The identity of the type of *Bubon gummiferum* (*Peucedanum gummiferum*) (*Apiaceae*)

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A detailed study of the species of *Peucedanum* occurring within the Cape Floristic Region of South Africa permitted the identity of the type of *Bubon gummiferum* L. (≡ *Peucedanum gummiferum* (L.) Wijnands), to be re-assessed. The type is a plate in Commelin, Horti Medici Amstelodamensis Rariorum Plantarum (1701) that closely matches, in our opinion, the species currently known as *P. hypoleucum* (Meisn.) Drude. *Peucedanum gummiferum* is therefore the correct name for this taxon.

KEYWORDS: *Apiaceae*, *Bubon*, nomenclature, *Peucedanum gummiferum*, *Peucedanum hypoleucum*

Extensive field studies within the Cape Floristic Region of South Africa were conducted as part of a formal taxonomic revision of the Cape endemic species of *Peucedanum* L. This has resulted in the clarification of species concepts and, we believe, the correct identity of the illustration that was selected by Wijnands (1983: 200) as lectotype of *Bubon gummiferum* L. (≡ *Peucedanum gummiferum* (L.) Wijnands). Linnaeus (1753) described *Bubon gummiferum* from Royen's (1740) *Prodromus*: 100 no. 4 and Commelin's (1701), *Horti Medici Amstelodamensis Rariorum Plantarum*: plate 58 (Fig. 1A). The Commelin plate was then misapplied to represent *Glia gummifera* (L.) Sond. when Sonder (1862) described the monotypic genus *Glia* (Burtt, 1989). Wijnands (1983, 1985) however claimed that the Commelin plate is a good match with specimens of *Peucedanum tenuifolium* Thunb. but specimens that he cited show that he had a broad species concept of *P. tenuifolium* which included the two species currently known as *P. sonderi* (M. Hiroe) B.L. Burtt and *P. hypoleucum* (Meisn.) Drude. In designating the Commelin plate "Ferula Africana galbanifera frutescens Mirrhidis foliis" as lectotype of *P. gummiferum*, he reduced *P. tenuifolium* into synonymy under it. Burtt (1991) correctly argued that it was unacceptable to equate the Commelin plate 58 (and as a result the name *P. gummiferum*) with that of *P. tenuifolium* as the expanded ultimate segments of the leaves shown in the plate do not match those of the Thunberg type of *P. tenuifolium*. Burtt (1991) therefore chose to leave *P. gummiferum* as a species dubia until a more suitable match could be made. Goldblatt & Manning (2000) followed a broad species concept of *P. tenuifolium* by including *P. hypoleucum* and *P. sonderi* as taxonomic synonyms. In recent checklists for southern Africa (Germishuizen & al., 2006) and sub-Saharan Africa (Klopper & al., 2006), *P. gummiferum* is accepted as a species distinct from *P. tenuifolium* (but with *P. hypoleucum* and *P. sonderi* considered to be synonyms of the latter).

However, after a thorough study of this complex, it became clear that it is best treated as comprising three distinct species. *Peucedanum hypoleucum* and *P. tenuifolium* are large shrubs (2–5 m tall) bearing a single multiradiate umbel (or sometimes up to three umbels) on a very short peduncle. Both these species are easily distinguishable from the high altitude *P. sonderi* which is a decumbent small shrub seldom exceeding 1 m in total height, with fewer-rayed umbels borne on a long peduncle (often twice the height of the plant). Commelin described the illustrated plant as seven foot high. Both *P. hypoleucum* and *P. tenuifolium* are sizeable shrubs, but the woody cane-like stem shown in the plate is typical of the tree-like *P. hypoleucum*. The leaf segments of *P. tenuifolium* are notably narrow and always uniformly coloured on both surfaces (Fig. 1B–D). The plant shown in the plate has broad ultimate leaf segments with the leaves distinctly glaucous below. Both these leaf characters are diagnostic for *P. hypoleucum* (Fig. 1E–F). It is interesting to note that Commelin used "Mirrhidis foliis" in the phrase name for the species he was illustrating, hinting (quite correctly) at the close vegetative resemblance with *Myrrhis odorata* (L.) Scop. Amongst the Cape species of *Peucedanum*, only *P. hypoleucum* can be likened to *Myrrhis*, which is indeed superficially very similar in terms of the width and structure of the leaflets. Furthermore, the leaves of *P. hypoleucum* (unlike those of *P. tenuifolium* and *P. sonderi*) exude a sticky resin after they are picked and invariably adhere to the drying papers when pressed. The choice of "*gummiferum*" as epithet therefore makes sense only if used for the species currently known as *P. hypoleucum*.

The type of *Peucedanum gummiferum* (the Commelin plate) was based on material grown in the Hortus Medicus in Amsterdam. It is known that the Cape Governor of

the time (Simon van der Stel) supplied a steady flow of plant material (mainly collected by the master-gardeners Oldenland and Hartog) to the Commelins in Amsterdam. The known localities of *P. hypoleucum* were within reach of plant collectors of the time, as there already existed in 1688 a well-marked track from the Hottentots Holland Mountains past Swellendam (Gunn & Codd, 1981), where the species is still common.

As *Peucedanum gummiferum* clearly matches *P. hypoleucum* and not *P. tenuifolium*, we hereby propose

Fig. 1. Comparison of the lectotype of *Peucedanum gummiferum* in Commelin, *Horti Medici Amstelodamensis Rariorum Plantarum*, 1701 (A) with leaflets of *P. tenuifolium* (B–D) and *P. hypoleucum* (E–F). The ultimate leaf segments of *P. tenuifolium* are narrow and always uniformly coloured on both surfaces (B–D) while in *P. hypoleucum* they are broad and distinctly glaucous below (E–F). *Peucedanum gummiferum* clearly matches *P. hypoleucum* and not *P. tenuifolium.* B–C = *Acocks 19978* (PRE); D = *Gentry & Barclay 19106* (PRE); E–F = *Magee, Van Wyk & Liu 62* (JRAU). Scale = 10 mm.

that the name *P. hypoleucum* (and not *P. tenuifolium*) becomes synonymous with that of *P. gummiferum*, a name which has priority. It can hardly be argued that the name *P. gummiferum* has been widely and persistently used for a species not including its type. The Cape species of *Apiaceae* are generally poorly known and have been treated or listed in only a small number of publications. The name was correctly used by authors and collectors between 1753 and 1862. Only Sonder (1862) did not follow the original (correct) application of the name and wrongly associated it with *Glia prolifera* (Burm. f.) B.L. Burtt. This error was partially corrected by Wijnands (1983, 1985) and Burtt (1991). Most authors used the name for a species of *Peucedanum* even though the correct identity of the type has remained uncertain. The original Linnaean application of the name is now clarified and it seems unlikely that there can be any further confusion.

The complete synonymy for the species is given below.

Peucedanum gummiferum (L.) Wijnands, Bot. Commelins: 200, pl. 23. 1983 ≡ *Bubon gummiferum* L., Sp. Pl.: 254. 1753 ≡ *Selinum gummiferum* (L.) Spreng. in Roem. & Schult., Syst. Veg. 6: 564. 1820 ≡ *Glia gummifera* (L.) Sond. in Harv. & Sond., Fl. Cap. 2: 548. 1862, quoad basion. tantum ≡ *Annesorhiza gummifera* (L.) Kuntze, Revis. Gen. Pl. 3: 111. 1898 – Lectotype (see Wijnands, 1983: 199–200): Commelin, Hort. Med. Amst. 2: 115, t. 58. 1701.

= *Pimpinella capensis* Thunb., Prodr. Fl. Cap.: 51. 1794. ≡ *Sison capensis* (Thunb.) Spreng., Sp. Umbell.: 111. 1818, non *Peucedanum capense* (Thunb.) Sond. (1862) – Lectotype (designated here): SOUTH AFRICA, Cape, *Thunberg s.n.* sub THUNB-UPS 7270 (UPS!; W, isolecto.).

= *Oreoselinum uliginosum* Eckl. & Zeyh. var. *glaucum* Eckl. & Zeyh., Enum. Pl. Afr. Austr.: 350. 1837 ≡ *Oreoselinum glaucum* (Eckl. & Zeyh.) K. Presl, Bot. Bemerk.: 75. 1845 – Lectotype (designated here): SOUTH AFRICA, Cape, Duyvels and Voormannsbosch near Swellendam, *Ecklon & Zeyher s.n.* (S!; SAM! isolecto.).

= *Bubon hypoleucum* Meisn. in J.D. Hook., Lond. J. Bot. 2: 536. 1843 ≡ *Peucedanum tenuifolium* var. *hypoleucum* (Meisn.) Kuntze, Revis. Gen. Pl. 3(2): 115. 1898 ≡ *Peucedanum hypoleucum* (Meisn.) Drude in Engl. & Prantl, Nat. Pflanzenfam. 3(8): 237. 1898 – Type: SOUTH AFRICA, Cape, near Gnadenthal, *Krauss 1183*.

The type specimen has not been located. *Krauss 1182*, *1184* and *1185* are all in NY, but not *Krauss 1183*. The description and locality, however, leave no doubt about the application of this name.

Note: Some lists, e.g., *NCU-3* (Greuter & al., 1993), *Order Out of Chaos* (Jarvis, 2007), and *Index Kewensis* (and consequently *The International Plant Names Index*) treat *Bubon* as masculine, but it is not clear that this is in accordance with Art. 62.1 of the *Code* (McNeill & al., 2006). That Article requires that "botanical tradition" be followed. With the notable exception of Sprengel (e.g., 1825), virtually all authors of new names have followed Linnaeus (1753) in treating *Bubon* as neuter, and this has been widely accepted, including in recent literature (Downie & al., 2000) as well as the *Index Nominum Genericorum* database (http://ravenel.si.edu/botany/ing/ingForm.cfm), so if there is any botanical tradition it is more likely to be neuter than masculine. It could be argued that the adoption by some of the classical masculine gender of βουβών (boubon), means that there is now no established botanical tradition. If that is the case, Art. 62.1 specifies that the gender assigned by the original author should be adopted. We have therefore decided to treat *Bubon* as neuter.

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