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Review

Ib Friis, Mats Thulin. Scientific plant names derived from the surname of Pehr Forsskål – their history, orthography, legitimacy, and current use

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In 1761, the King of Denmark sent an expedition to Egypt and the countries around the Red Sea, particularly Yemen, to report on the geography, natural history, languages and ethnology of the countries. The ultimate purpose was to provide scholarly evidence for the background of the Bible. The expedition consisted of the geographer, surveyor and astronomer Carsten Niebuhr, who also became an ethnologist on the expedition, the naturalist Pehr Forsskål, a highly competent student of Linnaeus, the philologist Frederik Christian von Haven, who should also collect ancient manuscripts, the medical doctor Christian Carl Kramer, the artist Georg Wilhelm Baurenfeind, and a servant. Von Haven and Forsskål died already in Yemen in 1763, but Niebuhr, the only member of the expedition who returned to Denmark, managed to bring Forsskål's collections and manuscripts to Copenhagen in 1767. After Niebuhr had managed to publish his own works from the expedition, he hired an anonymous helper with knowledge of natural history and posthumously published Forsskål's Flora Aegyptiaco-Arabica in 1775, 12 years after Forsskål had died, almost entirely based on Forsskål's manuscript as written in the field. It was not updated regarding to what had happened in science in the meantime. The manuscript contained information about ca. 660 new species of plants and consisted of a floristically arranged first part and a descriptive second part, with longer descriptions of the plants than was normal at the time of Linnaeus.

Later authors often misunderstood the text and provided more than 10% of Forsskål's new but already named species with new scientific plant names derived from Forsskål's surname (eponyms). There were these main reasons for later authors finding problems with Forsskål's published manuscript:

Forsskål's new species might have been discovered and described by others elsewhere between 1763 (when the manuscript was written) and 1775 (when it was published). Because of this, some Forsskål names became synonyms.

Scientific plant names derived from the surname of PEHR FORSSKÅL

- their history, orthography, legitimacy, and current use



- Some species described by others between 1763 and 1775 were given names identical with those proposed by Forsskål in his manuscript, but completely unrelated to Forsskål's species. Because of this, some Forsskål names became homonyms.
- Forsskål might in the field and when writing his manuscript – have misidentified new species from the Middle East with species described by Linnaeus from elsewhere. By that, these Forsskål names became misidentifications / misapplied names.
- Forsskål provided descriptions of new species in the second part of the book, but sometimes without a name for the plant there, but names (usually correct) were provided in the floristic first part of the book. The later botanists did not discover this connection, and therefore they renamed the new species with the apparently nameless description.

Cases in these four categories (illustrated by Friis and Thulin in their Figs. 2-8) were differently interpreted by later botanists from the 18th century and up to now. When later botanists assumed that they had discovered a fault in Flora Aegyptiaco-Arabica, they proposed a new name for Forsskål's species and frequently followed Linnaeus' suggestion to name a species after the person who had made the essential original observations on it, thus naming the plant after Forsskål, providing an eponym for him.

Seventy-three Forsskål eponyms have been proposed for plants, but the spelling of Forsskål's surname often caused difficulties for non-Scandinavian scholars. The Forsskål eponyms have been called "an amazing series of orthographic variations", with 34 different variants of epithets based on Forsskål's surname in original botanical publications and many more in secondary publications. Niebuhr, also in 1775, published Forsskål's zoological manuscripts, with the result that a slightly larger number of Forsskål eponyms have been published in zoological literature than in botany, mainly names for marine animals, but they are only briefly accounted for by Friis and Thulin.

Misspellings of Forsskål's eponyms accumulated in the nomenclatural indices in the 18th and 19th century, the botanical ones to some extent accumulated in the Index Kewensis (1893), from where many orthographic variants were transferred to the International Plant Names Index (IPNI; https://www.ipni.org/) that replaced the Index Kewensis and a number of other indices.

The International Code of Nomenclature for Algae, Fungi and Plants (ICN) requests that the spelling of Forsskål's eponyms in the original publications must be retained, apart from corrections proscribed in the ICN, particularly in its Art. 60-61, thereby preventing radical standardisation on the many eponyms based directly on Forsskål's surname as he himself wrote it (reproduced in Fig. 1 by Friis and Thulin). Being asked by the IPNI staff to help with this, Friis and Thulin discussed what to correct under the ICN and what not, reviewed the original eponyms in the more than 100 original publications, tried to identify the correct orthography, also discussing if the eponyms were valid and legitimate under ICN. The most common original orthographic variants are forms with one or two letters, s or ss, or a letter h before the final l in Forsskål's name, as well as complications in the way the special Swedish letter å was transliterated. Here Friis and Thulin have strictly followed Art. 60 in the ICN, transcribing an original å to ao. They encountered a problem when the typographers of the original publication did not have a letter å available but had to fit a home-made letter together from what was available, as illustrated in Friis and Thulin's Fig. 9-11. There is no rule about this in the ICN, so Friis and Thulin decided that these home-made letters had to be considered orthographic errors for the letter å, which then in agreement with Art. 60 then had to be transcribed to ao.

The analyses as made in Friis and Thulin's work show that of the eponyms based on Forsskål's surname,

seven are not validly published, 30 are illegitimate, and 36 are legitimate (of which one was rejected by the XVIII International Botanical Congress and one currently proposed for rejection). Of the legitimate eponyms, 19 provide epithets for currently accepted names of taxa.

This contribution is not only a tribute to a great botanist but also the demonstration of a detailed historical and nomenclatural study conducted by the two Authors focussed on the relationship between the History of Botany and Plant Taxonomy. Friis and Thulin confirm the importance of the correct application of names following an accurate analysis and taxonomic, nomenclatural knowledge supported by robust philological study of the scientific production of P. Forsskål.

Once again Webbia has the honour of commenting and disseminating a further initiative in which the importance of botanical Nomenclature and Taxonomy is emphasized as an essential basis of Plant Systematics.

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