium*—has a round edible root.

### DOGWOOD FAMILY—ORDER, CORNACEÆ.

Shrubs or small trees, rarely herbaceous plants, with simple, mostly opposite leaves, and small, perfect flowers. Calyx and corolla, each four-parted. Fruit berry-like, mostly two-celled and two-seeded.

The Cornels are very rare except in the northern hemisphere, they especially abound in the cooler parts of North America,

thirteen species (including the genus *Nyssa*) being found east of the Mississippi. Some of the species are of repute in medicine, having bitter and astringent properties, and tonic action. The bark of *Cornus florida* yields a principle sometimes employed as a substitute for quinine. None are poisonous.

"The wood of the Cornels is hard and close-grained, and is used in Europe for cogs in mill-wheels, and for other small articles formed by the turner; and in this country as a substitute for Box-wood."—(*Emerson*).

Nearly all the sorts are ornamental, and with us are chiefly valued on this account. Eight species are said to occur in this State.

The genus *Cornus*, a Latin word meaning a *horn*, and probably applied to these plants because of the extreme toughness of the wood, is the type of the order. The species are all hardy and some of them are highly ornamental. They readily multiply from seed, suckers, layers or cuttings. The limits of this paper will only allow a brief notice of the more deserving species.

The Dwarf Cornel or Bunch Berry—*C. Canadensis*—is an herbaceous plant, growing to the height of four or eight inches, from a woody, underground *stem*. The *leaves* are opposite and clustered near the summit of the stem. The *flowers* are quite small and are arranged in a terminal cluster. Surrounding the flowers are four large, white and showy involucre leaves. The Dwarf Cornel is a common plant in low woods, etc., and is well known to the young folks by its pretty bunches of bright red and edible berries, which ripen early in autumn.

**Flowering Dogwood**, *C. florida*, *L.* (Fig. in Darlington's Weeds and Useful Plants, page 158; Michaux, *Sylva*, I, pl. 48; Bigelow's Medical Botany, Plate 28).

A handsome, small tree, the most beautiful of its genus.

*Stem* 10 to 20 or 30 feet high, the largest specimens attaining the diameter of 9 or 10 inches. *Leaves* ovate, entire, 4 to 5 inches long. *Flowers* 12 or more in a head surrounded by four large and showy, white floral leaves (*involucre*). *Fruit* bright red, ripe in October. Rich, rocky woods. *June*.

This species of Dogwood is said to be found in this State, though the writer has never seen the living plant. It is frequent in Massachusetts, but occurs in the greatest profusion in the Southern States bordering the Gulf, where it sometimes exclusively occupies tracts of many acres in extent. The flowers of this species are its chief attraction. The bright red clusters of fruit displayed in autumn, as well as the beautiful autumnal colorings of its foliage, add much to the charms of this tree. Downing, referring to this



species in his *Landscape Gardening*, says that "in the early part of the season, the Dogwood is one of the gayest ornaments of our woods. It is seen at that time to great advantage in sailing up the Hudson river. There in the abrupt highlands, which rise boldly many hundred feet above the level of the river, patches of the Dogwood in full bloom, gleam forth in snowy whiteness from among the tender green of the surrounding foliage, and the gloomier shades of the dark evergreens, which clothe with a rich verdure the rocks and precipices that overhang the moving flood below."

Darlington in his *Flora Cestrica*, says that "the wood of this small tree is very close grained and firm, and valuable for many purposes in mechanics. Cabinet-makers sometimes employ it in the manufacture of small articles of furniture, in which it is considered very beautiful. The woodman selects it as the best material for wooden wedges. The young straight stems make good hoops for the cooper. \* \* The bark is an excellent tonic—almost rivalling the *Cinchona* in efficacy."

For its many virtues this tree is deserving of more attention than it has received by our cultivators. Its ornamental character renders it most desirable for the lawn or yard; its practical utility alone renders it worthy of cultivation.

Our other species of Dogwood are all shrubs excepting an occasional form of the Alternate-leaved Dogwood, *O. alternifolia*. This species is remarkable in having its leaves alternate. It often attains the height of fifteen feet or more, and has a wide-spreading, flat summit. It is common on dry hillsides, etc., and in the latter part of June is showy with broad cymes of white flowers. The fruit is deep blue, ripe in October. For ornament this species ranks next to the Flowering Dogwood. It grows from Canada to Carolina and west to Kentucky.

The Red-osier Dogwood, *O. stolonifera*, is a species frequent in very wet places. It occurs in Orono, Manchester, and Waterville. The name "Red-osier" is applied to this plant on account of the very bright red color of the bark of the annual shoots. The flowers, though not numerous, are attractive. The fruit is white or lead color, and, according to Nuttall, was eaten by the savages of Missouri. It is at all times a handsome shrub. In wet soil it propagates most readily by suckers.

Silky Cornel or Kinnikinnik, *O. sericia*, also inhabits wet places, growing to the height of from three to ten feet. It is distinguished by its purplish branches, silky-downy, and narrowly ovate or

elliptical pointed leaves, and pale blue fruit. The bark of this species is little inferior to that of the Flowering Dogwood in its medicinal properties.

The Round-leaved Dogwood, *C. circinata*, has greenish, warty-dotted stems, and large, round-oval leaves, two to five inches broad. It is quite common along the borders of rich woods, etc. It is deserving of a place in the shrubbery.

**TUPELO**, NYSSA, *Linnaeus*. (The name of a Nymph; so called because it [the original species] grows in the water.)

**Tupelo, Sour Gum-tree, Snag-tree, Horn-Pine, Pepperidge and Horn-beam, *N. multiflora*, Wangenheim.**

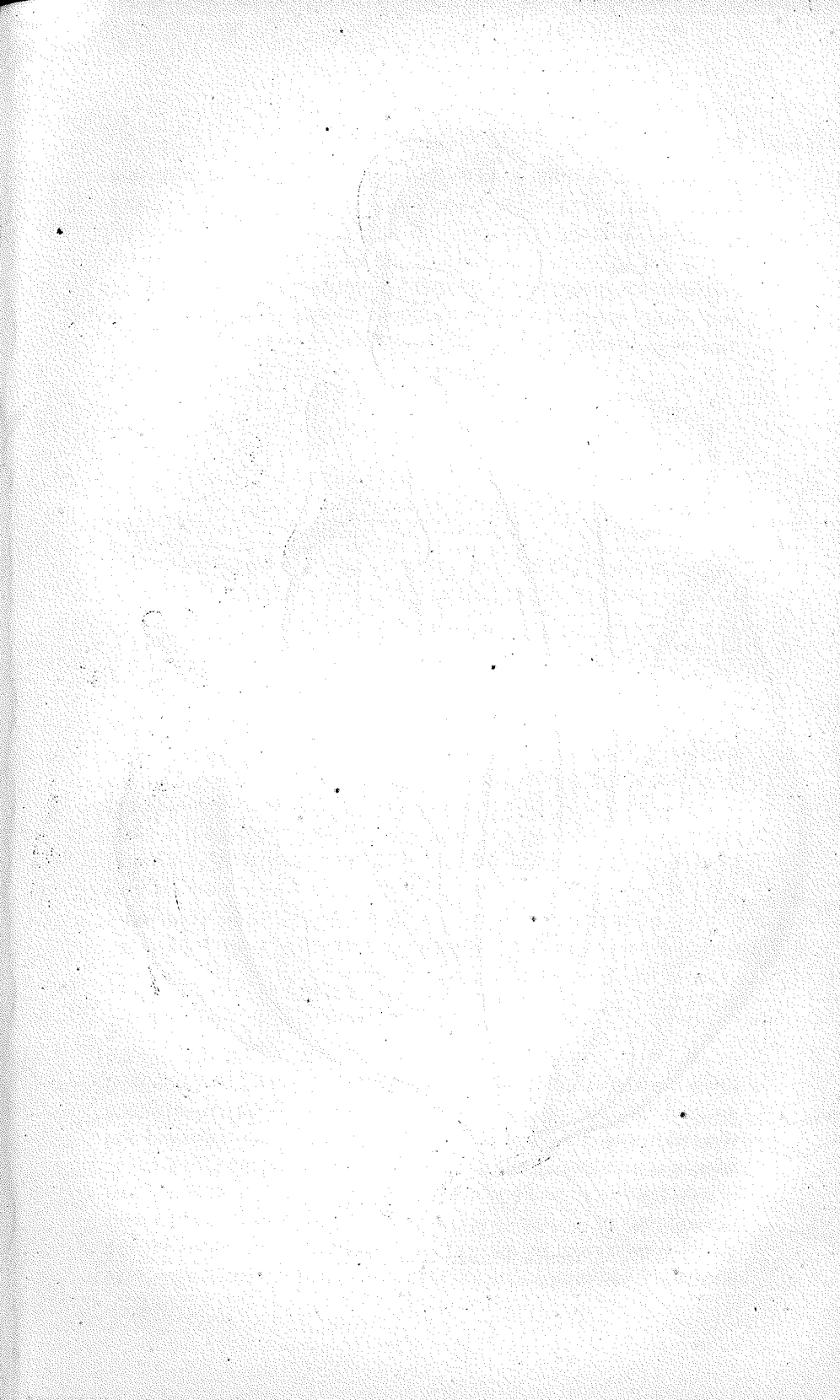
A middle-sized deciduous tree, having glossy foliage, irregular branches and usually a spreading, flat summit.

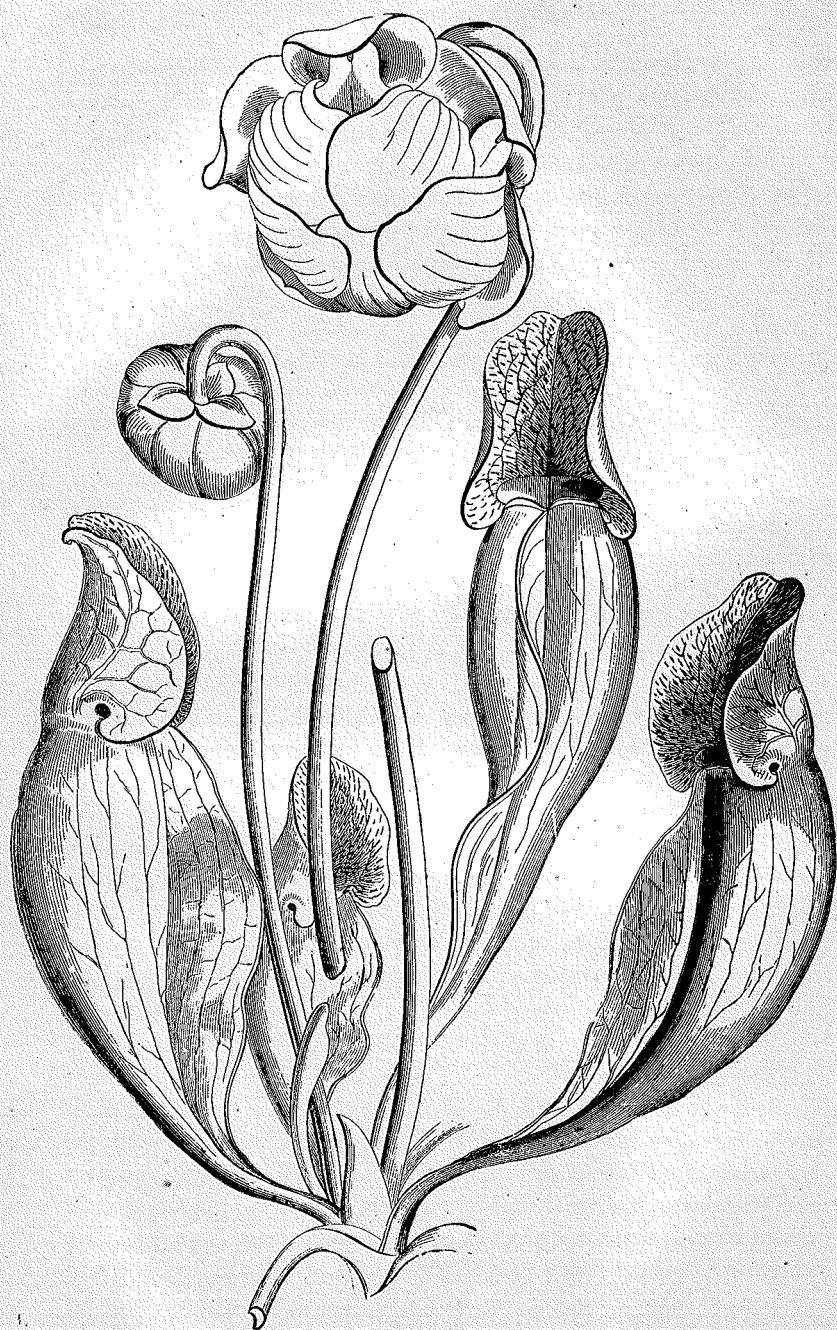
*Stem* 40 to 50, rarely 70 or 80 feet high; *trunk* 10 to 18 inches in diameter, covered with an ashen gray bark much furrowed longitudinally. *Leaves* alternate, oval, smooth except when young, upper surface glossy. *Fruit* blue-black, about one-half inch long. Rich soil, generally where moist. *May*.

This is not a common tree in Maine, being found only in the extreme southwestern part of the State. It is often met in Massachusetts, but is most abundant in the Middle States, and occurs as far south as Georgia.

The wood of the Tupelo (the name applied to the tree by the aborigines) has a yellowish hue when freshly cut; it splits with the greatest difficulty, owing to the peculiar arrangement of the fibres, which are united into bundles and interwoven like a braided cord. On account of its liability to decay the wood is little esteemed. Bowls and trays are made of it, and it is sometimes used for the hubs of wheels. For the latter purpose it is not so lasting as the elm, though less liable to split. It burns slow, giving out much heat, but from the extreme labor required to work it up, it has little value for fuel. It is recommended for aqueducts as it does not require hooping.

The chief value of this tree is for ornamental planting. Owing to its irregular and unique growth it forms an object of much attraction. For picturesque effect and to render rude and wild scenery still more wild and rude, there is no more appropriate tree than the Sour Gum. "There is no other tree, not excepting the Oak, that will compare with it in certain excentricities of habit. \* \* \* The spray is different from that of other trees. Every important branch is covered all round, at top, bottom and sides with short twigs, at right angles with the branch."—(*By-Ways of New England*.) Downing says that the Pepperidge, when of moderate





PITCHER PLANT.—PAGE 171.

size, is not difficult to transplant, and we consider it a very fine tree, both on account of its beautiful dark green and lustrous foliage in summer, and the brilliant fiery color which it takes when the frost touches it in autumn.

The Tupelo is propagated either by seeds, layers or cuttings. The seeds should be sown in spring or as soon as they are mature. The soil in which they are placed must not be allowed to become dry, else the seeds will not germinate.

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## DIVISION II.

### GAMOPETALOUS EXOGENS.

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Flowers furnished with both calyx and corolla, the latter having its parts, the *petals*, more or less united into one piece.

#### HONEYSUCKLE FAMILY—

##### ORDER, CAPRIFOLIACEÆ.

Climbing or erect shrubs, rarely herbs, with simple, opposite leaves, perfect, and generally sweet-scented flowers, and berry-like or capsular fruit. The juice of some of the species is bitter and astringent, so that they are included among the plants used in medicine.

To the florist this order presents very many elegant plants, prized for their ornamental habits and the beauty and fragrance of their flowers.

#### TWIN FLOWER, LINNÆA, *Gronovius*.

(This flower was the favorite plant of the immortal Linnæus, and was named in his honor by his pupil Gronovius.)

##### *Linnæa* or **Twin-flower**, *L. Corealis*.

*Stem* very slender, widely creeping. *Leaves* evergreen, small, of a rounded oval shape. *Flowers* in pairs on thread-like stalk, terminating the upright leafy branches, nodding, very fragrant. Mossy woods and bogs. *June*.

In June, the woods where this charming little evergreen plant abounds, are filled with the delightful perfume exhaled from its pretty rose-purple flowers. There is not in all our flora a sweeter or more pleasing little shrub than this. The Snow-berry is a more delicate vine, but is inferior in the modest beauty and fragrance of its blooms. In habit the Twin-flower is beautiful, forming a slender trailing vine, its rich and shining leaves covering with an evergreen verdure many a mossy knoll. Upon the bleak and



dreary table-lands of Mt. Katahdin, where is only moss, a few sedges and a stunted growth of fir, the writer has seen this hardy little plant in full flower past the middle of August, brightening the solitude and giving to the chilling winds its sweet odors.

**HONEYSUCKLE, LONICERA, L.** (Named in honor of *Lonitzer*, a German herbalist of the 16th century). Climbing or erect shrubs with opposite entire leaves, and often fragrant and showy flowers.

The Trumpet Honeysuckle, *L. sempervirens*, native from New York southward, is well known in the gardens. The American Woodbine or Sweet Wild Honeysuckle, native of the Middle States, is also cultivated for ornament. There are numerous beautiful exotic species familiar to all.

Native with us are two quite attractive, erect shrubs—the common

**Fly Honeysuckle, *L. ciliata*, and the Mountain Fly Honeysuckle, *L. cærulea*.**

The first is common in all deciduous, rocky woods. It grows to the height of from three to five feet, and has a rather straggling habit. The pale yellow, tubular flowers are nearly an inch long and grow in pairs. They appear with the leaves in May. The berries are bright red.

The second species is less common than the first. It is a more northern plant, found in "Mountain woods and bogs from Rhode Island to Wisconsin and northward." It is distinguished by its low growth, being from one to two feet high, its strictly upright branches and oval leaves, which are covered with a close down when young. The flowers of this species also grow in pairs; the ovaries of each pair are united in fruit into one, blue berry. Both these plants make pleasing additions to the shrubbery.

**BUSH HONEYSUCKLE, DIERVILLA, Tourn.** (Named by Tournefort in honor of *M. Dierville*, a French surgeon, who first sent him the plant from Canada.)

Low shrubs, of upright and slender growth. The *D. Japonica* and *rosea*, or Weigelias, from Eastern Asia and Japan, are among the most beautiful of our hardy garden plants.

**Common Bush Honeysuckle, *D. trifida*, Manch.**

*Stem* 2 to 3 feet high, branching. *Leaves* 2 to 5 inches long, oblong-ovate, taper-pointed, on short petioles. *Flowers* yellow, generally three in a cluster in the axiles of the upper leaves. Borders of woods and rocky fields. Common. *June, August.*

Though not especially attractive, this shrub is deserving a place in every collection. It transplants readily.

**The ELDER, SAMBUCUS, Tourn.** (From the Greek, *Sambuke*, a musical instrument, said to have been made of Elder wood.)

Mostly shrubs, having a large pith, and emitting a rank odor when bruised. The leaves are opposite and pinnate. The flowers are usually white and arranged in large compound cymes. The genus contains some twenty species, of which two are common to this State.

**Elder-bush, Common Elder, *S. Canadensis*, L.**

So common and well known is this shrub, that to describe it is unnecessary. It lays small claim to beauty, and is seldom classed among the ornamental shrubs; yet one cannot deny its attractiveness, when, in July, it is covered with its large and fragrant clusters of white flowers, or later in the season, when the blooms have been succeeded by rich masses of dark-purple fruit. Were it a plant from foreign lands, or even less common here, one could not be too lavish in its praises.

With good farmers the Elder has a bad reputation, as it often becomes troublesome along field borders, the long roots spreading extensively, resisting almost every effort for their destruction.

If for no other reason, the Elder deserves notice for its economic values, which are thus enumerated by Emerson: "An infusion of the bruised leaves is used by gardeners to expel insects from vines. A wholesome sudorific tea is made from the flowers. The unopened flower-buds form, when pickled, an excellent substitute for capers. The abundant pith is the best substitute for the pith-balls used in electrical experiments; and the hollow shoots are in great use with the boys for pop-guns and fifes." A good domestic wine is largely made from the expressed juice of the berries; and the medical action of the bark is purgative and emetic.

**The Panicked or Red-berried Elder, *S. pubens*, Mx.**

Is a more pleasing bush than the last, and in fruit is far more showy. The flowers appear in May, and instead of being in broad flat cymes, they are arranged in convex or pyramidal clusters. The bright red fruit is ripe in June. The pulp of the berry is yellowish and of an unpleasant taste. This species is of little or no value except for ornament.

**VIBURNUM, ARROW-WOOD, VIBURNAM, L.** (The classical name of unknown meaning.)

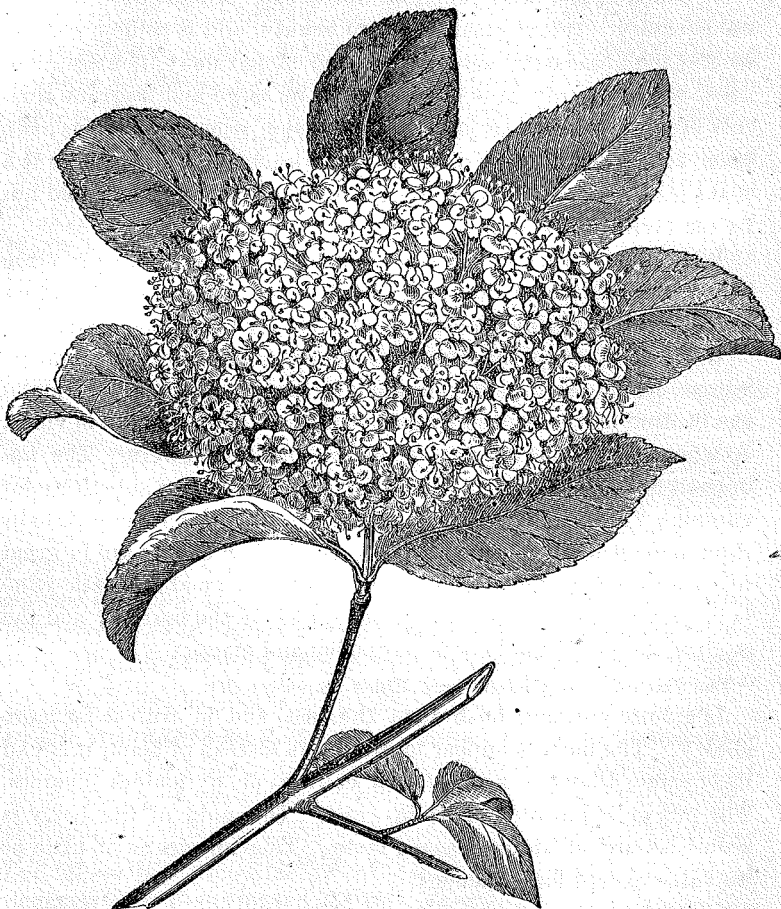
Our native plants of this genus are all shrubs of more or less ornamental character. Some of the foreign species are arborescent, and a few are evergreen. The leaves are simple and petiolate. The flowers are small, arranged in flat, compound clusters,

cymes, as in the Elder. The genus numbers some fifty species, of which six are found in Maine.

**Sweet Viburnum, Sheep-berry, *V. Lentago*, L.** (Figured below.)

*Stem* 10 to 20 feet high, much branched. *Leaves* 2 to 4 inches long, lance-ovate in outline, long-pointed, with sharply serrated margins; *petioles* about one-half an inch long, wavy margined. *Flowers* white, showy, in terminal, sessile cymes. *Fruit* quite large, at first scarlet changing as it matures to a bluish black, sweet and edible.

Common from Canada to Georgia. *June*.



SWEET VIBURNUM.

This is one of the most beautiful as well as the most hardy of the Viburnums. It often assumes an elegant tree-like form and is especially suited for small grounds. It is very pleasing when planted beside the walk or carriage drive, and when grown in clumps upon the lawn it forms an object of constant delight.

Handsome in flower, it is scarcely less attractive in autumn when loaded with its scarlet, or finally rich blue fruit, hanging in abundant clusters from every branch. The unripe and ripened fruit are often mingled together, and their appearance among the leaves already assuming their pleasing autumnal colorings, is extremely fine. The Sweet Viburnum generally has a thick and well rounded head, and owing to its great vitality, resisting the frequent browsing of sheep and cattle, it has been highly recommended for a hedge plant. A writer in the *American Agriculturist* remarks that "it is certainly one of the best of all deciduous shrubs for that (the hedge) purpose, and nothing but its commonness and cheapness can prevent it from having a rapid run and wide spread popularity for hedges." This same writer goes on to say that this plant "in the hands of the gardener is as plastic as the Box or Yew, and may be moulded into any desirable shape. Planted in good soil and properly trained, it makes a thick hedge, impervious to the light and strong enough to turn cattle. It is easily multiplied from the seed, old pastures and woodlands abounding in young plants that have been sown by birds and cattle. In the neighborhoods where the plant is already established, plants suitable for hedges are readily procured from the pastures. Those growing in the open ground, and that have been subjected to the severe cropping of the sheep and goats, are to be preferred."

**Cranberry-tree, High Cranberry, *V. Opulus*, L.** (Figured on page 236.)

*Stem* shrubby, 3 to 10 feet high, branching. *Leaves* broadly wedge-shaped, 3 to 5 inches in diameter, strongly lobed. *Flowers* numerous, small, except the marginal ones, which are large, showy and sterile. *Fruit* spherical, bright red, pleasantly acid, remaining on the plant through the winter. Meadows and along streams from Maryland northward. *June*.

This is another highly ornamental species, and may be grown from seed or transplanted directly from its native haunts, or it may be propagated by layers or cuttings. It prefers a moist soil, but does exceedingly well where the land is dry. This is a more bushy shrub than the last, seldom growing more than six or eight feet high. The flower-clusters are three or four inches in diameter and are rendered especially showy by the large sterile florets which surround them.

In the Guelder Rose or Snow-ball Tree of the gardens, which is but a cultivated state of the High-Cranberry, *all* the flowers of the cluster are sterile, that is destitute of both stamens and pistils, and consist only of the enlarged, five-lobed corolla. The wild species, though less showy while in bloom, is far more attractive

later in the season, and even through winter when ornamented with its fine scarlet fruit clusters. This fruit has somewhat the appearance and acidity of the common Cranberry, for which it is



HIGH CRANBERRY.

sometimes employed, whence the common name applied to this shrub. It makes an inferior substitute for the latter named fruit,



as it has a bitter taste mingled with its acidity, and besides, the pulp is largely filled with the seeds. The fruit may possibly be improved by careful cultivation, but at present this shrub is of little value except for ornament. "A case has recently come to our knowledge in which a tree peddler took orders for cranberries for upland culture, and supplied plants of this shrub. As this swindle may be tried elsewhere, our readers should be on their guard."—(*American Agriculturalist*.) The leaves of the High Cranberry have in summer a more lively green, and the autumn foliage is more brightly hued with crimson than in our other species of *Viburnum*. The attractiveness of this shrub at all seasons of the year strongly recommends it to the attention of every one who wishes to beautify his grounds.

The two species above described are those most worthy of attention; there are several others, however, which deserve a brief notice.

**The Maple-leaved Viburnum, *V. acerifolium*, L.,**

Seldom grows more than five feet high. It is a slender shrub, common in rich rocky woods, and is remarkable for its beautiful maple-like foliage, the leaves closely resembling in shape those of the Red Maple.

**The Arrow Wood, *Viburnum dentatum*, L.,**

Is a common species, growing on low wet grounds. The long and straight branches are extremely tough, and were formerly used by the Indians for making arrows, whence the common name applied to this species.

**The Hobble-bush, *V. lantanoides*, Mx.**

Is another common and well known species, growing in rich woodlands. It is often called Moose-wood, but this name properly belongs to the Striped Maple. The flowers are in very large and showy, flat cymes, the marginal flowers being sterile and most conspicuous, as in the High Cranberry.

## SOME NOTES ON MAINE CATTLE.

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Through the efforts of prominent gentlemen, interested in agricultural improvement, Maine—long before it became an independent State—was one of the earliest sections of the New World to attempt an improvement of its breeds of cattle by the introduction of thoroughbred animals from other countries. As early as 1791, cattle were imported from England by Maine farmers, and so late as 1836, Maine farmers sent breeding animals of thoroughbred stock to Vermont, Massachusetts, New York, and even to Ohio. Considering these facts, and also considering the fact that the history of these transactions has never been so fully or completely recorded as it should be; it has been believed that some materials towards a history of these importations, with an account of their progeny, some mention of the men engaged in these early stock transactions, as well as notes of the different breeds of cattle at present kept in Maine, might be of interest as a part of our agricultural history. In the following pages an attempt has been made towards carrying out this plan.

### EARLY IMPORTATIONS OF CATTLE INTO NEW ENGLAND.

It has been noticeable in the history of all past events that occupants of land, farmers, have made the procurement of better stock, cattle, sheep, horses, one of the first objects of their attention after the more simple and immediate wants have been supplied.

At first the settlers of any new country must perform those duties which concern daily subsistence; following these comes better dwellings, and then almost invariably, as the land becomes cleared,\* better farm stock. An example of this kind is now found

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\*“ It is a somewhat curious fact that the modern improvements in cattle in England did not begin till after the systematic culture of the higher qualities of natural grass. It is not strange, therefore, that the colonists here, who had vastly greater hardships to encounter in the practical operations of the farm, were slow to recognize the possibilities of improvement, or that their cattle, poor as they must have been at the outset,

in our own State—for while in the older portions the improved breeds of neat stock largely predominate, in Aroostook county the settlers have but recently, and even now only a few of them, turned their attention to breeding choice cattle of the various thoroughbreds. And while the first settlers of Maine made fishing and lumbering their principal business, they early gave attention to rearing and grazing cattle.

Capt. John Mason, who with Sir Fernando Gorges had several grants of land on the Piscataqua river—a part of which territory is now within the limits of this State—introduced cattle on their plantations as soon as they could obtain forage enough, by clearing and cultivating, for them to subsist upon. The present towns of Kittery and Berwick were included in the large plantation of Capt. Mason, and by him the first cattle were brought into that section, in 1631; although it is quite possible there might have been a cow or two imported prior to this date, for the purpose of furnishing milk to the fishermen. During the years 1631, '32 and '33 frequent importations of bulls, oxen and cows were made for the purpose of stocking his manor, known as "Mason Hall." In 1634 Capt. Mason had, by purchase, become sole proprietor of the "Piscataqua Patent," and had imported numbers of Danes, and Danish cattle for the purpose of establishing a permanent colony. The cattle were imported by Capt. Mason on account of their capacity for labor and enduring the rigors of our climate. They were large in size, of powerful make, and yellow color. Previous to the death of Capt. Mason, which occurred in 1635, there were some three hundred cattle upon his plantations, and they were chiefly Denmarks.

There are preserved in the office of the Secretary of State, for the State of New Hampshire, the originals of two curious depositions which substantiate the above statements; and as the facts contained in them relate directly to the early history of our Maine cattle, they are copied in full; having been originally published in the Transactions of the New Hampshire Agricultural Society for 1854.

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continued rather to depreciate than to improve in quality until sometime after the Revolution. The number increased, however, as the range of pasturage or browsing grounds was comparatively unlimited, so that the keeping of stock may be said to have assumed some importance in the older settlements, by the middle of the last century, when it had become comparatively safe from molestation."—*Chas. L. Flint's Hundred Years' Progress of American Agriculture.*

## DEPOSITION OF FRANCIS SMALL.

Francis Small, of Piscataqua, in New England, planter, aged 65 years, maketh oath, that he hath lived in New England upwards of 40 years; that he very well knew the plantations Capt. Mason had caused to be made at Piscataqua, Strawberry Bank, and Newichewanock, and was well acquainted with all the servants employed by Captain Mason upon the said plantations, some of whom are yet living; and that there was *a great stock* at each of these plantations. And this deponent doth very well remember that Captain Mason sent into this country eight Danes to build mills to saw timber and tend them, and to make potashes; and that the first saw and corn mill, in New England, was erected at Capt. Mason's plantation at Newichewanock, upward of fifty years, where was, also, a large house, with all conveniences of out-houses, and well fortified with store of arms. That about forty years since the said houses and buildings were burnt to the ground, but by what means this deponent doth not know. *That about the same time this deponent, with others, was employed by Capt. Francis Norton, (who then lived at Capt. Mason's house at Piscataqua, called the great house,) to drive about one hundred head of cattle towards Boston, and the said Capt. Norton did goe with the cattle; that said cattle were there usually sold for five and twenty pounds, the head money of England.* And the said Norton did settle himself at Charlestown, near Boston, and wholly left Capt. Mason's plantation, upon which the other servants *shared the residue of the goods and stock among them, which were left in that and the other Plantations*, and possessed themselves of the houses and lands, *and this deponent doth verily believe that from the cattle sent thither by Capt. Mason, most of the cattle in the provinces of New Hampshire and Maine, have been raised, for this deponent doth not remember or heard that any one person else did bring over any.* That Thomas Wannerton, a servant to Capt. Mason, and lived in a fair house at Strawberry Bank, about the year 1644, did carry goods and arms belonging to Captain Mason's plantation, and did sell them to the French that did inhabit at Fort Royal, where the said Thomas Wannerton was slain. That some time after one Sampson Lane came over from England, with power, as he pretended, to look after and take care of the aforesaid plantations, and did settle himself in the great house at Strawberry Bank, and made additions thereunto, where he continued about three years and then returned for England, upon whose departure

John and Richard Cutts got into possession of the aforesaid house and lands at Strawberry Bank, but by what right this deponent never heard, and have sold several tracts, upon which many houses are now built and possessed by the relations of the said Cutts.

FRANCIS SMALL.

Sworn before me the 8th September, 1685,

R. CHAMBERLAIN, Justice P."

The facts sworn to in Small's deposition are corroborated, and the origin, extra size and color of these cattle, are given in the

DEPOSITION OF NATHANIEL BOULTER AND JOHN REDMAN.

"Nathaniel Boulter, aged 60 years, and John Redman, aged 70 years, of the town of Hampton, in the Province of New Hampshire, Yeoman, make oath that they were two of the first planters that did sit down at Hampton, aforesaid, about forty years since by the authority of the Massachusetts General Court, which gave power to some few persons (called Sellectmen) who came likewise to inhabit in the said town, to grant or sell land to others as they thought fit. That upon these deponents first settling at Hampton several of the servants of Capt. Mason or his heirs, came from Piscataqua to Hampton, and did forbid these deponents and others from settling in the said town without a license from the proprietor or his agents, and paying a quit rent. But these deponents and others of the inhabitants being backed by the authority of the Massachusetts government, which had declared those lands to be in their jurisdiction, no regard was had to the prohibition by Capt. Mason's servants. And these deponents do very well remember that Mr. Mason had made a great plantation at Piscataqua and Newichewanock, where there were a great stock of cattle, and much land improved—and these deponents about forty years since, did see a drove of one hundred head of great cattle, or thereabouts, that came from off Capt. Mason's plantation at Piscataqua, and drove through the town of Hampton, towards Boston, by Capt. Norton and others, the servants of Capt. Mason or his heirs, and there sold and disposed of (as these deponents were informed) by the said Capt. Norton, who did then settle himself in or near Boston, and deserted the plantation at Piscataqua, and these deponents do further testify that such cattle were commonly valued at five and twenty pounds the head, being very large beasts of a yellowish color, and said to be brought by Capt. Mason



*from Denmark.* And these deponents say, that soon after Capt. Norton's going to Boston to inhabit, the Massachusetts government did lay claim to the whole province of New Hampshire, as pretending it to be within their patent, and did accordingly exercise a jurisdiction therein and required those inhabitants to take an oath of fidelity to them.

NATHANIEL BOULTER,  
JOHN REDMAN.

Sworn before me the 6th of November, 1685,

R. CHAMBERLAIN, Just. P."

THE NATIVE, OR OLD RED CATTLE OF NEW ENGLAND.

Much discussion has been had as to the origin of the Old Red Cattle or native stock of New England; and many attempts have been made by different writers to show that such and such foreign breeds formed the basis of our native cattle, by basing their assertions upon the fact that the inhabitants of certain sections came from particular districts in the mother country and would be most likely to bring with them cattle of the particular breed that abounded in their own localities. Thus Mr. Alanson Nash, in an original and entertaining Memoir of the Origin and History of American Cattle, states that the inhabitants of Salem, Mass., are descendants of Dorcestershire, settlers who would of course introduce Devons; that those of the town of Rowley are descendants of Yorkshire, colonists who came from England in 1638, bringing with them the old Yorkshires and the old Shorthorns; that the people of Lynn came from Lincolnshire, bringing with them the old Lincolnshire cattle, and that the people of many of the towns in Connecticut came from Kent and Surry by way of the Bristol channel, bringing with them cattle from Sussex and Hereford, and above all, Devons in great numbers. It is true, no records have been found upon which to base such statements, but the inferences are very clear and the general assertions such as seem well founded. In commenting upon these opinions of Mr. Nash, Mr. Solon Robinson, one of the prominent agricultural writers of our county, in a valuable series of articles in the *New York Tribune*, on "Breeds of Domestic Cattle," thus speaks of the origin and characteristics of the "old red stock of New England:"

"We think Mr. Nash lays too much stress on these localities as proving the species of cattle imported from them at that early date.

Lincolnshire was supplied with Longhorns it is certain from the small and remote district of Craven, on the opposite coast of the island, and far to the north of England. They gained ground but gradually and slowly, and the southern coast of Lincolnshire opposite to Norfolk would have been about the last place they would have reached, as it is in fact the extreme southern limit of their district in England. There is, in fact, no reason for believing—but rather the reverse—that there were Longhorns in Lincolnshire at the period of the embarkation of the Pilgrims. Now, however, there has grown up, and within a few years grown into great consideration, justly, a peculiar breed of oxen known as the red cattle of New England. Their characteristics—in first, their color, which being pure red decidedly negatives the probability, if not the possibility of any Shorthorn cross, since white, either pure or spotted with clear blood red is, as has been before demonstrated, an original Shorthorn color, derived not from the Chillingham or Cadgowl-park wild cattle, with which it is not probable that they were ever crossed, but from the original imported Danish stock brought into England prior to the Norman invasion. This white color would indubitably break out if it existed dormant in the red cattle of New England, while the form of the Yorkshire horn would unmistakably show itself in any cross breed of which the Shorthorns formed a constituent part. From a very early date these red cattle have existed in New England, but they have been recently greatly improved, and have assumed new characteristics. They were formerly, we understand, of the light red color peculiar to the Sussex cattle; had characteristic horns, somewhat coarser and less tapering than that of the Devon, and showed a good deal of the Sussex coarseness and weight about the forehead. They have now returned nearer to the rich blood color, deeper almost than blood bay of the Devons and old Herefords before the white faces and bellies were introduced among the latter, probably from their neighbors the Montgomeries. They have gained a horn much larger it is true than either Devon or Sussex, but of the true Devon form, delicate, tapering finely to a point, and of a clear, waxy color, white at the base. Lastly, they have got rid of the weight and coarseness of the Sussex shoulder, and have all the freedom from inferior beef in the fore-quarter, with all the agility and quickness at work of the Devonshire, which in that character excels all the English cattle. They are fair milkers, though not equal to the Shorthorn or Yorkshire stock, which prevails in other

parts of New England. They are hardy, docile, and excellent workers, attain to a great weight, fattening easily, and not forming like the new Longhorns immense masses of useless tallow, but giving a finely grained and beautifully marbled beef.

They are in all respects a highly valuable and excellent breed of cattle, and admirably adapted for the country in which they are produced, the cold, hilly and backward pastures of New England. It is certain, however, (or as certain as anything can be which is predicated on a consideration of effects, not on a foregone knowledge of causes) that there is no Yorkshire nor any Shorthorn blood whatever in the Red Cattle of New England, how much soever there may be in the red and white breeds kept for milk in the same regions. There may be, and we will say most probably there is, a Longhorn cross, whether that came only from the old Leicestershire Middlehorns which had always a tendency to make longer horns than the rest of the family, or, as we believe to be the case, chiefly from their size, which is far superior to that of the pure Devon or Herefords, from a far more recent admixture within the last fifty or sixty years of the improved Bakewell long horns. The tendency to the long horn formation among these New England red cattle is particularly conspicuous in the oxen, and breaks out, as has been observed, in the neat stock of all the States originally settled from New England, very remarkably. So is that of Ohio, among the cattle of which State it is common to see light red, and even brindled oxen, which might pass for real Leicester Longhorns. The true base of the breed is, in our idea, unquestionably Sussex, and the improvement recently effected in it has been probably brought about by a careful selection of native parents on both sides, according to individual qualities and judicious breeding, back to the best imported Devons, to which they owe their color, lightness of form, docility, freedom from offal when slaughtered, and pure grain of their beef.

Mr. Nash claims for these cattle nothing less than that they are the best in the world for all purposes. He alleges that they not unusually weigh from 3,500 to 3,600 pounds, dead weight, and that he has heard of one which weighed 950 pounds per quarter, or 3,800 per carcass. This at the rate of 64 lbs. to the 100 would give the prodigious weight of above 5,900 pounds for the live weight of the animal. The largest animal ever slaughtered in England, and he a prize beast, fattened for exhibition, weighed but 3,080 pounds. He also claims that their beef is finer grained,

finer marbled, and finer flavored, than any that is found abroad. In neither of these points can we agree with his conclusions. We believe that the weight, even as a maximum, much more as an average, is greatly exaggerated, and we know that English beef is imported by every steamer, finer grained, better marbled and higher flavored, and therefore commanding a higher price in eating houses than any domestic beef; all the other merits of this admirable breed of cattle we readily concede. Their remarkable union of good qualities, their singular adaptation to the climate and constitution of hill countries, the great amount of work they will do and quantity of milk and beef they will yield on scanty fare and in a rugged district, are not to be disputed, and this granted they will have enough to recommend them even though we do not admit them to be the best cattle in every possible respect and for every possible purpose in the known world."

We deem these remarks of so able a writer as Mr. Robinson, worthy of permanent record, but think it must be admitted that the Denmark cattle introduced by Capt. Mason, which were distributed throughout Maine, New Hampshire and Massachusetts, and which became mixed with the cattle that had been imported into the Plymouth and Massachusetts colonies—and which were mainly Devons—formed the cross or breed of cattle that are generally known as natives, or the "old red stock of New England."

From the time of Capt. Mason to the year 1791, nothing is definitely known in regard to the importation of cattle into Maine; although it is probable animals were occasionally brought in by shipmasters who traded with different parts of Europe and with the West Indies.

#### THE VAUGHAN IMPORTATIONS.

The County of Kennebec has long been known as a section of Maine famous for its superior cattle, and it is to residents of this county that belong the honor of having introduced the first imported cattle into Maine. This was done in the year 1791, by the late Mr. Charles Vaughan of Hallowell, who with his brother Benjamin Vaughan, LL.D., had some years previously migrated from England and settled in that town. This importation consisted of two bulls and two cows. The cows were selected from the London dairies; and as the Holderness or Yorkshire breed was then that from which the milking stables of the English metropolis were mainly supplied, the cows selected for Mr. Vaughan were

probably of this variety. The bulls were selected from the famous Smithfield market, according to points laid down in the order given the purchaser; points which would fit the draught stock for a hilly country, and also to be well fitted for the dairy. These bulls were of the Longhorn breed, though it has been doubted by so good an authority as the late Mr. Sanford Howard—who at one time was foreman of the Vaughan farm—that they were of that particular family which Bakewell bred with so much care. On the passage to this country—the animals having landed at Kennebec river in November of that year—one of the cows dropped a bull calf, which, in August of 1792, was presented to Hon. Christopher Gore, afterwards governor of Massachusetts, and became the progenitor of the cattle which became so much talked of for years in that State as the “Gore breed.” At the age of nine months this bull girthed four feet seven inches. Mr. Capen of Cambridge, Mass., had two oxen of this breed, which he called Magnus and Maximus, that weighed over 6,000 pounds when slaughtered. The progeny of the cattle imported by Mr. Vaughan were as famous for their dairy as their working qualities. In 1807 five cows of this breed, during the six months from November 1st to April 1st, furnished for sale 2,998 quarts of milk, two gallons of cream, and eighty-four pounds of butter, besides the cream and milk used in a family of eight persons. From six cows and three heifers that calved in the spring, was produced in six months, from April 1st to November 1st, 745 pounds of butter and 1,476 pounds of cheese, besides the milk, butter, cheese and cream used in the same family. These were fed on straw, turnips and meadow hay until one month of calving, then with the best of hay. Another cow produced from the 16th of August to the 2d of September, a period of eighteen days, 245 quarts of milk, producing 23 pounds of butter; and from Sept. 3d to Sept. 20th, eighteen days, 246 quarts of milk, yielding 23 pounds 1 ounce of butter. A bull calf out of this cow was sent to the island of Jamaica. The Longhorn cattle of Mr. Vaughan’s importation, like their ancestors, were very long lived, and this quality was strikingly manifested in the descendants of Mr. Vaughan’s bulls. Many of the cows continued to breed till eighteen years old, and the oxen were noted for their vigor, strength and hardihood. The bulls imported by Mr. Vaughan were used in a way to benefit the settlers of Maine as much as possible. It was his custom to keep one of them at Hallowell and the other at different points in the valley of the Sandy River,

changing them accordingly. By this course their progeny soon became numerous, and quite widely spread. The Messrs. Vaughan continued to breed their stock, without crossing, until after the importation into Massachusetts of the Shorthorn bull "Young Denton," in 1817.

## LATER IMPORTATIONS.

All writers on our agricultural history, unite in saying, that about 1814 an English vessel was captured near Portland by an American Privateer, which had some cattle on board of it, and that a bull from this lot stood in different parts of Kennebec and Cumberland counties, known as the "Prize bull." Mr. Sanford Howard, writing in 1865, says of this bull: "I have been informed by various persons who had seen him, that he was called a 'Bakewell bull,' and that his points corresponded to the Bakewell variety of Longhorns. I remember to have seen several animals that were said to have been got by him, which would pass very well for half blood Longhorns." The venerable Friend, Samuel Taylor of Fairfield, however, gives the following version of this transaction. Under date of 11th mo. 1872, he writes:

"The Peter Waldo stock was so named from the fact that they were brought to this country in a vessel named 'Peter Waldo,' a British vessel bound to St. Johns, New Brunswick, during the war of 1812.\* The vessel had on board a Methodist minister and his family, and they brought with them a bull and cow. This vessel was captured by an American cruiser and brought into Portland, Maine, the stock and other things sold. The bull and cow went either to Westbrook or Falmouth, and there remained until after the close of the war, when the good minister sent to Portland and purchased them back again. I have a very distinct recollection of some of the progeny as early as 1817, when some of them found their way to the towns of Sidney, Fairfield, and what was then Bloomfield. They were heavy in the fore and hind quarters, rather long on the back, a little saddled, and slow in their movements. Their name was Holderness. We never had on the Kennebec any but grades or half breeds. Some of them grew to be very large and heavy. Some of the grade heifers two years old would

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\*"Brig Peter Waldo, from Newcastle, England, for Halifax, with a full cargo of British manufactures, clearing for the captors \$100,000, sent into Portland in August 1812, by the Teaser of New York."—*Coggeshall's American Privateers and Letters-of-Marque*, page 47.



dress 700 pounds or more. The greatest objection to the grades was, that many of the calves have monstrous hips and shoulders. The cows were fair milkers, and when well fattened would weigh from eight to thirteen cwt."

#### EARLY VIEWS OF PEDIGREE AND HERD BOOKS.

In the second volume of the *MAINE FARMER*, (1834), the editor, Dr. E. HOLMES, published some sketches of the celebrated bulls and cows of the Durham breed which had been or were at that time kept in Kennebec county; and from these articles, from his report as Secretary of the Maine State Agricultural Society, in 1855, and from private letters, a list of the noted animals of Kennebec county has been compiled—it being borne in mind that this county has been from the time of the Messrs. Vaughan the leading section of Maine in the matter of improving its neat cattle, and in their dissemination into other parts of the State and of New England. The list embraces the names of many animals famous in our early agricultural history; and we preface it with the following remarks of the late Dr. HOLMES, on herd-books and the value of pedigree, copied from the *MAINE FARMER* of February 21, 1834, in order to show what at that time was the opinion of this leading writer and advanced thinker upon this subject:

"The Herd Book is a book containing the pedigree of the different Improved Durham Shorthorns in England. It now makes two large octavo volumes—and none are admitted but those whose pedigree on the father's and mother's side can be traced back to some of the best bulls of the race, especially to Hubback. Now we do not attach quite so much importance to the Herd Book as some of our Western brethren do. We are willing to allow that an animal bred from a long line of ancestry will have certain points so firmly fixed as to become a distinct variety or breed; but every animal that is recorded in the Herd Book is by no means a good animal. We speak with all due deference to wiser heads—but still facts must be believed in preference to mere opinion. And it is a fact, we verily believe, that some miserable animals have been immortalized on the same pages with your Comebs and Hubbaks, Foljambes and Favorites. We are ourselves decidedly of the opinion that the best breeds of cattle that we have is the half blood Durhams; although there is occasionally some miserable beings among these. Now to insure a good breed of half bloods, we must have

two things, viz: a good many first rate native cows, and a few first rate full-blooded improved Durham bulls. These should be put together judiciously, not at random; for even the best breed on earth is in danger of degenerating, and has often degenerated under the most skilful hands. It has been whispered, though we to be sure, at this distance both of time and place cannot vouch for its truth—but it has, nevertheless, been whispered, that the celebrated English breeder of Improved Durhams, Collings, whose famous race of Herd-Book cattle sold for such great prices, found it necessary to mix in a little common blood slyly, to preserve the form and vigor of his herd."

LIST OF EARLY BLOODED STOCK IN MAINE.—BULLS.

DENTON\* was the first thoroughbred Durham or Shorthorn ever brought into the State. His color was white, neck and shoulders of a dark chesnut color, with patches of the same on other parts of his body. He was brought to Gardiner in November, 1827, having been presented to Dr. E. Holmes, by Stephen Williams, Esq., of Northboro', Mass., by whom he was imported in 1817. While he stood for service in Massachusetts, he had, from October, 1818 to November, 1824, 284 cows, which came from a stretch of country extending from Philadelphia to this State. In August, 1821, he measured as follows: neck back of horns, 4 feet 4 inches: girth over the brisket, 8 feet 9½ inches: girth back of fore legs, 7 feet 10¾ inches: length from rump to insertion of horns 8 feet 9½ inches. He weighed in December, 1822, 2,700 pounds. Dr. Holmes says: "His stock was highly prized, and readily bought up by the farmers of the adjoining States; \$200 for a half blood bull calf being considered cheap." In 1828, Denton stood in Gardiner; in 1829 in Starks, Somerset county, where he died of old age, April, 1830.

YOUNG CŒLEBS. Bred by Col. Samuel Jaques of Charlestown, Mass.; got by Cœlebs, imported by Col. Jaques; dam, an imported Durham cow owned by William Gray, Esq. Brought to Hallowell in 1825 by Gen. Jesse Robinson, and by him sold to

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\*The following is the pedigree of Young Denton, as given in the second volume of the English Herd-Book (Coates):—

(693) YOUNG DENTON. Roan, calved 1816, bred by Mr. Wetherell, Kirby Malery; sold to Samuel Williams, merchant of London: owned by Stephen Williams, Northboro', Mass., U.S.A.; got by Denton (198), d. Cora, by Baronet (60), by Cripple (161), by Irishman (329), by Hubback (319).

Mr. John Kezar of Winthrop, and commonly known as the "Kezar bull." His color was white, with patches of dark color intermixed. Dr. Holmes says of him: "He was a large, vigorous animal, with excellent quarters. He had a hollowness or sinking down behind his shoulders, which injured his appearance, but his stock, or but few of them, had this defect. Some of our best oxen descended from this bull, and some of our handsomest cows were sired by him, and in general they are good milkers."

**HERCULES.** Bred by Samuel Lee, Esq., of Massachusetts. Brought to Pittston in 1826 by Gen. Henry Dearborn, where he stood for several years. Afterwards he stood in Winthrop. Got by Cœlebs, dam an imported cow owned by Mr. Lee. Color white, intermixed with occasional spots of dark color. "A large, robust animal, with good quarters, well ribbed, with a good loin and shoulders, but sinking a little behind them. The getter of some good stock, both for the yoke and dairy."

**JUPITER.** Bred by Col. Samuel Jaques of Charlestown, Mass. Got by Cœlebs, dam Flora. Brought to Hallowell in 1826 by the late Mr. John Davis. He was kept in Readfield, Winthrop and Wayne; and also in Starks, Somerset county. "A valuable, but in his lifetime a despised animal. He had good quarters, and in general was well made, but not so straight in the back as that breed generally is. He left some first rate cattle behind him. The oxen got by him are handsome, strong and active, and some of the cows excellent milkers. But he was despised by most of our farmers on account of his color (pure white), and little patronized. He accidentally broke his neck in the fall of 1830, and his loss, like that of the Kezar bull, is now (1834) much regretted."

**ARGWASUC.** Bred by J. Davis, Esq. Sire, Jupiter; dam Europa. He was purchased and carried out of the county by Mr. Rangely, of No. 3, on Lake Argwasuc; and we have ventured to call the bull by that name till we shall know more about him.—*Dr. E. Holmes, in Maine Farmer, March 7th, 1834.*

**DARLINGTON.** Bred by E. Holmes. Color roan; got by Jupiter, dam Europa. Calved April, 1829. Kept in Readfield.

**MAINE DENTON.** Bred by Robert Conforth of Readfield. Got by Imported Denton; dam Durham Beauty, by Jupiter; grand dam Europa by Cœlebs, great grand dam Flora, imported by Col. Samuel Jaques of Massachusetts. Calved April, 1830; color, red and white. Owned by Thomas Pierce of Readfield.

**HANSON.** Bred by E. Cushing, Esq., of Hanson, Mass. Got by Pilgrim. Brought into Kennebec county by E. Holmes, in 1830.

**BANQUO.** Imported from England by John Hare Powell of Virginia, and introduced into Winslow in 1828 by R. H. Greene, Esq. Color, red with some white spots. He stood in Winslow three years, in Winthrop one, and in Augusta one. In a letter from Mr. Greene, under date of April 17th, 1873, he says: "Although my price for the service of Banquo was only one dollar, but very few persons took advantage of this opportunity of improving their stock."

**TURK.** By Jupiter, out of a thoroughbred cow. Owned by Robert Conforth of Readfield, in 1830. He was afterwards kept in Vienna, and in Anson, where he stood eight or nine years.\*

**SIR ISAAC, (Hereford).** Bred by Hon. John Wells of Boston. Got by the imported bull, Sir Isaac. Brought into Hallowell by \*Sanford Howard in 1830. Calved in 1827.

**NORFOLK, (Hereford).** Bred by Hon. John Wells of Boston. Got by the imported bull, Admiral; dam by Sir Isaac; grand dam by Holderness. Introduced into Hallowell in November, 1832, by Sanford Howard. Color brindle.

**WALDO.** Bred by Mr. Young of Jackson. Got by the imported Durham Shorthorn bull Lyman Durham. Calved March, 1833. Brought to Winthrop in 1834 by Elijah Wood, Esq. Color, red.

**TASSO.** Calved in 1829. Got by a bull bred by John Hare Powell of Virginia; dam, imported cow Judy; color, white. Brought to Winslow by R. H. Greene, Esq.

**BONNIVET.** Got by Banquo; dam, imported cow Sally Richards; color, red with some white spots; calved 1833. Owned by R. H. Greene, Esq., Winslow.

**URANUS.** Got by Maine Denton; dam by Darlington, calved August, 1833. Owned by Thomas Pierce, Readfield. "Dam, a first rate cow of native breed."

**GOLD-FINDER.** Got by Maine Denton; dam, Flora by Jupiter; grand dam by the King bull. Calved December, 1833. Owned

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\*In speaking of the descendants of this bull, D. H. Thing, Esq., of Mt. Vernon, says, in *Agriculture of Maine* for 1870, page 14: "His descendants are now to be seen and readily recognized in that part of Somerset county where he stood so long. Some fifteen years since, in passing through that vicinity, I was struck with the familiar appearance of their stock; especially on one farm where there were kept about fifty head. On inquiry, I learned they were descended from the above named animal."

by Thomas Pierce, Readfield. "Flora was a cow of great milking qualities, and in form equal to any other cow."

**YOUNG FITZ FAVORITE.** Imported by Robert B. Minturn, Esq., of New York, June, 1830, from the stock of Mr. Ashcroft, one of the leading cattle breeders in the west of England. Got by Fitz Favorite; his dam, Ellen, by George, he by Favorite, 2d, by Favorite the sire of Comet, Favorite by Bolingbroke, dam by Foljambe. Brought to Winslow in 1834 by R. H. Greene, Esq., and exchanged by him in 1837 with Charles Henry Hall, Esq., of New York, for a bull bred by him and called

**YOUNG COMET,** after the celebrated bull Wye Comet. He was kept by Mr. Greene, at Winslow, two years, and sold to Colonel Samuel Butman of Plymouth.

In addition to the above, mention should also be made of the following thoroughbred bulls introduced into Maine, and about which definite information as to pedigree is wanting: **ALBANY**, (Hereford) purchased of Messrs. Lotham & Corning, in 1844, and brought to Hallowell by J. W. Haines; the "King bull," sent by Gov. King of Bath to Kingfield in Franklin county; "Fillebrown's brindle bull," kept at Readfield, and a bull kept at Pittston by Gen. Jesse Robinson, who afterwards removed to Waterville; the latter a very fine animal, with good points.

The bull **Spotted Leopard**, which was brought to Fayette about 1842, by J. H. Underwood, and which was also kept in Fairfield by Capt. Henry Lawrence and in Skowhegan by A. Crawford, was said to have been got by a thoroughbred bull imported from New York into Hallowell by J. W. Haines. D. H. Thing, Esq., of Mt. Vernon, in a private letter, says he was "a full-blood Durham, red and white, rather spotted than mixed, tall, long, very stylish, and altogether one of the most splendid looking animals I ever looked upon. He was a getter of superior stock, particularly oxen."

#### Cows.

**DAISY.** Bred by Col. Jaques of Charlestown, Mass.; imported into this State by the late John Davis of Hallowell. Got by Cœlebs, dam, imported cow Flora. Color mostly white.

**EUROPA.** Bred and introduced by the same; got by Cœlebs, dam, Flora; color red.

**EASTERN CHERRY.** Red; bred by E. Cushing, Esq., of Hanson, Mass. Got by Pilgrim; dam, an imported Shorthorn cow. Intro-

duced into Maine by the late Dr. E. Holmes, and owned by A. Tinkham of Anson.

JUDY. Imported by Henry De Groot, Esq., of New York. Introduced by R. H. Greene, Esq., of Winslow.

PEGGY. Got by Banquo; dam, Sylvia. Color red and white. Bred by Mr. De Groot, and introduced by Mr. Greene.

SALLY RICHARDS. Imported by Mr. De Groot, and brought to Maine by Mr. Greene.

CHESTNUT BEAUTY. Brought to Maine in 1830, by Sanford Howard, Hallowell. Sold to Sumner Bixey of Norridgewock.

DAFFY. Brought to this State in 1833 by Sanford Howard of Hallowell. Was the mother of the bull Young Sir Isaac.

It is an important fact, that the bulls Denton, Young Cœlebs, Fitz Favorite, Banquo, Comet, Foljambe and Wye Comet, mentioned in the preceding list, are all found recorded in the early volumes of the English Shorthorn Herd Book—Coates'—the first of which was published in 1822, the second in 1829, and the third in 1836:—thus establishing beyond a doubt the purity of the blood of these early bulls, the progeny of which formed the basis of the farm stock of the county of Kennebec, from which they were widely disseminated throughout the State. In a few instances, where known, some individuals of the Hereford breed have been indicated. The above list is believed to be a more complete register of the early blooded cattle of Maine, than any ever before published.

#### EFFORTS OF EARLY BREEDERS IN DIFFERENT PARTS OF THE STATE.

It is very interesting to trace the spread of these early animals from the county of Kennebec, which was from 1792 to 1835 the centre of enlightened farming and intelligent stock raising in Maine. The gentlemen who were interested in improved farming and cattle breeding at that time, were among the leading citizens and business men of the day in this portion of the State; and they were often brought into contact with the leading business men in other parts of Maine. Through this means the highly prized bulls which had been imported and were owned by residents of this country, were sent into other portions of the State to improve the cattle there. Generally these animals were not sold, but were leased or hired-out by their owners for a term of one or two years.



Occasionally animals were purchased by prominent business men in other counties; who, while being interested in farming, were also generally more largely engaged in trade or lumbering. So we find that at an early period choice blooded bulls were kept in Waldo, Somerset and Franklin counties, and from these points they wrought improvement in the cattle of the contiguous Territory. In Somerset county we find the bull Young Denton as early as 1830, upon the farm of the late Dr. E. Holmes in the town of Starks. Ariel Tinkham and Luke Houghton of Anson were also early interested in the improvement of stock in Somerset county, having purchased several animals of the produce of the bulls Denton, Jupiter, Hanson and Darlington, and the cows Sophia, Eastern Cherry and others of the pure blood Durhams introduced by residents of Kennebec county. We are informed by Hon. Asa W. Moore of Anson, that at the time of the death of Mr. Tinkham he left some twenty head of choice animals bred from the above stock. He also writes: "The grades from this stock have been widely dispersed throughout western Somerset, and even beyond the limits of the county. The benefit derived from the introduction of this stock cannot be easily estimated, but it is safe to say that the farmers of this section have realized thousands upon thousands of dollars therefrom." His son, Col. S. W. Tinkham, and the Messrs. Hilton of Anson, continued to breed from this stock for years, and they are known to have had some of the finest stock, especially of large oxen, in Somerset county. The southern and central portion of this county was also one of the first sections out of Kennebec to receive an impetus in its breeding operations, through intercourse with the leading farmers and breeders in the county last mentioned. Col. Reuben H. Greene of Winslow was among the foremost to engage in the breeding of thoroughbred stock in Maine, and many of his animals were sent into Somerset county. On preceding pages mention has been made of some of the animals introduced by this gentleman, who was actively engaged in breeding from 1829 to 1855, and who is still living in the enjoyment of a hale old age. In a letter under date of April 17, 1873, Col. Greene gives an interesting account of his breeding transactions, in which he says: "My first thoroughbred calves at six and eight weeks old sold at \$50, which at that time was considered a great price, although in New York they were selling for \$300. My first sale was of Banquo stock—one bull and five one-year-old heifers to Abel Shorey of St. Johnsbury,

Vt., for the sum of \$300. As they passed through Augusta, they were noticed by many and much admired, and could have been sold at an advance of \$15 each. The remark was then made, 'It is a shame to have such animals taken from the State.' I sold a bull calf by Fitz Favorite, to the Messrs. Burrell of Newport, and when three years old they sold him to go to Ohio. He was a splendid animal, and was shown at a cattle show in Massachusetts while being driven to Ohio, and received a premium of \$20." Col. Greene has furnished a list of his early stock sales—not by any means complete—from which it appears that aside from the above named animals sold by him, he sent a bull and cow to Springfield, Mass., a bull to Cincinnati, Ohio, and other animals to the following towns in Maine, viz: two to Augusta, nine to Waterville, two to Hallowell, five to Lewiston, five to Thorndike, three to Newport, twelve to Vassalboro', three to Bloomfield, two to Carmel, two to Portland, two to Albion, two to Bridgton, and one each to Scarboro', Saco, Fairfield, Canaan, Pittsfield, Clinton, Norridgewock, Dresden and Anson. A large number of these were thoroughbred animals, and the list shows how extensively they were disseminated throughout the State. Mention has been made here of the efforts of Col. Greene, as he resided so near the limits of Somerset county as to be more identified with its farming and its business than with his own county of Kennebec. Capt. Henry Lawrence of Fairfield, who was born in 1791, was one of the first in the southern-central portion of Somerset county to engage in the improvement of the breeds of cattle. According to the recollection of Friend Samuel Taylor of Fairfield, Capt. Lawrence and his brother had early given great attention to breeding, and he says in a private letter: "They were famed for their excellent stock as early as 1800. Nothing but a red calf had any chance of life with them." These efforts at improvement, prior to 1800, were made with the kinds of cattle then kept, through careful selection, and Friend Taylor observes that previous to 1800 many of the farmers in portions of Somerset county had by this means greatly improved their farm stock. He says: "They were generally red in color, with long, slim horns, straight backs, and were a very great improvement to the native breeds then in the country."

Some of the best farmers in Kennebec and Somerset counties had succeeded in raising up some most splendid cattle; red or brindled, and nearly as valuable as the thoroughbreds. But in

1823 Capt. Lawrence attended a cattle show at Augusta, and there purchased a bull which was called the "Bakewell breed," and was probably a descendant of the animals introduced by the Vaughans from England. Mr. Hall O. Burleigh of Fairfield, in writing his recollections of the early stock breeding operations in Somerset county, says: "This bull brought from Kennebec county by Capt. Lawrence was of a chestnut color, and was probably the first 'blooded' bull ever brought into this county. Capt. Lawrence kept him a number of years, and he left a beautiful lot of young cattle—in fact his calves might be said to have been the foundation stock of this section. But he was a very cross and vicious animal." Preceding next in order of time, Mr. Burleigh says: "The next blooded bull of which I can get any account was being driven to some town farther up the river and stopped over night at Mr. Samuel Burgess'. Mr. B., having a cow in heat, got a heifer calf by this bull—which was called the 'Holderness' blood. Capt. Lawrence bought this heifer calf and stunted her to his bull, and he succeeded in raising a bull from her which he saved for a future sire. About 1832 Capt. L. bought another blooded bull at a cattle show at Readfield, which was called 'Brighton.' In 1839 he hired the bull Banquo of Col. Greene of Winslow, and subsequently purchased the famous Butman bull from Dixmont (a monster for those days, said to weigh 2500 lbs.). This bull left the largest boned, and coarsest stock of any bull ever in this section. But to remedy this, Capt. Lawrence and Allen Jones, in 1843, purchased the bull Leopard, of Daniel Lancaster of Gardiner. He was a beautiful animal, spotted, and made a splendid cross with the large, coarse cows left by the Butman bull. It was the results of this cross that made this section of Somerset county so celebrated for its large and excellent oxen." Capt. Lawrence certainly deserves to be remembered as the pioneer in the improvement of neat stock in this portion of Somerset county. He was a good farmer, and also largely interested in lumbering. He died in 1857. The late John Otis, also of Fairfield, was famous as a breeder of large cattle in early years. Of his transactions Mr. Burleigh writes: "He kept a large herd—as many as fourteen breeding cows at a time. I heard him say, when he was over fifty years of age, that he never killed a calf in his life. He kept a team of large oxen all the time. But I think Mr. Otis failed in judgment in selecting heifers to breed from. He thought large boned animals the best—and I might say, indispensable as breeders—and the

result was what might be reasonably expected, viz: a very large, coarse herd of cattle, very unlike Capt. Lawrence's herd, although they often used the same bulls. To the credit of Mr. Otis, here let me say, he always patronized the best bulls within his reach, (and he would reach a good ways to get a good bull), and paid generously for their services."

In the list of early blooded bulls, previously mentioned, is the bull which Dr. Holmes ventured to call Argwasuc, got by Jupiter, by Coelebs, out of Europa, bred by Col. Jaques, which was taken by Mr. James Rangely to Franklin county. Mr. Rangely was an Englishman and moved to the township (of which he was owner) now called by his name, about 1824. He built roads and dwellings, constructed a dam at the outlet of Rangely Lake, and built a saw and grist mill, both of which were of great value to the settlers in that section. In 1828 he opened a road through the north part of Madrid, Township No. 2, and into the interior of Rangely—a distance of about twenty miles—then a forest the whole distance. He also carried with him to this place a small herd of cattle, "then called Durhams, or Grizzly Durhams." Concerning them (the above named bull being no doubt the head of the herd) Sewall Dill, Esq., of Phillips, writes: "They were in color mixed red and white. Their progeny became very numerous among our farmers; the cows were excellent milkers, the oxen good workers. I remember distinctly about them, as I was engaged in buying and driving cattle to Brighton, from 1835 to 1850. I sold one of these grade cows to Mr. J. H. Bigelow of Livermore, and she proved so well that he continued to purchase of me till he had obtained eight or ten heifers from this blood. They proved so good that his whole dairy was at one time made up of cows from this source." Mr. Rangely's business transactions were continued here for many years, when he moved to Portland, and subsequently to the state of Virginia, where he died a few years since. The animals he carried to Franklin county from those imported into Kennebec, laid the foundation for the improved farm stock of that section of the State.

Through the efforts of Messrs. Thorndike, Sears and Prescott, proprietors of the Waldo Patent, choice blooded stock was early introduced into that section of the State. These gentlemen were wealthy land proprietors, and had a farm of one thousand acres in the town of Jackson, which they carried on as a mere pastime.

The operations upon this "great farm" were something magnificent for the time and place, and deserve more than a passing notice. The buildings were large and expensive, food for animals was cooked by steam, some twenty-five to thirty men were employed upon the farm and in the garden,—but the whole establishment was never a paying concern, and was carried on solely for the pleasure and amusement of its proprietors. My friend, Prof. Samuel Johnson, formerly of the State College, and a native of Jackson, has kindly furnished the following account of this famous farming enterprise, which, although lengthy, will be read with interest:

"Israel Thorndike, Sen., became wealthy by his commercial transactions, and in connection with Prescott and Sears, purchased of the heirs of Gen. Knox what is known as the Waldo Patent. The title to the farm in Jackson was, however, always entirely in the Thorndike family, being purchased by I. Thorndike, Sen., and I. Thorndike, Jr. from time to time, of the first settlers, who generally obtained their titles from Gen. Knox. The farm at first contained five or six hundred acres, but additions were made to it, till in 1830 it extended two miles from the centre of the town southwardly, on both sides of the road, and contained about 1,600 acres. It was first commenced, I think, by Israel Thorndike, Sen., and the house and old barn built by him in 1815 or 1816. The house is two stories in front and three stories back, with a long L containing a large kitchen and wood-house, and in the extreme eastern end a room which John Davis, Esq., a graduate of Harvard, used for a store. This was the first store in Jackson. The house contained 15 or 16 rooms, and cost \$15,000. The bricks for the chimneys were made in the eastern part of Maine and shipped to Boston. They were then purchased by Thorndike and re-shipped to Belfast, then carted 15 miles over a very rough, hilly road to Jackson. At the death of Israel Thorndike, Sen., I. Thorndike, Jr., a graduate of Harvard, became sole owner. The Thorndikes were on the farm but a few months in the year, using it only for a summer residence.

"My memory of this farm extends back to 1824. At that time Timothy Thorndike, Esq., of Brooks, had charge of it. There being no lack of means, the farm continued to flourish till 1835, when Israel Thorndike, Jr., became so deeply entangled in land speculations that he failed. Since that time the farm has been changing owners, and retrograding. It was evidently the intention of the Thorndikes, regardless of expense, to make this in every respect a model farm. The methods adopted were many of them English, and there were many failures. In the garden there was a well educated English gentleman, Mr. Rhénier, an old bachelor, who with his exquisite neatness and profusion of flowers was the centre of attraction for all visitors. The orchard contained about 15 acres of the choicest fruit. In the flock of sheep, numbering at one time fifteen or sixteen hundred, were to be found imported rams from Saxony, costing two or three hundred dollars each. When these sheep were troubled with foot rot, a Polish gentleman was employed to care for and doctor them. Believing that turnips might be as profitable a crop here as in England, a skilled Englishman was hired one summer who raised a very large crop. In the hog-house were about fifty swine, of different breeds, from the extremely fine-boned, delicate Chinese, up to the ponderous Berkshire and Chester. Here, too, were the best appliances known for cooking and steaming food for the swine. In the stable was the imported horse, 'The Pheasant'; and although he was fine looking and thorough bred, his progeny was a disappointment to the community. Here were imported Jacks, and quite a number of Mules

raised by the farmers around there and sold to Thorndike when four months old. In the large poultry yard were a great variety of fowls, including domesticated wild geese, peacocks, and guinea hens. To make the whole establishment seem more foreign,—more like England,—it so happened that Mr. Timothy Thorndike was fond of fox hunting, and had a few well trained hounds. These, in the fall of the year, after the leaves fell, he would put with Mr. Pilley's of Brooks, and then the woods for miles around would for a few weeks echo and re-echo with their lengthened yelp.

"This expensive establishment served to gratify the taste of its owner, and was indirectly a benefit to the farmers around it. They could with little expense improve their breeds of cattle, and could witness the expensive experiments going on at the farm unharmed. But it is much to be regretted that with all this profusion of means so little was accomplished; that there was so little weighing and measuring; no record of facts kept. Perhaps such another opportunity for exact experiment may not occur again in this State during this century. For twenty years money was lavished upon this farm, and the result seemed to be of little permanent value. Go into the piggery and ask Mr. Gilman how much pork a bushel of potatoes or a bushel of corn would make, or the relative value of the several breeds of swine, or how much more nutritious cooked food is than uncooked, for swine, and he would know little about it. And so it was all through the various departments. They could only give opinions, guesses—not figures, facts. Thus this great outlay continued, almost through one generation—was mainly lost because there was not connected with the estate one enquirer after truth who could make a record of what he learned.

"Timothy Thorndike, Esq., was a man of excellent judgment and good sense. Many years after he left the farm he said, while conversing with him about stock, that large breeds of cattle required so large an amount of nutritious food to keep them up that he doubted if they were any more profitable than smaller breeds, or so well adapted to the general wants of this State.

"Israel Thorndike, Jr., would come from Boston annually, with his family, his rich coach and his beautiful span of dappled bays, and receive in the halls of his noble mansion many distinguished guests. Daniel Webster spent a short time there one summer, and angled in the farm brook. But now, how changed! The beautiful garden, the piggery and the poultry yard, all gone! The orchard but a remnant. The buildings in a most dilapidated state. The old lead aqueduct, that brought spring water a half a mile to the buildings, taken out and sold. The large lightning rods attached to the barn and house, and put up in accordance with Franklin's most approved plan, torn down and sold for old iron. It seems like some great banquet hall deserted."

The first bull introduced by them was got by the imported bull Denton. He was a red-grizzle in color, and according to the statement of Mr. Henry Butman, of Gardiner, "was confessedly the finest bull ever introduced into eastern Maine." The next was a bull known as "Sore-chops," a pure blood Shorthorn, imported by Theodore Lyman, of Boston, from the herd of the celebrated English breeder, Mr. Witherell, of Kirkly, Leicestershire. This was imported about the year 1832. He was mostly red, and his stock was celebrated for oxen rather than for cows—though the latter were not complained of. At that time, however, when butter and cheese sold slowly, and large, well matched oxen were in great demand for the woods, the milking qualities of cows were not



much regarded. The oxen were majestic and stately, and would sell for from one-fourth to one-third more in price than other oxen of the same girth, on account of their beauty. But somehow his stock was not at first duly appreciated by the farmers in that section, and after a few years' service he was sold, and stood in towns in Penobscot county. He was gone some two years, and meanwhile his stock had proved so good that he was afterwards bought back by Timothy Thorndike, Esq., agent of the proprietors, and died upon the farm. His stock became disseminated all over Waldo and Penobscot counties, and formed the basis of the best cattle in those districts. This bull had a scrofulous, never-healing sore on his under jaw, and always went by the name of "Sore-chops." Another bull placed upon this large farm, was a full blood Hereford, obtained from the Vaughan farm in Hallowell about 1835. The oxen from this bull were stout and lusty, and the cows large and fair. He was afterwards sold to Dea. Joseph Rich of Jackson. Mr. Samuel Johnson, writing concerning this stock in 1872, said: "The stock of this bull was very celebrated in all that region, almost as much so as that of 'Sore-chops;' and so strongly marked was it, that even now his white-faced descendants may possibly be found in some of the herds in that vicinity. The grade Herefords made very fine looking, salable oxen, and were excellent for beef." In addition to these animals, the proprietors of the "Great Farm" made a direct importation of some Dutch or Holstein cattle, consisting of a bull and two or three cows: one of the cows dropping a bull calf either on her passage or soon after landing at Boston. These cows were noted as milkers, though the milk was not rich in quality: but the amount given was so great that the breed went by the name of "Fill-pail," in all that section. As the value of this breed was not then known, the bull was kept but a few years, when he was castrated. "But even in the few years he was kept," writes Mr. Johnson, "he made his mark—starting a race of black, and black and white cattle, that had quite an influence upon the herds in that vicinity for many years. This Holstein stag, named 'Goldin,' was long, bony and muscular, and on being put to work his strength was Sampson-like, almost miraculous. There was such a singular mixture of black and white in his color, that he was called blue. The grade Shorthorn that worked with him girted over seven feet, yet his office seemed rather to be that of an attendant to carry the long end of the yoke. For years it was 'Gen.' Witham's business

to feed and drive this yoke of cattle, and he was as proud as a prince of his position. At the barn haulings, the first call was always on Gen. Witham for the farm team, the old blue stag and his mate being put next to the building. Then we boys would gather round, entirely confident that when Gen. Witham swung his white oak goad, saying, 'haw Goldin here,' and the stag bending forward to the bow began to strain his powerful muscles, the building would tremble and move. Boyish fancy probably clothed Goldin with powers that did not belong to him, but I fully believe that he was the most powerful ox we ever had in that region. Though some of the cows from this strain of Dutch blood were very good, so good that it was a disputed point which was best, these or the Shorthorns, yet it was chiefly valuable for oxen. I can myself recollect two yokes very remarkable for strength. One of these logged at Lake Baskahegan in 1834, and were called by those who knew them, the strongest yoke of oxen on the Penobscot." In 1834 Israel Thorndike, Esq., also introduced a full blood Devon bull, which was procured from the celebrated Patterson herd of Baltimore, Md.

Among those gentlemen early identified with the improvement of stock in the eastern section of Maine, was Henry Butman, Esq., who was born in Worcester, Mass., in 1793, and who came to Dixmont in 1822. He took up a farm of 300 acres, and resided on it from this period to 1869, being also largely engaged in lumbering and mercantile pursuits. He procured, about 1828, a bull got by the celebrated "Sore-chops," to which reference has just been made—and soon afterwards one sired by the bull Hercules, (see page 250), which weighed at four years old 2,500 pounds. He was called Young Hercules; was a deep or mahogany red, and after keeping him some five years, he was sold to Capt. Henry Lawrence of Fairfield. The cows of his get were good milkers, and the oxen large and lofty. Next Mr. Butman obtained a full blood Durham bull of Messrs. N. & L. Burrell of Newport, who obtained their stock of Col. Greene of Winslow, and who paid great attention to breeding choice cattle. This bull was not purchased, but was kept a few years, and then returned to them. He was got by Fairfax, out of an imported Durham cow. Mr. Butman subsequently purchased of William Cooper of Montville, a full blood Durham bull, color red and white, called Prince Albert, imported in a ship owned by William Bradstreet of Gardiner. He was a stout, stocky bull, the cows of his get being fair milkers,

and the oxen strong and hardy. This bull was afterwards sold to Mr. Samuel Butman of Plymouth, who was quite a breeder of good cattle. Henry Butman, Esq., after having pursued a long and successful business career is now residing in the city of Gardiner.

Before leaving this period of our history, it should be mentioned, that as early as 1816, Mr. Thomas Payne of Standish, Mass., moved into Unity, in Waldo county, bringing with him a bull and cow, purporting to be direct offspring of stock imported in the "Peter Waldo," before referred to. They left some good descendants, which, in the hands of the late Thomas Fowler, of Unity, and Jonah Crosby of Albion, made a marked improvement on the cattle of that section. In 1843 Capt. Phineas Pendleton of Searsport imported from England a Hereford bull and cow, the progeny of which were somewhat extensively disseminated throughout Waldo and Kennebec counties. So early as 1830, the late Dr. Ithamar Bellows of Unity, introduced into that town a Shorthorn bull, presented to him by a friend in Massachusetts, and some of the best cows now found on the farms in that part of Waldo county may be clearly traced back to this bull. The late Mr. Jesse Wadsworth of Livermore, early engaged in the breeding of Shorthorns, ranking among the most intelligent of our early breeders. His son, Elijah Wadsworth, is still engaged in the business, and has kept up the herd founded by his father, by adding new strains of blood from time to time.

In 1838 a thoroughbred Durham or Shorthorn bull was introduced into Houlton, from a herd of seven animals of this blood which had been imported into New Brunswick, and was taken across the lines by Mr. Zebulon Ingersol, who was the principal owner of the bull. Mr. Francis Barnes of Houlton, of which this information is obtained, writes: "This bull has passed into history as the Ingersol bull. He developed into a large, well proportioned Durham, and his stock became noted for size and working qualities. The cross with him and the native cows produced some most excellent milkers. There are cows now in this town which have descended from this bull, and without exception they are good milkers. His stock, though much mixed up now, have lately been crossed with the Jerseys, and the heifers seem to promise superior to all else we have had." Mr. J. W. Haines also carried a thoroughbred Durham and a thoroughbred Hereford bull to Aroostock county about 1843. The latter was highly esteemed, and his stock remains trustworthy to this day. The offspring of the Durham

had not the qualities which belonged to those of the Ingersoll bull, and his stock as a distinctive family have been lost sight of.

About 1843, John A. Harris introduced a thoroughbred Durham into the southern part of Penobscot county, from Massachusetts, who left good stock. A few years earlier one had been introduced into the town of Windsor, by J. B. Swanton. In Cumberland county, the farmers, with a few recent exceptions, have paid but little attention to the improvement of the breeds of cattle. Quite early, the late Dr. Southgate of Scarboro', bred the Ayrshires; and the brothers Warren, of Gorham, have for many years been famous for their large and fine oxen, but I can give no particulars as to the source of their blood.

#### LINE OF BREEDING—COLOR—LATER EFFORTS.

The above notes bring down our narrative to about the year 1843 to 1845—there being a degree of uncertainty as to some of the dates given. Within the period embraced above, it will have been observed that the efforts of breeders were constantly put forth in the direction of producing large oxen, of a uniform color. Little attention was paid to breeding for the dairy, although a few instances occur where superior milch cows were produced and continued to be bred for years in spite of any real designs to this end. The conditions of the country were such that heavy oxen were needed for farm work and draft purposes, and the breeders of the period had a pride in producing cattle of this class. Considerable prejudice also existed in regard to color, and some of the best bred bulls were not used simply because their color was objectionable. Some of the best bulls early introduced, were nearly or all white, and were not patronized by the farmers simply on this account. Red was the favorite color, and many farmers made a practice of killing all calves that were not thus marked, and by this course a race of red cattle became the common stock throughout many portions of the State. For ten years succeeding the period last named, but few new efforts appear to have been made to introduce fresh blood from abroad into the State—the cattle bred being descended from those brought in and bred in the different sections of which an outline has been given. From this time (about 1850 to 1855) down to the present day, great activity has been manifested by our breeders, and in order to give a succinct and condensed view of these transactions, the facts are given in order under the breed of cattle introduced.

## HEREFORDS.

The late Mr. J. H. Underwood of Fayette, to whom the farmers of Kennebec county are so largely indebted for his efforts at improving the cattle of his section of the State, was one of the first to engage in the breeding of this class of stock. In 1852, Mr. Underwood purchased of Capt. Pendleton of Searsport, a bull and cow from his imported stock, from which he bred for a few years, and then purchased in 1859 the bull Cronkhill, 2d, of the Messrs. Clarke of Granby, Mass. In 1865 he introduced into his herd the bull Wellington Hero, purchased of the celebrated breeder, Frederick William Stone of Guelph, Ontario. Since the death of Mr. Underwood, Sr., his sons, G. & G. Underwood, have kept up the herd which their father founded, adding new blood as necessary to maintain its character. The bulls Ontario Chief and Ontario Boy, together with several cows from Mr. Stone's herd, have been purchased by them, from which they are now breeding. Of the Herefords these gentlemen write: "We esteem the Herefords above all others, for various reasons. They are vigorous and hardy, and will withstand the extremes of heat and cold better than any others. They are active and powerful in the yoke, and will endure more labor than any other breed we have ever used as working oxen. They are the very best feeders, and consequently accumulate flesh and fat very rapidly. We have made but one test to learn the amount of growth of a calf in a given time. This calf was dropped the 26th of February. He was allowed the milk of his dam and some provender, and what hay he would eat, until he was turned to pasture, 26th of May. His dam was turned out with him, and I think neither of them were taken out of the pasture until the 26th of September. And neither of them had provender of any kind whatever while at pasture. At the latter date he was weighed, and it was found that his average daily gain was a little better than 2½ lbs. from the time he was dropped. We are satisfied that this is not an exceptional case of the rapid growth of Hereford calves, although this is the only test of the kind we have made in our herd."

In 1869, Messrs. H. C. Burleigh of Fairfield and Geo. E. Shores of Waterville, purchased the entire herd of Herefords belonging to Hon. M. H. Cochrane of Compton, P. Q., then and for a long time previous regarded as the most famous herd of Herefords on the Continent. The herd consisted of eleven animals, including

the bull Compton Ladd, together with four cows and six heifers. These gentlemen continued to own and breed the animals in common for two or three years, when the herd was divided, and now forms the distinct herds under the separate management of each owner. Mr. Burleigh has practiced in-and-in-breeding in his herd to some extent, concerning which he says: "I have bred Compton Ladd to his sister Verbena 2d, six times, with the very best results. I have also bred him to Verbena 5th, and she is by him out of his sister, ten times—and have raised ten of the finest calves I ever saw. With such results, I shall continue to breed in this way as long as Compton Ladd retains his constitutional vigor. I consider one perfect bull, bred in this way, worth infinitely more than a bull with out-crosses as a stock getter. In regard to breeding, I will say: never breed from an animal of imperfect form, although he have a pedigree as long as his tail; and never breed from one who has not a pedigree, if it can possibly be avoided; both are needed to insure success, the good animal and the perfect lineage." Mr. Burleigh, before his purchase of Herefords, had been engaged in breeding other classes of thoroughbreds, but became convinced that the Herefords "were a better breed of cattle for the thin soils and rigorous climate of New England than any other," and hence his course in deciding upon them as the cattle for him to keep. Among other breeders of Herefords in Maine, are Wm. P. Blake of West Waterville, Moses B. Bailey of Strong (who has imported some animals from the Canada herd of Mr. Stone), Col. John P. Perley of Bridgton, who has also purchased animals of Mr. Stone, and D. R. & J. W. Wentworth of Skowhegan, who obtained their animals of H. C. Burleigh.

## JERSEYS.

William S. Grant of Farmingdale was one of the first, if not the very first to introduce and breed the Jerseys in this State. His stock was purchased in 1852 or '53, of Samuel Henshaw of Boston, by whom it was imported from the island of Jersey. The bull Old Duke (which figures quite largely in the pedigrees of much of the early Jerseys kept in Maine) was purchased by him of Mr. Henshaw, also one or two heifers.

The Jerseys introduced into Winthrop by the late Dr. E. Holmes, were the bull Butter Boy and cow Pansy 3d, both obtained of Mr. Henshaw; the latter having been imported by him, and the former



from imported stock. The bull was brought into Winthrop in July, 1855, and the cow Pansy 3d in August, 1856, being then three years old. The sire of Pansy 3d was Sailor Boy, her dam Pansy. At the time these animals were introduced into Winthrop, but very little was known of the breed, and the plan of introducing them into this State was ridiculed by many as a wild and visionary one. In 1856 Pansy 3d dropped Jessie Pansy, whose sire was an imported bull belonging to Mr. Henshaw, and was the first pure blood of this breed dropped in Winthrop. When ten years old she was sold for \$175, and went to Albany, N. Y. Pansy 3d dropped seven heifer calves in succession, some of which have ranked among the best cows in the State. Buttercup, calved in 1854, was one of the famous Jerseys in this part of Maine. She was imported in her dam from the island of Alderney, by Mr. Thayer of Brookline, Mass., and was purchased of him by W. S. Grant of Farmingdale, and by him sold to W. H. Chisam of Augusta. Mr. Chisam also purchased direct from Mr. Thayer the heifer Belle, in 1855, who was then seven months old. The cow Buttercup was afterwards owned by the late Dr. Holmes and by him sold to A. Robinson of Winthrop. Afterwards she was again sold to Massachusetts, at the age of 16 years. Her stock was superior, and, a good authority says: "Four quarts of her milk would make a pound of butter; and she was not dry for a number of years—making seven pounds of butter per week from the time of going to the barn up to the time of calving." Lilly, imported by George Brown of Boston, was purchased by Greenlief Smith of Winthrop, in 1863, and was one of the best butter cows ever brought into the State, having yielded  $17\frac{1}{2}$  lbs. of butter per week. Fanny 2d, owned for a number of years in Winthrop, made 16 lbs. of butter per week. At the age of ten years she had been dry but few times, and farrow but once, and had given from four to six quarts per day at the time of calving. Lloyd H. Snell of East Winthrop was at one time largely interested in the breeding of Jerseys, and owned the cow Victoria Pansy (now owned by C. S. Robbins of Winthrop) which was from the Henshaw stock; and also the cow Buttercup, of which mention has been made. Mr. Snell formerly had a herd of some seven or eight animals, but has recently given less attention to breeding than formerly. In and about Winthrop, the Jerseys bred from the above animals have been largely disseminated, and the cows have had a somewhat noted record as milkers. They have been sold at high

figures, and even grades have brought from \$100 to \$150—this being considered an ordinary price. For pure bred cows sales have been made at \$150 to \$240 each. In 1870, Mr. A. Robinson sold these animals, which were taken to Nebraska, and others were sent to Massachusetts, Vermont, and New Hampshire. In 1872 one car load of fifteen pure bred Jerseys from this town were sent to Denver, Colorado, having been purchased by Rev. W. Scott of that place. The Jersey breeders of Winthrop have formed themselves into an Association of Breeders, and keep a MS. herd-book of all the pure blood stock of this breed raised in town.

The first Jerseys owned in Sagadahoc county were purchased in 1859, by Rev. S. F. Dike of Bath, of Mr. Grant of Farmingdale; and subsequently Mr. Dike sold animals to Hon. C. J. Gilman of Brunswick and M. E. Rice of Stetson. About the time that Mr. Dike purchased his animals of Mr. Grant, Maj. Thomas Harwood of Bath imported two cows and a bull from the island of Gurnsey, which were bred with care for some years, and disseminated somewhat throughout that section of the State. George Sampson of Bowdoinham, some years since had a herd of five or six Jerseys, obtained of stock purchased of Thomas Motley of Roxbury, Mass., and bred to the Harwood bull before spoken of; but at present the herd is not kept up. Mr. Edward K. Whitney of Harrison has a herd of Jerseys, bred from stock obtained in Winthrop. James W. North, Jr., of East Jefferson, purchased his first cow of P. H. Holmes of Augusta (a descendant of the Henshaw importation) and a bull of Dr. Boutelle of Waterville. He has also purchased other animals of Dr. Boutelle, and has a small herd which he is breeding with much care. G. J. Shaw of Detroit commenced his breeding operations with this breed of stock in 1866, by purchasing animals of M. E. Rice of Stetson and A. Robinson of Winthrop, the latter being the bull Champion, descended from the Henshaw blood. In 1871 Mr. Shaw purchased the cow Clover, (recorded in the Jersey Register of the Association of Breeders of Thoroughbred Stock, No. 270), and also other animals from other parties, with which he kept up his breeding operations until the fall of 1872, when he purchased the bull Nutshell, and two heifers, of Col. G. E. Waring of the Ogden Breeding Farm, Newport, R. I., all the animals being recorded in the Register of the American Jersey Cattle Club. The "Millbrook Herd" of Dr. N. R. Boutelle was commenced in 1865, by the purchase of animals in Winthrop which descended from the Dr. Holmes or Henshaw

stock. "The animals," says Dr. Boutelle, "not meeting my expectations, and having no evidence of purity of blood, were disposed of the following season." The next purchase was of animals of doubtful blood, although reputed to be thoroughbred. Being satisfied this was not the proper course of breeding to establish a herd, Dr. Boutelle purchased a bull and two cows in 1867 of C. Wellington of Lexington, Mass. One of the cows was subsequently sold to the Insane Hospital at Augusta. In 1869 animals to increase the herd were purchased of Col. Waring of Newport, R. I., and also of F. E. Bowditch of Framingham, Mass., from stock of his own selection on the island of Jersey. Subsequently some of these animals were sold to H. H. King of Calais. Some choice animals were in 1870 obtained from the herd of Thomas Motley of Jamaica Plains, Mass.; and in 1871, Dr. Boutelle visited Canada and purchased six animals from the famous herd of S. Sheldon Stephens of Montreal. Since that time this gentleman has been studiously engaged in managing his choice herd; has been a constant exhibitor and high winner at the State and New England Fairs, and has made many sales throughout Maine and in other States. He is aiming "to breed animals of good size, combining improved shape, desirable color and first class dairy qualities." In carrying out the extensive breeding operations at the National Soldiers' Home at Togus, near Augusta, the Manager decided upon the Jerseys as one of the breeds to be kept—the foundation of the herd being animals from the herds of Benj. E. Bates, Thomas Motley, R. L. Maitland and John S. Barstow, all selected with reference more to their purity of blood and good milking qualifications than to their form and color, although the latter qualities were by no means overlooked. In recent years animals have been imported directly from Jersey by the Governor of the establishment, Gen. W. S. Tilton. The herd now comprises about twenty animals, all registered in the Register of the American Jersey Cattle Club. The head of the herd, Maharajah, now three years old, is by Rajah out of Fleur de Lis (614), and is one of the best bulls of this breed ever brought to this country. Messrs. J. & N. Dane, Jr., of Kennebunk, commenced the breeding of Jerseys in 1874, by the purchase of cows from Benj. E. Bates of Boston (from imported stock), and others out of imported animals of the Motley stock, so that in all, these gentlemen now have a choice family of some six or eight animals, from which they intend to build up a herd. The State College of Agriculture and the

Mechanic Arts, at Orono, also have some fine animals of this breed, which are kept mainly as means of illustration and training in connection with its course of practical instruction. It has in addition, good specimens of the Ayrshire and Shorthorn breeds, and will add others as opportunity offers.

## DEVONS.

This breed of cattle have not been very widely disseminated in Maine, notwithstanding from the time Mr. Thorndike introduced them upon his farm in Jackson in 1834, to the present, full bloods have been kept in the State by different persons engaged in breeding. They are a "beautiful, compact breed, well adapted to most of the purposes of a grazing country," but our farmers generally have been more anxious to breed larger animals than they generally make, for workers and beef; while in recent years they have run to other breeds for special uses—as for the butter and cheese dairy. Among the earlier breeders of Devons were Mr. Butman of Dixmont, the Messrs. Percival of Waterville, Mr. Harris of Dixmont (whose animals were obtained from the herd of William Buckminster of Framingham, Mass.), and Joseph Tufts of Paris, who obtained his stock from the herd of the Messrs. Hurlburt of Connecticut. The above named gentlemen were engaged in breeding previous to 1855; but their operations were limited and they did but little comparatively in the way of disseminating pure bloods. Allen Lambard, Esq., of Augusta, was one of the first in the State to engage largely in breeding Devons, his herd having been started in 1859 by the purchase of the bull Rob Roy, with three cows of Joseph Burnett of Southboro', Mass. The following year he purchased the bull Kentucky and cow Helena 3d, of S. C. Wainwright of "The Meadows," Rhineback, Dutchess Co., N. Y. With these animals he commenced the breeding of Devons in a systematic and thorough manner, and has continued his operations until the present time. In the first volume of the Devon Herd Book, Mr. Lambard had recorded eight bulls and nine heifers; in the second, four bulls and six heifers, and in the third, eight bulls and six heifers. Mr. Lambard esteems the Devons as being well adapted for all purposes. The cows are good milkers; the oxen good workers, quick walkers, docile, kind, and small eaters. They are hardy and fatten easily; and Mr. Lambard says, with the Devons he can make three pounds of beef

as cheaply as he can make two with the Durhams. The name of Hon. John F. Anderson of Maplewood Farm, South Windham, first appears as a breeder of Devons, in the second volume of the American Devon Herd Book, published in 1868. But he had previous to this been engaged in breeding Devons, having about 1856 obtained some animals of the Messrs. Percival of Waterville. In this volume Mr. Anderson had recorded the pedigrees of thirteen bulls, and thirty-seven cows and heifers. Many of these animals were obtained from E. H. Hyde of Stafford, Conn., and are traced back to the celebrated Patterson Devons of Maryland. From the fact that Mr. Anderson's name does not appear as a breeder of Devons in the first volume of the American Herd Book, published in 1863, five years before the issue of the second volume it would seem that he came suddenly forward as the leading Devon breeder in Maine, about the years 1865-'68. He made large sales throughout the Provinces of New Brunswick and Nova Scotia, and sold also to parties in our own State: among them to S. B. Page of Winthrop, Gen. G. G. Cushman of Bangor, Oliver Pope, Windham, George E. Hall, Dresden, Edward Davis, Burnham, Isaiah Wentworth, Poland, and other parties. He also made extensive sales to parties in other States, and is the only breeder of Devons in Maine who has had animals recorded in the English (Davy's) Devon Herd Book. Mr. Anderson has been engaged in active business, and the duties of public stations in recent years, and has allowed his breeding operations to absorb less of his time, although he still keeps up his "Maplewood Herd" at South Windham.

#### SHORTHORNS.

The Shorthorns, or as they were formerly called, the Durhams, have been more widely disseminated in Maine than any other breed. Animals were brought into the State by different parties, from other States, and leading breeders of this breed in our own State have sent animals into almost every section. From this fact, as well as from the fact that responses to the call for information, gave, with the exception of but few instances, only general statements—omitting such details as the year certain animals were introduced, the names of the animals, the herd from which they came—it will be impossible to supply these points. If in this division of the subject, breeders names are omitted and dates not given, it will be understood to arise from this cause.

The largest breeder of this class of cattle is Hon. Warren Percival of Cross Hill, Vassalboro'. His first purchase was made of W. S. Grant of Farmingdale in 1859, consisting of six cows bred by George Butts of Manlius, N. Y. A few years later the bull Duke of Manlius, and two heifers, were purchased of Paoli Lathrop of South Hadley, Mass. These were fine animals, from imported stock. Next, the bull Gen. Smith was bought of Mr. Lathrop, and following that a bull from the herd of Mr. Fletcher of Lee, Mass. Later, a bull and some cows were purchased from the herd of Augustus Whitman of Fitchburg, Mass. Other animals from some of the best breeders in Massachusetts have been purchased from time to time, in order to improve and keep up the purity of blood of his own herd; and sales have been made by him into all parts of the State and throughout the Provinces. His herd now comprises about sixty animals, and in the last published volume of the American Shorthorn Herd Book, (1874), he had recorded the pedigree of twenty-five animals, the result of one year's breeding. The herd of Hon. Charles Shaw of Dexter, was commenced in 1866, by the purchase of two cows of H. G. White of Framingham, Mass., the bull Duke of Grafton and two cows of F. M. Wood of Grafton, Mass., and one cow of Warren Percival. In 1868 he purchased other animals of Geo. T. Plunkett of Hinsdale, Mass., and in 1869, at the auction sale of the herd of H. G. White of Framingham, Mass., he purchased (in connection with Levi A. Dow of Waterville) some five or six choice cows and heifers. He has now a herd of fifteen animals. Levi A. Dow of Waterville, obtained a bull of T. S. Lang of Vassalboro'—from the stock of Paoli Lathrop—and subsequently animals were purchased of W. Percival, H. G. White, Framingham, Mass., and other breeders. He has bred quite extensively in former years, but is not now so largely engaged in the business as formerly. The Messrs. Lang of Vassalboro'—John D. and Thomas S.—started a small herd in 1860, but disposed of it a few years later, in consequence of turning their attention to another class of stock. Their stock came from Paoli Lathrop of Massachusetts, and Samuel Thorne of New York, and in selling it to close out, some of the animals found their way back to Massachusetts again. Friend J. D. Lang, it should be mentioned, was one of the early breeders of thoroughbreds of this class, and some twenty-five years ago bred quite largely of stock obtained from Col. Greene of Winslow. Messrs. Howard & Ellis of Fairfield Corner, commenced their herd



in 1869 by the purchase of some cows of Henry Taylor of Waterville. Mr. Taylor had for a few years previous been engaged in breeding, having purchased in Massachusetts some animals bred by R. A. Alexander of Kentucky; but discontinuing his operation, his animals were sold. In addition, these parties also purchased animals of L. A. Dow, Waterville, Charles Shaw, Dexter, and other parties. They have bred with care, and have a choice herd of about twenty animals. Elijah Wadsworth of Livermore is one of our oldest breeders of Shorthorns, his father, the late Jesse Wadsworth, having obtained his animals from Col. Greene of Winslow, and at his death his son continued to give some attention to breeding, purchasing a bull formerly owned by the Messrs. Lang of Vassalboro'. He subsequently purchased a bull of A. M. Winslow & Son of Vermont, and is still engaged in breeding. His herd has long maintained a good reputation, and many good animals have gone out from it. Peter W. Ayer of Freedom, commenced a herd of Shorthorns in 1870, by purchasing the bull Knight of Geneva, and two heifers, of Augustus Whitman, Fitchburg, Mass. From these he is now breeding. E. E. Parkhurst of Maysville, Aroostook county, purchased animals of Warren Percival, and also of the Agricultural Society of Woodstock, N. B., and has a herd of a dozen or fifteen thoroughbreds. Mr. Parkhurst has made some sales in his county, and the thoroughbred animals of this class in Northern Aroostook have done much to improve the farm stock of that section. Some years since the late Samuel W. Coburn of Skowhegan had a considerable herd of Shorthorns, which he bred with success for many years, but I am unable to say from whom his animals were obtained. Since his death the herd has not been kept up, although many nice grades in that section of the State are found as the result of his efforts. Among other breeders of Shorthorns, whose animals have been purchased within the State, may be named Jos. Sanborn, Webster; A. L. Barton, Dexter, (who had a bull from the herd of Benj. Sumner of Woodstock, Conn.), W. H. Haynes, Smithfield; Z. A. Gilbert, East Turner; Luke Hilton, Skowhegan; A. C. Chandler, New Gloucester, and M. L. Wilder, Pembroke. These gentlemen are not breeding thoroughbreds to any great extent, but have by their efforts assisted very materially the improvement of the stock of the State in their several localities—the character of the grades having been brought up largely by the introduction and dissemination of pure bloods, through their agency.

## HOLSTEIN, OR DUTCH.

But few pure blood animals of this breed have ever been introduced into Maine. The first was the bull Duke of Holstein, from the stock of W. W. Chenery of Belmont, Mass., brought to Vassalboro' by Thomas S. Lang of North Vassalboro', in 1864. He remained there for several years and got some good grade stock. The next was the bull Oppendoes 16th, purchased of Mr. Chenery by Gen. W. S. Tilton of Togus, near Augusta; but he very soon died, leaving no progeny. In 1871 Gen. Tilton imported direct from East Friesland, the bull Pleon, and cow Itzehoe. The bull Denmark, imported in the cow Itzehoe, was calved in October, 1871. From these, several thoroughbred Holsteins have been bred, and also a number of very promising half blood heifers. William R. Hersey of Lincoln, has a herd of grade Holsteins, which he esteems highly, regarding them as "superior animals, good feeders, and good breeders." His grade bull at 22 mos. old weighed 1,450 lbs., a pair of steer calves at 5½ mos. old weighed 970 lbs., and a cow owned by him gave 39 lbs. of milk per day for seven days in succession, in September, on pasture feed and four quarts of oat and pea meal per day. He says: "I like the cattle; they are bright, active and intelligent, and take well in this section." Grades of this blood are also owned by Robert Huston, Falmouth, Milton Shaw and Joshua Fogg, Greenville, Mr. Plaisted of Stetson, Mr. Robinson of Weld, and Moses Getchell of Winslow. They have as yet hardly been bred long enough to render a full verdict as to their merits as a breed for our farmers to keep.

## AYRSHIRES.

Those who made early trial of the Ayrshires in Maine, were John D. Lang of Vassalboro', Timothy Boutelle of Waterville, and Hiram Pope of Gardiner. These animals came from the herds of J. P. Cushing of Watertown, Mass., and Capt. Randall of New Bedford, Mass., who both imported them from Scotland. It is probable that those who first engaged in breeding them did not take great pains to preserve the purity of the blood, as the breed did not for years make much progress in the State. About 1858 S. L. Goodale of Saco imported some Ayrshires from New Brunswick, which were very fine animals. How long they were bred by this gentleman I am not able to say, but my impression is that the stock was not very widely disseminated. One cow of this

stock was purchased by Rev. S. F. Dike of Bath, who speaks of her as a very remarkable milker, giving 49 lbs. of milk per day for thirty consecutive days during the month of June. "She was a small cow, beautifully made, round as an apple, and one of the best of feeders." The leading breeders of Ayrshires are now Messrs. J. & N. Dane, Jr., of Kennebunk. Their herd was commenced in 1861, with the bull Oswald, (imported by H. H. Peters of Southboro', Mass.), and several cows. These animals were purchased of R. Gray, Fredericton, New Brunswick; and subsequently several fine animals were purchased in that Province and in this State. The bull Brewster was next purchased of H. H. Peters, and in 1871 the bull Harry from the herd of Walcott & Campbell of New York. Two imported cows from Sturtevant Brothers, Framingham, Mass., were added to their herd in 1873, and they now have fourteen or fifteen animals. Frank Buck of Orland, commenced breeding Ayrshires in 1866, and in that year introduced the first thoroughbred cow into Hancock county. This was from the stock imported by Mr. Goodale. In 1870 he purchased the bull Norval and some cows from the stock of Mr. Gray of Fredericton, N. B. From these he continued to breed for some years, and then made additions to his herd by purchases from T. S. Gold of West Cornwall, Conn.

It should be here mentioned, that in the above record of herds and breeders, it has not been deemed advisable to give the names of those who only have one or two full bloods, or who may be keeping a thoroughbred bull. Such a list of names would swell the length of this paper and serve no useful purpose.

#### STATISTICS OF THE CATTLE HUSBANDRY OF MAINE.

The following statistics regarding the numbers and value of the cattle of Maine at different periods, have been compiled from the reports of the U. S. Census:—

Year.	Milch Cows.	Working Oxen.	Other cattle.	Total value of Live Stock.
1850.....	133,556....	83,893.....	125,890.....	\$9,705,726
1860.....	147,315.....	79,792.....	149,827.....	15,437,533
1870.....	139,259.....	60,530.....	143,272.....	23,357,129

The increase of milch cows is due to the greater interest in the dairy, and the decrease of working oxen to the fact that horses have been gradually superseding oxen as a team for doing farm work. The column of values of course embraces all the live stock kept, including horses.

## RECOLLECTIONS OF A DROVER.

From thirty to forty years ago large numbers of cattle were collected in this State and driven to the cattle market at Brighton, near Boston. This was usually done before "housing time" in the fall, and immense quantities of cattle were carried from this State to supply the Boston market. Now, such a thing is of very rare occurrence, in this State; the transportation of cattle by rail having done away with the practice of "driving." Among the materials received for this paper was a sketch of the early practice of driving cattle, furnished by Seward Dill, Esq., of Phillips, who was himself engaged in the business as early as 1835. His recollections, as given below, will be read with interest, as furnishing a chapter without which our cattle history would by no means be complete:

"My first drove was picked up about this vicinity, and collected at this place, Phillips, in the fall of 1835; and I continued in the business about twenty years, driving from one to three droves a year, which was done the latter part of summer and fall, in droves of from fifty to two hundred head—a large proportion young cattle, one, two, and three year-olds, the balance oxen and cows. These cattle were of as many colors as Jacob's—red, white, black, brown, lined-back and spotted; some with high horns, and low horns, some up and some down, and others with none at all. The prices paid for the two first years were, for one-year olds \$3 to \$5; for two years old \$7 to \$10; for three years old \$10 to \$15; cows \$10 to \$12; oxen \$35 to \$40 per pair, for six feet in girth, and sometimes six and a half feet at that price—and 6½ feet were considered pretty large here at that time. In those days, selling cattle in Brighton was dull and hard business for "greenhorns"; many drovers lost money, myself among the rest. Two-year olds were often sold for \$7, and sometimes much less. In 1837 and 1838 prices went up with a rush. For two years cattle had been so low that but few calves were raised in Maine, New Hampshire and Vermont. We poor drovers, who purchased our droves early in 1837, then got even with the Brighton sharpeners, and some one year old heifers sold as high as \$24 each, two-year olds \$30 to \$35, and oxen from \$35 and \$40 up to \$80 and \$90. In 1840 cattle were low again, but not down to the prices of 1835. I have purchased 7-foot oxen in the towns of Livermore and Turner at \$50, (what we called mess and market beef), driven them to Portland and Brighton, and then sold at a very small profit.

"Drovers sometimes took cattle "on drift," at \$2 per head for driving 200 miles and selling. That was not a good way, for a drover had rather drive his own cattle for one dollar than to drive them for others for twice that. Then there is no chance to find fault, let them sell high or low. The custom was, to go over the towns among the farmers, and purchase the cattle, to be delivered on a certain day; and when the time arrived it was all commotion and excitement: cattle coming in from every direction, upon the run, lowing and bellowing, men and boys screaming and whipping, crowding them into a yard—when there would be fighting, hooking and jumping. All were then to be branded or marked with scissors, and after all preparations are made they were turned out and driven to some field or pasture for the night, where they were guarded till the next morning by two men, so that the unruly should not break away and let the whole drove out. They were now ready for a fourteen days' tramp to Brighton; and turned into the road by five or six men on horseback, with long whips, the journey began, with such yelling and whipping as was seldom heard. After one day's drive, and the cattle in the road got used to the business, the extra men and horses were sent back, leaving three to take the drove along. The practice used to be to rush all day, seldom stopping for dinner or allowing the poor creatures a moment to even bite the grass by the way-side; so when we arrived at Brighton, our cattle were lank, rough, foot-sore and weary—the picture of a hard journey. We always sold all we could on the way, and when we arrived at the market-yards were obliged to sell at what we could get—often at a big loss. The object at that time, of driving cattle, was to make collections where we had trusted out merchandise, and many times we paid much higher prices than we should if we had paid cash. After driving a few years we made some improvements in managing the creatures on the road. Instead of six men on horseback to drive the first day, three could do the work, and without whip or much noise. The second day two men with horse and wagon could get along quite comfortably, although if the drove was large three were better. At noon we usually looked up a good field to turn into, or get a foddering of corn stalks or hay for a baiting, and let them rest an hour or more, while we baited old Dobbin and refreshed the inner man. In this way our cattle stood the journey much better, and looked first-rate when we arrived at Brighton, and sold more readily both on the road and at market. If we

found the sales dull and low, we put them on the road again for Bridgewater, Fairhaven, and along the Cape, where we sold them as best we could."

PORTRAITS OF ANIMALS.

It seemed desirable that representative animals of the several breeds of thoroughbred cattle should form the subjects for illustrations to this paper, and for the purpose of accomplishing this, correspondence was early engaged in with several breeders. While they admitted the desirability of having this done, the difficulties in the way were considerable. Nothing is so difficult a subject for correct illustration as an animal, and especially animals generally so hard to manage as bulls. Breeders, of course, were not willing to put up with an imperfect or unsatisfactory picture—a correct and truthful one being the only one that would give satisfaction. In many of our herd books, and in agricultural journals, the portraits of animals are too often but little better than caricatures—one would answer about as well for one animal as another, or for one breed as another. Nothing seemed to promise satisfaction but the photographic illustrations, with which some of the herd books are now illustrated, and these came so high in price that it was found impossible to obtain them. So, while it was hoped at one time to be able to have some portraits accompany this article, it was upon the whole deemed advisable to omit them entirely, rather than have those which would not be good representations of the animals figured. This will explain why what was at one time considered quite certain in regard to illustrations, it has been found best to abandon as impracticable.

SOME CONCLUDING REMARKS.

A review of the subject which has been presented in the preceding pages, will show many points of interest to the practical farmer; the first of which is in regard to the purity of blood of the animals early introduced into Maine, and the judicious and intelligent manner in which the early breeders carried on their operations. We doubt, if in any other State in the Union, at so early a period as marks the introduction of Denton and the bulls which were imported from 1826 to 1833, can so large a number of pure blood bulls be found to have been introduced, as were brought into this State. The breeders interested in them were



also men of high standing and intelligence, and not only selected the best animals to breed from, but bred with much care and in a manner to maintain the purity of the blood and the value of the animals. They laid the foundation for the superior cattle which thirty and forty years ago gave Maine the reputation of producing some of the best stock found in the Union; of large size, fine workers, excellent beef animals, and which as stock getters possessed remarkable staying qualities. The testimony of many who were familiar with these animals, is to the effect that they added thousands of dollars in value to the farm stock of certain communities, and that even now the good results of particular strains of blood, thus early introduced, may be clearly traced. It is also plain to notice the good work done by those pioneer farmers and breeders for the improvement of our stock and our agriculture, (for, in reality, our agriculture is founded upon, and depends upon our farm stock for its advancement), and which was done at a time when they were surrounded by discouragements, and when every inch gained was the work of actual effort against prejudice and often against ignorance. Even now the results of their efforts are plainly visible, and we are led to rise up and honor their work and their memory. The change in the character of our cattle, in their adaptability to certain uses, in their money value as compared with those kept generally in the State before the labors of these pioneer breeders were commenced, is also a consideration of great importance. The cattle were brought up from poor, small, scraggy animals, giving little milk and being of very little worth, to those finely proportioned, well developed and valuable. And the efforts of breeders in more recent years have steadily been in the same direction, adding not only cash value but desirable special qualities to certain breeds, until now, to say nothing of the herds of full bloods of the different breeds which we have in the State, and of which some outline has been attempted, (which will compare favorably with those of any breeders in any State), our general farm stock in all parts of Maine has been improved to a great extent, and the grade animals found upon all our farms are generally very valuable animals, often of high grade, and as satisfactory for all purposes—except breeding—as full bloods. Another conclusion presents itself in regard to the absolute necessity of cattle in our husbandry. We cannot carry on our farms without them; they do our work, furnish our meat, supply our butter and

cheese, and provide the manure by means of which our farms can only be brought up to a profitable degree of fertility. Therefore cattle should be kept, and may be kept at a profit in Maine. Our farmers can, by providing plenty of pasturage, good hay and an abundance of turnips, grow beef at a profit: while our cheese factories, of which we now have a large number—so many in fact that the plan of associated dairying in this State may no longer be looked upon as an experiment—will demand that more and better cows be kept. In order to accomplish this good bulls are needed, the best calves must be raised, and as a consequence the numbers of our cattle will increase. As this comes about, more hay will be consumed upon our farms, more manure made and better crops the result. Altogether, it seems that cattle husbandry in Maine has now a more encouraging look than for many years. Some considerations on breeding, feeding, and general management, were intended in this connection, but it is a broad subject in itself, and is reserved for future treatment.

## REPORT OF THE ORONO MEETING.

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In accordance with a vote of the Board, the semi-annual meeting was held at Orono, the seat of the State College of Agriculture and the Mechanic Arts, on the 27th, 28th and 29th of October. The first day was spent at the State College, during the forenoon of which the members attended the various recitations of the classes at the college, including that in chemistry to Prof. Aubert; in mathematics to Prof. M. C. Fernald; in engineering (strength of timbers) to Prof. Pike, and in comparative anatomy, and elements of agriculture (manures) to Prof. C. H. Fernald. During the intervals of the several class recitations, the members visited the various public rooms in the college buildings, including the laboratory, natural history room, library, model room, and chapel, together with several of the students' rooms. The collections in the several rooms were attentively examined, and the gentlemen expressed great interest in the several departments. At noon, by invitation of President Allen, the members dined at the college boarding house, which is under charge of the steward, Rev. A. W. Reed, partaking of a substantial and well served dinner. In the afternoon the barn and farm were visited, the stock and implements looked over, and the work of the students who were engaged in performing their assigned task of manual labor, examined. At 4 o'clock there was an exhibition drill given by the cadets, to the number of about eighty, under the direction of Prof. W. S. Chaplin, Professor of Modern Languages and Military Tactics. The drill was witnessed by a considerable number of spectators, and was a highly interesting exercise. After it was finished the members repaired to their quarters at the Orono House, Orono village.









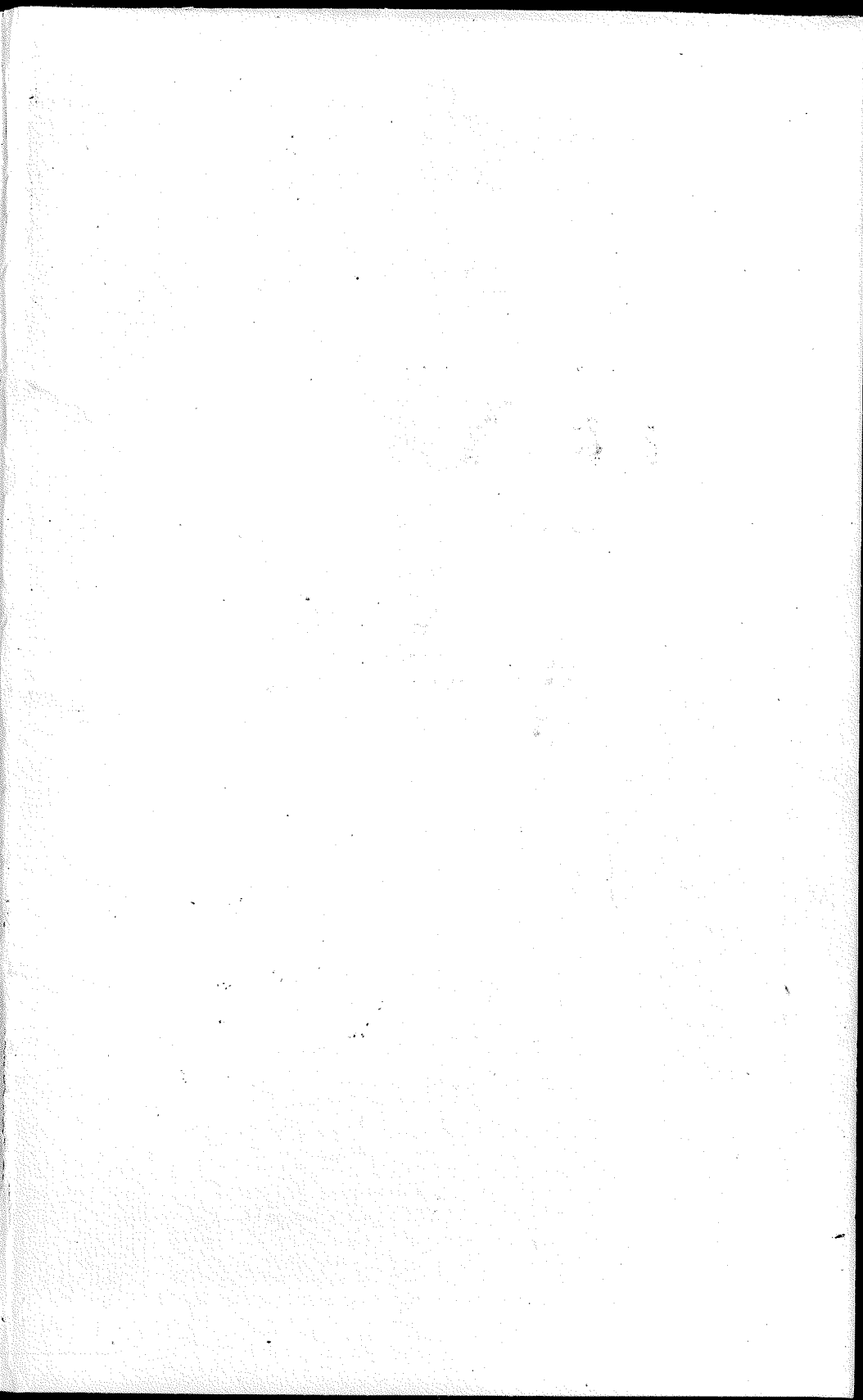
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