

plant, being quite red in color after the outermost leaves are removed. They always carefully pick over the grass when brought home, stripping off the older, outer leaves which, they say, have no fragrance.

In using the grass it is generally braided into strips as fine or as coarse as they require, and of any desired length, and is then woven into baskets and other fancy work. As it takes a good deal of time to pick the grass, dry and braid it, the Indians often buy it of those who gather and prepare it for sale, paying for it so much a pound. The wood used, which forms the main part of these articles, is white ash, *Fraxinus Americana*, and red maple, *Acer rubrum*, called in Maine white maple. These woods they prepare at home, splitting the ash into strips of the requisite thinness and width by means of a machine. The maple is used for the heavier parts, such as the frame work and handles. The pieces are stained with some coloring material and are then ready for use. Baskets and articles of that sort are always made over a block to preserve the shape, and I was told that it would be impossible to make a basket, with Sweet Grass in it, without a block, as the grass would draw the basket out of shape. I saw some very delicate specimens of weaving. They frequently use horse hair in making very small baskets for charms, being less than half an inch in width; the frame work is of ash and the weaving is almost microscopic. I noticed among the articles for sale in the Indian tent, some small boats, beautifully cut out of white cedar or arbor vitae, *Thuja occidentalis*, while the bark of the paper birch, *Betula papyracea*, was made into baskets, music rolls, etc.

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### Notes on *Carex*. VIII.—Hybrids.

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(WITH PLATE XI.)

#### CAREX ARCTATA $\times$ FLEXILIS.

*C. Knieskernii* Dewey, Sill. Journ. 2d ser. ii. 247. *C. arctata*  $\times$  *formosa*? Bailey, Proc. Amer. Acad. Arts and Sci. xxii. 104.

In a recent trip to the northern boundary of Minnesota, I found a quantity of this rare *Carex* and growing in such intimate association with *Carex arctata* and *Carex flexilis* that all doubt was at once removed as to its parentage. I had long been confident that the plant is a hybrid, and that *Carex arctata* is one of





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BAILEY ON CAREX.



its parents, but it had not occurred to me that the rare *Carex flexilis* is the other parent. In the Synopsis of North American Carices I guessed at *Carex formosa* as being the other parent, although that plant had not been found in the vicinity of Lake Superior, where Professor Macoun had found the hybrid. Dr. Vasey has loaned me the original specimens of *Carex Knieskernii*, together with *Carex flexilis* from the same source, and adds this note: "The original *Carex Knieskernii* was collected by myself, in company with Dr. Knieskern, on the ground of old Fort Bull, somewhere west or northwest of Rome, N. Y., near a small stream which, if I remember correctly, was called Fish Creek, and empties into Oneida Lake. The specimens of *Carex flexilis* are from the same locality." This first collection was made in 1841. In 1869 Professor Macoun collected it at Kakabeka Falls, on the Canadian side of Lake Superior. The third finding was that of the present summer, a few miles this side of the international boundary. I obtained about a hundred specimens from two or three contiguous localities. Judging from its comparative frequency in these localities, I should expect to find the hybrid wherever *Carex arctata* and *Carex flexilis* grow near each other. Some of my specimens are almost indistinguishable from one parent, some from the other. They appear to have been the products of reciprocal crosses. The hybrid may be distinguished in general as follows:

Culm one and a half to two feet high, longer than the flat leaves, all usually somewhat hairy as in *C. flexilis*; spikes one to two inches long, drooping or spreading on very slender peduncles, mostly sparsely alternately flowered at the base, rusty, or whitish in color; perigynium empty, rusty, mostly lance-ovate and in at least the northern specimens very conspicuously beaked, lightly nerved, thin in texture, mostly surpassing the whitish, pointed scale (Fig. A).

It is singular that a genus possessing imperfect flowers and so many species should present so few hybrids. I enumerate all the remaining hybrid Carices which have been clearly made out in this country:

*CAREX DEBILIS* × *VIRESCENS* Bailey, Proc. Amer. Acad. Arts and Sci., xxii. 105.—Plant slender and lax, very green, appearing as if immature; culm flattish, rough on the angles; leaves flat, rough, mostly longer than the culm; bracts narrow, usually much exceeding the culm; spikes two or three, two inches long, thin and slender, erect or nearly so, the terminal one bearing a few pistillate flowers at the top; perigynium, which is nearly an exact medium between the two species, lance-ovate,





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