

SOME NOTES ON THE NOMENCLATURE, GENERIC DEFINITION AND THE SPECIES QUESTION IN THE GENUS *SARCOCOLLA*, KUNTH.

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I. NOMENCLATURE.

The genus *Sarcocolla*, derived from the Greek *sarz*, flesh and *kolla*, glue, was coined by Linnaeus (Linn. Syst. Ed. I, 1735), but on publication of his *Species Plantarum* Ed. I (1753) he dropped this genus in favour of *Penaea*, retaining the word *Sarcocolla* as the trivial name for *Penaea Sarcocolla* L. a well known Peninsula plant.

Since the genus *Sarcocolla* was pre-Linnean in the botanical sense (i.e. prior to 1753), it is now ascribed to Kunth who revived it in *Linnaea* V (1830) p. 678, but although that author cites *P. Sarcocolla* L., he did not give it a new trivial name.

Three species of *Penaea* appear in the *Species Plantarum*, viz. *P. Sarcocolla* L., the plant now known under the invalid name *Sarcocolla squamosa* Endl.; *P. mucronata* L., which still bears this name; and *P. squamosa* L., a species of somewhat doubtful identity owing to the inadequacy of the description. It is very probable that this last plant was that now known as *Brachysiphon imbricatus* A. Juss. and it has been so considered by many authors, but leaving that apart, it is at least obvious that it is not *Sarcocolla squamosa* Endl. (Gen. Suppl. IV ii, 74) for the words "Corolla ut in precedente" imply that the corolla is like that of *P. mucronata*. L.

A second and different *Penaea squamosa* L. appears in Linnaeus' *Mantissa Altera* (1771) and since this species is identical with *P. Sarcocolla* L., the new combination *Sarcocolla squamosa* Endl. (Gen. Suppl. IV ii (1874) 74) was evidently founded on this *Mantissa* species which is figured in *Bot. Reg.* (1816) 106. In 1767 Bergius gave the first full description of the species under the name *Penaea tetragona* Berg. (Fl. Cap. 36) and as this is the first trivial name (other than *Sarcocolla* which is invalid) to be applied to it, the combination *Sarcocolla tetragona* (Berg.) Salter should be adopted.

Sarcocolla formosa A. Juss. in *Ann. Sc. Nat.* 3me Sér. VI (1846) 25 and t. 2, fig. 4 f. is founded on specimens of *Penaea formosa* Thunb. Fl. Cap. Ed. Schult. (1823) 149, in Paris, but it is probable that some

error in distribution of Thunberg's specimens took place, for the original specimen of *P. formosa*, Th. in Thunberg's own Herbarium, has been identified as *Glischrocolla Lessertiana* A.D.C. (Stephens in Flora Capensis V ii p. 96).

Since the exact identities of *Penaea squamosa* L. of Sp. Pl. I (? *Brachysiphon imbricatus* A. Juss.) and *Penaea formosa* Th. (? *Glischrocolla Lessertiana* A.D.C.) are doubtful, it is left to those who have access to the type specimens to make new combinations if necessary.

II. GENERIC DEFINITION.

An error exists in the generic definition of the genus *Sarcocolla* as now constituted in the Flora Capensis, viz. the statement that the ovary chambers may be either 2- or 4-ovuled, whereas they are actually always 4-ovuled. Bentham and Hooker (Gen. Plant. III 202) seem to have first discovered that the chambers were 4-ovuled, but since they included the genus *Brachysiphon* under *Sarcocolla*, their definition "*ovula in loc. 2, vel rarius 4*" was correct.

A. De Jussieu, in Ann. Sc. Nat. t. 2, fig. 4, gives a misleading plan of a flower of *Sarcocolla* in which the ovary is shown with only 2 ovules in each chamber and this agrees with his description. The shape of the placenta is, however, such that two of the ovules project somewhat higher than the other two and it is just possible, when taking a cross section of the ovary, to cut through the upper pair only. Perhaps this is the explanation.

III. THE SPECIES PROBLEM.

The genus appears to be confined to the extreme South West region, being only recorded from the Cape Peninsula, the Hottentots Holland, Caledon and Bredasdorp Hills as far east as Elim.

Three species, *S. squamosa* Endl., *S. minor* (Zey.) ex A.D.C. and *S. formosa* A. Juss. are now recognised in the Flora Capensis V ii p. 94 and these are distinguished in the key by the number of flowers in the terminal heads and by the size of the leaves and median floral bracts. An examination of the genus as it occurs in the field, however, shows that the three species run one into the other and that although more or less typical forms of the species can be picked out, there are many intermediates. This will also be found in herbarium collections where there is much material.

That the species *S. minor* and *S. formosa* are one and the same there is no doubt at all, for their characteristics often occur on the same plant. *S. squamosa*, the large form with very thick-set flower heads of 4—7 flowers, occurs in its extreme form in the Peninsula hills as far south

as the Muysenberg range where on the southern slopes it becomes depauperated, usually with smaller leaves and fewer flowers in the heads, gradually merging into *S. minor* about Fish Hoek.

About Glencairn and to the south, many of the plants produce entirely single or both single and several-flowered heads. The most southerly forms have very small leaves and in the neighbourhood of Paulsberg the single-flowered form is prevalent, but still further south on Vasco da Gama Peak, where the plant is abundant, both the small-leaved forms merge together. A small form also occurs on the slopes above Camp's Bay.

In the Hottentot's Holland Mts. the distribution is not so fully known, but the larger form generally occurs inland (Houw Hoek and Caledon) while the smaller forms are prevalent in the south and nearer the sea.

These do not seem to be simple epharmonic forms. What is more probable is that they represent distinct minor races or strains, selected by the habitat.

In all forms the upper leaves gradually merge into pale sticky imbricating lacinate floral bracts which grow longer, narrower and more spatulate until they finally take the form of a pair of almost linear bracteoles to each flower. There is perhaps a tendency in the large (*squamosa*) form for the median bracts to be proportionately wider than in those of the southern small forms in which the bracteoles are occasionally missing, but these distinctions are not definite. The length and diameter of the corolla tube is very variable in all the forms.

As is unfortunately the case with many of our South African plants the species have been founded by old European botanists on the evidence of a very limited number of dried herbarium specimens and the three species of *Sarcocolla* are a good instance of what might be called "herbarium species".

It is of interest to record that Miss M. MacRobert, of the University of Cape Town, who has recently been studying the Penaeaceae of the Cape Peninsula, has arrived at exactly similar conclusions.

Since as *Sarcocolla* occurs in the field no definite character can be found to warrant its separation even into varieties, it is proposed to amalgamate all three species under the oldest valid name, viz. *S. tetragona* (Berg) Salter, which, on account of the square arrangement of the closely congested opposite pairs of leaves and bracts, is a very appropriate one.