



Further notes on the Sri Lankan uropeltid snakes *Rhinophis saffragamus* (Kelaart, 1853) and *Uropeltis ruhunae* Deraniyagala, 1954

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A recent paper dealing with the systematics of Uropeltidae (Pyron *et al.* 2016) made several taxonomic changes affecting Sri Lankan species in the genera *Platyplectrurus* Günther, 1868; *Pseudotyphlops* Schlegel, 1839; *Rhinophis* Hemprich, 1820; and *Uropeltis* Cuvier, 1829. Space precluded a full discussion of those changes, for which there was a wealth of additional photographs, data, and references. Here, we expand on those alterations and provide further justification with reference to the ICZN (1999) and additional questions for future research.

Uropeltis ruhunae Deraniyagala, 1954

As detailed by Pyron *et al.* (2016), Deraniyagala (1954) described *Platyplectrurus ruhunae* Deraniyagala, 1954 and *Uropeltis ruhunae* Deraniyagala, 1954 (both with type locality “Galle”) from specimens found in a jar containing snakes from both the Galle district of Sri Lanka and the Madurai district of India (De Silva 1980). Thus, origin of the holotypes from Sri Lanka is in serious doubt. While recent works (e.g., McDiarmid *et al.* 1999; Wallach *et al.* 2014) considered *Platyplectrurus ruhunae* Deraniyagala, 1954 to be a synonym of *Platyplectrurus madurensis* Beddome, 1877; *Uropeltis ruhunae* Deraniyagala, 1954 was still considered valid (see Wallach *et al.* 2014). Pyron *et al.* (2016:464) compared the scalation of the holotype (NMSL R.S. 52) of *Uropeltis ruhunae* Deraniyagala, 1954 to known populations of *Uropeltis woodmasoni* (Theobald, 1876), concluding that it was a member of that species. Here, we present photographs of NMSL R.S. 52 (Fig. 1), as well as photographs of two syntypes of *Silybura nigra* Beddome, 1878 (MNHN-RA-1895.85a–b; Figs. 2a–d), a junior synonym of *Uropeltis woodmasoni* (Theobald, 1876). In addition to the lepidosis data reported by Pyron *et al.* (2016), visual comparisons of the dorsal and ventral color-pattern further cement this association. The holotype (ZSI 8760) of *Uropeltis woodmasoni* (Theobald, 1876) is in relatively poor condition, but photographs provided by I. Das are essentially identical to the *nigra* and *ruhunae* types in overall shape and remaining visible color-pattern. Specifically, hypertrophied anterior trunk musculature and “swollen” aspect of the first ~1/4 of body; irregular yellow stripe on the first several dorsal scale rows, beginning on posteriormost labials and extending ~1/4 the length of the body, dark brown dorsum with broken rings of yellow ocellations or speckles on the posteriormost 3/4 of body, spaced 3–4 scale rows apart; and irregular yellow and brown zigzags or blotches on the venter, with yellow occasionally and irregularly extending on to the first few dorsal scale rows.

Rhinophis saffragamus (Kelaart, 1853)

Cuvier (1829:76) indicated a new species *Uropeltis philippinus* Cuvier, 1829; based on a specimen (MNHN-RA-0.5621; Fig. 3) in the Paris museum, but without an illustration or description that could be considered valid (Gans 1966). Müller (1832) later provided a valid description and illustration for the species *Uropeltis philippinus* Müller, 1832. Schlegel (1839) then erected the genus *Pseudotyphlops* Schlegel, 1839 for species from *Uropeltis* Cuvier, 1829 and *Rhinophis* Hemprich, 1820; which he stated were excessively divided. He included *Anguis oxyrhynchus* Schneider, 1801; *Uropeltis philippinus* Cuvier, 1829; and *Uropeltis ceylanica* Cuvier, 1829. Schlegel (1839) did not designate a type species for *Pseudotyphlops* Schlegel, 1839; but Smith (1943) considered the type to be *Uropeltis philippinus* Cuvier, 1829 by “elimination,” as *Anguis oxyrhynchus* Schneider, 1801 is the type species of *Rhinophis* Hemprich, 1820 (fixed by Wagler 1830) and *Uropeltis ceylanica* Cuvier, 1829 is the type species of *Uropeltis* Cuvier, 1829 (fixed by Fitzinger 1843). While “fixation by elimination” is currently proscribed by the Code (Article 69.4), and a species can be the type of multiple genera, Smith’s action is nonetheless valid under Article 69.1, as the stated reason for fixation is not important.

There is some confusion, though, as Schlegel (1839:44) clearly indicated that his “*Pseudo-Typhlops philippinus*” is *Typhlops philippinus* Cuvier, 1829 (currently included in *Rhinophis* Hemprich, 1820), as he cited Cuvier (1829:74)

specifically. He then stated that he believed that *Uropeltis philippinus* Cuvier, 1829 from Cuvier (1829:76) was the same taxon, because it was not found in the Paris museum. The species *Rhinophis philippinus* (Cuvier, 1829) is represented by the currently extant holotype MNHN-RA-64.94. However, in discussing his “*Pseudo-Typhlops philippinus*,” he is clearly describing MNHN-RA-0.5621, for which he reported 145 ventrals and 6 subcaudals. The coloration, he noted (translated), is “above coffee-brown, with light spots and cross-ribbons on the sides of the back; yellowish and brown-spotted below.” This agrees with our observations, with a measurement of 205mm SVL and 8mm TL (Fig. 3; see Wallach *et al.* 2014). While the coloration of the specimen is faded in preservative, the described pattern is still faintly evident. Thus, he may have mistaken MNHN-RA-0.5621 for MNHN-RA-64.94, believing he was examining the holotype of *Typhlops philippinus* Cuvier, 1829, rather than that holotype of *Uropeltis philippinus* Cuvier, 1829, which he thought to be lost, based on his comments. However, under Article 70.3 (regarding misidentified type species), we continue to consider as valid Smith’s (1943) designation of *Uropeltis philippinus* Müller, 1832 as the type species of *Pseudotyphlops* Schlegel, 1839.

Subsequently, Kelaart (1853) described three new species from what are now the Sabaragamuwa and Southern provinces of Sri Lanka. In terms of distinguishing characteristics, *Uropeltis saffragamus* Kelaart, 1853 from Sri Pada (holotype lost, *vide* Taylor 1953) was said to be ~230 mm in total length, have a blackish brown dorsum with bluish bronze reflections, white beneath, and with a pale white spot on either side of the neck. Similarly, *Uropeltis grandis* Kelaart, 1853 from “Kerinday” near Matara (holotype BMNH 1946.1.8.1) is ~510 mm in length, dark brown dorsally with a bluish metallic luster, a pale-yellow venter, and darker spots on the anterior portion of all scales (Fig. 4). Contrastingly, *Uropeltis pardalis* Kelaart, 1853 from Matara (holotype BMNH 1946.1.16.55) is ~160 mm in length, with a black dorsum with bluish bronze reflections and irregular white spots, and a yellowish white venter with irregular black spots both large and small (Fig. 5).

Peters (1861) placed all three species in the synonymy of *Uropeltis philippinus* Cuvier, 1829; tentatively suggesting that the variation was due to sex and age. Tennent (1861) agreed with this change, suggesting that at a minimum, *Uropeltis grandis* Kelaart, 1853 and *Uropeltis philippinus* Cuvier, 1829 were identical. The species was thereafter referred to as *Uropeltis grandis* Kelaart, 1853 by subsequent authors such as Günther (1864), Beddome (1886), Boulenger (1893), and Wall (1921), before Smith (1943) resurrected both the genus “*Pseudotyphlops*” and the species “*philippinus*” (see McDiarmid *et al.* 1999).

Taylor (1953) then reported on a collection of four specimens from the Tonacombe Estates in the Namunukula range of the Uva province, near Badulla. Of these, Taylor suggested that a female (KU 31249; 345 mm total length) matched the description of *Uropeltis philippinus* Cuvier, 1829 in having a deep, iridescent lavender dorsally with a darker area on each dorsal scale, lighter ventral scales with darker areas, a paired series of alternating or fused ventral spots, a yellow spot curving around the base of the tail shield, and lighter labials. A small male (KU 31248; 148mm) was said to match *Uropeltis pardalis* Kelaart, 1853 in being black dorsally with numerous scattered yellow dots, a greenish-white venter with numerous black spots, an immaculate chin and throat, and whitish labials. Contrastingly, the larger male specimens KU 31250 (318 mm) and KU 31251 (360 mm) were said to match *Uropeltis grandis* Kelaart, 1853 in being brownish dorsally with dark markings on all scales and an indistinctly lighter venter.

An additional specimen (BMNH 1968.871) from the same collection described by Taylor (1953), a female of ~300 mm total length, also resembles the “*grandis*”-type color pattern (Van Wallach, *pers. comm.*) in being uniformly brown dorsally with darker tips of each scale. Similarly, adult specimens were photographed by Pyron *et al.* (2016:483, Fig. 7G) from Telijjawila (Southern Prov., near Matara) and amateur observers (see <https://www.inaturalist.org/observations/122283>) from Thalgapala (Southern Prov., near Galle) both of which resemble the “*saffragamus*”-or “*grandis*”-type, with a faint remnant of pattern both dorsally and ventrally. Taylor (1953) suggested that the “*grandis*”-and “*pardalis*”-type represent two distinct “forms,” either species or subspecies. However, all forms have been reported in the southern lowlands, the Rakwana massif, and the eastern part of the Central massif. Furthermore, we observe here at least a qualitative relationship between patterning and size, with the smallest specimens having the “*pardalis*”-type pattern, and the largest having the “*grandis*”-type.

Indeed, the holotype of *Uropeltis philippinus* Cuvier, 1829 and the description of *Uropeltis saffragamus* Kelaart, 1853 appear to be intermediate between the “*grandis*” and “*pardalis*” types. Concomitantly, Duméril *et al.* (1854:161) remark in their description of MNHN-RA-0.5621 that (translated): “The spots on the upper parts seem to be the remnants of a yellowish-white half-ring that would have been offered by this little serpent at a young age.” Thus, we concur with Peters (1861) and Günther (1864) that the forms of Kelaart (1853) are synonyms of *Uropeltis philippinus* Müller, 1832, and that the color-pattern variation represents ontogenetic change, which to our knowledge has not been reported among uropeltids.

Nuclear, mitochondrial, and allozyme data indicate that *Uropeltis philippinus* Müller, 1832 is nested within Sri Lankan *Rhinophis* Hemprich, 1820 (Cadle *et al.* 1990; Pyron *et al.* 2013). Thus, *Typhlops philippinus* Cuvier, 1829 takes precedence over *Uropeltis philippinus* Müller, 1832 when the two are considered congeneric (Article 57.3.1). As Kelaart’s (1853) names are the most senior available synonyms, Pyron *et al.* (2016) selected the first, *Uropeltis saffragamus* Kelaart, 1853 as the replacement under Article 60.1. Because the holotype of *Uropeltis saffragamus* Kelaart, 1853 is lost (*vide* Taylor, 1953). Pyron *et al.* (2016) were thus able to designate MNHN-RA-0.5621, the holotype of *Uropeltis philippinus* Cuvier, 1829, as the neotype of *Uropeltis saffragamus* Kelaart, 1854, rendering the two names objective synonyms.



FIGURE 1. Dorsal (a) and ventral (b) views of the holotype (NMSL R. S. 52) of *Uropeltis ruhunae* Deraniyagala, 1954. Major ticks are 1 cm.

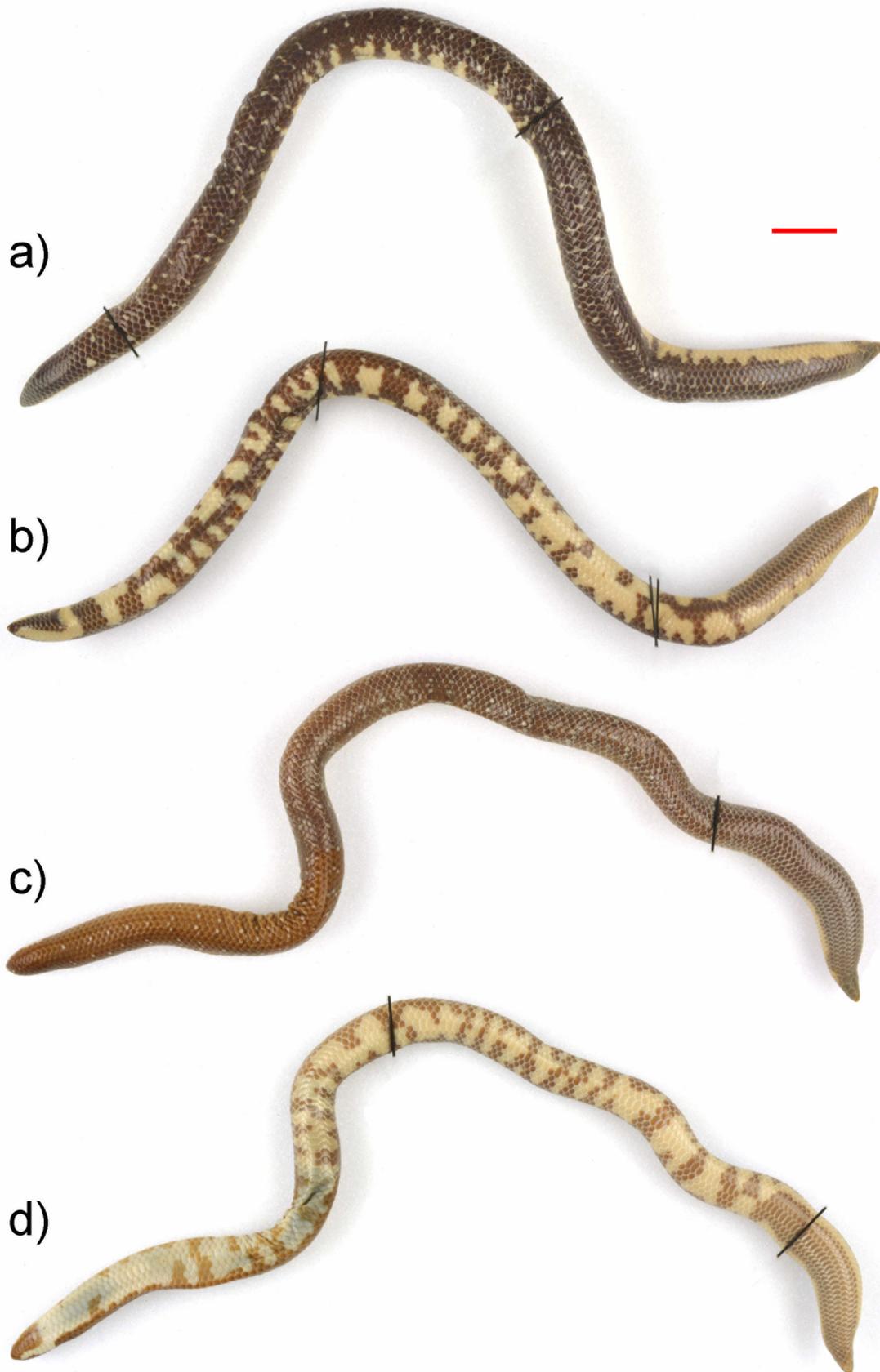


FIGURE 2. Syntypes (MNHN-RA-1895.95a–b, the latter re-catalogued as MNHN-RA-2012.421) of *Silybura nigra* Beddome, 1878, a junior synonym of *Uropeltis woodmasoni* (Theobald, 1876). From top to bottom: a) & b) dorsal and ventral views of MNHN-RA-1895.95, c) & d) dorsal and ventral views of MNHN-RA-2012.421. Red scale bar is 1 cm.

a)



b)



FIGURE 3. Dorsal (a) and ventral (b) views of the holotype (MNHN-RA-0.5621) of *Uropeltis philippinus* Cuvier, 1829 (*nomen nudum*) and *Uropeltis philippinus* Müller, 1832, and neotype of *Uropeltis saffragamus* Kelaart, 1853. This species is now classified as *Rhinophis saffragamus* (Kelaart, 1853). Red scale bar is 1 cm.



FIGURE 4. Dorsal (a) and ventral (b) views of the holotype (BMNH 1946.1.8.1 = 1854.6.18.1) of *Uropeltis grandis* Kelaart, 1853. Major ticks are 1 cm.



FIGURE 5. Dorsal (a) and ventral (b) views of the holotype (BMNH 1946.1.16.55 = 1854.6.18.2) of *Uropeltis pardalis* Kelaart, 1853. Major ticks are 1 cm.

Because Pyron et al. (2016) included no further statement correcting the type locality after the neotype designation, the type locality of *Rhinophis saffragamus* (Kelaart, 1853) is currently “de Philippinischen Inseln” (in error) as reported by Schlegel (1839) for MNHN-RA-0.5621, under Article 76.3. Neither Cuvier (1829) or Müller (1832) mentioned an explicit locality, but the name “*philippinus*” from Cuvier (1829) clearly indicates the Philippines, as does the Paris catalogue and the account thereof by Duméril et al. (1854). We refrain from correcting this locality here (under Recommendation 76A.2), given the continued uncertainty in the origin of the specimen, and the potential for multiple geographic species in the group.

The specimens analyzed by Cadle et al. (1990) and Pyron et al. (2013) originated from the Badulla district, Uva province, near the collection reported by Taylor (1953) containing both “*grandis*”—and “*pardalis*”—type individuals. No molecular sequence data are currently available from Southern or Sabaragamuwa populations. Morphometric analysis or formalin sequencing of MNHN-RA-0.5621 may allow more precise population-level assignment in the future. We leave a comprehensive molecular phylogeographic assessment and analysis of comparative variation in the series of known material to future authors. Regardless, Kelaart’s (1853) names remain the available and valid senior synonyms for any such future divisions.

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