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Revision and cladistic analysis of the Guineo-Congolian spider genus *Smeringopina* Kraus (Araneae, Pholcidae)

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Abstract

The genus *Smeringopina* Kraus, 1957 is revised, with redescriptions of the nine previously known species and descriptions of 35 new species. *Smeringopina* is largely restricted to the tropical forests of West and Central Africa. It includes both large species that build their domed sheet-webs in protected spaces near the ground, and small (probably derived) litter-dwelling species. With leg spans up to 18 cm the former group includes some of the largest pholcids known. A first cladistic analysis of *Smeringopina*, based on 68 morphological (including SEM) characters, suggests several well-defined species groups but also identifies some problematic species whose phylogenetic position needs further study. The 'Dahomey-Gap' separates two small western clades (the *guineensis* species group and two species of the *ankasa* group) from all other species. The following new species are described: *S. ankasa; S. attuleh; S. bamenda; S. bayaka; S. belinga; S. bioko; S. bomfobiri; S. bwiti; S. chaillu; S. djidji; S. ebolowa; S. essotah; S. etome; S. fang; S. fon; S. ibadan; S. iboga; S. kala; S. kikongo; S. kinguele; S. kribi; S. lekoni; S. luki; S. mayebout; S. mbouda; S. mohoba; S. moudouma; S. ndjole; S. ngungu; S. nyasoso; S. ogooue; S. sahoue; S. simintang; S. tchimbele; S. tebe*.

Key words: Pholcidae, Smeringopinae, *Smeringopina*, Africa, cladistic analysis, taxonomy

Introduction

For several relatively well-studied groups of organisms such as plants, amphibians, and reptiles, African forests seem to be less diverse than those of South America (White 2001, Livingstone 2001, Lawson & Klemens 2001, Antonelli & Sanmartín 2011). Several possible explanations have been proposed for this difference, including Pleistocene arid phases that may have been less severe in South America (and Southeast Asia) than in Africa; Africa's smaller area that is wet enough to support rain forest; and even the much longer history of human impact on African forests as compared to South America (reviewed in White 2001, Livingstone 2001, Lawson & Klemens 2001). However, it has also been argued that at least part of this difference may be artificial, resulting from our rudimentary understanding of the alpha-taxonomy of many African taxa (Lawson & Klemens 2001).

Pholcid spiders are highly diverse in tropical forests around the world, but in comparison to the Neotropics, the diversity of pholcids in Africa has long seemed to be small. In 2002, when I started to work on African Pholcidae, just 11% of the world's known species at that time were African (88 of 774). Whether this reflected a more general pattern or just taxonomic neglect was unclear. However, a variety of observations suggested that the latter was a likely explanation: (1) only four new African pholcid species had been described in the four decades from 1960 to 2002; (2) available collections, even though patchy and never specifically designed to explore pholcid diversity, seemed to contain many dozens of undescribed species; (3) more focused collecting efforts (e.g. in the Eastern Arc, on Madagascar, in Cameroon, in South Africa) were revealing not only high species numbers but also extraordinary levels of species turnover rates.

The genus *Smeringopina* Kraus, 1957 clearly exemplifies this situation. With the exception of the transfer of Millot's (1941) three West African species to *Smeringopina* by Huber (1995) and a single SEM photo in Huber & Fleckenstein (2008), nothing has been published about the genus since 1957. When Kraus (1957) erected the genus, only eight adult specimens from five species were available to him, and the type localities of three of the five species were only known at country level (Cameroon, Benin).

In the meantime, the situation has changed dramatically. Recent focused collecting trips have provided over 1000 adult specimens of *Smeringopina* from numerous localities. This fresh material finally allows redescriptions of poorly known 'old' species, reasonable estimates of the actual species diversity, and phylogenetic analyses. A more realistic picture is also emerging about African pholcid diversity in general. With the present publication, all major genera represented in Africa have been revised (Huber 2003a, b, c, 2007, 2009, 2011, 2012, Huber & Warui 2012), and the total number of species has more than tripled to 282. This is still just 20% of the currently known worldwide species-diversity, but this percentage is probably closer to reality than the 11% of a decade ago.

At the level of genera, African pholcids can now be considered relatively well known. However, the current revision also demonstrates clearly that much taxonomic work remains to be done in order to address basic questions such as the one outlined above. When four short collecting trips increase the number of species from nine to 44 (as in the present case), then it is safe to assume that the undiscovered diversity is still tremendous. This is especially true considering the fact that some of the areas with high species turnover rates (e.g. the northern margins of the Congo Basin and the western escarpment of Angola; see Linder *et al.* 2012) are basically unexplored with respect to pholcid spiders.