



## Neotypification of *Delphinium dasycaulon* (Ranunculaceae)

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The afro-montane species *Delphinium dasycaulon* Fresenius (1837: 272) is one of the three species of *Delphinium* Linnaeus (1753: 530) (Ranunculaceae) distributed in tropical Africa. This perennial plant has a disjunct distribution, with isolated populations in East Africa (from Djibouti and Eritrea in the North to Malawi and Zambia in the South) and West Africa (Cameroon and Nigeria) (Milne-Redhead & Turrill 1952). Interestingly, no specimen has ever been collected in the central part of the East African Rift region (Kenya and Uganda), where the two other afro-montane species of the genus occur: *D. macrocentrum* Oliver (1886: 397) which is endemic on Mt. Elgon and in the Kenyan Highlands, and *D. leroyi* Franchet ex Huth (1895: 474), which has a broader distribution in tropical East Africa ranging from Ethiopia in the North to Tanzania in the South (Milne-Redhead & Turrill 1952).

*Delphinium dasycaulon* was described in 1837 by the German botanist Georg Fresenius based on material collected in August or September (year not given) in the Semien Mountains in Northern Ethiopia. In the protologue, no direct reference was made to the collector, the collection number, precise locality, or was the herbarium mentioned where specimens observed by Fresenius were deposited.

We have no evidence that the specimens used by Fresenius for his description were seen by any of the botanists responsible for subsequent taxonomic treatments that included *D. dasycaulon*, notably Richard (1847: 8), Oliver (1868: 11), Huth (1895: 435), Engler (1910: 269), Staner (1939: 308), Milne-Redhead & Turrill (1952: 22), Exell & Milne-Redhead (1960: 101), Munz (1967: 35), and Teketay (2000: 29).

However, Fresenius explicitly stated that he relied on Eduard Rüppell's collection when writing his "Beiträge zur Flora von Abyssinien" (1837: 105), and this seems also very likely in the case of *Delphinium dasycaulon*. There is no direct evidence that the material of *D. dasycaulon* collected in Ethiopia by Rüppell was deposited in FR, but this is very likely as Rüppell gave his collections to the Senckenbergische Naturforschende Gesellschaft and as Fresenius, being the curator in charge of the Herbarium Senckenbergianum at that time, was surely the person who received and handled this material. The Rüppell herbarium is still extant at FR (Stafleu & Cowan 1983; JSTOR Global Plants 2015), although several specimens of taxa described by Fresenius are missing (Lobin 1999). Moreover, the private herbarium of Fresenius is also deposited at FR, again with some material missing (Stafleu & Cowan 1976; Dorr & Nicolson 2009). For example, of the seven Ranunculaceae taxa described by Fresenius (1837) based on Rüppell collections, only the original specimens corresponding to the two species of *Clematis* Linnaeus (1753: 543) are extant. It therefore seems reasonable to assume that the original material of *D. dasycaulon* was similarly lost, and indeed no reference was made to it in a local herbarium catalogue initiated by Fresenius' successor in 1867 (Lobin 1999; Stefan Dressler pers. obs.). Given this situation, and in accordance with Art. 9.7 of the ICN (McNeill *et al.* 2012), we therefore propose a neotype for the name *D. dasycaulon*.

Among a total of 180 specimens examined (see below), we found no specimens from Rüppell and the single specimen from the Semien Mountains (also spelled Simien, Simen, or Semen) in Ethiopia (*Hugh Scott* 222, collected in 1952, BR barcode BR0000013217648!) has no capsules and presents only few crushed leaves.

Besides Rüppell, Georg Wilhelm Schimper was the only other major early 19<sup>th</sup> century collector to work in Ethiopia (Friis 2009). The earliest of his collections of *D. dasycaulon* was made on 28<sup>th</sup> October 1837 (*Schimper Iter Abyssinicum* 397). It was identified as *D. dasycaulon* Fresenius on the original printed label, and bears a reference to Fresenius' publication in *Museum Senckenbergianum*, which was released before 14 Dec. 1837 (Lobin 1999; Dorr & Nicolson 2009). This specimen and its duplicates were distributed in 1840 under the exsiccatae series "Schimper iter Abyssinicum. Sectio prima: plantae Adoënses" to several herbaria by the Unio Itineraria (a German Scientific