

Miscellaneous notes on the genus *Pelargonium*

J. J. A. VAN DER WALT* and P. J. VORSTER*

ABSTRACT

It is pointed out that the name sect. *Pelargium* DC. must be replaced by sect. *Pelargonium*, and *Pelargonium cardiophyllum* Harv. (1860) by *P. setulosum* Turcz. (1858); *P. mossambicense* Engl. is reported as a new record for the Transvaal; a new name *P. ternifolium* Vorster is given to *P. trifoliatum* Harv., nom. illeg.; and the typification of *P. multifidum* Harv., *P. plurisectum* Salter, *P. dolomiticum* Knuth and *P. dasyphyllum* E. Mey. ex Knuth is discussed.

NOTES DIVERSES SUR LE GENRE PELARGONIUM

Il est souligné que le nom sect. *Pelargium* DC. doit être remplacé par sect. *Pelargonium*, et *Pelargonium cardiophyllum* Harv. (1860) par *P. setulosum* Turcz. (1858); *P. mossambicense* Engl. est rapporté comme un nouvel enrégistrement pour le Transvaal; un nouveau nom, *P. ternifolium* Vorster est donné à *P. trifoliatum* Harv. nom. illeg.; et l'établissement de types de *P. multifidum* Harv., *P. plurisectum* Salter, *P. dolomiticum* Knuth et *P. dasyphyllum* E. Mey. ex Knuth est discuté.

CORRECT NAME OF THE TYPE SECTION OF THE GENUS *PELARGONIUM*

The genus *Pelargonium* L'Hérit. was typified** by Van der Walt in JI S. Afr. Bot. 45: 377 (1979), who chose *P. cucullatum* (L.) L'Hérit. (*Geranium cucullatum* L.) as the lectotype species. The section containing this species was placed as sect. *Pelargium* DC., Prodr. 1: 658 (1824) and this was followed by Harvey in Fl. Cap. 1: 301 (1860), Knuth in Pflanzenr. 4, 129: 455 (1912) and Van der Walt, Pelargoniums S. Afr. xiv (1977). According to Art. 22 of the Code, this section, containing the type species, must be referred to as *Pelargonium* L'Hérit. sect. *Pelargonium*.

PELARGONIUM MOSSAMBICENSE ENGL., NEW TO THE FLORA OF SOUTHERN AFRICA REGION

Pelargonium mossambicense Engl., Pflanzenw. Ost.-Afr. C: 225 (1895) has been known up to now from only a few collections on the Zimbabwe side of the mountains bordering Zimbabwe and Mozambique, and from the type collection made at Gorongosa in Mozambique in 1884-1885. It can now be announced that it also occurs in the Transvaal, having been found ca. 1.6 km east of Pilgrim's Rest on the road to Graskop (Codd 9797 in K!) and at Pilgrim's Rest (Rogers 23257 in BOL!). These records extend the known distribution of this species southwards by about 700 km. This distribution pattern, with populations widely separated by the broad Limpopo Valley, with small relic populations in the south, is shared by several species, for example the ferns *Pyrosia schimperana* (Mett.) Alston [cf. Vorster in Bothalia 11: 287 (1974)] and *Selaginella imbricata* (Forssk.) Spring ex Decne. [op cit. 12: 259 (1977)], *Leucospermum saxosum* S. Moore [cf. Rourke in Flower. Pl. Afr. 41: t. 1633 (1971)] and

Aloe swynnertonii Rendle [cf. Reynolds, Aloes S. Afr. 220-222 (1950) as *A. chimanimaniensis*].

NEW NAME FOR *PELARGONIUM TRIFOLIATUM* HARV.

Pelargonium ternifolium Vorster, nom. nov.

P. trifoliatum Harv. in Fl. Cap. 1: 271 (1860); Knuth in Pflanzenr. 4, 129: 351 (1912); non Sweet (1926); nec *P. trifoliatum* (Eckl. & Zeyh.) Steud. (1841). Type: 'Cape, Klein Drakenstein, Stell.' (Stellenbosch), Drège 7497 (K!; L!; P!; S!; W!).

P. CARDIOPHYLLUM HARV. VERSUS *P. SETULOSUM* TURCZ.

P. cardiophyllum Harv. was described in Fl. Cap. 1: 284 (1860), based on Ecklon & Zeyher 601 and Zeyher 2084. The name was subsequently wrongly upheld by Knuth in Pflanzenr. 4, 129: 389 (1912), who placed the earlier name, *P. setulosum* Turcz. in Bull. Soc. nat. Moscow 31: 422 (1858), based on Zeyher 2084, in synonymy. The latter is the correct name for this species.

Earlier, Ecklon & Zeyher, Enum. 1: 77 (1835), had wrongly associated their specimen Ecklon & Zeyher 601 with *Geranium elegans* Andr., Bot. Rep. 1: t. 28 (1799), when they effected the combination *Eumorphia elegans* (Andr.) Eckl. & Zeyh.

Harvey (l.c.) also described a variety *laciniatum*, having the 'leaves 3-lobed, the lobes laciniate and toothed'. However, both undivided and deeply lobed leaves may occur on the same plant and, with our present knowledge of the species, it does not appear justified to recognize the variety as a separate entity.

Pelargonium setulosum Turcz. in Bull. Soc. nat. Moscow 31: 422 (1858). Type: Cape, 'C, b. spei', Zeyher 2084 (? MW, holo.; G!; K!; PRE, 2 sheets!; S!; W!; WU!; Z!).

Eumorphia elegans sensu Eckl. & Zeyh., Enum. 1:77 (1835), as to Ecklon & Zeyher 601, non (Andr.) Eckl. & Zeyh. l.c. [*Geranium elegans* Andr., Bot. Rep. 1: t. 28 (1799)], nec *Pelargonium elegans* (Andr.) Willd., Sp. Pl. ed. 4, 3: 655 (1800).

P. cardiophyllum Harv. in Fl. Cap. 1: 284 (1860); Knuth in Pflanzenr. 4, 129: 389 (1912), syn. nov. Syntypes: Cape, 'Rocky mountain sides, above the Baths, and Baviansberg, Gnadenthal', Ecklon & Zeyher 601 (S!; SAM!); 'River Zonderende', Zeyher 2084 (G!; K!; ? MW; PRE, 2 sheets!; S!; W!; WU!; Z!).

*Department of Botany, University of Stellenbosch, Stellenbosch, 7600.

**Hanks & Small, N. Amer. Fl. 25: 23 (1907) also designated a lectotype species for the genus *Pelargonium*, but for reasons explained elsewhere (in press) this is not acceptable.

Geranospermum cardiophyllum (Harv.) Kuntze, Rev. Gen. 1: 94 (1891). *P. cardiophyllum* Harv. var. *laciniatum* Harv. l.c., syn. nov. Type: Cape, without precise locality, Zeyher s.n. (S!).

TYPIFICATION OF *PELARGONIUM MULTIFIDUM* HARV. AND *P. PLURISECTUM* SALTER

With the original description of *Pelargonium multifidum* Harv. in Fl. Cap. 1: 282 (1860) two specimens were cited, viz. Drège 9460 and Zeyher 2054 ('Herb. Sond.'). From this citation the impression is gained that two syntypes are involved. However, both numbers appear on single sheets in S, G and P, on two sheets in G and P respectively on the same label, whereas only the number Zeyher 2054 appears on sheets in P and W. The probable solution is provided by one of the three sheets in P, which bears both numbers as well as the inscription 'Legit Zeyher. Communicavit Drège ...'. It therefore seems as if only one collection is involved, namely Zeyher 2054 which was distributed under the number Drège 9460.

The material of this species in Harvey's collection (TCD) consists of three small branches of Zeyher 2054 and a tiny fragment marked Drège 9460, but without any indication of locality of origin so that it is unlikely that this sheet was used solely or mainly for compiling the original description. Sonder's main collection, referred to by Harvey, was acquired by Stockholm in 1875 and there is a sheet in S containing both numbers as well as the locality and name written on in Sonder's handwriting. We therefore designate this sheet as lectotype of *Pelargonium multifidum* Harv. (1860), non Salisb. (1796), as well as of *P. plurisectum* Salter (1941) which replaces the former name.

NEOTYPE FOR *PELARGONIUM DOLOMITICUM* KNUTH

With the original description of *P. dolomiticum* Knuth in Bot. Jb. 40: 71 (1907) it was stated that the type (Engler 2889) was housed in B ('Typus in herb. Berol.'). This specimen can no longer be traced in B, and it is presumed to have been destroyed during World War II. Neither could any duplicates be traced.

Although herbarium material of this species was borrowed from all the major herbaria in South Africa and Europe, it transpired that these collections do not contain any specimens with duplicates suitable for typification purposes. It appears as if the petals are easily shed during the preparation process, so that complete specimens with ample flowers proved to be very scarce. We finally decided to designate the following specimen as neotype: Orange Free State, (2926): Bloemfontein (-AA), J. W. Mostert 1661 (PRE!).

This is not a very neatly prepared specimen, but it has more flowers than most seen by us, and it is complete with mature fruits and part of the perennial basal part of the stem. It conforms with Knuth's original description, it is representative of the species and provides a good impression of the species in general.

Even though no type material survives, there is no doubt about the identity of *P. dolomiticum*. The original description did not mention that there are four petals only, but it did mention that the posterior petals are up to 20 mm long. This serves to distinguish *P. dolomiticum* from *P. senecioides* L'Hérit.

which has five petals not longer than ca. 9 mm, (with which *P. dolomiticum* is otherwise likely to be confused). In fact, even Knuth in Pflanzenr. 4, 129: 401-402 (1912) cited under *P. senecioides* a number of specimens which undoubtedly are *P. dolomiticum* [Dinter 976 (SAM!); 662; Fleck 488a; 571a; 821 (all in Z!)].

THE DELIMITATION AND TYPE COLLECTION OF *PELARGONIUM DASYPHYLLUM* E. MEY. EX KNUTH

The name *Pelargonium dasyphyllum* first appeared as a *nomen nudum* in Drège's Zwei pflanzengeographische Dokumente, pp. 60, 90, 91 and 209 (1843). Harvey, in Fl. Cap. 1: 279 (1860) listed it in the synonymy of *P. crithmifolium* J. E. Sm. Knuth, in Pflanzenr. 4, 129: 373 (1912) acknowledged it as a separate entity and validated the name by providing a description and indicating Drège 3245 as a type. In addition to the type, Knuth cited several other collections.

Of the material cited by Knuth, we have only been able to trace Rehmann 2776 and 2823 (both in Z) and two type sheets. The Rehmann specimens are very poor fragments impossible to identify positively, and were collected in the Hex River Valley, which is far outside the distribution area of *P. dasyphyllum* as indicated by other collections. Of the type sheets, the first, in P, consists of a fragment which appears to be the upper portion of a branch which branched rather profusely, with a dense mass of leaves and a single unbranched peduncle with a three-flowered pseudumbel. The second sheet, in PRE, consists of a single short, branched inflorescence branch, and came originally from P. It is not evident that it is a fragment of the specimen in P, so that it must be considered to be a duplicate. While these two fragments are hardly sufficient to provide an image of the species, Knuth's description could have been compiled from them, except for the fruit which is not evident on either of the sheets.

During our investigations of live material, both in the field and in cultivation, we separated a number of specimens of what we consider to be a separate species from *P. alternans* Wendl. These specimens seem to match the description and type of *P. dasyphyllum*.

According to our observations, *P. dasyphyllum* at first glance is morphologically very similar to *P. alternans* and only remotely resembles *P. crithmifolium*. It is, however, readily distinguishable from *P. alternans*, to such an extent that we have no hesitation in recognizing it as a separate species, as set out in Table 1. The branched inflorescence branches are nevertheless reminiscent of *P. crithmifolium*, and probably signify a close relationship to that species.

The length of the pedicel and the hairiness of the leaves are characters which usually hold good, but these cannot be used exclusively to distinguish the two species. *P. alternans* occasionally resembles *P. dasyphyllum* in respect of these characters and it is recommended that a combination of characters be used for this purpose.

The type locality of *P. dasyphyllum* was stated by Knuth (l.c.) to be 'near the Copper Mountains'. However, neither of the two sheets of the type collection which we have seen, bears that inscription. The sheet in P is labelled 'Camdeboosberg' on a label different from that bearing the number. This is probably wrong, as Camdeboosberg is far outside the

TABLE 1.—Comparison of diagnostic characters of *Pelargonium dasyphyllum* and *P. alternans*

Character	<i>P. dasyphyllum</i>	<i>P. alternans</i>
Leaves	Lamina setose, petiole microscopically setose	Both lamina and petiole conspicuously hirsute
Inflorescence	A thin, non-succulent, branched flowering stem, clearly differentiated from the succulent vegetative branches, with a few reduced leaves, flowering stem persistent for some time	A succulent, unbranched peduncle, not clearly differentiated from vegetative branches, not persistent.
Pedicel	Conspicuous, $\frac{1}{2}$ –4× the length of the hypanthium	Inconspicuously short in relation to hypanthium
Petals	Reflexed at base	Reflexed in middle, especially 2 posterior ones
Geographical distribution	North-western Cape	Western and inland southern Cape

known geographical range of *P. dasyphyllum*. The sheet in PRE is labelled 'Zilverfontein', which is well within the known distribution range of this species. Drège (*op cit.*) cited three localities for *P. dasyphyllum*:

1. 'Camdeboosberg' (p. 60), which, as explained above, could not have been this species. The numbers cited also did not include the type number.
2. 'Zilverfontein' (p. 90) This is well within the known geographical range of this species, but again the cited numbers did not include the type number.
3. 'Zwischen Zilverfontein, Kooperbergen und Kaus' (p. 91). No collection numbers were cited, but the description of the locality is not dissimilar to that given by Knuth (*l.c.*). We therefore conclude that, despite the labels on the type sheets, the correct type locality is probably 'Between Silberfontein, Copper Mountain and Kaus' (about 29½°S, 18°E). We can only guess whether Knuth (*l.c.*) obtained his information from a now-lost sheet of Drège 3245 or deduced it from Drège (*op. cit.*).

Attention is drawn to a sheet in S which has the words 'Zwischen Zilverfontein, Kooperbergen and Kaus' typed on the label, and the name '*Pelargon. dasyphyllum*' written on in Meyer's handwriting. This may well be a duplicate of the type collection, but it lacks the number cited by Knuth. The specimen is a small fragment of poor quality.

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UITTREKSEL

Daar word op gewys dat die naam seksie *Pelargonium* DC. vervang moet word deur seksie *Pelargonium*, en *Pelargonium cardiophyllum* Harv. (1860) deur *P. setulosum* Turcz. (1858); *P. mossambicense* Engl. word gemeld as 'n nuwe rekord vir die Transvaal; 'n nuwe naam *P. ternifolium* Vorster word gegee aan *P. trifoliatum* Harv., *nom. illeg.*; en die tipifikasie van *P. multifidum* Harv., *P. plurisectum* Salter, *P. dolomiticum* Knuth en *P. dasyphyllum* E. Mey. ex Knuth word bespreek.

