

THE STATUS OF *LUZULA ANTARCTICA* HOOK. F.

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RESUMEN

El estudio del holótipo de *Luzula antarctica* Hook. f., descrito en base de material de Tierra del Fuego, revela que esta especie ha sido erróneamente interpretada en revisiones recientes. Se ha demostrado que esta especie no se puede distinguir de la muy variable y difundida *L. alopecurus* Desv.

In addition to the alien *Luzula campestris* DC., introduced with grass seed from Europe, 4 species of *Luzula* have been recorded from Tierra del Fuego. One of these, *L. pumila* Hook. f., is only known from a single collection (*Spegazzini* 215-LP) from the alpine zone of Isla de los Estados. Of the other species, *L. chilensis* Nees & Meyen occurs throughout the deciduous *Nothofagus* zone and drier steppe of the northern part of the Isla Grande while *L. alopecurus* Desv., the most variable and widespread species, occurs in a wide variety of habitats from sea-level almost to the upper limit of vegetation at c. 1100 m. on the Fuegian mountains; the fifth species, *L. antarctica* Hook. f., has been reported by recent authors (Barros, 1953, 1969) from several localities in southern Tierra del Fuego, where it is sometimes sympatric with *L. alopecurus*, as well as in prov. Santa Cruz, Argentina.

Although it is clear from the literature that *Luzula alopecurus* and *L. antarctica* are closely related, recent treatments (Barros, 1969) provide a number of apparently clear-cut characters to differentiate them (Table 1). However, on examination of our extensive collections of *Luzula* from Tierra del Fuego we have been unable to clearly identify any specimens as *L. antarctica*, although in a number of plants some characters agreed with those ascribed to that species.

In view of this unsatisfactory state of affairs we examined the type specimen of *L. antarctica* (*Hooker* 14-K), collected among alpine rocks on Isla Hermite, Tierra del Fuego. As can be seen from Table 1, in several characters the specimen differs conspicuously from the description of *L. antarctica* by Barros (1969) and, indeed, frequently resembles the state

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TABLE 1

Character	Species		
	<i>alopecurus</i> *	<i>antarctica</i> *	<i>antarctica</i> type +
Stem-length (cm).....	8-40	6-10	6.3-6.5
Leaf-ciliation.....	dense	basal moderate, cauline dense	dense
Inflorescence shape.....	conical, rarely with basal lobe	ovoid or globose	ovoid
Flower-length (mm).....	3-3.5	5	3.2
Tepal-midrib.....	dark	inconspicuous	dark
Inner tepal.....	not laciniate	laciniate in distal half	not laciniate
Outer tepal.....	laciniate in distal half	laciniate throughout	laciniate distally
Anther-length (mm).....	0.5-0.7	0.5	0.2
Fruit-length (mm).....	2	1.2	1.2-1.6
Seed-length (mm).....	1-1.2	0.6-0.8	0.5
Caruncle-colour.....	yellowish	greyish	yellowish to brownish

Characters used to differentiate *Luzula alopecurus* and *L. antarctica*.

* From Barros (1969). + From type specimen in Kew.

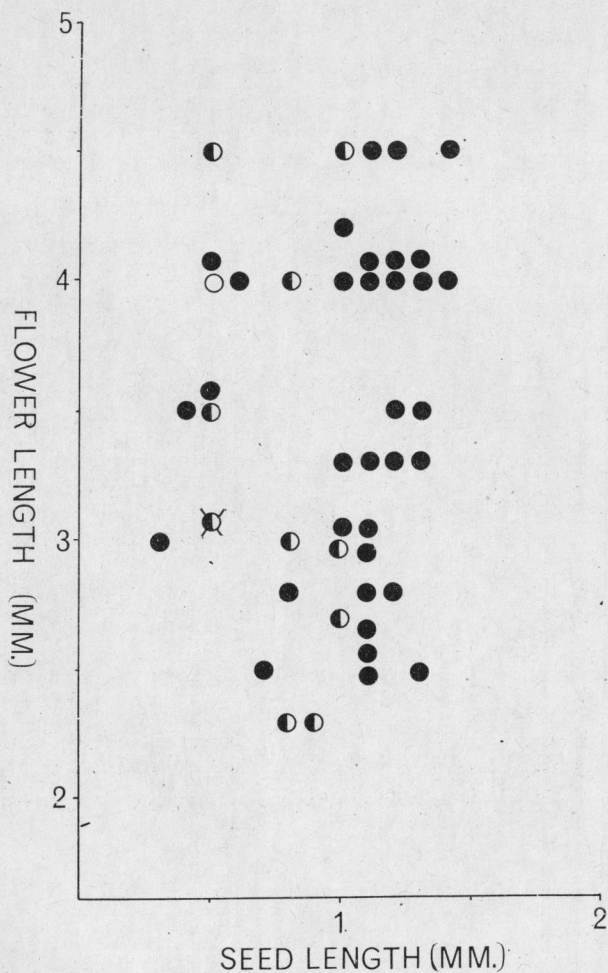


Fig. 1. — Scatter diagram of flower, fruit and seed size of *Luzula alopecurus* and *L. antarctica* from Tierra del Fuego. Fruit length < 1.1 mm (open circle), 1.2-1.6 mm (black and white), > 1.7 mm (closed circle). Holotype of *L. antarctica* indicated by circle and cross,

described for *L. alopecurus*. It seems clear that some confusion has arisen with regard to the circumscription of *L. antarctica* in relation to *L. alopecurus* and, in consequence, we studied the variation in the 11 characters listed in Table 1 in order to test their validity.

Fifty samples of Fuegian material of these species were examined. The critical diagnostic characters —flower, seed and fruit size— are plotted in Fig. 1, from which it can be seen that there is little significant correlation between them. Thus, flower size is not correlated with seed or fruit size and although smaller seeds generally occur in the smaller fruits this is by no means constant. In no case did we find flowers attaining the length of 5 mm quoted for *L. antarctica* by Barros (1969), nor did we find any in which the tepals lacked the dark midrib. However, the bracteoles subtending the perianth usually lack the midrib and are frequently longer than the tepals so that it is just possible that there has been some confusion in the earlier description. The inner tepals are always less lacinate than the outer but although they mostly lack laciniae they are sometimes sparsely lacinate distally, often the two types are found in flowers of the same inflorescence.

The shape of the inflorescence varies as indicated in Table 1, but often in the same plant. The young inflorescence in all plants tends to be ovoid or globose and, since the capsules are underdeveloped and the perianths close together, the young inflorescence appears more hairy owing to the prominence of the densely lacinate bracts and bracteoles. In view of the influence of age on the inflorescence shape it is perhaps not surprising that small fruits and seeds, undoubtedly immature, are associated with ovoid inflorescences in Table 1. Similarly, the more or less continuous variation in anther-length (0.2-0.9 mm), which depends upon their degree of maturity, appears to be correlated with the shape of the inflorescence.

Finally, there is obviously an environmental component to the variation exhibited by these plants. Stem-length varies continuously from 2.5 to 48 cm and seems, not unnaturally, to be correlated with the degree of exposure, the tallest specimens growing in *Nothofagus* forests. Although the basal leaves are usually less densely ciliate than the cauline leaves the degree of leaf-ciliation is also correlated with the habitat, the more densely ciliate plants occurring on drier soils.

In conclusion, therefore, it seems impossible to separate Hooker's (1847) *L. antarctica* from *L. alopecurus* on any of the characters studied, either alone or in combination.

The most recent attempts to define *L. antarctica* have been at variance with the original description and type material in many points and have given undue importance to features which are shown to constitute transient modes in the variation pattern shown by *L. alopecurus*.

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