

# Studies in New Zealand Carices II and III

B. G. HAMLIN

Dominion Museum, Wellington

[Read before the Wellington Branch, July 25, 1956; received by the Editor, July 30, 1956.]

## Abstract

### PART II

*Carex raoulii* Boott in Hook. f. and *C. goyenii* Petrie are shown to be distinct species, the former having been misidentified by all authors since the original publication. Distinguishing characters are given and illustrated.

### PART III

*Carex fascicularis* Sol. ex Boott in Hook. f. and var. *minor* Boott in Hook. f. are compared to *C. pseudocyperus* L. and maintained as distinct, var. *minor* being raised to a species as *C. maorica* sp. nov. Morphological features are described and figured and synonymy is given with known distribution of both species in New Zealand.

## Part II—*Carex raoulii* Boott in Hook. f.

THE peculiar scabrid surface of the utricle as described by Boott for *Carex raoulii* ("perigynia . . . inter nervos scabris") is a character found in only one other described species of Section *Echinochlaenae* Th. Holm, namely *C. McMahoni* Petrie (although not mentioned in Petrie's description), and the present author had suspected an affinity between the two. Mr. V. D. Zotov, of Botany Division, Christchurch, during his recent visit to Kew, examined and took photographs of the Type suite of *C. raoulii* which show that not only is *C. McMahoni* the same species as *C. raoulii* but also that the plant known by Boott's name ever since the publication of Hooker's "Handbook" is a quite different species, *C. goyenii* Petrie.

The distinctions between the two species may be summarised as follows:—

*Carex raoulii*  
Leaves 0.4 cm wide, soft and grassy, keeled.  
Culms 50–120 cm tall, elongating and exceeding the leaves at maturity.  
Spikes 5–7, closely contiguous at the tip of the culm.  
Utricles strongly nerved, scabrid on the margins and both surfaces to the midline, crura 0.2–0.3 mm long  
Text-figs. Text-fig. 1 F–H

*Carex goyenii*  
Leaves 0.5–0.7 cm wide, coriaceous, flat.  
Culms 7–45 cms tall, shorter than the leaves.  
Spikes 6–8, approximate, occupying a third to two-thirds of the culm.  
Utricles finely striate, scabrid only on the margins of the beak, crura 0.1–0.15 mm long.  
Text-figs. Text-fig 1 A–C.

Although both species usually have the terminal spike partly or largely female, this is by no means invariably the case, and while affording a convenient field character it cannot be regarded as diagnostic. The error in identification seems to have arisen from this similarity.

### *Carex goyenu* PETRIE

*Carex goyenii* Petrie, Trans. N.Z. Inst. 14: 363. 1882 (*goyeni*).

Head of Lake Wakatipu, 1,100 feet, *D Petrie* (No. 41 to Cheeseman) in Herb. Auckland Museum No. 2616. (There is no specimen in Petrie's herbarium at the Dominion Museum.)

Cheeseman (Trans. N.Z. Inst. 16: 433. 1884; Man. N.Z. Flora 821. 1906 and ed. 2: 265. 1925; Illustr. N.Z. Flora Pl. 215 excl utricle. 1914) understood the above species to be *C. raoulii* and his descriptions refer to *C. goyenii* only; Hooker (Handb.

N.Z. Flora 1: 314. 1864) and Kukenthal (Pflanzenr. Heft 38: 687. 1909) include both species under *C. raoulii*. Boott's figure (Illustr. Carex 3: 109, Pl. 333. 1862) has not been seen.

Kukenthal (l.c. p. 689) maintains *C. haasteana* Boeck. as a "forma" of *C. raoulii* Boott. Boeckeler's Type ("In Nova Selandia leg. Haast. Herb. reg. Berolin.") was destroyed in an air-raid on Berlin in 1943 (Dr. G. Buchheim pers. comm.) and I have been unable to locate a duplicate. The Haast specimen of *C. goyenii* Petrie which is mounted with the Type of *C. raoulii* Boott (see Plate 46), does not answer to Boeckeler's description (Flora 61: 168. 1878) nor can I match any other specimen which I have seen so that I cannot select the necessary Neotype. (I am not sure that *C. haasteana* Boeck. is not an earlier name for *C. wakatipu* Petrie.)

I prefer therefore to adopt Petrie's name, which has a verifiable Type, rejecting the older name *C. haasteana* Boeck. as a *nomen confusum*, at least until the latter can be identified beyond reasonable doubt.

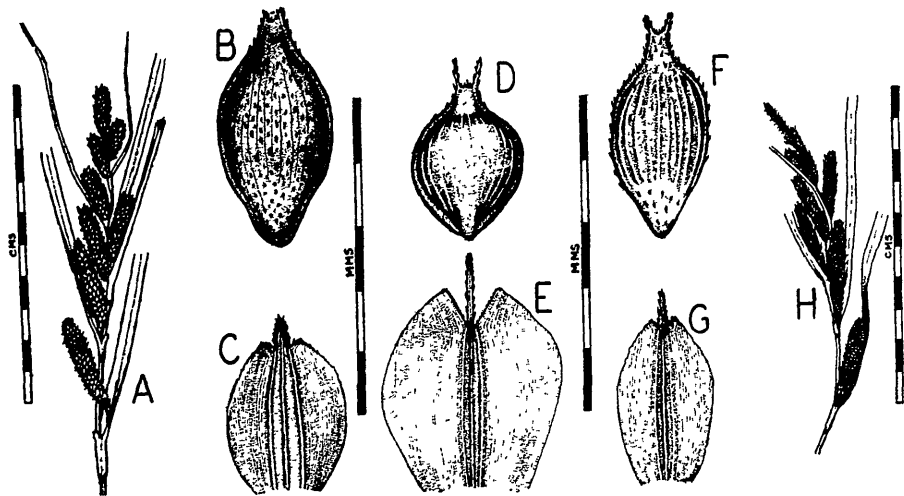
*Carex raoulii* Boott in Hook. f.

*Carex raoulii* Boott in Hook. f. Fl. Nov. Zel. 1: 283. 1853 (*Raoulii*).

*C. McMahonii* Petrie, Trans. N.Z. Inst. 56: 6. 1926.

TYPE. There are three sheets of Raoul's collection from Akaroa at Kew, one of which is labelled by C. B. Clarke, "N.B.—This is the 'type' Raoulii with utricles hairy all over the upper half . . ." The word 'type' here seems to be used in the sense of "type variety" and in any case an earlier annotation by Boott ("2. From Spach Aug. 27. 1857") rules the specimen out as having been used by Boott for the original description. Another specimen labelled "1. From Hooker" by Boott is young with six spikes. The third specimen, mounted on the same sheet as a specimen of *C. goyenii* (see above) is older and has four spikes. It is suggested that these two latter sheets, minus the *C. goyenii* specimen, were Boott's original material, "4-6" being the number of spikes quoted in the description. The older specimen is obviously the more suitable and is accordingly selected as the Type (Plate 46, right-hand side of sheet).

Boott and C. B. Clarke in annotations on the sheets at Kew and Hooker in his "Handbook" all expressed doubt as to the specific distinction of *C. raoulii* from *C. testacea* Sol. ex Boott in Hook. f., a doubt which Cheeseman (l.c. 1884), with *C. goyenii* in mind, had difficulty in understanding. The reason for the doubt is



TEXT-FIG. 1.—*Carex goyenii*—A. inflorescence; B. utricule; C. glume. *Carex testacea*—D. utricule; E. glume. *C. raoulii*—F. utricule; G. glume; H. inflorescence.



Photo: V. D. Zotov.

*Carex raoulii*. Type (right-hand specimen) mounted on same sheet as a specimen of *C. goyenii* (Herb. Kew).



readily appreciated, however, when *C. raoulii* is examined, for it is very close to *C. testacea* in appearance, principally differing in having a more robust habit, broader greener leaves, in having the terminal spike usually partly female, smaller glumes and with the utricles scabrid on both surfaces (see Text-fig. 1, D-E).

The following collections, all from coastal areas and preserved in the Herb. Dominion Museum, Wellington, have been identified:—

Herb. No. 1975 Akaroa, *T. Kirk*; 1979 French Pass, *W. R. B. Oliver*; 1980 Edgecumbe Point, Marlborough Sounds, *J. H. McMahon* in Herb. D. Petrie (Type of *C. McMahoni* Petrie); 2702 Seatoun Heights above Worsler Bay, Wellington, *V. D. Zotov*.

Of these specimens, the Kirk and Zotov collections have the terminal spikes mixed; Oliver's specimen has two culms, one of which has the terminal spike wholly male the other mixed; McMahon's plants are almost exclusively male in the terminal spike which is unusually robust, but a few female flowers occur in some inflorescences.

The species is probably of fairly general occurrence on both shores of Cook Strait but has almost certainly been overlooked as being *C. testacea*.

#### ACKNOWLEDGMENTS

I wish to thank Mr. Zotov for his invaluable assistance referred to above. Also Mrs P Hynes, honorary botanist of the Auckland Museum, for details of the Type of *C. goyenii* Petrie and Mr. E. Nelmes of Kew Herbarium for information on the Kew material.

### Part III—The Section *Pseudocypereae* Tuckerman

#### INTRODUCTION

THERE has been more or less general recognition that there are two taxa of the *Carex pseudocyperus* L. group in New Zealand, but opinions have differed widely on the status of the taxa concerned. They have been variously placed as varieties of a species, varieties of *C. pseudocyperus* L. or, in Hooker's extreme view, as varieties of *C. forsteri* Wahl. In the opinion of the present author, they represent two distinct species, an opinion with which Mr. E. Nelmes, of Kew, agrees.

Kukenthal, in his monograph (Pflanzenreich Heft 38. 1909) places *Carex forsteri* Wahl. and *C. vacillans* Sol. ex Boott in Hook. f. with *C. pseudocyperus sensu lato* in the Section *Pseudocypereae* Tuckerm. I do not propose to discuss the relationships here as the position will be examined when dealing with *C. forsteri* and its allies, but it can be noted that the similarity is of a superficial nature; *C. forsteri* and its allies are forest species with a densely caespitose habit, coriaceous sheaths and leaves, sheathing bracts, erect or nodding spikes, long glumes with short awns and usually coriaceous utricles which have the mouth scabrid between the crura. In addition, *C. forsteri* has an oblique mouth to the utricle.

I prefer, therefore, to limit the New Zealand species of Sect. *Pseudocypereae* to the two following. These can be recognised from all other native species by the following combination of characters:

Essentially swamp plants with prominent cross-veinlets on sheaths and leaves; leaves 3–7 mm wide, longer than the culms; spikes 3–5, cylindric, 2–6 cm long, terminal 1–2 male, lateral female with or without male flowers at the apex; bracts very shortly sheathing; glumes much shorter than the utricles and lacerate or fimbriate on the margins with the awns as long or longer than the glumes; utricles spreading when ripe or reflexed, 5–6 mm long, conspicuously nerved, membranous or submembranous, more or less stipitate, beaks 1.5–2 mm long, mouth not scabrid between the long, more or less spreading crura.