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knife shave this billet down to a cross-section, elliptical in form, of one inch by two inches, after which cut off to the proper length, say five feet eight inches, and gradually scrape the piece down from the middle, slowly tapering to the ends, where deep notches must be cut to receive the string. By bending the bow now and then during the process of finishing it, you will easily be able to give it the proper curve, which should be a flat, semi-ellipse.

A very good arrow is made by trimming a stick of tough hickory down to a circular cross-section of one-fifth of an inch in diameter, smooth and straight, which may be headed with a steel point or a cap of pewter. The end opposite the head should have a deep, clear notch to fit the bowstring. The feathering of the arrow must be nicely done, or the missile will be worthless. Take strips of the stiff part of the down of a goose's wing-feather and glue them longitudinally on opposite sides of the shaft near the notch. If the arrow is to be used in damp weather, a fine silk thread, in addition to the glue, may be used to fasten on the feather.

Flax or silk makes the best bowstring. It should be twisted very hard, and well waxed. With such a bow and arrow as I have described, I have seen a bird killed at the distance of ninety yards by an amateur archer.

Archery was revived in England in 1844, and became very popular as a pastime, but I am not aware of any successful toxophilite organizations in the United States. Such organizations, however, if properly managed, would no doubt meet with success here, and be received by the people with greater favor than even base-ball companies.

Ladies may become expert archers, and the sport recommends itself to them, in that, while it gives them excellent physical exercise, it also "shows off" their form and graces to the very best advantage.

The greatest objection to archery here in America is, that we cannot bear the thought of wringing any kind of pleasure out of an implement not sold to us by a patent-right agent or pedler.

JAMES MAURICE THOMPSON.

THE WILD-FLOWERS OF APRIL.

THERE is no floral demarcation between the later months of spring, nor is the distinction at any other season arbitrary. Some of the flowers of April continue into June, while others bloom within a few weeks, and go to seed. Many of the beauties properly pertaining to an earlier season, not satisfied with its chilling showers and scanty sunshine, struggle into May for comfort. The wood-anemone, for instance, which has been in bloom some weeks, is now in its perfection. The blushing buds may yet be found peering from amid the olive leaflets, yet the expanded calyxes are now pure white, and the involueral leaves are fast assuming their permanent and lovely green.

The violets are with us once again—blue,

white, and yellow. Their duty seems to be to make lovely the places that else were plain and nude. The choicest of all these is the "bird-foot" violet (*Viola pedata*), growing in sandy soil in the woods, with light-blue flowers, paling toward the central organs, which, in fine, are orange-yellow. Hawthorne, strolling doubtless in some piney forest, hit upon this note: "A gush of violets along a wood-path." To any one familiar with this little plant, his few words recall a host of pleasant memories.

Many persons, casually observing, imagine all blue violets identical; but let them, for comparison, place side by side the common species (*Viola cucullata*), with its deep-blue flowers entire, and very variable leaves, and bearded petals; and the "bird-foot" violet, with its large and lilac-tinted blossoms, the petals beardless, and the leaves conspicuously divided. The difference is perceptible at once. Not so obvious, however, are the varieties of the first-named species, which shade into each other by scarcely determinable gradations. Together with the common violet in the meadows may be found the five-finger (*Potentilla Canadensis*), with yellow flowers, and pretty strawberry-like leaves. The sociable Hous-tonias are gathered in little groups about the field, and the early "everlasting" protrudes from amid the grass its ashy stems and flowers.

In damp places, where we will need overshoes to proceed, we will discover, if our sight is sharp, the wee Veronica, with salver-shaped corolla, neatly veined with violet. Underneath the shrubbery, bordering the margin of the swamp, the *Fedicularis* is very common.

Another interesting order, to which belong the azaleas and kalmias of June, is the great Heath family, represented in this month by many vase-formed flowers, quite as pretty in their way as are their gorgeous relatives. Of these we may mention the *Cassiope* in the swamps, and the various species of huckle-berries, cranberries, and blue-berries. The variety of form exhibited in these little vases, and their delicate shades of color—ranging from white to yellow-ochre—and in *Andromeda polifolia*, even to pink, are truly wonderful. Another pretty plant—and this, too, is a member of the Heath family—is the creeping snowberry (*Chimaphila leptophylla*), a trailing evergreen, aromatic, and with small flowers on nodding stems. Its berry is quite large, globular, white, and often spotted like some birds'-eggs. The "fair Rhodora" of Emerson is not uncommon in our Northern swamps, and is certainly worthy of his exquisite poem.

The wild-cherry is just illumining its wanders of clustering flowers, and pendulous catkins of the birch bestow their blessing as we pass. "Damp mosses, cool and sweet, allure our waiting feet," and the *Mitchella* occasionally offers us a brilliant berry, red with the exposure of a previous summer. Soon we ponder by a shaded brooklet, making its laughing way to the sunlight through tufts of emerald hellebore. With hollowed palm we scoop the gladsome element, and drink to the spirit of the grove. Following up the stream, we come to a secluded valley, which

affords us meadow, wood, and swamp. A sunny little fountain gives origin to the rivulet explored, into which, at a later period, the dandelions and buttercup gaze at their "counterfeit presentment."

The Mayflower (*Epiyora repens*) is hallowed by an affection that increases with the lengthening years. Its sweetness brings to mind full many a pleasant day and happy memory from our earliest childhood until the present time. When the tree-toad begins to chant his pleasing overture from the swamps, and a stray butterfly, the survivor of a previous summer, flits gayly in the sunlight, or the wasps lazily climb our window-panes, we may seek the Mayflower with an assurance of success. This modest plant is the first to open the ball, but the silken willows and tasselled alders soon advance to meet her. At the same time, the blue-eyed Hepatica laughs from amid the fallen leaves of the maple and oak, which have shielded her from the frosts and winds, and the Dutchman's breeches displays its curious flowers and tender leaves. The ferns, too, are now uncurling their woody fronds, and the maple twigs tipping themselves with red. On the rocks we find the saxifrage, and in the open woods the bloodroot. Toward the end of the month, the wild-columbine, so charming in its delicacy both of flowers and foliage, adorns the lichened rocks.

Such are a few of the plants whose corollas unfold under the genial influence of April rains and sunshine. Were we to proceed with our examination, we would find the other months as surely chronicled, some newly-opening flower recording the advent of every day. But that which forms a pleasing study beneath the clear skies is frequently uninteresting upon paper. We commend the further consideration of the subject to the attention of all lovers of natural history, believing that there are many such who, terrified by the cold name of Science, have failed to enroll themselves among her votaries.

W. W. BAILLY.

A PICTURE OF MIRANDA.

THOU hast embodied shape that Shakespeare knew,
When in the glow of bright poetic power
A form like this beamed forth to bless the hour.

Thus, thus to maidenhood Miranda grew,
With something in her look of morning dew,
And tranquil stars, and bud of lily-flower;
And Ariel's music heard in sea-girt bow;
The sweetest child that Fancy ever drew.
"The fringed curtains of thy lids advance,"
To eyes like these, might Prospero have spoken;
And he, the enamoured prince, beneath such glance,
Might say, "I do beseech your name," some token
All hallowed borne, of creature made so fair,
"Chiefly that I may see it in my prayer."

ELIZABETH OAKES SMITH
PATCHOGUE, L. I.