

1.2 Lectotypification not effected

In this case one has the option of designating a lectotype for *S. constantia*, but this is not mandatory (Article 7.5 and Recommendation 7B). If a lectotype is designated, the Ecklon & Zeyher s.n. specimen mentioned above would be a good choice. The result of this action, as already indicated, would be that *S. constantia* becomes the correct name and *S. dewinteri* a later synonym.

2. *Antholyza caffra*

In a note on *Anapalina caffra* (Ker ex Bak.) Lewis in *Journal of South African Botany* 37: 235 (1971) Goldblatt states that *Antholyza caffra* Ker ex Bak. (1892) was not a superfluous name, even though the earlier *Anisanthus splendens* Sweet (1831), a misidentification, was cited in synonymy and he cites Stafleu's interpretation of the Seattle modification of Article 63 in support [see Stafleu in *Taxon* 19: 41–42 (1970)]. The Seattle modification relates to the explicit or implicit exclusion of the type of the cited name. Stafleu interprets this as follows: 'When it can be shown that the type of a cited name cannot within reason have been included by the author within the circumscription of his new taxon, his name does not become automatically superfluous on account of the mere citation of the older name'. Goldblatt writes: 'As Baker probably named this plant *Antholyza caffra* thinking that Ker's name had priority over *Anisanthus splendens* and because the latter cannot be included in Baker's circumscription of this species the question of superfluity cannot really be raised, particularly if Stafleu's interpretation of the modification of Article 63 is followed'.

Let us analyse Goldblatt's statement. Firstly, he states that superfluity is not at issue because Baker believed that *Antholyza caffra* Ker (1805) had priority over *An-*

isanthus splendens (1831). But *Antholyza caffra* Ker was a *nomen nudum* and therefore not validly published. By supplying a description Baker validated the name for the first time and by citing *Anisanthus splendens* as a synonym ['the citation of the name itself' (Article 63.2)] without excluding its type either explicitly or implicitly (there is no evidence of such exclusion) the name *Antholyza caffra* becomes superfluous. Secondly, Goldblatt asserts that because *Anisanthus splendens*, as figured and described by Sweet, cannot be included in Baker's circumscription of *Antholyza caffra*, the question of superfluity cannot be raised. The fact is that whatever taxonomists of today think about the relationship between the two species, Baker himself regarded *Antholyza caffra* as conspecific with the earlier *Anisanthus splendens*. This is not surprising if, as pointed out by Goldblatt, 'the plants are similar', though they are now known to belong to different genera. Weresub & Hennebert [*Taxon* 12,6: 218–228 (1963)] would call this a case of facultative superfluity involving a facultative synonym as opposed to nomenclatural superfluity involving an obligate synonym.

Clearly there seems to have been a misinterpretation of the Seattle modification of Article 63, since the question of explicit or implicit exclusion does not arise at all. What is the implication of *Antholyza caffra* being superfluous? The name *Antholyza caffra*, being illegitimate, the epithet *caffra* can only be used in *Anapalina* if the combination *Anapalina caffra* is treated as new dating from 1960 and attributed solely to Lewis.

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THE CARYOPSIS SURFACE OF *PENTAMERIS* AND *PSEUDOPENTAMERIS* (ARUNDINOIDEAE, POACEAE) REVISITED

Barker (1986) reported on the structure of the surface of the caryopses of five taxa in *Pentameris* Beauv. and one in *Pseudopentameris* Conert. This study showed there to be three types of surface sculpturing (colliculate, rugose and reticulate) and three types of caryopsis shape (cuneate, elliptic and globose-truncate). Free stylar hairs were observed in all the examined taxa of *Pentameris*, where they appear as a crown of short weak hairs (see Barker 1986 for photomicrographs of these structures). These structures were, however, absent from the caryopses of *Pseudopentameris macrantha*.

Subsequent to the work of Barker (1986), Clayton & Renvoize (1986) have defined the fruit of *Pentameris* as an achene, while that of *Pentaschistis* Stapf is considered to be a caryopsis. This difference is recognized, and the term caryopsis is used here in the broad sense, as advocated by Sendulsky *et al.* (1987).

The caryopsis of *Pseudopentameris brachyphylla* was predicted by Barker (1986) to have a narrowly elliptical shape, reticulate surface sculpturing and no free stylar hairs. The caryopsis of *Pentameris longiglumis* was expected to have an elliptic shape, colliculate surface features and free stylar hairs.

This study was carried out to test these predictions, and to augment the data on caryopsis structure in the southern African Arundineae.

MATERIALS AND METHODS

Caryopses were obtained from herbarium specimens housed in the National Herbarium, Pretoria (PRE). They were gold-coated after being mounted on stubs using two-sided sticky tape. Specimens were examined using an ISI-SX-25 Scanning Electron Microscope. Photographs were taken using Tura 60 × 70 mm format black and white 100 ASA film.

Specimens examined:

Pentameris longiglumis

CAPE.—3318 (Cape Town): Table Mountain (—CD), Marloth 3078.

Pseudopentameris brachyphylla

CAPE.—3419 (Hermanus): Die Mond se Kop (—AD), Barker 58.

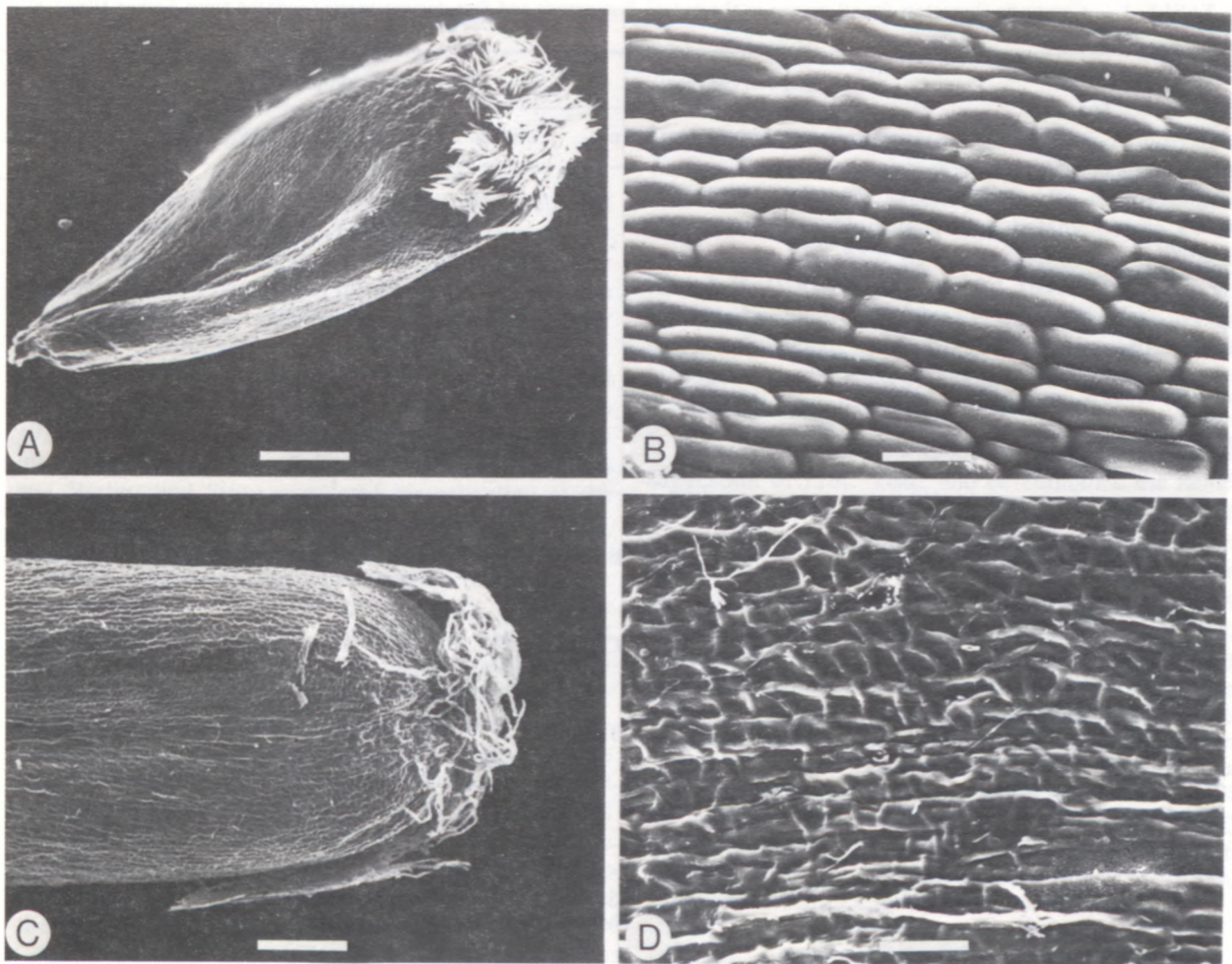


FIGURE 1.—A & B, *Pentameris longiglumis*, Marloth 3078: A, slightly malformed caryopsis, with colliculate sculpturing and free stylar hairs, scale bar = 450 μ ; B, close-up of colliculate sculpturing, scale bar = 40 μ . C & D, *Pseudopentameris brachyphylla*, Barker 58: C, stylar end of caryopsis, note the reticulate sculpturing, linear-elliptical shape and absence of stylar hairs, scale bar = 420 μ ; D, high magnification of reticulate sculpturing, scale bar = 155 μ .

RESULTS AND DISCUSSION

The morphology of the caryopses of these two taxa corroborate the predictions made in an earlier publication (Barker 1986). Figure 1A shows the entire caryopsis of *Pentameris longiglumis*. Although slightly malformed, it is basically elliptical in shape, and the surface is of a colliculate nature (Figure 1B). This structure compares closely with those of the previously examined *Pentameris obtusifolia*, *P. macrocalycina*, and to a lesser extent, *P. thuarii*, in that the former two species have elliptical caryopses with colliculate sculpturing and free stylar hairs (Barker 1986), while the latter species differs only in having a globose-truncate caryopsis.

The caryopsis of *Pseudopentameris brachyphylla* is, as predicted, narrowly elliptical and reticulately sculptured, with no free stylar hairs. Figure 1C shows the distal or stylar half of the grain. The remains of the style and style base may be seen, but the small weak hairs, which are obvious in *Pentameris longiglumis*, are lacking. Figure 1D shows the reticulate nature of the surface of the caryopsis. The caryopsis of this species is visually indistinguishable from that of the previously examined *Pseudopentameris macrantha*.

Both species examined here are rare, and only a few herbarium specimens were available. The small sample

size may be construed as inadequate, especially since the caryopsis of the *Pentameris longiglumis* specimen is slightly malformed. However, the results obtained confirm the predictions made previously (Barker 1986), and a complete character set for all presently known taxa in both genera is now available. These data are outlined in the character by taxon matrix (Table 1) which is an update of the table published earlier (Barker 1986).

Further work on *Pentastichis*, *Pentameris* and *Pseudopentameris* is in progress (Barker in prep., Linder pers. comm. and Ellis pers. comm.), which will throw further light on the taxonomy and phylogeny of these related genera.

CONCLUSION

Species of *Pentameris* have elliptic or globose caryopses with colliculate sculpturing and free stylar hairs, whereas the species of *Pseudopentameris* have narrowly elliptic caryopses, reticulate surface features and no free stylar hairs.

This study has provided additional information and improved the understanding of the variation within and between the genera *Pentameris* and *Pseudopentameris*. The taxonomic importance of characters such as the presence or absence of free stylar hairs, has been reiterated.

TABLE 1.—Caryopsis characters for all species in the genera *Pentameris* and *Pseudopentameris* (updated from Barker 1986)

Species	Shape of caryopsis			Surface of caryopsis			Style hairs	
	Cuneate	Elliptic	Globose	Colliculate	Reticulate	Rugose	Absent	Present
<i>Pentameris</i>								
<i>thuarii</i>			x	x				x
<i>dregeana</i>	x					x		x
<i>macrocalycina</i>		x		x				x
<i>obtusifolia</i>		x		x				x
sp. nov.		x			x			x
<i>longiglumis</i>		x		x				x
<i>Pseudopentameris</i>								
<i>macrantha</i>		x			x		x	
<i>brachyphylla</i>		x			x		x	

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