

A HYBRID SEDGE FROM WEST NORFOLK

By C. P. PETCH and E. L. SWANN

In late August, 1955, when botanizing on Cranberry Rough, which is on the site of the former Hockham Mere, we came across a few clumps of a sedge which one of us (E.L.S.) at first glance took to be a strange form of *Carex vesicaria* L. Fortunately the other had taken material for further examination and found that no fruit had formed. Subsequent visits to secure fresh material and to carry out further field-observations strengthened the suggestion of hybridity, for the characters appeared to be more or less intermediate between *C. pseudocyperus* L., and *C. rostrata* Stokes. On submitting material to Mr. Nelmes our tentative determination was confirmed.

Although Pearsall (1934) records this hybrid as British he gives no particulars and search in the literature has revealed remarkably few instances. There are no European specimens at Kew but Mr. Nelmes informs us that he has seen three Swedish gatherings at the British Museum. It would seem reasonable to suggest that its rarity may be due to three reasons. Although both parents are common in West Norfolk they do not usually grow together; *C. rostrata* begins to flower about a month earlier than *C. pseudocyperus*; and the plants are wind-pollinated.

The area in which we found this plant is only a few square yards in extent. One of its parents (*C. pseudocyperus*) is abundant close by but the other is about a hundred yards away. There are five colonies in all growing on the side of one of the drainage channels near alder-carr. The soil here is peat, up to 120 cm. deep, with the summer water-table not far below the surface. The Mere was drained during the 18th century. The associated flora comprises:—

Alnus glutinosa (a), *Holcus lanatus* (f), *Juncus effusus* (a), *Lysimachia vulgaris* (f), *Lythrum salicaria* (f), *Mentha aquatica* (a), *Phragmites communis* (o), *Salix cinerea* (a).

A description of the hybrid *Carex* follows.

Carex pseudocyperus × *rostrata* (Thorstenon) Kükenth., 1909, in *Engl. Pflanzenr.*, IV, 20: 758. *C. ampullacea* × *pseudocyperus* Thorstenon, 1893, in *Vet.-Akad. Förh. Stockholm*, 50: 278.—Sweden, Thorstenon. *C. Schmidiana* Junge, 1904, in *Verh. naturw. Ver. Hamburg*, 3, Folge, 12: 22.—Germany, Junge.

Densely tufted. Stems to 75 cm. tall, 3 mm. thick above the crowded lower leaves, smooth below but scabrid towards and on the rhachis,

erect up to the slightly drooping inflorescence. *Leaves* overtopping the spikes, 6-12 mm. wide, flat or flattish, glaucous below, bright green above, scabrid on the margins and principal nerves and very rough on much of both surfaces, longly attenuated towards the apices. *Spikes* 5, rarely 6, dense-flowered, slightly drooping, sometimes slightly curved or flexuous, fastigate, and approximate, i.e. arising from nodes which are 3-6 cm. distant from one another, uppermost 1½-2 male, terminating the stem, slenderly cylindric, 8 cm. long, about 3 mm. thick, lateral spikes female (except the uppermost which has a male upper half), stoutly cylindric, 6.5-12 cm. long, 8-10 mm. thick (including the long spreading beaks of the utricles), upper scarcely or shortly, lower rather shortly peduncled, lowest slightly compound at base. *Bracts* (lower) subfoliaceous, much longer than the whole inflorescence, upper bracts reduced, none sheathing. *Female glumes* more or less oblong to elliptic-lanceolate, apex obtuse, 3-4 mm. long (excluding awn), whitish to light, bright brownish with a greenish midrib, awn flattened, ciliolate-hispidulous, 0.5-4 mm. long. *Utricles* ovoid or, beak included, ovoid-lanceoloid, inflated, often somewhat shrunken, 5-6 mm. long (including stipe and beak with teeth), 1.8-2.2 mm. broad, distinctly rather many-nerved, narrowly but distinctly marginate, glabrous, straight, obliquely to subpatently spreading, light-greenish to light yellowish-green, tapering gradually into a beak; *beak* at the base gradually and above scarcely tapering, rather compressed, 2-2.5 mm. long, narrowly marginate, smooth, bidentate; *teeth* 0.5-1 mm. long, slender, firm, each tooth gradually tapering, together sometimes erect but usually moderately diverging. *Achene* undeveloped.

V.c. 28, W. Norfolk. Cranberry Rough, Hockham, August 1955, C. P. PETCH and E. L. SWANN (Herb. Kew.).

The following is Kükenthal's description of European specimens. "Rhizoma laxae caespitosum interdum stoloniferum. Culmus validus triqueter parce scaber. Folia 3-5 mm. lata, vaginae basiales brunneae parce reticulatim fissae. Spiculae 5-6, superiores 2-3 ♂, inferiores ♀ cylindricae remotiusculae pedunculatae subnutantes. Squamae ♀ lanceolatae acuminato-aristatae ferrugineo-fuscae. Utriculi lanceolato-ovati subinflato-trigoni multicostati, in rostrum longum bidentatum subsensim desinentes steriles, crura porrecta (breviora quam in *C. pseudocyperus*)".

It will be seen that the leaves of the Norfolk plants are wider and male spikes fewer than in Kükenthal's description.

The Norfolk hybrid differs from *C. pseudocyperus* L., in its partly glaucous leaves; its only slightly pendulous, less crowded, longer, looser-flowered, spikes, fewer male spikes; its less oblong, much longer (but shorter-awned), not always whitish female glumes; and its utricles ovate-lanceolate, less strongly and rather fewer nerved, less spreading, brighter and more yellowish green, more inflated, with teeth slightly shorter and more diverging.

It differs from *C. rostrata* Stokes in its wider, flatter and partly greenish leaves; its more pendulous, longer, fewer male, more numerous female, more crowded and fastigiate spikes; its differently shaped, obtuse, not reddish-brown with silvery margins, awned, female glumes; and its utricles differently shaped, longer (5-6 not 4-5 mm.), relatively narrower, and more stoutly nerved, slightly less spreading, tapering gradually (not abruptly contracted) into the beak, which is more flattened, much longer, more distinctly marginate and with much longer and somewhat firmer teeth.

A later visit brought to light a few clumps of a plant that appears to be intermediate between the hybrid and *C. rostrata*. A few achenes had developed and this may well be accounted for by its being nearer one of the fertile parents. The leaves are darker and more glaucous green and slightly less flat; spikes more erect and slightly stouter; female glumes oblong-ovate to elliptic, 3.5-5 mm. long, dark brownish and but little awned; utricles mostly ovoid or ellipsoid, 5-6 mm. long, 2-3 mm. broad, rather less distinctly and fewer nerved, darker and more yellowish green, more abruptly and more shortly and slenderly beaked; beak shorter in proportion to the rest of the utricle; teeth shorter, less firm and slightly more divergent. Kükenthal (1909) has the hybrid divided into "*A. superpseudocyperus* Junge, *B. intermedia* Junge, and *C. super-rostrata* Junge" but his descriptions do not fit our plant very well.

The accompanying photograph shows the hybrid with parents, and the bracts have been removed to show the inflorescences more clearly.

The writers are much indebted to Mr. E. Nelmes for his interest and assistance in the preparation of this paper.

REFERENCES

- JUNGE, P., 1904, In Schleswig-Holstein beobachtete Formen und Hybriden der Gattung *Carex*, *Verh. Naturw. Ver. Hamburg*, **3** (12), 1-24.
JUNGE, P., 1908, Die Cyperaceae Schleswig-Holsteins, *Jahrb. Hamburg Wissen Anat.*, **25**, 125-277.
KÜKENTHAL, G., 1909, Cyperaceae, in Engler, A., *Das Pflanzenreich*, **4**, 20.
PEARSALL, W. H., 1934, Some hybrid carices, *Rep. Bot. Soc. & E.C.*, **10**, 682-685.

PLATE 1



C. rostrata

Hybrid

C. pseudocyperus