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## EIGHT NEW SPECIES OF *PSEUDOPHILAUTUS* (AMPHIBIA: ANURA: RHACOPHORIDAE) FROM SRIPADA WORLD HERITAGE SITE (PEAK WILDERNESS), A LOCAL AMPHIBIAN HOTSPOT IN SRI LANKA

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**Abstract:** Eight new species of *Pseudophilautus* (*Pseudophilautus bambarameni*, *P. dayawansai*, *P. jagathgunawardanai*, *P. karunaratnai*, *P. newtonjayawardanei*, *P. puranappu*, *P. samarakoon*, and *P. sirilwijesundarai*) were discovered as a result of a survey carried out to study the herpetofaunal diversity with the changes in elevation in the Sripada World Heritage Site (Peak Wilderness), Central Hills of Sri Lanka. Detailed descriptions of new species along with colour photographs and line drawings for each species are provided herein. The new species possess unique morphological characters and are well distinguishable from one another that could be easily identified in the field. The conservation status of all species described here, have been considered Critically Endangered, except for *P. newtonjayawardanei*, as all the new species are recorded from single locations, and their habitats are under severe threat.

**Keywords:** Amphibian, new species, Peak Wilderness, *Pseudophilautus*, Sri Lanka, Sripada.

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## INTRODUCTION

The genus *Pseudophilautus* consists of 65 known species currently, all of which are endemic to Sri Lanka (Manamendra-Arachchi & Pethiyagoda 2005; Meegaskumbura & Manamendra-Arachchi 2005, 2011; Meegaskumbura et al. 2007, 2009). These direct developing rhacophorids (Bossuyt & Dubois 2001; Meegaskumbura et al. 2002; Bahir et al. 2005; Grosjean et al. 2008; Li et al. 2008, 2009; Biju & Bossuyt 2009; Yu et al. 2009) previously belonged to the genus *Philautus* which were widely distributed throughout tropical Asia (Bossuyt & Dubois 2001; Bossuyt et al. 2004; Frost et al. 2006; Yu et al. 2009). But later, considering molecular phylogenetics, the populations in Sri Lanka and India were found to be a separate radiation belonging to a separate genus known now as *Pseudophilautus* (Li et al. 2009; Yu et al. 2010; Meegaskumbura & Manamendra-Arachchi 2011). The most recent publication of this genus by Meegaskumbura & Manamendra-Arachchi (2011) in the country described two species which brought the total number to 65 species. But sadly, a considerable portion of the total number of identified species, have already vanished (17 species) (Manamendra-Arachchi & Pethiyagoda 2005; Meegaskumbura et al. 2007) where most have not even been sighted after their initial descriptions, showing an urgency to conserve the few remaining habitats.

Peak Wilderness as part of the Central Hills was recently designated as a World Heritage Site. Geographical area of the sanctuary is about 240sq.km, of which 211.75sq. km comprises natural or semi natural vegetation; the rest is no longer forest and includes tea estates and village settlements. The sanctuary lies in the center of the western ridge of the Central Highlands, north-east of Ratnapura and spanning the border of Central and Sabaragamuwa provinces. Its eastern boundary is contiguous with Horton Plains National Park. Peak Wilderness occupies the escarpment that rises steeply from the lowlands to the south and west. Much of the terrain is very rugged, with altitudes ranging from 600m near Ratnapura to 2,238m at Sripada Peak, Sri Lanka's fourth highest peak. It is an important watershed for three major river systems, the Kelani Ganga, the Kalu Ganga, and the Walawe Ganga (DWC 2007).

The last vertebrate species discovered from the studied area were *Cnemaspis samanalensis* (Wickramasinghe & Munindradasa 2007); *Lankascincus munindrasai* and *Lankascincus sripadensis* (Wickramasinghe et al. 2007), depicting its diversity.

Because of relatively high altitudes, difficult

trails, heavy rainfall, and steep geographic variations, proper field surveys in this region were lacking. Due to this reason inspite of the geographical and climatic variations the region was considered to have a lower faunal diversity. Hence, we carried out the survey with the intention of setting a basis for the actual diversity of herpetofauna of Peak Wilderness. The novel species described here from the Peak Wilderness, Central Hills, of Sri Lanka, as results of the preliminary two phases of an extensive field survey of the region which lasted for a period of two years (end of 2009-end of 2011), were based on morphological and morphometric characters. Sripada Peak is the highest point in this mountain range, and because of its religious importance, and aesthetic beauty, pilgrims and travellers have identified six major trails leading to the top. For the 1<sup>st</sup> phase, sampling was carried out in the trail leading from Palabaddala to the Sripada peak, and in the 2<sup>nd</sup> phase we chose Kuruvita to the Sripada peak. Our work here describes a collection of eight new species, with each species having a detailed description based on strong morphological characters, accompanied by colour photographs.

## MATERIALS AND METHODS

The approximate total distances of the 1<sup>st</sup> trail (from Palabaddala to the Sripada peak) was 10km, and the 2<sup>nd</sup> trail (from Kuruvita to the Sripada peak) was 10km. The field survey commenced at the end of 2009, and the Phases I and II were completed in December 2011. The sampling sites were selected considering the accessibility, representative habitats and spatial distribution in the National Park, through an initial reconnaissance survey. Fifteen field visits were made, each sampling session spanning eight continuous days. Sampling was done mostly nocturnally, and photographs of most species were done in the wild to avoid any confusion of change in colour after captivity and to avoid over collection of the same species. Specimens collected in the field were first fixed in 90% ethanol for two hours and stored in 70% ethanol.

Sex and maturity were determined by examining secondary sexual characters, or when absent, by examining the gonads through a small lateral incision in the specimen. The following morphological characteristics were common to all eight species hence they have not been mentioned under each species; nostrils oval, without flap of skin laterally, small, close to tip of snout; latero-dorsal folds, lateral line system, Fejervarya line, and macroglands were absent. We here

have explained the terminology used to explain the skin textures, specially the variations in granular skin on the ventral side of body: weakly granular (Image 1); granular (Image 2); coarsely granular (Image 3). The new type material discussed in this paper is also deposited in NMSL and the Department of Wildlife Conservation (DWC), National Wildlife Research and Training Center, Girithale, Sri Lanka.

The new species were compared with all types from Sri Lanka, deposited in the NMSL and specimens deposited in the Natural History Museum, London (Appendix 4). The specimens that formerly belonged to the Wildlife Heritage Trust (WHT) bearing WHT numbers are currently deposited in the NMSL, catalogued under the same numbers. For the description section, all known species of Sri Lanka were grouped into four categories based on their snout to vent length: very small (<15mm), small (16–30 mm), moderate (31–45 mm) and large (46–60 mm). Comparison for each species was carried out amongst all species belonging to the genus *Pseudophilautus*, by cancelling common characters and taking the best combination of characters that best distinguishes. In the comparison tables for each species, for convenience of distinguishing the species, an empty cell in the table denotes either the same character as that of the species considered, or for few extinct species when there was no data available. Hence in order to minimise this error we included all characteristics and all species in one table provided in Appendix 1 and 2, by selecting the best combination of characters where Appendix 1, provides morphological characters that differentiate *Pseudophilautus* species and Appendix 2 provides characters in the skin structure that differentiate *Pseudophilautus* species. We paid special attention to extinct species and their characters in the comparison (Wickramasinghe et al. 2013) of each species.

Forty four external measurements of specimens were taken with a Mitutoyo digital vernier calliper to the nearest 0.1mm. Nomenclature of external anatomy abbreviated in the text and external measurements taken are listed alphabetically herein: Breadth of disk of the third finger (DB), taken from anterior to posterior edge of circum-marginal groove; distance between back of eyes (DBE), measured between posterior edge of eyes; distance between front of eyes (DFE), measured between anterior edges of eyes; length of disk of the third finger (DL), taken from anterior edge of circum-marginal groove to posterior edge of disk; width of disk of the third finger (DW), measured across the inner and outer edges of circum-marginal groove; eye diameter (ED), horizontal diameter of eye; eye to nostril distance



Image 1. Weakly granular (Chest of *Pseudophilautus jagathgunawardanai* sp. nov. holotype, NMSL 2013.03.01 NH).



Image 2. Granular (Belly of *Pseudophilautus newtonjayawardanei* sp. nov. holotype NMSL 2013.05.01 NH)

(EN), measured between anterior most point of eye and middle of nostril; eye to snout distance (ES), measured between anterior most point of eye and tip of snout; thigh (femur) length (FEL), distance between vent and



**Image 3. Coarsely granular (Belly of *Pseudophilautus sirilwisesundarai* sp. nov. holotype, NMSL 2013.08.01 NH)**

knee with both thigh and shank flexed; first finger length (FL-1), measured between posterior margin of the most proximal subarticular tubercle or crease of articulation and the tip of first finger; second finger length (FL-2), measured between posterior margin of the most proximal subarticular tubercle or crease of articulation and the tip of second finger; third finger length (FL-3), measured between posterior margin of the most proximal subarticular tubercle or crease of articulation and the tip of third finger; fourth finger length (FL-4), measured between posterior margin of the most proximal subarticular tubercle or crease of articulation and the tip of fourth finger; foot length (FOL), distance between heel and tip of fourth toe with both foot and shank flexed; groin to knee distance (GK), measured between groin and the tip of knee; hand length (HNL), taken from posterior-most margin of inner palmar tubercle to tip of disk of third finger; head depth (HD), distance between the apex of eye and the bottom of jaw; head length (HL), distance between angle of jaws and snout tip; head width (HW), measured across angle of jaws; inner metatarsal tubercle length (IML), distance between the anterior and posterior edges of the inner metatarsal tubercle; internarial distance (IN), least distance between the inner margin of nares;

interorbital width (IO), least distance between the upper margins of orbits; knee-angle length (KT), distance from knee-angle to tibio-tarsal articulation; forearm length (LAL), taken from elbow to posterior-most margin of inner palmar tubercle; mandible-back of eye distance (MBE), distance between angle of jaws and posterior-most point of eye; mandible-front of eye distance (MFE), taken as distance between angle of jaws and anterior-most point of eye; mandible-nostir distance (MN), taken as distance between angle of jaws and middle of nostril; snout-nostir distance (SN), taken as distances between middle of nostril and tip of snout; snout-vent length (SVL), measured from tip of snout to vent; tympanum-back of eye distance (TAD), distance between anterior-most point of inner margin of inner rim of tympanum and posterior most point of eye; tarsal length (TAS), measured between the tibio-tarsal articulation and anterior edge of inner metatarsal tubercle; tibia length (TBL), distance between knee and heel with both shank and foot flexed; first toe length (TL-1), measured between posterior margin of the most proximal subarticular tubercle or crease of articulation and the tip of first toe; second toe length (TL-2), measured between posterior margin of the most proximal subarticular tubercle or crease of articulation and the tip of second toe; third toe length (TL-3), measured between posterior margin of the most proximal subarticular tubercle or crease of articulation and the tip of third toe; fourth toe length (TL-4), measured between posterior margin of the most proximal subarticular tubercle or crease of articulation and the tip of fourth toe; fifth toe length (TL-5), measured between posterior margin of the most proximal subarticular tubercle or crease of articulation and the tip of fifth toe; tympanum-nostir distance (TND), distance between anterior-most point of inner margin of inner rim of tympanum and middle point of nostril; tympanum-front of eye distance (TPD), taken as distance between anterior-most point of inner margin of inner rim of tympanum and anterior most point of eye; tympanum height (TYH), vertical diameter of the inner rim; tympanum width (TYW), horizontal diameter of the inner rim; upper arm length (UAW), distance between axilla and elbow; upper eyelid width (UEW), measured from bony edge of supraorbital to outer edge of upper eyelid; vent to knee-angle length (VKL), distance measured from knee-angle to vent.

Morphometric data of both males and females was considered for statistical analysis to understand the morphometric difference among the individuals of eight new species of *Pseudophilautus*. To account for the size difference among individuals, all the morphometric

characters were taken as %SVL. Principle Component Analysis (PCA) was performed on the correlation matrix between 25 variables using the software PAST (Hammer et al. 2001). Dendrogram showing the relationship between different species was plotted using mean values of morphometric data for each species using Euclidian distances and Ward's method for clustering in PAST.

Geographical coordinates were determined from GPS readings (Gamin eTrex Gista) with WGS84 (World Geodetic System) datum at the locality. Additional data for comparison were collected from Pethiyagoda & Manamendra-Arachchi (2005) and WGS 84 world grid system.

Collectors are indicated by their initials as follows: L.J. Mendis Wickramasinghe (L.J.M.W), Dulan Ranga Vidanapathirana (D.R.V), M.D. Gehan Rajeev (M.D.G.R), S. Chathuranga Ariyaratne (S.C.A.), A. W. Amila Chanaka (A.W.A.C.), L.L. Dharshana Priyantha (L.L.D.P.), Imesh Nuwan Bandara (I.N.B.).

## RESULTS

### *Pseudophilautus bambaradeniyai* sp. nov.

(Figs. 1–4; Images 4–7; Tables 1–3)

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**Holotype:** NMSL 2013.01.01 NH, 05.iv.2010, adult male SVL 17.3mm (Images 4, 5A,D), Sri Lanka (Peak Wilderness), Ratnapura District, Sabaragamuwa Province, Sri Lanka (06°48'31"N & 80°8'14"E; 1334m) (Fig. 1), coll. L.J.M.W, D.R.V., S.C.A. & A.W.A.C.

**Paratypes:** DWC 2013.01.001, adult male, SVL 19.9mm (Images 5B,E, 6); DWC 2013.01.002, adult male, SVL 20.2mm (Images 5C,F, 7); same data as holotype.

**Diagnosis:** *Pseudophilautus bambaradeniyai* sp. nov., can be distinguished from known congeners by the following combination of characters: small size frog (SVL 17.3–20.2 mm); head dorsally convex; canthus rostralis rounded; interorbital space convex; internarial space flat; vomerine teeth, lingual papilla, fringe on fingers, calcar and nuptial pad absent; snout, interorbital area, side of head, upper and lower flank smooth; anterior dorsum prominent tubercles and horny spinules, posterior dorsum horny spinules. Distinguishing characters provided in comparison tables 2 and 3.

**Description of holotype:** Small sized frog (SVL 17.3mm), elongate (SVL/HW 2.4); head large (HL/SVL 0.5), convex above; snout truncate in lateral aspect, mucronate in dorsal aspect, and sub-elliptical in ventral aspects (Fig. 2 A–C) (ES/DFE 0.8, SN/IN 0.7), larger

than horizontal diameter of eye (ES/ED 1.1); internasal space flat; canthus rostralis rounded, loreal region concave; interorbital space convex, larger than upper eyelid (IO/UEW 1.1), and equal to internasal distance (IO/IN 1.0); distance between front of eyes 2/3<sup>rd</sup> the distance between back of eyes (DBE/DFE 1.6); nostrils oval, without flap of skin laterally, closer to tip of snout than to eye (SN/EN 0.8); pupil horizontally elliptical; tympanum distinct, oval (TYH/TYW 0.8), smaller than the eye diameter (TYH/ED 0.4), tympanum-eye distance about 2/5<sup>th</sup> of tympanum width (TAD/TYW 0.4); pineal ocellus, vomerine teeth and lingual papilla absent, but a depression with a conical tubercle present on tongue; tongue small, lanceolate.

Arm short, thin (LAL/FEL 0.5, UAL/FEL 0.3); forearm shorter than hand length (LAL/HNL 0.9), longer than upper arm (LAL/UAL 1.4); fingers thin, (Fig. 3), relative length of fingers I < II < IV < III (FL-1/FL-3 0.5, FL-2/FL-3 0.7, FL-4/FL-3 0.9) (Table 1), and webbing formula I2½–2 2/3II2—3½III2½—2IV; tips of fingers rounded enlarged, discs present on all fingers, with distinct basal and circum marginal grooves; dermal fringes absent; rudimentary webbing present on all fingers; subarticular tubercles prominent, oval, single, all present, III2 and IV2 relatively smaller, supernumerary tubercles present on finger III and IV; inner palmar tubercle indistinct, single, oval, larger than outer palmar tubercle; outer palmar tubercle indistinct, single, oval, smaller than the subarticular tubercles; nuptial pads absent; prepollex absent; femur 2 2/5 times longer than fourth toe length (FEL/TL-4 2.4); foot length longer than thigh (FOL/FEL 1.3); toes thin, (Fig. 4), relative length of toes I < II < III < V < IV (TL-1/TL-4 0.3, TL-2/TL-4 0.4, TL-3/TL-4 0.7, TL-5/TL-4 0.7); webbing formula I2+—2II2+—3III2+—3IV3—2V; tips of toes rounded, enlarged, discs present on all toes with distinct basal and circum marginal grooves; thin dermal fringe present on all toes, thin fringe along postaxial edge of toe V, small tubercles present on outer edge of tarsal fold; subarticular tubercles prominent, oval, single, all present, IV2, IV3, and V2 relatively smaller; supernumerary tubercles present, indistinct, on toe III and IV; inner metatarsal tubercle oval prominent and large, its length 3/4 times in length of toe I (IML/TL-1 0.6); outer metatarsal tubercle indistinct.

Skin of snout dorsally, laterally and interorbital space smooth; upper eyelid tubercular; head laterally smooth; dorsum anterior with prominent tubercles and horny spinules, posterior with prominent horny spinules; upper and lower part of flank smooth; supratympanic fold distinct; upper arm, forearm, and hand smooth; thigh inner and outer smooth, dorsally with tubercles,

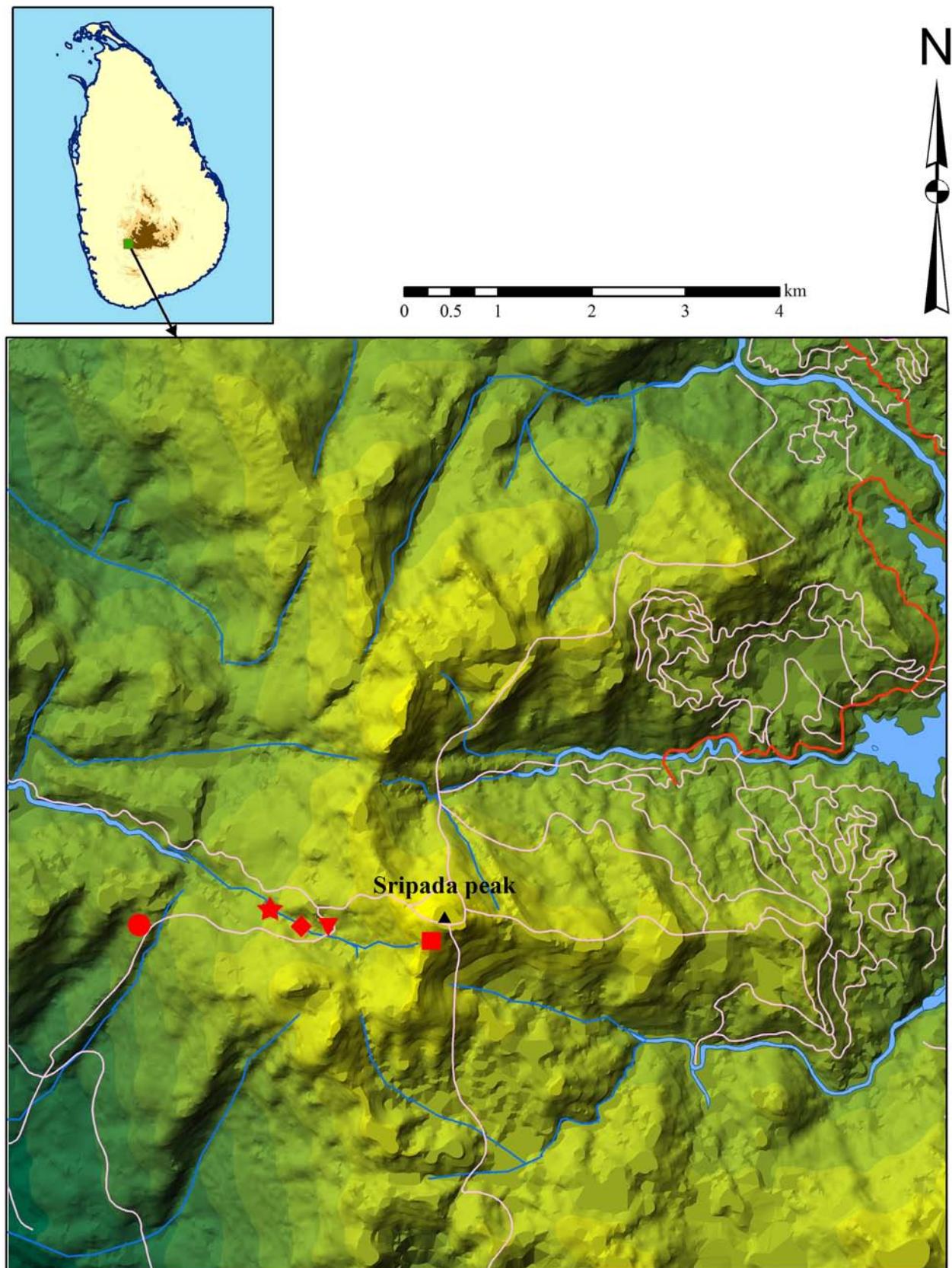


Figure 1. Distribution of the type localities within the Peak Wilderness: “●” *Pseudophilautus bambaradeniyai* sp. nov., *P. karunarathnai* sp. nov., and *P. samarakoon* sp. nov.; “▼” *P. dayawansai* sp. nov., and *P. sirilwijesundarai* sp. nov.; “♦” *P. jagathgunawardanai* sp. nov.; “★” *P. newtonjayawardanei* sp. nov.; “■” *P. puranappu* sp. nov.

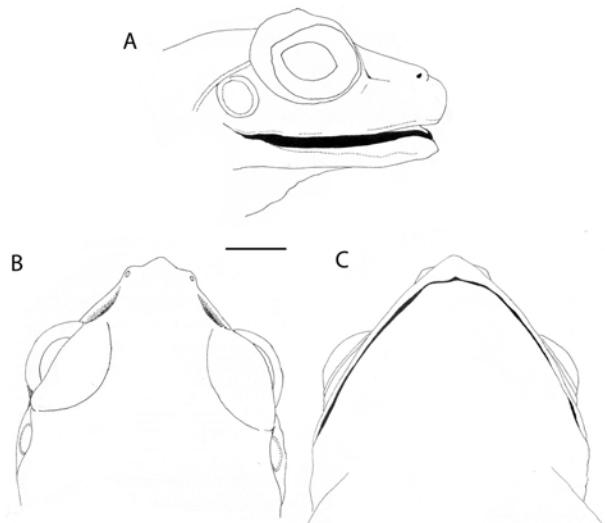


Figure 2. *Pseudophilautus bambaradeniyai* sp. nov. holotype (NMSL 2013.01.01 NH), head; (A) lateral aspect (B) dorsal aspect (C) ventral aspect. Scale bar: 2mm. (© Dulan Ranga Vidanapathirana).

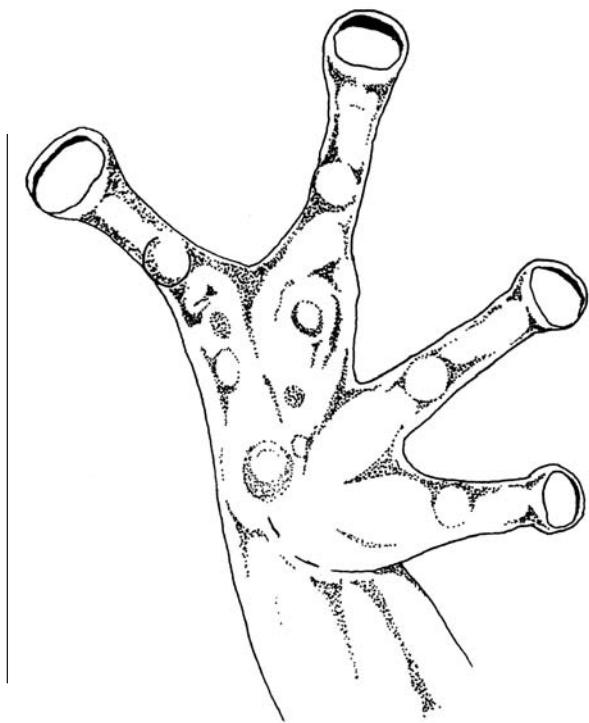


Figure 3. *Pseudophilautus bambaradeniyai* sp. nov. holotype (NMSL 2013.01.01 NH), ventral aspect of left hand. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)

macroglands absent; leg smooth with few tubercles; calcar absent, small tubercles present at heel; vent dorsally shagreen, either side shagreen.

Ventral side of body: Throat and chest weakly granular; belly granular; upper arm weakly granular to

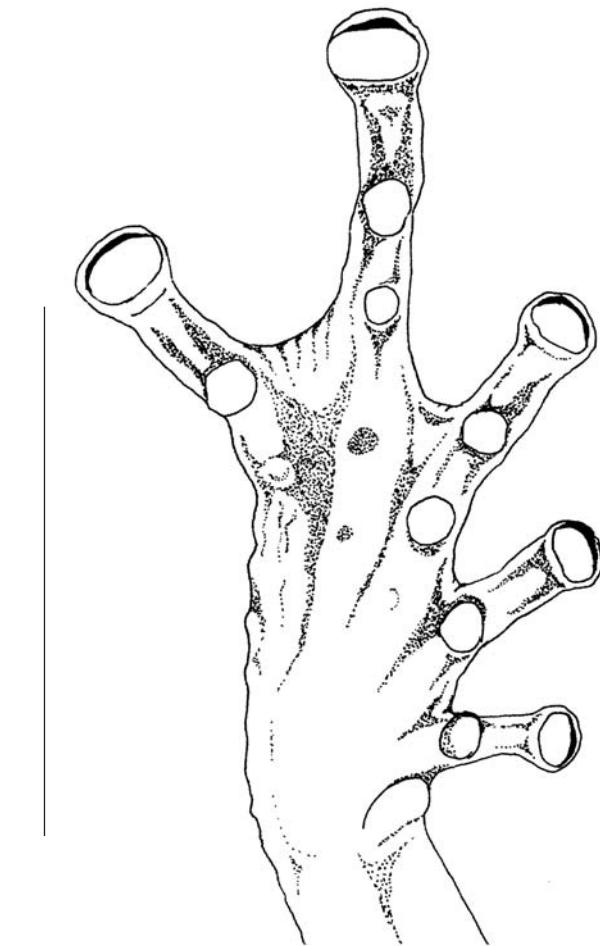
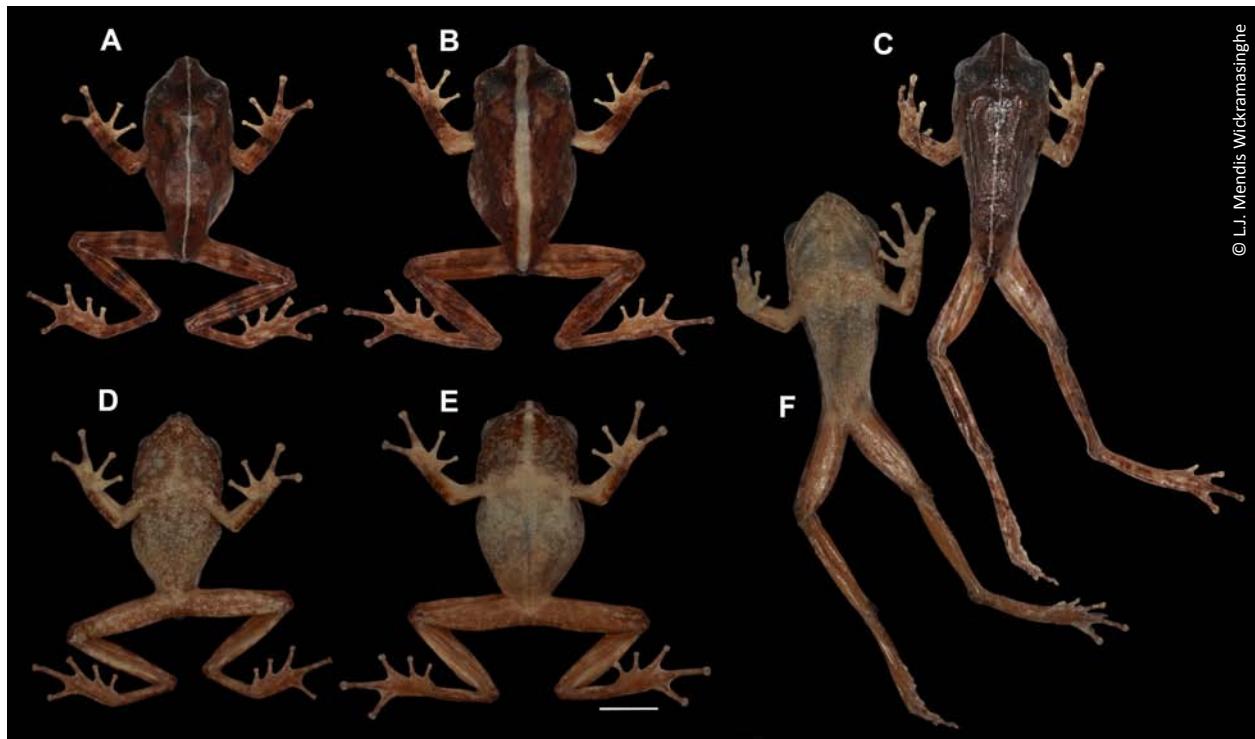


Figure 4. *Pseudophilautus bambaradeniyai* sp. nov. holotype (NMSL 2013.01.01 NH), ventral aspect of left foot. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)



Image 4. *Pseudophilautus bambaradeniyai* sp. nov. holotype in life (NMSL 2013.01.01 NH). © L.J. Mendis Wickramasinghe



**Image 5.** Type series of *Pseudophilautus bambaradeniyai* sp. nov. Left to right, NMISL 2013.01.01 NH, DWC 2013.01.001, DWC 2013.01.002. A-C dorsal aspect and D-F ventral aspect. Scale bar: 5mm.



**Image 6.** *Pseudophilautus bambaradeniyai* sp. nov., paratype in life (DWC 2013.01.001).



**Image 7.** *Pseudophilautus bambaradeniyai* sp. nov. paratype in life (DWC 2013.01.002).

smooth; forearm smooth; thigh, leg and tarsus smooth.

**Colour in life:** Dorsum dark brown with blackish blotches, large dark brown marking covering much of the anterior, blackish cross band between eyes, a prominent off-white vertebral stripe from the tip of snout to anus, and continuing down the hind limbs symmetrically, lateral body lighter; limbs dark brown, fore limbs, hind limbs, fingers and toes with blackish-brown cross bands; ventral side off white with light brown blotches, hands,

feet and webbing lighter (Image 4).

**Colour in alcohol:** Colour pattern remains with a little fading, off-white vertebral stripe prominent on dark brown, ventral side off-white all over (Images 5 A,D).

**Paratype and variation:** Dorsum colour varies ranging from orange to a lighter brownish tinge and the thickness of the vertebral line varies; in some this line discontinues towards limbs (Images 5 B,E, 6).

**Etymology:** The species epithet *bambaradeniyai*

**Table 1.** The morphometric measurements (mm) of the type series of *Pseudophilautus bambaradeniyai* sp. nov.

| NMSL/<br>DWC | Holotype       | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|----------------|-------------|-------------|------|-----|-----------|
|              | 2013.01.01. NH | 2013.01.001 | 2013.01.002 |      |     |           |
| DB           | 0.4            | 0.5         | 0.5         | 0.5  | 0.0 | 0.4–0.5   |
| DBE          | 6.8            | 7.6         | 7.3         | 7.2  | 0.4 | 6.8–7.6   |
| DFE          | 4.3            | 4.3         | 4.3         | 4.3  | 0.0 | 4.3–4.3   |
| DL           | 0.7            | 0.7         | 0.8         | 0.7  | 0.0 | 0.7–0.8   |
| DW           | 0.8            | 0.8         | 0.9         | 0.9  | 0.0 | 0.8–0.9   |
| ED           | 3.2            | 3.4         | 3.2         | 3.3  | 0.1 | 3.2–3.4   |
| EN           | 1.9            | 2.1         | 2.1         | 2.0  | 0.1 | 1.9–2.1   |
| ES           | 3.4            | 3.3         | 3.2         | 3.3  | 0.1 | 3.2–3.4   |
| FEL          | 10.1           | 9.6         | 10.2        | 10.0 | 0.4 | 9.6–10.2  |
| FL-1         | 1.5            | 1.7         | 1.7         | 1.6  | 0.1 | 1.5–1.7   |
| FL-2         | 2.1            | 2.3         | 2.1         | 2.2  | 0.1 | 2.1–2.3   |
| FL-3         | 3.2            | 3.7         | 3.5         | 3.5  | 0.3 | 3.2–3.7   |
| FL-4         | 2.8            | 2.9         | 3.0         | 2.9  | 0.1 | 2.8–3.0   |
| FOL          | 13.3           | 14.1        | 14.2        | 13.9 | 0.5 | 13.3–14.2 |
| GK           | 9.2            | 8.7         | 9.2         | 9.0  | 0.3 | 8.7–9.2   |
| HD           | 4.2            | 4.4         | 4.6         | 4.4  | 0.2 | 4.2–4.6   |
| HL           | 8.4            | 8.6         | 8.5         | 8.5  | 0.1 | 8.4–8.6   |
| HNL          | 5.3            | 6.4         | 6.1         | 5.9  | 0.6 | 5.3–6.4   |
| HW           | 7.4            | 8.3         | 8.2         | 8.0  | 0.5 | 7.4–8.3   |
| IML          | 0.9            | 0.8         | 0.9         | 0.9  | 0.1 | 0.8–0.9   |
| IN           | 2.1            | 2.4         | 2.0         | 2.2  | 0.2 | 2.0–2.4   |
| IO           | 2.2            | 2.7         | 2.6         | 2.5  | 0.3 | 2.2–2.7   |

| NMSL/<br>DWC | Holotype       | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|----------------|-------------|-------------|------|-----|-----------|
|              | 2013.01.01. NH | 2013.01.001 | 2013.01.002 |      |     |           |
| KT           | 9.4            | 9.6         | 9.6         | 9.5  | 0.1 | 9.4–9.6   |
| LAL          | 4.6            | 4.8         | 4.8         | 4.7  | 0.1 | 4.6–4.8   |
| MBE          | 3.2            | 3.0         | 3.5         | 3.2  | 0.2 | 3.0–3.5   |
| MFE          | 6.1            | 6.3         | 6.0         | 6.2  | 0.1 | 6.0–6.3   |
| MN           | 7.5            | 8.0         | 7.8         | 7.8  | 0.3 | 7.5–8.0   |
| SN           | 1.5            | 1.5         | 1.3         | 1.5  | 0.1 | 1.3–1.5   |
| SVL          | 17.3           | 19.6        | 20.2        | 19.0 | 1.5 | 17.3–20.2 |
| TAD          | 0.6            | 0.6         | 0.6         | 0.6  | 0.0 | 0.6–0.6   |
| TAS          | 6.2            | 6.3         | 6.8         | 6.4  | 0.3 | 6.2–6.8   |
| TBL          | 10.5           | 10.8        | 10.9        | 10.7 | 0.2 | 10.5–10.9 |
| TL-1         | 1.4            | 1.5         | 1.4         | 1.4  | 0.1 | 1.4–1.5   |
| TL-2         | 1.5            | 1.7         | 1.7         | 1.7  | 0.1 | 1.5–1.7   |
| TL-3         | 2.9            | 2.9         | 3.0         | 2.9  | 0.0 | 2.9–3.0   |
| TL-4         | 4.2            | 4.7         | 4.6         | 4.5  | 0.2 | 4.2–4.7   |
| TL-5         | 3.1            | 3.3         | 3.2         | 3.2  | 0.1 | 3.1–3.3   |
| TND          | 5.3            | 5.5         | 5.6         | 5.5  | 0.2 | 5.3–5.6   |
| TPD          | 3.6            | 3.7         | 3.7         | 3.7  | 0.1 | 3.6–3.7   |
| TYH          | 1.3            | 1.5         | 1.5         | 1.4  | 0.1 | 1.3–1.5   |
| TYW          | 1.5            | 1.5         | 1.5         | 1.5  | 0.0 | 1.5–1.5   |
| UAL          | 3.4            | 3.5         | 3.5         | 3.5  | 0.1 | 3.4–3.5   |
| UEW          | 1.9            | 2.2         | 2.1         | 2.1  | 0.2 | 1.9–2.2   |
| VKL          | 9.1            | 8.9         | 8.7         | 8.9  | 0.2 | 8.7–9.1   |

**Table 2.** Characters that differentiate *Pseudophilautus bambaradeniyai* sp. nov. among congeners of the genus *Pseudophilautus*

| Species name                          | SVL       | Head dorsally   | Snout lateral       | Canthus rostralis | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|---------------------------------------|-----------|-----------------|---------------------|-------------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|-------------|
| <i>P. bambaradeniyai</i> sp. nov.     | 17.3–20.2 | Convex          | Truncate            | Rounded           | Convex             | Flat              | Absent         | Absent          | Absent            | Absent  | Absent      |
| <i>P. dayawansai</i> sp. nov.         | 24.5–30.1 |                 |                     |                   | Concave            | Concave           |                | Present         | Present           | Present |             |
| <i>P. jagathgunawardanai</i> sp. nov. | 35.8–40.4 |                 | Rounded             | Sharp             |                    | Concave           |                | Present         |                   |         |             |
| <i>P. karunaratnai</i> sp. nov.       | 16.2–19.2 |                 | Rounded             |                   |                    | Concave           | Present        |                 | Present           |         | Present     |
| <i>P. newtonjayawardanei</i> sp. nov. | 38.4      | Concave         | Rounded             |                   | Concave            | Concave           |                |                 | Present           |         |             |
| <i>P. puranappu</i> sp. nov.          | 33.6–51.1 | Concave         | Rounded             |                   | Flat               | Concave           | Present        | Present         |                   |         | Present     |
| <i>P. samarakoon</i> sp. nov.         | 20.4–24.6 |                 |                     |                   |                    |                   |                |                 | Present           | Present |             |
| <i>P. sirilwisesundarai</i> sp. nov.  | 22.3–32.5 |                 | Rounded             |                   |                    |                   | Present        |                 | Present           |         |             |
| <i>P. abundus</i>                     | 25.4–37.0 | Concave         | Pointed or oval     |                   | Flat               | Concave           | Present        | Present         | Present           |         |             |
| <i>P. adspersus</i>                   | 33.3–41.7 | Flat            |                     | Sharp             |                    |                   |                |                 | Present           |         |             |
| <i>P. alto</i>                        | 17.0–27.5 |                 | Obtusely pointed    |                   |                    | Concave           |                |                 | Present           | Present | Present     |
| <i>P. asankai</i>                     | 18.9–27.3 |                 | Obtusely pointed    |                   |                    |                   |                |                 | Present           |         |             |
| <i>P. auratus</i>                     | 21.7–26.4 | Flat            | Blunt               |                   | Flat               | Concave           | Present        |                 | Present           |         |             |
| <i>P. caeruleus</i>                   | 16.3–19.0 | Flat            | Obtusely pointed    | Sharp             | Flat               |                   |                | Present         |                   |         |             |
| <i>P. cavirostris</i>                 | 38.4–48.9 | Concave         | Oval                | Sharp             | Concave            | Concave           | Present        |                 | Present           | Present |             |
| <i>P. cuspis</i>                      | 17.6–28.9 |                 | Sharply Pointed     | Sharp             |                    |                   |                |                 | Present           | Present |             |
| <i>P. decoris</i>                     | 18.3–23.9 | Flat            | Obtusely pointed    |                   | Concave            | Concave or flat   |                | Present         |                   | Present |             |
| <i>P. dimbuliae</i>                   | 44.8      |                 |                     | Sharp             | Flat               |                   | Present        |                 | Present           |         |             |
| <i>P. eximius</i>                     | 35.3      | Flat            | Rounded             | Sharp             | Flat               |                   |                | Present         | Present           |         |             |
| <i>P. extirpo</i>                     | 43.5      | Flat            | Blunt               | Sharp             | Concave            | Concave           |                | Present         | Present           |         |             |
| <i>P. femoralis</i>                   | 23.4–28.8 | Flat            |                     |                   | Flat               | Concave           |                |                 | Present           |         |             |
| <i>P. fergusonianus</i>               | 26.9–44.5 | Concave or flat | Rounded             |                   | Concave or flat    | Concave           | Present        |                 | Present           |         | Present     |
| <i>P. folicola</i>                    | 23.7–29.4 | Flat            | Rounded or truncate | Sharp             | Flat               | Concave           | Present        |                 | Present           |         |             |
| <i>P. frankenbergi</i>                | 26.7–29.3 | Flat            | Rounded             | Sharp             | Flat               |                   |                |                 | Present           |         |             |
| <i>P. fulvus</i>                      | 33.4–46.8 |                 | Rounded             | Sharp             | Flat               | Concave           | Present        |                 | Present           | Present | Present     |
| <i>P. hallidayi</i>                   | 32.9–42.9 |                 | Rounded             |                   | Flat               |                   | Present        |                 | Present           |         | Present     |

| Species name            | SVL       | Head dorsally     | Snout lateral    | Canthus rostralis | Interorbital space | Internarial space | Vomerine teeth    | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|-------------------------|-----------|-------------------|------------------|-------------------|--------------------|-------------------|-------------------|-----------------|-------------------|---------|-------------|
| <i>P. halyi</i>         | 27.9      | Uneven            | Rounded          | Sharp             | Flat               |                   |                   |                 | Present           |         | Present     |
| <i>P. hankeni</i>       | 18.3–21.9 |                   | Pointed          |                   |                    | Concave           |                   |                 |                   |         |             |
| <i>P. hoffmanni</i>     | 21.2–23.4 | Flat              | Rounded          |                   | Flat               |                   |                   |                 | Present           |         |             |
| <i>P. hoipolloi</i>     | 22.0–28.6 |                   | Blunt            |                   | Flat               | Concave           |                   |                 | Present           |         |             |
| <i>P. hypomelas</i>     | 11.2–22.4 |                   | Acuminate        |                   |                    |                   | Absent or present |                 |                   |         |             |
| <i>P. leucorhinus</i>   | 19.8      | Flat              | Oval             | Sharp             | Concave            | Concave           |                   |                 |                   |         |             |
| <i>P. limbus</i>        | 25.7      | Concave           | Obtusely pointed |                   | Concave            | Concave           | Present           | Present         |                   | Present |             |
| <i>P. lunatus</i>       | 40.9      | Flat              | Oval             |                   | Concave            | Concave           | Present           | Present         | Present           | Present |             |
| <i>P. macropus</i>      | 27.4–42.7 | Convex or concave | Oval             |                   | Flat               |                   | Present           | Present         | Present           |         | Present     |
| <i>P. maia</i>          | 46.6      | Concave           |                  | Sharp             | Concave            |                   | Present           |                 | Present           |         |             |
| <i>P. malcolmsmithi</i> | 14.9      |                   | Pointed          | Sharp             | Flat               |                   |                   |                 |                   | Present |             |
| <i>P. microtympanum</i> | 23.9–49.0 |                   | Oval             |                   | Flat               | Concave           | Present           |                 | Present           |         | Present     |
| <i>P. mittermeieri</i>  | 16.3–18.4 |                   | Pointed          |                   | Concave            | Concave           |                   |                 | Present           | Present |             |
| <i>P. mooreorum</i>     | 29.4–35.0 | Flat              | Rounded          |                   | Flat               | Concave           |                   |                 | Present           |         |             |
| <i>P. nanus</i>         | 34.8      |                   | Oval             |                   | Flat               | Concave           | Present           |                 |                   |         | Present     |
| <i>P. nasutus</i>       | 17.4      |                   | Pointed          | Sharp             | Flat               | Concave           |                   |                 |                   | Present |             |
| <i>P. nemus</i>         | 20.7      |                   | Obtusely pointed |                   | Flat               |                   |                   |                 |                   |         | Present     |
| <i>P. ocularis</i>      | 23.1–33.4 | Flat              | Blunt            |                   | Flat               | Concave or flat   | Present           |                 | Present           |         |             |
| <i>P. oxyrhynchus</i>   | 18.6      | Flat              | Pointed          | Sharp             | Concave            | Concave           |                   |                 |                   | Present |             |
| <i>P. papillosum</i>    | 40        |                   |                  | Sharp             | Concave            |                   | Present           | Present         | Present           | Present |             |
| <i>P. pardus</i>        | 32.1      |                   | Rounded          |                   | Flat               | Concave           |                   |                 |                   |         |             |
| <i>P. pleurotaenia</i>  | 25.6–30.3 |                   |                  |                   |                    | Concave           |                   |                 | Present           |         |             |
| <i>P. poppiae</i>       | 21.3–26.0 |                   | Rounded          |                   | Flat               | Concave           |                   |                 | Present           |         |             |
| <i>P. popularis</i>     | 17.7–24.7 |                   | Rounded          |                   | Flat               |                   |                   |                 |                   |         |             |
| <i>P. procax</i>        | 25.1–26.8 | Concave           | Pointed or oval  |                   | Flat               | Concave           | Present           | Present         | Present           |         |             |
| <i>P. regius</i>        | 18.3–21.7 | Flat              | Oval             |                   | Concave            | Concave           |                   |                 | Present           |         | Present     |
| <i>P. reticulatus</i>   | 42.5–61.1 | Convex or flat    |                  | Sharp             |                    | Convex or concave | Present           | Present         | Present           | Present | Present     |
| <i>P. rugatus</i>       | 17.5      |                   | Rounded          | Sharp             |                    | Concave           |                   |                 |                   |         |             |

| Species name          | SVL       | Head dorsally | Snout lateral    | Canthus rostralis | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|-----------------------|-----------|---------------|------------------|-------------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|-------------|
| <i>P. rus</i>         | 20.6–24.1 | Flat          | Oval             |                   | Flat               |                   | Present        |                 |                   |         |             |
| <i>P. sarasinorum</i> | 22.6–38.1 | Flat          | Rounded          |                   | Flat               | Concave           |                | Present         |                   |         |             |
| <i>P. schmarda</i>    | 17.7–30.0 |               | Obtusely pointed | Sharp             |                    | Concave           |                |                 | Present           | Present |             |
| <i>P. schneideri</i>  | 19.9–22.8 |               | Pointed          | Sharp             |                    |                   | Present        |                 |                   |         |             |
| <i>P. semiruber</i>   | 13.4      |               | Oval             |                   | Concave            |                   |                |                 | Present           |         |             |
| <i>P. silus</i>       | 35.4–51.8 |               | Oval             | Sharp             | Flat               |                   | Present        |                 | Present           |         |             |
| <i>P. silvaticus</i>  | 24.3–31.3 |               | Oval             | Sharp             | Flat               |                   | Present        | Present         |                   |         |             |
| <i>P. simba</i>       | 12.6–15.6 |               |                  |                   |                    |                   |                |                 |                   |         |             |
| <i>P. singu</i>       | 16.1–16.6 |               | Rounded          |                   |                    | Concave           |                | Present         |                   |         |             |
| <i>P. sordidus</i>    | 22.2–39.4 |               | Blunt            |                   |                    |                   | Present        | Present         |                   |         |             |
| <i>P. steineri</i>    | 30.4–41.6 | Flat          | Rounded          | Sharp             | Flat               | Concave           | Present        |                 | Present           |         | Present     |
| <i>P. stellatus</i>   | 39.6–55.3 | Concave       | Rounded          |                   | Concave            | Concave           | Present        |                 | Present           | Present |             |
| <i>P. stictomerus</i> | 23.2–36.0 |               | Obtusely pointed |                   |                    |                   | Present        |                 |                   |         | Present     |
| <i>P. stuarti</i>     | 24.2–32.4 | Flat          | Rounded          | Sharp             | Flat               |                   |                |                 |                   |         |             |
| <i>P. tanu</i>        | 13.5–13.9 |               | Obtusely pointed |                   | Flat               |                   |                |                 |                   |         |             |
| <i>P. temporalis</i>  | 28.4–31.0 |               | Rounded          |                   | Concave            | Concave           | Present        |                 |                   |         |             |
| <i>P. variabilis</i>  | 35.7      | Flat          |                  |                   | Flat               | Concave           |                |                 | Present           |         |             |
| <i>P. viridis</i>     | 27.4–36.3 |               | Blunt or rounded |                   | Flat               |                   |                |                 | Present           |         |             |
| <i>P. zal</i>         | 20.0–32.5 |               | Rounded          |                   |                    | Concave           |                |                 | Present           |         | Present     |
| <i>P. zimmeri</i>     | 31.6      |               | Blunts           | Sharp             | Flat               |                   | Present        |                 | Present           |         | Present     |
| <i>P. zorro</i>       | 22.9–30.1 | Concave       | Pointed          | Sharp             | Flat               | Concave           |                |                 | Present           | Present |             |

**Table 3. Characters in skin structure that differentiate *Pseudophilautus bambaradeniyai* sp. nov. among congeners of the genus *Pseudophilautus***

| Species name                          | Snout  | Interorbital area                                 | Side of head                                      | Anterior dorsum  | Posterior dorsum   | Upper flank                        | Lower flank               | Dorsal thigh                   |
|---------------------------------------|--|---|---|--|--|------------------------------------|---------------------------|--------------------------------|
| <i>P. bambaradeniyai</i> sp. nov.     | Smooth   | Smooth  | Smooth  | Prominent tubercles and horny spinules                           | Horny spinules   | Smooth                             | Smooth                    | Tuberculated                   |
| <i>P. dayawansai</i> sp. nov.         | Tuberculated, a single prominent tubercle medially | Smooth, with a ridge across breaking medially     | Tubercular  | Smooth   | Weakly tubercular  | Granular                           | Granular                  | Smooth                         |
| <i>P. jagathgunawardanai</i> sp. nov. |  | Smooth, with two cross dermal fringes             |   | Smooth   | Smooth   |                                    | Weakly granular           |                                |
| <i>P. karunarathnai</i> sp. nov.      | Smooth, a prominent blunt tubercle                 | Weakly tubercular                                 | Weakly tubercular                                 | Smooth   | Spinulate  | Weakly granular                    | Granular                  | Smooth                         |
| <i>P. newtonjayawardanei</i> sp. nov. | Shagreen   | Shagreen, with a prominent ridge                  | Shagreen  | Shagreen   | Shagreen   | Shagreen                           | Weakly granular           | Shagreen                       |
| <i>P. puranappu</i> sp. nov.          | Smooth, with a blunt tubercle                      |   |   | Weakly shagreen  | Few horny spinules, Prominent tubercles                          | Weakly tubercular                  | Granular                  | Weakly shagreen                |
| <i>P. samarakoon</i> sp. nov.         | Prominent tubercle present on centre of snout      | Tubercular  |   | Tubercular   | Tubercular   | Tubercular                         | Granular                  |                                |
| <i>P. sirilwijesundarai</i> sp. nov.  | Shagreen, with prominent dermal fold               | A prominent tubercle present                      | Weakly shagreen                                   | Shagreen with few tubercles                                      | Shagreen   | Areolate                           | Granular                  | Smooth                         |
| <i>P. abundus</i>                     |  |   |   | Horny spinules (absent in females)                               |  |                                    | Granular                  | Smooth                         |
| <i>P. adspersus</i>                   | Smooth except for a few scattered glandular warts  | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts                | Smooth   | Granular                           | Granular                  | Smooth                         |
| <i>P. alto</i>                        | Horny spinules in males                            | Horny spinules in males                           |   | Horny spinules in males, warty in females                        | Horny spinules in males, warty in females                        | Horny spinules in males            | Granular                  | Smooth                         |
| <i>P. asankai</i>                     | Very fine, horny spinules                          | Very fine, horny spinules                         | Very fine, horny spinules                         | Very fine, horny spinules  | Very fine, horny spinules  | Horny spinules                     | Very fine, horny spinules | Very fine, horny spinules      |
| <i>P. auratus</i>                     | Shagreen   | Shagreen  | Shagreen  | Shagreen   | Shagreen   | Granular or smooth                 | Granular                  | Smooth                         |
| <i>P. caeruleus</i>                   | Glandular warts and horny spinules                 | Glandular warts and horny spinules                | Glandular warts and horny spinules                | Glandular warts and horny spinules (females lack horny spinules) | Glandular warts and horny spinules (females lack horny spinules) | Glandular warts and horny spinules | Granular in males         | Smooth                         |
| <i>P. cavirostris</i>                 | Glandular warts                                    | Glandular warts                                   | Glandular warts                                   | Heavily tuberculated, glandular warts                            | Heavily tuberculated, glandular warts                            |                                    | Granular                  | Smooth                         |
| <i>P. cuspis</i>                      | Horny spinules                                     | Horny spinules                                    |   | Horny spinules with a "J" shaped pattern of tubercles            |  |                                    |                           | Smooth or with glandular warts |
| <i>P. decoris</i>                     | Glandular warts                                    | Glandular warts                                   | Glandular warts                                   | Glandular warts  | Glandular warts  | Glandular warts                    | Glandular warts           | Glandular warts                |
| <i>P. dimbuliae</i>                   | Shagreen   | Shagreen  | Shagreen  | Shagreen   | Shagreen   | Shagreen                           | Granular                  | Smooth                         |

| Species name            | Snout  | Interorbital area                                  | Side of head   | Anterior dorsum  | Posterior dorsum  | Upper flank   | Lower flank                   | Dorsal thigh                                |
|-------------------------|--|--|--|--|---|---|-------------------------------|---|
| <i>P. eximus</i>        |  |  |  | Smooth   | Smooth  |   | Weakly granular               | Smooth                                      |
| <i>P. extirpo</i>       | Shagreen, with a few glandular warts               | Shagreen   | Shagreen   | Shagreen, with a few glandular warts                     | Shagreen, with a few glandular warts                          | Granular  | Granular                      | Shagreen, few glandular warts               |
| <i>P. femoralis</i>     | Finely granular                                    | Finely granular                                    | Finely granular  | Finely granular  | Finely granular   | Finely granular   | Granular                      | Smooth                                      |
| <i>P. fergusonianus</i> | Shagreen, males glandular warts and horny spinules | Shagreen, males glandular warts and horny spinules | Few glandular warts                                      | Shagreen, males glandular warts and horny spinules       | Few glandular warts, males glandular warts and horny spinules | Shagreen, males with glandular warts and horny spinules | Granular                      | Smooth with glandular warts,                |
| <i>P. folicola</i>      |  |  | Shagreen, smooth or with a few scattered glandular warts | Smooth or granular                                       | Smooth  | Granular  | Granular                      | Smooth                                      |
| <i>P. frankenbergi</i>  | Shagreen   | Shagreen   | Glandular warts  | Shagreen, horny spinules scattered                       | Shagreen, horny spinules scattered                            | Shagreen  | Granular                      | Smooth                                      |
| <i>P. fulvus</i>        | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen  | Shagreen  | Granular                      | Shagreen                                    |
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males      | Glandular warts, with horny spinules in males      | Glandular warts  | Glandular warts, with horny spinules in males            | Glandular warts, with horny spinules in males                 | Glandular warts, with horny spinules in males           | Granular                      | Glandular warts                             |
| <i>P. halyi</i>         | Shagreen with glandular warts                      | Shagreen with glandular warts                      | Shagreen with glandular warts                            | Shagreen with glandular warts                            | Shagreen with glandular warts                                 | Glandular warts   | Granular                      | Glandular warts                             |
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules                   | Glandular warts bearing horny spinules                   | Glandular warts bearing horny spinules                        | Glandular warts bearing horny spinules                  | Granular                      | Glandular warts with horny spinules         |
| <i>P. hoffmanni</i>     |  |  |  | Smooth   | Smooth  |   | Glandular                     | Smooth                                      |
| <i>P. hoipolloi</i>     |  |  |  | Smooth or shagreen                                       | Smooth or shagreen  |   |                               | Smooth                                      |
| <i>P. hypomelas</i>     |  |  |  | Smooth   | Smooth  |   |                               |   |
| <i>P. leucorhinus</i>   |  |  |  | Smooth with a few scattered glandular warts              | Smooth with a few scattered glandular warts                   | Smooth with glandular warts                             | Granular with glandular warts | Smooth                                      |
| <i>P. limbus</i>        | Weakly granular                                    | Weakly granular                                    | Weakly granular  | Weakly granular  | Weakly granular   | Granular  | Granular                      | Granular, not rough                         |
| <i>P. lunatus</i>       |  |  |  | Smooth   | Smooth  | Glandular warts   | Granular                      | Smooth                                      |
| <i>P. macropus</i>      |  | Smooth with a few scattered glandular warts        | Glandular warts  | Shagreen or smooth, with a few scattered glandular warts | Shagreen or smooth, with a few scattered glandular warts      | Granular with a few scattered glandular warts           | Granular                      | Smooth with a few scattered glandular warts |

| Species name            | Snout  | Interorbital area  | Side of head  | Anterior dorsum   | Posterior dorsum   | Upper flank  | Lower flank             | Dorsal thigh   |
|-------------------------|--|--|---|---|--|--|-------------------------|--|
| <i>P. maia</i>          |  |  |   | Glandular warts   | Glandular warts  | Glandular warts  | Glandular warts         | Smooth   |
| <i>P. malcolmsmithi</i> |  |  |   | Smooth, 'V' shaped ridge  | Smooth   | Glandular warts  | Glandular warts         | Smooth, few scattered glandular warts                          |
| <i>P. microtympanum</i> | Smooth or tuberculated   |  | Shagreen  | Smooth, shagreen and glandular warts, males horny spinules      | Smooth, shagreen and glandular warts, males horn like spinules     | Granular   | Granular                | Shagreen, few scattered glandular warts                        |
| <i>P. mittermeieri</i>  | Glandular warts  | Glandular warts  | Glandular warts   | Glandular warts   | Glandular warts  | Glandular warts  | Glandular warts         | Smooth   |
| <i>P. mooreorum</i>     | Horny spinules in males  | Horny spinules in males  | Horny spinules in males                                   | Horny spinules in males, finely granular or shagreen in female  | Horny spinules in males, finely granular or shagreen in female     | Horny spinules in males  | Horny spinules in males | Shagreen   |
| <i>P. nanus</i>         | Glandular warts  | Few glandular warts  | Few glandular warts                                       | Few glandular warts   | Few glandular warts  | Glandular folds  | Granular                | Smooth   |
| <i>P. nasutus</i>       | Glandular warts  | Glandular warts  | Glandular warts   | tuberculated, horn-like spinules                                | Tuberculated, horn-like spinules                                   |  | Granular                | Glandular warts  |
| <i>P. nemus</i>         | Glandular warts  |  | Glandular warts   | Glandular warts   | Glandular warts  |  | Granular                | Smooth   |
| <i>P. ocularis</i>      | Shagreen or with glandular warts                               | Shagreen or with glandular warts                               | Shagreen or with glandular warts                          | Shagreen or with glandular warts                                | Shagreen or with glandular warts                                   | Shagreen or with glandular warts                                   | Granular                | Glandular warts  |
| <i>P. oxyrhynchus</i>   |  |  |   | Smooth  | Smooth   |  |                         |  |
| <i>P. papillosum</i>    | Glandular warts  | Glandular warts  | Glandular warts   | Glandular warts   | Glandular warts  | Glandular warts  | Granular                | Glandular warts  |
| <i>P. pardus</i>        |  |  |   | Smooth  | Smooth   | Granular   | Granular                | Smooth   |
| <i>P. pleurotaenia</i>  | Shagreen   | Shagreen   | Shagreen  | Shagreen if females, glandular warts and horny spinules (males) | Shagreen, few scattered glandular warts and horny spinules (males) | Shagreen, few scattered glandular warts and horny spinules (males) | Granular                | Smooth   |
| <i>P. poppiae</i>       | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Males horny spinules, females finely granular or shagreen | Horny spinules in males, finely granular or shagreen in female  | Horny spinules in males, finely granular or shagreen in female     | Horny spinules in males, finely granular or shagreen in female     |                         | Horny spinules in males, finely granular or shagreen in female |
| <i>P. popularis</i>     | Glandular warts  |  | Glandular warts   | Horny spinules  |  | Horny spinules   | Granular                | Glandular warts  |
| <i>P. procox</i>        |  |  |   |   |  |  | Granular                | Smooth   |
| <i>P. regius</i>        | Horny spinules   | Horny spinules   | Horny spinules  | Horny spinules  |  | Glandular  | Glandular               | Glandular warts  |

| Species name          | Snout   | Interorbital area                                   | Side of head                                      | Anterior dorsum  | Posterior dorsum   | Upper flank   | Lower flank                        | Dorsal thigh                          |
|-----------------------|---|---|---|--|--|---|------------------------------------|---------------------------------------|
| <i>P. reticulatus</i> | Shagreen with a few scattered glandular warts     | Shagreen with a few scattered glandular warts       | Shagreen with a few scattered glandular warts     | Shagreen with a few scattered glandular warts, finely tuberculated | Shagreen with a few scattered glandular warts, finely tuberculated | Shagreen with a few scattered glandular warts       | Granular                           | Smooth                                |
| <i>P. rugatus</i>     | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts   | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts                  | Smooth except for a few scattered glandular warts                  | Glandular warts                                     | Granular                           | Smooth, few scattered glandular warts |
| <i>P. rus</i>         |   |   | Glandular warts                                   | Glandular warts  | Glandular warts  | Granular  | Granular                           | Smooth                                |
| <i>P. sarasinorum</i> | Glandular warts                                   | Glandular warts                                     | Glandular warts                                   | Glandular warts, males with horny spinules scattered               | Glandular warts, males with horny spinules scattered               | Glandular folds                                     | Granular in females                |                                       |
| <i>P. schmarda</i>    | Glandular warts                                   | Glandular folds, glandular warts and horny spinules | Glandular warts                                   | Glandular folds, glandular warts and horny spinules                | Glandular folds, glandular warts and horny spinules                | Glandular folds, glandular warts and horny spinules | Glandular warts and horny spinules | Glandular warts                       |
| <i>P. schneideri</i>  | Small tubercles with horny spinules               | Small tubercles with horny spinules                 | Small tubercles with horny spinules               | Small tubercles with horny spinules                                | Small tubercles with horny spinules                                | Small tubercles with horny spinules                 | Granular                           | Smooth                                |
| <i>P. semiruber</i>   |   |   |   | Smooth   | Smooth   |   |                                    | Smooth                                |
| <i>P. silus</i>       |   |   | Glandular warts                                   | Glandular warts  | Glandular warts  | Glandular warts                                     | Granular                           | Smooth                                |
| <i>P. silvaticus</i>  | Glandular warts                                   | Glandular warts                                     | Glandular warts                                   | Glandular warts  | Smooth   | Glandular warts                                     | Granular                           | Smooth                                |
| <i>P. simba</i>       |   |   | Glandular warts                                   | Glandular warts  | Smooth   |   | Granular                           | Smooth                                |
| <i>P. singu</i>       | Scattered, glandular tubercles                    | Scattered, glandular tubercles                      | Scattered, glandular tubercles                    | Scattered, glandular tubercles                                     | Scattered, glandular tubercles                                     | Scattered, glandular tubercles                      | Scattered, glandular tubercles     | Scattered, glandular tubercles        |
| <i>P. sordidus</i>    | Glandular warts                                   | Glandular warts                                     | Glandular warts                                   | Glandular warts, males with horny spinules scattered               | Glandular warts, males with horny spinules scattered               | Glandular warts, with horny spinules in males       | Granular                           | Glandular warts                       |
| <i>P. steineri</i>    | Glandular warts and horny spinules                | Glandular warts and horny spinules                  |   | Glandular warts and horny spinules, females lack horny spinules    | Glandular warts and horny spinules, females lack horny spinules    | Glandular warts and horny spinules                  | Granular                           | Smooth, scattered glandular warts     |
| <i>P. stellatus</i>   | Weakly shagreen                                   | Weakly shagreen                                     | Weakly shagreen                                   | Weakly shagreen  | Weakly shagreen  | Shagreen to weakly areolate                         | Weakly areolate                    | Weakly shagreen                       |
| <i>P. stictomerus</i> |   |   |   | Shagreen, horny spinules in males                                  | Shagreen, horny spinules in males                                  | Shagreen, horny spinules in males                   | Granular                           | Smooth                                |
| <i>P. stuarti</i>     | Horny spinules                                    | Horny spinules                                      |   | Horny spinules, females lack horny spinules                        | Horny spinules, females lack horny spinules                        |   |                                    |                                       |
| <i>P. tanu</i>        | Shagreen  | Shagreen  | Shagreen  | Shagreen   | Shagreen   | Granular  | Granular                           | Smooth                                |

| Species name         | Snout   | Interorbital area                                     | Side of head  | Anterior dorsum  | Posterior dorsum  | Upper flank   | Lower flank       | Dorsal thigh    |
|----------------------|---|---|---|--|-------------------|---|-------------------|-----------------|
| <i>P. temporalis</i> |   |   |   | Smooth   | Smooth            |   | Coarsely granular | Smooth          |
| <i>P. variabilis</i> |   |   |   | Smooth   | Smooth            | Granular  | Granular          | Smooth          |
| <i>P. viridis</i>    | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males)                  |                   | Horny spinules (smooth in females and immature males) | Granular          | Shagreen        |
| <i>P. zal</i>        | Weakly shagreen                                       | Shagreen  | Shagreen  | Weakly tubercular  | Weakly tubercular | Granular  | Granular          | Glandular warts |
| <i>P. zimmeri</i>    | Glandular warts                                       | Glandular warts                                       | Glandular warts                                       | Glandular warts  | Glandular warts   | Granular  | Granular          | Glandular warts |
| <i>P. zorro</i>      | Horny spinules  | Horny spinules  | Glandular warts                                       | Horny spinules, Anterior dorsum with ")(\" shaped pattern of tubercles |                   | Glandular warts                                       | Granular          | Glandular warts |

is named after Channa Bambaradeniya, a leading wetland scientist who has been working immensely to protect the wetlands and its ecosystems in Sri Lanka, in great appreciation of his dedicated efforts towards the conservation of the biodiversity at large in the country. The species name *bambaradeniyai* is a noun in the genitive case.

**Suggested vernacular names:** Bambaradeniyage panduru madiya, and Bambaradeniya's Shrub Frog in Sinhala and English, respectively.

**Natural history:** The species was found in elevations of 750–1400 m from the forest floor to about 1.5m high shrubs in lowland rain forests to lower montane rain forests.

#### *Pseudophilautus dayawansai* sp. nov.

(Figs. 5–7; Images 8–12; Tables 4–6)

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**Holotype:** NMSL 2013.02.01 NH, 23.x.2011, adult male SVL 24.5mm (Images 8, 9A,D). Sripada (Peak Wilderness), Ratnapura District, Sabaragamuwa Province, Sri Lanka ( $06^{\circ}48'30''N$  &  $80^{\circ}29'19''E$ ; altitude 1679m) (Fig. 1), coll. L.J.M.W, D.R.V., M.D.G.R., S.C.A., A.W.A.C. & L.L.D.P..

**Paratypes:** DWC 2013.01.003, 14.xi.2011, adult female, SVL 30.1mm (Image 10); DWC 2013.01.004, 14.xi.2011, adult male, SVL 26.2mm (Image 11); information same as holotype.

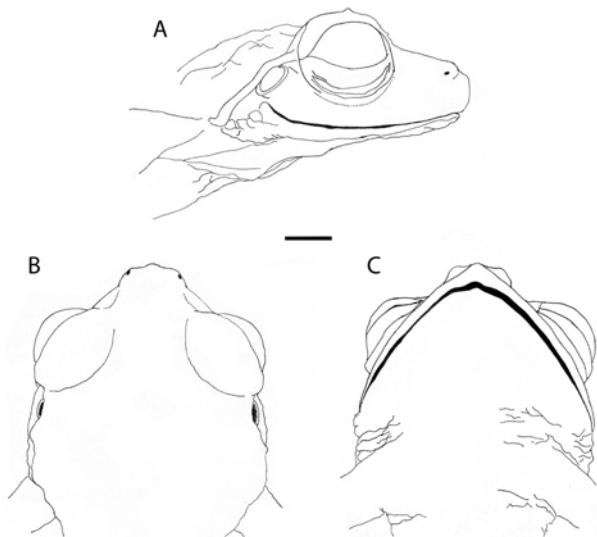


Figure 5. *Pseudophilautus dayawansai* sp. nov. holotype (NMSL 2013.02.01 NH), head; (A) lateral aspect (B) dorsal aspect (C) ventral aspect. Scale bar: 2mm. (© Dulan Ranga Vidanapathirana)

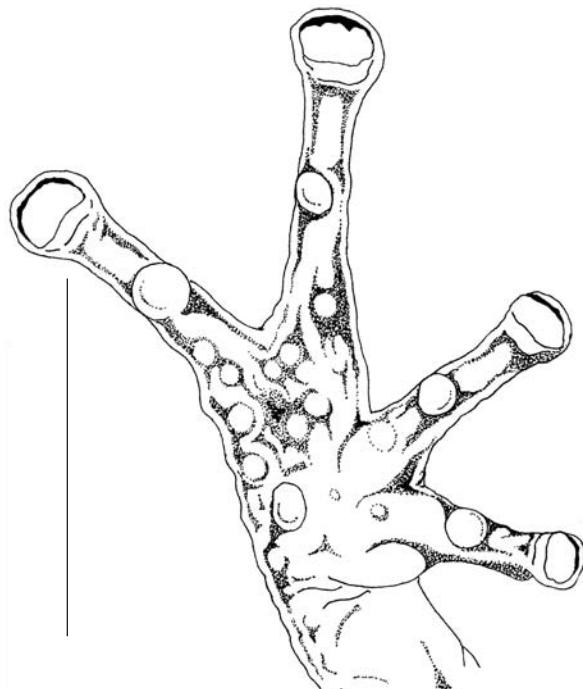


Figure 6. *Pseudophilautus dayawansai* sp. nov. holotype (NMSL 2013.02.01 NH), ventral aspect of left hand. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)

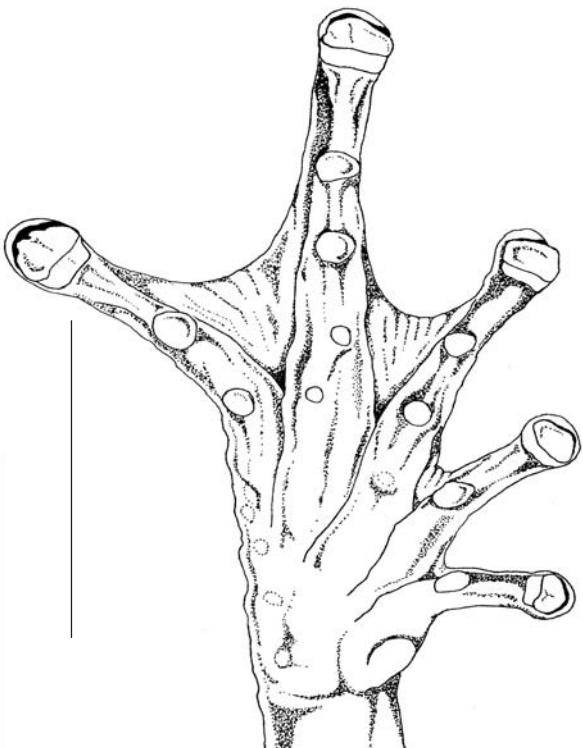
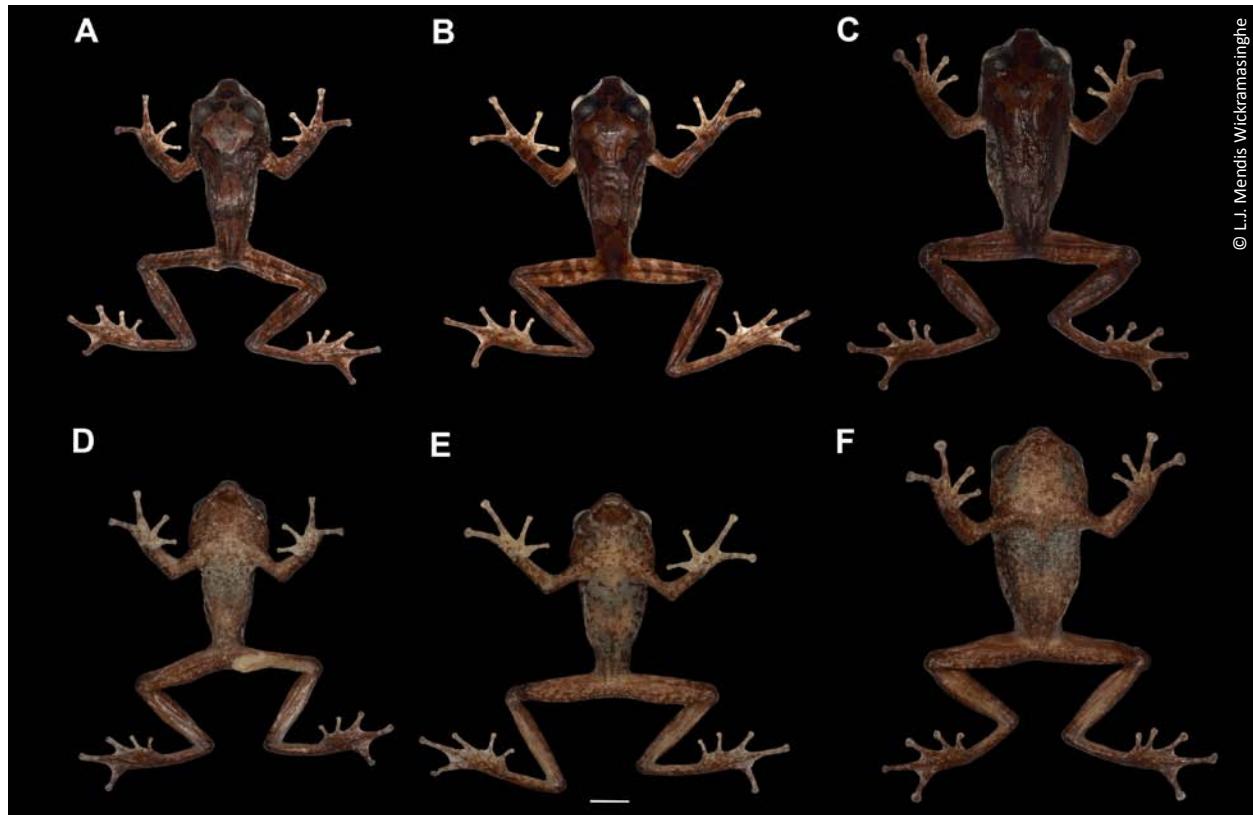


Figure 7. *Pseudophilautus dayawansai* sp. nov. holotype (NMSL 2013.02.01 NH), ventral aspect of left foot. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)



**Image 9.** Type series of *Pseudophilautus dayawansai* sp. nov. Left to right, NMSL 2013.02.01 NH, DWC 2013.01.003, DWC 2013.01.004. A-C dorsal aspect and D-F ventral aspect. Scale bar: 5mm.



**Image 8.** *Pseudophilautus dayawansai* sp. nov. holotype in life (NMSL 2013.02.01 NH).



**Image 10.** *Pseudophilautus dayawansai* sp. nov. paratype in life (DWC 2013.01.003).

**Diagnosis:** Small sized frog (adult male SVL 24.5–26.2 mm, adult female SVL 30.1mm); head dorsally convex; snout laterally truncate, skin dorsally tuberculated, a single prominent tubercle medially placed; canthus rostralis rounded; loreal region, interorbital space and internarial space concave; vomerine teeth absent; lingual papilla, fringe on fingers and blunt small calcar present; interorbital area smooth, with a ridge across braking

medially; side of head tubercular; anterior dorsum smooth; posterior dorsum weakly tubercular; median dermal ridge absent; upper and lower flank granular; throat shagreen.

**Description of holotype:** Small sized frog (SVL



Image 11. *Pseudophilautus dayawansai* sp. nov. paratype in life (DWC 2013.01.004).

24.5mm), elongate (SVL/HW 2.3); head large (HL/SVL 0.4), about as wide as long (HW/HL 1.0), dorsally convex; snout truncate in lateral aspect, mucronate in dorsal aspect, and sub-elliptical in ventral aspect (Fig. 5 A) (ES/DFE 0.8, SN/IN 0.5); internasal space concave; canthus rostralis rounded; loreal region concave; interorbital space mid dorsally concave, upper eyelid smaller than interorbital distance (IO/UEW 1.2), smaller than internasal distance (IN/UEW 1.2); distance between front of eyes half its distance between back of eyes (DBE/DFE 1.9); nostrils oval without flap of skin laterally, closer to tip of snout than to eye (SN/EN 0.7); pupil horizontally elliptical; tympanum distinct, oval and vertical (TYH/TYW 1.2), tympanum smaller than the eye diameter (TYH/ED 0.3), tympanum-eye distance 1/3 of tympanum diameter (TAD/TYW 0.8); pineal ocellus absent; vomerine ridge absent; tongue moderate, lanceolate; lingual papilla present, blunt, depressed, rounded, and flattened, with conical tubercles present on tongue.

Arm short, thin (LAL/FEL 0.5, UAL/FEL 0.4); lower-arm shorter than hand length (LAL/HNL 0.8), longer than upper arm (UAL/LAL 0.8); fore-arm distinctly enlarged; fingers thin, (Fig. 6), relative length of fingers I < II < IV < III (FL-1/FL-3 0.4, FL-2/FL-3 0.5, FL-4/FL-3 0.8) (Table 4); tips of fingers rounded enlarged; discs present on all fingers, with distinct basal and circum marginal grooves; dermal fringe present on inside of all fingers; fringe on external edge of finger IV and palm; ulnar fold indistinct but few small undulating tubercles present; webbing formula I2—2½II2—3III1 ½—2 ½IV2—1+V; subarticular tubercles



Image 12. *Pseudophilautus dayawansai* sp. nov. unpreserved specimen.

prominent, oval, single, all present, III2 and IV2 relatively smaller; inner palmar tubercle single, oval, larger than outer palmar tubercle; outer palmar tubercle single, indistinct; nuptial pads absent; supernumerary tubercles present on all fingers, and a few indistinct ones on palm; femur twice as long as the fourth toe length (FEL TL-4 2.1), foot length longer than thigh (FOL/FEL 1.5), toes long, thin (Fig. 7); relative length of toes I < II < III < V < IV (TL-1/TL-4 0.4, TL-2/TL-4 0.4, TL-3/TL-4 0.6, TL-5/TL-4 0.8); tips of toes rounded, discs present on all toes, with distinct basal and circum marginal grooves; webbing formula I2—2½II2—3III1 ½—2 ½IV2—1+V; lateral dermal fringe present on both sides of all toes, fringe along exterior edge of toe V and metatarsal fold; fringe absent on tarsus but few small undulating tubercles present; subarticular tubercles prominent, oval, single, all present, III3 relatively smaller; supernumerary tubercles present on toe III, IV and V, becomes indistinct after preservation; inner metatarsal tubercle oval prominent and large, its length 3/5 times the length of toe I (IML/TL-1 0.6); outer metatarsal tubercle indistinct; tarsal with a single blunt small calcar and a few blunt small tubercles present at heel.

Skin between eyes smooth with two symmetrically placed ridges that do not meet mid dorsally; dorsal and lateral snout tubercular, a prominent tubercle present dorsally on middle of snout; upper eyelid bearing few horny tubercles with one being more prominent; lateral head tubercular with prominent tubercle present near the gape of mouth; a median dermal ridge absent; anterior part of dorsum smooth, posterior part weakly tubercular; upper and lower part of flank granular; supratympanic fold prominent; upper arm shagreen; forearm weakly tubercular; hand shagreen; inner, outer,

**Table 4.** The morphometric measurements (mm) of the type series of *Pseudophilautus dayawansai* sp. nov.

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.02.01 NH | 2013.01.003 | 2013.01.004 |      |     |           |
| DB           | 0.5           | 0.9         | 0.6         | 0.7  | 0.2 | 0.5–0.9   |
| DBE          | 9.4           | 10.8        | 9.6         | 9.9  | 0.8 | 9.4–10.8  |
| DFE          | 5.0           | 6.5         | 5.0         | 5.5  | 0.9 | 5.0–6.5   |
| DL           | 1.1           | 1.4         | 1.3         | 1.3  | 0.2 | 1.1–1.4   |
| DW           | 1.2           | 1.6         | 1.1         | 1.3  | 0.3 | 1.1–1.6   |
| ED           | 4.1           | 4.8         | 4.0         | 4.3  | 0.5 | 4.0–4.8   |
| EN           | 2.3           | 3.0         | 2.6         | 2.6  | 0.3 | 2.3–3.0   |
| ES           | 3.8           | 4.9         | 4.4         | 4.4  | 0.5 | 3.8–4.9   |
| FEL          | 12.1          | 14.7        | 13.7        | 13.5 | 1.3 | 12.1–14.7 |
| FL-1         | 2.0           | 2.4         | 2.3         | 2.2  | 0.2 | 2.0–2.4   |
| FL-2         | 2.8           | 3.7         | 3.2         | 3.2  | 0.5 | 2.8–3.7   |
| FL-3         | 5.6           | 6.8         | 6.7         | 6.4  | 0.7 | 5.6–6.8   |
| FL-4         | 4.5           | 5.1         | 4.9         | 4.8  | 0.3 | 4.5–5.1   |
| FOL          | 18.1          | 19.7        | 20.1        | 19.3 | 1.1 | 18.1–20.1 |
| GK           | 12.0          | 13.4        | 12.8        | 12.7 | 0.7 | 12.0–13.4 |
| HD           | 5.2           | 6.4         | 5.2         | 5.6  | 0.7 | 5.2–6.4   |
| HL           | 10.5          | 12.4        | 11.1        | 11.3 | 1.0 | 10.5–12.4 |
| HNL          | 7.6           | 9.1         | 8.5         | 8.4  | 0.8 | 7.6–9.1   |
| HW           | 10.5          | 12.2        | 10.9        | 11.2 | 0.9 | 10.5–12.2 |
| IML          | 1.2           | 1.4         | 1.2         | 1.3  | 0.1 | 1.2–1.4   |
| IN           | 2.9           | 3.3         | 2.7         | 3.0  | 0.3 | 2.7–3.3   |
| IO           | 2.8           | 3.6         | 3.1         | 3.2  | 0.4 | 2.8–3.6   |

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.02.01 NH | 2013.01.003 | 2013.01.004 |      |     |           |
| KT           | 12.2          | 13.0        | 12.8        | 12.7 | 0.4 | 12.2–13.0 |
| LAL          | 6.2           | 7.5         | 7.7         | 7.1  | 0.8 | 6.2–7.7   |
| MBE          | 4.7           | 5.1         | 4.3         | 4.7  | 0.4 | 4.3–5.1   |
| MFE          | 8.8           | 9.0         | 8.3         | 8.7  | 0.3 | 8.3–9.0   |
| MN           | 10.6          | 11.5        | 10.3        | 10.8 | 0.6 | 10.3–11.5 |
| SN           | 1.5           | 1.7         | 1.5         | 1.6  | 0.1 | 1.5–1.7   |
| SVL          | 24.5          | 30.1        | 26.2        | 26.9 | 2.9 | 24.5–30.1 |
| TAD          | 0.8           | 0.9         | 0.7         | 0.8  | 0.1 | 0.7–0.9   |
| TAS          | 8.0           | 9.3         | 9.0         | 8.7  | 0.7 | 8.0–9.3   |
| TBL          | 13.6          | 15.1        | 14.6        | 14.4 | 0.7 | 13.6–15.1 |
| TL-1         | 2.0           | 2.2         | 2.2         | 2.1  | 0.1 | 2.0–2.2   |
| TL-2         | 2.4           | 2.7         | 2.6         | 2.5  | 0.1 | 2.4–2.7   |
| TL-3         | 3.6           | 4.1         | 4.5         | 4.1  | 0.4 | 3.6–4.5   |
| TL-4         | 5.7           | 6.9         | 7.0         | 6.5  | 0.7 | 5.7–7.0   |
| TL-5         | 4.4           | 4.9         | 4.5         | 4.6  | 0.2 | 4.4–4.9   |
| TND          | 7.3           | 8.5         | 7.7         | 7.8  | 0.6 | 7.3–8.5   |
| TPD          | 4.7           | 5.8         | 5.1         | 5.2  | 0.6 | 4.7–5.8   |
| TYH          | 1.3           | 1.5         | 1.3         | 1.4  | 0.1 | 1.3–1.5   |
| TYW          | 1.1           | 1.1         | 0.9         | 1.0  | 0.1 | 0.9–1.1   |
| UAL          | 5.1           | 4.7         | 5.0         | 5.0  | 0.2 | 4.7–5.1   |
| UEW          | 2.5           | 2.6         | 2.1         | 2.4  | 0.3 | 2.1–2.6   |
| VKL          | 10.1          | 12.0        | 11.6        | 11.2 | 1.0 | 10.1–12.0 |

**Table 5.** Characters that differentiate *Pseudophilautus dayawansai* sp. nov. among congeners of the genus *Pseudophilautus*

| Species name                          | SVL       | Head dorsally   | Snout lateral       | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  |
|---------------------------------------|-----------|-----------------|---------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|
| <i>P. dayawansai</i> sp. nov.         | 24.5–30.1 | Convex          | Truncate            | Rounded           | Concave       | Concave            | Concave           | Absent         | Present         | Present           | Present |
| <i>P. bambaradeniyai</i> sp. nov.     | 17.3–20.2 |                 |                     |                   |               | Convex             | Flat              |                | Absent          | Absent            | Absent  |
| <i>P. jagathgunawardanai</i> sp. nov. | 35.8–40.4 |                 | Rounded             | Sharp             | Convex        | Convex             |                   |                |                 | Absent            | Absent  |
| <i>P. karunarathnai</i> sp. nov.      | 16.2–19.2 |                 | Rounded             |                   |               | Convex             |                   | Present        | Absent          |                   | Absent  |
| <i>P. newtonjayawardanei</i> sp. nov. | 38.4      | Concave         | Rounded             |                   |               |                    |                   |                | Absent          |                   | Absent  |
| <i>P. puranappu</i> sp. nov.          | 33.6–51.1 | Concave         | Rounded             |                   |               | Flat               |                   | Present        |                 | Absent            | Absent  |
| <i>P. samarakoon</i> sp. nov.         | 20.4–24.6 |                 | Truncate            |                   |               | Convex             | Flat              |                | Absent          |                   |         |
| <i>P. sirilwijesundarai</i> sp. nov.  | 22.3–32.5 |                 | Rounded             |                   |               | Convex             | Flat              | Present        | Absent          |                   | Absent  |
| <i>P. abundus</i>                     | 25.4–37.0 | Concave         | Pointed or oval     |                   |               | Flat               |                   | Present        |                 |                   | Absent  |
| <i>P. adspersus</i>                   | 33.3–41.7 | Flat            |                     | Sharp             |               |                    | Flat              |                | Absent          |                   | Absent  |
| <i>P. alto</i>                        | 17.0–27.5 |                 | Obtusely pointed    |                   |               | Convex             |                   |                | Absent          |                   |         |
| <i>P. asankai</i>                     | 18.9–27.3 |                 | Obtusely pointed    |                   | Flat          | Convex             | Flat              |                | Absent          |                   | Absent  |
| <i>P. auratus</i>                     | 21.7–26.4 | Flat            | Blunt               |                   | Flat          | Flat               |                   | Present        | Absent          |                   | Absent  |
| <i>P. caeruleus</i>                   | 16.3–19.0 | Flat            | Obtusely pointed    | Sharp             |               | Flat               |                   |                |                 | Absent            | Absent  |
| <i>P. cavirostris</i>                 | 38.4–48.9 | Concave         | Oval                | Sharp             |               |                    |                   | Present        | Absent          |                   |         |
| <i>P. cuspis</i>                      | 17.6–28.9 |                 | Sharply Pointed     | Sharp             |               | Convex             | Flat              |                | Absent          | Absent            |         |
| <i>P. decoris</i>                     | 18.3–23.9 | Flat            | Obtusely pointed    |                   |               |                    |                   |                |                 |                   |         |
| <i>P. dimbuliae</i>                   | 44.8      |                 |                     | Sharp             |               | Flat               | Flat              | Present        | Absent          |                   | Absent  |
| <i>P. eximus</i>                      | 35.3      | Flat            | Rounded             | Sharp             |               | Flat               | Flat              |                |                 |                   | Absent  |
| <i>P. extirpo</i>                     | 43.5      | Flat            | Blunt               | Sharp             |               |                    |                   |                |                 |                   | Absent  |
| <i>P. femoralis</i>                   | 23.4–28.8 | Flat            |                     |                   |               | Flat               |                   |                | Absent          |                   | Absent  |
| <i>P. fergusonianus</i>               | 26.9–44.5 | Concave or flat | Rounded             |                   |               |                    |                   | Present        | Absent          |                   | Absent  |
| <i>P. folicola</i>                    | 23.7–29.4 | Flat            | Rounded or Truncate | Sharp             |               | Flat               |                   | Present        |                 |                   | Absent  |
| <i>P. frankenbergi</i>                | 26.7–29.3 | Flat            | Rounded             | Sharp             |               | Flat               | Flat              |                | Absent          |                   |         |
| <i>P. fulvus</i>                      | 33.4–46.8 |                 | Rounded             | Sharp             |               | Flat               |                   | Present        | Absent          |                   |         |
| <i>P. hallidayi</i>                   | 32.9–42.9 | Concave or flat | Rounded             |                   |               | Flat               |                   | Present        | Absent          |                   | Absent  |

| Species name            | SVL       | Head dorsally     | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar |
|-------------------------|-----------|-------------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|--------|
| <i>P. halyi</i>         | 27.9      | Uneven            | Rounded          | Sharp             |               | Flat               | Flat              |                | Absent          |                   | Absent |
| <i>P. hankeni</i>       | 18.3–21.9 |                   | Pointed          |                   |               | Convex             |                   |                | Absent          | Absent            |        |
| <i>P. hoffmanni</i>     | 21.2–23.4 | Flat              | Rounded          |                   | Flat          | Flat               | Flat              |                | Absent          |                   | Absent |
| <i>P. hoipolloi</i>     | 22.0–28.6 |                   | Blunt            |                   | Flat          | Flat               |                   |                |                 |                   | Absent |
| <i>P. hypomelas</i>     | 11.2–22.4 |                   | Acuminate        |                   |               | Convex             | Flat              |                | Absent          | Absent            | Absent |
| <i>P. leucorhinus</i>   | 19.8      | Flat              | Oval             | Sharp             |               |                    |                   |                | Absent          | Absent            | Absent |
| <i>P. limbus</i>        | 25.7      | Concave           | Obtusely pointed |                   |               |                    |                   | Present        |                 | Absent            |        |
| <i>P. lunatus</i>       | 40.9      | Flat              | Oval             |                   |               |                    |                   | Present        |                 |                   |        |
| <i>P. macropus</i>      | 27.4–42.7 | Convex or concave | Oval             |                   |               | Flat               | Flat              | Present        |                 |                   | Absent |
| <i>P. maia</i>          | 46.6      | Concave           |                  | Sharp             |               |                    | Flat              | Present        | Absent          |                   | Absent |
| <i>P. malcolmsmithi</i> | 14.9      |                   | Pointed          | Sharp             |               | Flat               | Flat              |                | Absent          | Absent            |        |
| <i>P. microtympanum</i> | 23.9–49.0 |                   | Oval             |                   |               | Flat               |                   | Present        | Absent          |                   |        |
| <i>P. mittermeieri</i>  | 16.3–18.4 |                   | Pointed          |                   |               |                    |                   |                | Absent          |                   |        |
| <i>P. mooreorum</i>     | 29.4–35.0 | Flat              | Rounded          |                   |               | Flat               |                   |                | Absent          |                   | Absent |
| <i>P. nanus</i>         | 34.8      |                   | Oval             |                   |               | Flat               |                   | Present        | Absent          | Absent            | Absent |
| <i>P. nasutus</i>       | 17.4      |                   | Pointed          | Sharp             |               | Flat               |                   |                | Absent          | Absent            |        |
| <i>P. nemus</i>         | 20.7      |                   | Obtusely pointed |                   |               | Flat               | Flat              |                | Absent          | Absent            | Absent |
| <i>P. ocularis</i>      | 23.1–33.4 | Flat              | Blunt            |                   |               | Flat               |                   | Present        | Absent          |                   |        |
| <i>P. oxyrhynchus</i>   | 18.6      | Flat              | Pointed          | Sharp             | Flat          |                    |                   |                | Absent          | Absent            |        |
| <i>P. papillosum</i>    | 40        |                   |                  | Sharp             |               |                    | Flat              | Present        |                 |                   |        |
| <i>P. pardus</i>        | 32.1      |                   | Rounded          | Indistinct        | Flat          | Flat               |                   |                | Absent          | Absent            | Absent |
| <i>P. pleurotaenia</i>  | 25.6–30.3 |                   |                  |                   |               | Convex             |                   |                |                 |                   | Absent |
| <i>P. poppiae</i>       | 21.3–26.0 |                   | Rounded          |                   |               | Flat               |                   |                | Absent          |                   | Absent |
| <i>P. popularis</i>     | 17.7–24.7 |                   | Rounded          |                   |               | Flat               | Flat              |                | Absent          | Absent            | Absent |
| <i>P. procax</i>        | 25.1–26.8 | Concave           | Pointed or oval  |                   |               | Flat               |                   | Present        |                 |                   | Absent |
| <i>P. regius</i>        | 18.3–21.7 | Flat              | Oval             |                   |               |                    |                   |                | Absent          |                   | Absent |
| <i>P. reticulatus</i>   | 42.5–61.1 |                   | Truncate or oval | Sharp             |               | Convex or concave  |                   | Present        |                 |                   |        |
| <i>P. rugatus</i>       | 17.5      |                   | Rounded          | Sharp             |               | Convex             |                   |                | Absent          | Absent            |        |

| Species name          | SVL       | Head dorsally | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar |
|-----------------------|-----------|---------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|--------|
| <i>P. rus</i>         | 20.6–24.1 | Flat          | Oval             |                   |               | Flat               | Flat              | Present        | Absent          | Absent            | Absent |
| <i>P. sarasinorum</i> | 22.6–38.1 | Flat          | Rounded          |                   |               | Flat               |                   |                |                 | Absent            | Absent |
| <i>P. schmarda</i>    | 17.7–30.0 |               | Obtusely pointed | Sharp             |               | Convex             |                   |                | Absent          |                   |        |
| <i>P. schneideri</i>  | 19.9–22.8 |               | Pointed          | Sharp             | Flat          | Convex             | Flat              | Present        | Absent          | Absent            |        |
| <i>P. semiruber</i>   | 13.4      |               | Oval             |                   | Flat          |                    | Flat              |                | Absent          |                   | Absent |
| <i>P. silus</i>       | 35.4–51.8 |               | Oval             | Sharp             |               | Flat               | Flat              | Present        | Absent          |                   | Absent |
| <i>P. silvaticus</i>  | 24.3–31.3 |               | Oval             | Sharp             |               | Flat               | Flat              | Present        |                 | Absent            | Absent |
| <i>P. simba</i>       | 12.6–15.6 |               |                  |                   | Flat          | Convex             | Flat              |                | Absent          | Absent            | Absent |
| <i>P. singu</i>       | 16.1–16.6 |               | Rounded          |                   |               | Convex             |                   |                |                 | Absent            |        |
| <i>P. sordidus</i>    | 22.2–39.4 |               | Blunt            |                   |               | Convex             | Flat              | Present        |                 | Absent            | Absent |
| <i>P. steineri</i>    | 30.4–41.6 | Flat          | Rounded          | Sharp             |               | Flat               |                   | Present        | Absent          |                   | Absent |
| <i>P. stellatus</i>   | 39.6–55.3 | Concave       | Rounded          |                   |               |                    |                   | Present        |                 |                   |        |
| <i>P. stictomerus</i> | 23.2–36.0 |               | Obtusely pointed |                   |               |                    |                   | Present        | Absent          | Absent            | Absent |
| <i>P. stuarti</i>     | 24.2–32.4 | Flat          | Rounded          | Sharp             |               | Flat               | Flat              |                | Absent          | Absent            | Absent |
| <i>P. tanu</i>        | 13.5–13.9 |               | Obtusely pointed |                   | Flat          | Flat               | Flat              |                | Absent          | Absent            |        |
| <i>P. temporalis</i>  | 28.4–31.0 |               | Rounded          |                   |               |                    |                   | Present        | Absent          | Absent            | Absent |
| <i>P. variabilis</i>  | 35.7      | Flat          |                  |                   |               | Flat               |                   |                | Absent          |                   |        |
| <i>P. viridis</i>     | 27.4–36.3 |               | Blunt or rounded | Indistinct        |               | Flat               | Flat              |                | Absent          |                   | Absent |
| <i>P. zal</i>         | 20.0–32.5 |               | Rounded          |                   |               | Convex             |                   |                | Absent          |                   | Absent |
| <i>P. zimmeri</i>     | 31.6      |               | Blunt            | Sharp             |               | Flat               | Flat              | Present        | Absent          |                   |        |
| <i>P. zorro</i>       | 22.9–30.1 | Concave       | Pointed          | Sharp             |               | Flat               |                   |                | Absent          | Absent            |        |

**Table 6. Characters in the skin structure that differentiate *Pseudophilautus dayawansai* sp. nov. among congeners of the genus *Pseudophilautus***

| Species name                          | Snout   | Interorbital area                                 | Side of head                                      | Anterior dorsum  | Posterior dorsum   | Median dermal ridge | Upper flank                        | Lower flank               | Throat   |
|---------------------------------------|---|---|---|--|--|---------------------|------------------------------------|---------------------------|--|
| <i>P. dayawansai</i> sp. nov.         | Tuberculated, a single prominent tubercle medially placed | Smooth, with a ridge across breaking medially     | Tubercular  | Smooth   | Weakly tubercular  | Absent              | Granular                           | Granular                  | Shagreen   |
| <i>P. bambaradeniyai</i> sp. nov.     | Smooth  | Smooth  | Smooth  | Prominent tubercles and horny spinules                           | Horny spinules   |                     | Smooth                             | Smooth                    | Weakly granular  |
| <i>P. jagathgunawardanai</i> sp. nov. | Smooth  | Smooth, with two cross dermal fringes             | Smooth  |  | Smooth   | Present             | Smooth                             | Weakly granular           | Weakly granular  |
| <i>P. karunarathnai</i> sp. nov.      |   | Weakly tubercular                                 |   |  | Spinulate  | Present             |                                    |                           | Granular   |
| <i>P. newtonjayawardanei</i> sp. nov. | Shagreen  | Shagreen, with a prominent ridge                  | Shagreen  | Shagreen   | Shagreen   | Present             | Shagreen                           | Weakly granular           | Granular   |
| <i>P. puranappu</i> sp. nov.          |   | Smooth  | Smooth  | Weakly shagreen  | Few horny spinules, Prominent tubercles                          | Present             | Weakly tubercular                  |                           | Weakly granular  |
| <i>P. samarakoon</i> sp. nov.         |   | Tubercular  | Smooth  | Tubercular   | Tubercular   | Present             | Tubercular                         |                           | Weakly granular  |
| <i>P. sirilwisesundarai</i> sp. nov.  | Shagreen, with prominent dermal fold                      | A prominent tubercle present                      | Weakly shagreen                                   | Shagreen with few tubercles                                      | Shagreen   | Present             | Areolate                           |                           |  |
| <i>P. abundus</i>                     | Smooth  | Smooth  | Smooth  | Horny spinules (absent in females)                               | Horny spinules (Absent in females)                               |                     | Smooth                             |                           | Coarsely granular  |
| <i>P. adspersus</i>                   | Smooth except for a few scattered glandular warts         | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts |  | Smooth   |                     |                                    |                           | Weakly granular  |
| <i>P. alto</i>                        | Horny spinules in males                                   | Horny spinules in males                           | Smooth  | Horny spinules in males, warty in females                        | Horny spinules in males, warty in females                        |                     | Horny spinules in males            |                           | Granular   |
| <i>P. asankai</i>                     | Very fine, horny spinules                                 | Very fine, horny spinules                         | Very fine, horny spinules                         | Very fine, horny spinules  | Very fine, horny spinules  |                     | Horny spinules                     | Very fine, horny spinules | Granular   |
| <i>P. auratus</i>                     | Shagreen  | Shagreen  | Shagreen  | Shagreen   | Shagreen   |                     |                                    |                           | Smooth or granular   |
| <i>P. caeruleus</i>                   | Glandular warts and horny spinules                        | Glandular warts and horny spinules                | Glandular warts and horny spinules                | Glandular warts and horny spinules (females lack horny spinules) | Glandular warts and horny spinules (females lack horny spinules) |                     | Glandular warts and horny spinules | Granular in males         | Granular with scattered glandular warts, smooth in females |
| <i>P. cavirostris</i>                 | Glandular warts   | Glandular warts                                   | Glandular warts                                   | Heavily tuberculated, glandular warts                            | Heavily tuberculated, glandular warts                            |                     | Smooth                             |                           | Smooth   |
| <i>P. cuspis</i>                      | Horny spinules  | Horny spinules                                    | Smooth  | Horny spinules with a "J"-shaped pattern of tubercles            | Horny spinules   | Present             | Smooth or with glandular warts     | Smooth or granular        | Smooth   |

| Species name            | Snout  | Interorbital area                                  | Side of head   | Anterior dorsum                                    | Posterior dorsum   | Median dermal ridge  | Upper flank   | Lower flank     | Throat                                |
|-------------------------|--|--|--|--|--|----------------------|---|-----------------|---------------------------------------|
| <i>P. decoris</i>       | Glandular warts                                    | Glandular warts                                    | Glandular warts  | Glandular warts                                    | Glandular warts  |                      | Glandular warts   | Glandular warts | Glandular, warty, or roughly granular |
| <i>P. dimbuliae</i>     | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen   |                      | Shagreen  |                 | Weakly granular                       |
| <i>P. eximius</i>       | Smooth   | Smooth   | Smooth   |  | Smooth   |                      | Smooth  | Weakly granular | Smooth                                |
| <i>P. extirpo</i>       | Shagreen, with a few glandular warts               | Shagreen   | Shagreen   | Shagreen, with a few glandular warts               | Shagreen, with a few glandular warts                               |                      |   |                 | Weakly granular                       |
| <i>P. femoralis</i>     | Finely granular                                    | Finely granular                                    | Finely granular  | Finely granular                                    | Finely granular  |                      |   |                 | Smooth                                |
| <i>P. fergusonianus</i> | Shagreen, males glandular warts and horny spinules | Shagreen, males glandular warts and horny spinules | Few glandular warts                                      | Shagreen, Males glandular warts and horny spinules | Few glandular warts, males with glandular warts and horny spinules |                      | Shagreen, males with glandular warts and horny spinules |                 | Weakly granular                       |
| <i>P. folicola</i>      | Smooth   | Smooth   | Shagreen, smooth or with a few scattered glandular warts |  | Smooth   |                      |   |                 | Granular or smooth                    |
| <i>P. frankenbergi</i>  | Shagreen   | Shagreen   | Glandular warts  | Shagreen, horny spinules scattered                 | Shagreen, horny spinules scattered                                 |                      | Shagreen  |                 | Granular                              |
| <i>P. fulvus</i>        | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen   |                      | Shagreen  |                 | Granular                              |
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males      | Glandular warts, with horny spinules in males      | Glandular warts  | Glandular warts, with horny spinules in males      | Glandular warts, with horny spinules in males                      |                      | Glandular warts, with horny spinules in males           |                 | Smooth, granular in males             |
| <i>P. halyi</i>         | Shagreen with glandular warts                      | Shagreen with glandular warts                      | Shagreen with glandular warts                            | Shagreen with glandular warts                      | Shagreen with glandular warts                                      | Tip of snout to vent | Glandular warts   |                 | Granular                              |
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules                   | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules                             |                      | Glandular warts bearing horny spinules                  |                 | Granular                              |
| <i>P. hoffmanni</i>     | Smooth   | Smooth   | Smooth   |  | Smooth   |                      | Smooth  | Glandular       | Granular                              |
| <i>P. hoipolloi</i>     | Smooth or shagreen                                 | Smooth or shagreen                                 | Smooth or shagreen                                       |  | Smooth or shagreen   |                      | Smooth or granular                                      |                 |                                       |
| <i>P. hypomelas</i>     | Smooth   | Smooth   | Smooth   |  | Smooth   | Present              | Smooth  | Smooth          | Smooth                                |
| <i>P. leucorhinus</i>   | Smooth   | Smooth   | Smooth   | Smooth with a few scattered glandular warts        | Smooth with a few scattered glandular warts                        |                      | Smooth with glandular warts                             |                 | Granular, but not rough               |

| Species name            | Snout                            | Interorbital area                           | Side of head                     | Anterior dorsum  | Posterior dorsum   | Median dermal ridge  | Upper flank   | Lower flank             | Throat                           |
|-------------------------|----------------------------------|---|----------------------------------|--|--|----------------------|---|-------------------------|----------------------------------|
| <i>P. limbus</i>        | Weakly granular                  | Weakly granular                             | Weakly granular                  | Weakly granular  | Weakly granular  |                      |   |                         | Granular                         |
| <i>P. lunatus</i>       | Smooth                           | Smooth                                      | Smooth                           |  | Smooth   |                      | Glandular warts   |                         | Smooth                           |
| <i>P. macropus</i>      | Smooth                           | Smooth with a few scattered glandular warts | Glandular warts                  | Shagreen or smooth, with a few scattered glandular warts                       | Shagreen or smooth, with a few scattered glandular warts                       |                      |   |                         | Smooth or granular               |
| <i>P. maia</i>          | Smooth                           | Smooth                                      | Smooth                           | Glandular warts  | Glandular warts  |                      | Glandular warts   | Glandular warts         | Granular                         |
| <i>P. malcolmsmithi</i> | Smooth                           | Smooth                                      | Smooth                           | Smooth, ' \ ' shaped ridge   | Smooth   |                      | Glandular warts   | Glandular warts         | Smooth                           |
| <i>P. microtympanum</i> | Smooth or tuberculated           | Smooth or tuberculated                      | Shagreen                         | Smooth above, shagreen and with glandular warts, males with horn like spinules | Smooth above, shagreen and with glandular warts, males with horn like spinules |                      |   |                         | Granular                         |
| <i>P. mittermeieri</i>  | Glandular warts                  | Glandular warts                             | Glandular warts                  | Glandular warts  | Glandular warts  |                      | Glandular warts   | Glandular warts         | Granular                         |
| <i>P. mooreorum</i>     | Horny spinules in males          | Horny spinules in males                     | Horny spinules in males          | Horny spinules in males, finely granular or shagreen in female                 | Horny spinules in males, finely granular or shagreen in female                 |                      | Horny spinules in males                                     | Horny spinules in males | Granular                         |
| <i>P. nanus</i>         | Glandular warts                  | Few glandular warts                         | Few glandular warts              | Few glandular warts  | Few glandular warts  |                      | Glandular folds   |                         | Weakly granular                  |
| <i>P. nasutus</i>       | Glandular warts                  | Glandular warts                             | Glandular warts                  | Tuberculated, horn like spinules   | Tuberculated, horn like spinules   | Tip of snout to vent | Smooth  |                         | Granular                         |
| <i>P. nemus</i>         | Glandular warts                  | Smooth                                      | Glandular warts                  | Glandular warts  | Glandular warts  |                      | Smooth  |                         | Granular but not rough           |
| <i>P. oocularis</i>     | Shagreen or with glandular warts | Shagreen or with glandular warts            | Shagreen or with glandular warts | Shagreen or with glandular warts   | Shagreen or with glandular warts   |                      | Shagreen or glandular warts                                 |                         | Granular or with glandular folds |
| <i>P. oxyrhynchus</i>   | Smooth                           | Smooth                                      | Smooth                           |  | Smooth   |                      | Smooth  | Smooth                  | Smooth                           |
| <i>P. papillosum</i>    | Glandular warts                  | Glandular warts                             | Glandular warts                  | Glandular warts  | Glandular warts  |                      | Glandular warts   |                         | Granular                         |
| <i>P. pardus</i>        | Smooth                           | Smooth                                      | Smooth                           |  | Smooth   |                      |   |                         | Weakly granular                  |
| <i>P. pleurotaenia</i>  | Shagreen                         | Shagreen                                    | Shagreen                         | Shagreen with a few scattered glandular warts and horny spinules (males)       | Shagreen, few scattered glandular warts and horny spinules (males)             |                      | Shagreen, few scattered glandular warts, and horny spinules |                         | Granular                         |

| Species name          | Snout  | Interorbital area  | Side of head   | Anterior dorsum  | Posterior dorsum   | Median dermal ridge        | Upper flank  | Lower flank                        | Throat                               |
|-----------------------|--|--|--|--|--|----------------------------|--|------------------------------------|--------------------------------------|
| <i>P. poppiae</i>     | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female     | Horny spinules in males, finely granular or shagreen in female     |                            | Horny spinules in males, finely granular or shagreen in female | Smooth                             | Granular                             |
| <i>P. popularis</i>   | Glandular warts  | Smooth   | Glandular warts  | Horny spinules   | Horny spinules   |                            | Horny spinules   |                                    | Granular                             |
| <i>P. procax</i>      | Smooth   | Smooth   | Smooth   | Horny spinules (spinules Absent in females)                        | Horny spinules (spinules Absent in females)                        |                            | Smooth   |                                    | Coarsely granular                    |
| <i>P. regius</i>      | Horny spinules   | Horny spinules   | Horny spinules   | Horny spinules   | Horny spinules   |                            | Glandular  | Glandular                          | Granular                             |
| <i>P. reticulatus</i> | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts, finely tuberculated | Shagreen with a few scattered glandular warts, finely tuberculated |                            | Shagreen with a few scattered glandular warts                  |                                    | Smooth or granular                   |
| <i>P. rugatus</i>     | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts                  | Smooth except for a few scattered glandular warts                  |                            | Glandular warts  |                                    | Weakly granular                      |
| <i>P. rus</i>         | Smooth   | Smooth   | Glandular warts  | Glandular warts  | Glandular warts  |                            |  |                                    | Granular                             |
| <i>P. sarasinorum</i> | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts, males with horny spinules scattered               | Glandular warts, males with horny spinules scattered               |                            | Glandular folds  | Granular in females                | Glandular warts                      |
| <i>P. schmarda</i>    | Glandular warts  | Glandular folds, glandular warts and horny spinules            | Glandular warts  | Glandular folds, glandular warts and horny spinules                | Glandular folds, glandular warts and horny spinules                |                            | Glandular folds, glandular warts and horny spinules            | Glandular warts and horny spinules | Glandular warts                      |
| <i>P. schneideri</i>  | Small tubercles with horny spinules                                | Small tubercles with horny spinules                                |                            | Small tubercles with horny spinules                            |                                    | Granular                             |
| <i>P. semiruber</i>   | Smooth   | Smooth   | Smooth   |  | Smooth   | Thin, tip of snout to vent | Smooth   | Smooth                             | Smooth                               |
| <i>P. silus</i>       | Smooth   | Smooth   | Glandular warts  | Glandular warts  | Glandular warts  |                            | Glandular warts  |                                    | Granular                             |
| <i>P. silvaticus</i>  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  | Smooth   |                            | Glandular warts  |                                    | Granular in males, smooth in females |
| <i>P. simba</i>       | Smooth   | Smooth   | Glandular warts  | Glandular warts  | Smooth   |                            |  |                                    | Weakly granular                      |
| <i>P. singu</i>       | Scattered, glandular tubercles                                 | Scattered, glandular tubercles                                 | Scattered, glandular tubercles                                 | Scattered, glandular tubercles                                     | Scattered, glandular tubercles                                     |                            | Scattered, glandular tubercles                                 | Scattered, glandular tubercles     | Granular                             |

| Species name           | Snout   | Interorbital area                                     | Side of head  | Anterior dorsum  | Posterior dorsum  | Median dermal ridge                | Upper flank   | Lower flank       | Throat          |
|------------------------|---|---|---|--|---|------------------------------------|---|-------------------|-----------------|
| <i>P. sordidus</i>     | Glandular warts                                       | Glandular warts                                       | Glandular warts                                       | Glandular warts, males horny spinules scattered                      | Glandular warts, males horny spinules scattered                 |                                    | Glandular warts, with horny spinules in males         |                   | Smooth          |
| <i>P. steineri</i>     | Glandular warts and horny spinules                    | Glandular warts and horny spinules                    | Smooth or with glandular warts                        | Glandular warts and horny spinules, females lack horny spinules      | Glandular warts and horny spinules, females lack horny spinules | Tip of snout to posterior dorsum   | Glandular warts and horny spinules                    |                   | Granular        |
| <i>P. stellatus</i>    | Weakly shagreen                                       | Weakly shagreen                                       | Weakly shagreen                                       | Weakly shagreen  | Weakly shagreen   |                                    | Shagreen to weakly areolate                           | Weakly areolate   | Weakly granular |
| <i>P. strictomerus</i> | Smooth  | Smooth  | Smooth or with glandular warts                        | Shagreen, horny spinules in males                                    | Shagreen, horny spinules in males                               |                                    | Shagreen, horny spinules in males                     |                   |                 |
| <i>P. stuarti</i>      | Horny spinules  | Horny spinules  | Smooth  | Horny spinules, females lack horny spinules                          | Horny spinules, females lack horny spinules                     |                                    | Smooth  | Smooth            | Granular        |
| <i>P. tanu</i>         | Shagreen  | Shagreen  | Shagreen  | Shagreen   | Shagreen  | Tip of snout to vent (Very narrow) |   |                   | Granular        |
| <i>P. temporalis</i>   | Smooth  | Smooth  | Smooth  |  | Smooth  |                                    | Smooth  | Coarsely granular | Smooth          |
| <i>P. variabilis</i>   | Smooth  | Smooth  | Smooth  |  | Smooth  |                                    |   |                   | Granular        |
| <i>P. viridis</i>      | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males)                | Horny spinules (smooth in females and immature males)           |                                    | Horny spinules (smooth in females and immature males) |                   | Granular        |
| <i>P. zal</i>          | Weakly shagreen                                       | Shagreen  | Shagreen  | Weakly tubercular  |   | Present                            |   |                   | Granular        |
| <i>P. zimmeri</i>      | Glandular warts                                       | Glandular warts                                       | Glandular warts                                       | Glandular warts  | Glandular warts   |                                    |   |                   | Granular        |
| <i>P. zorro</i>        | Horny spinules  | Horny spinules  | Glandular warts                                       | Horny spinules, Anterior dorsum with "J"-shaped pattern of tubercles | Horny spinules  | Tip of snout to vent (narrow)      | Glandular warts                                       |                   | Smooth          |

and dorsal thigh smooth; dorsally leg weakly tubercular; tarsus weakly tubercular; foot smooth.

**Ventral side of body:** Throat shagreen; chest weakly granular; belly granular; upper arm weakly granular; forearm smooth; thigh weakly granular; leg smooth.

**Colour in life:** Dorsally brown with dark brown blotches; much of the dorsum covered with a dark brown marking, forming a clear semicircular blackish margin anteriorly, its center with a large light brown triangle, prominent, symmetrically placed on dorsum with the base on sacral hump pointing towards head, its margins blackish-brown and outer area dark brown, three prominent blackish-brown circular spots, two between eyes, and right in front another circular dark brown spot, posterior part from sacrum light brown; lateral body, and behind eyes dark brown with an olive green tinge; limbs dark brown, forelimbs, hind limbs, fingers and toes with maroon cross bands, hind limbs laterally olive green tinge; ventrally light brown with dark brown blotching, hands, feet and webbing darker.

**Colour in alcohol:** Colour pattern remains with a little fading, maroon to dark brown, venter light brown to off-white with darker marbling, green tinge absent.

**Paratype and variation:** Dorsum colour varies ranging from a reddish-brown (Image 10) to a lighter brown shades (Image 12); in the lighter coloured specimens the dorsal colour of foot and hand light yellowish, and limbs were cream with brown cross bands.

**Etymology:** The species epithet *dayawansai* is named after Nihal Dayawansa, Senior Lecturer of the Department of Zoology, University of Colombo in recognition of his dedicated service and commitment towards amphibian research work in Sri Lanka. The species name *dayawansai* is a noun in the genitive case.

**Suggested vernacular names:** Dayawansage panduru madiya in Sinhala and Dayawansa's Shrub Frog in English.

**Natural History:** The species was found in cloud forests of elevation 1550–1900 m above sea level from forest floor to about 2m high shrubs.

**Remarks:** *Pseudophilautus dayawansai* sp. nov., possesses a unique colour pattern which is not possessed by any of its congeners, hence can easily be identified. In Dutta & Manamendra-Arachchi 1996: "Fig. 232. *Rhacophorus macropus* MCZ 20873 Queenwood, Dimbula, Sri Lanka" in page 194, closely resembles *Pseudophilautus dayawansai* from its unique mark on head; dark brown marking, forming a clear semicircular blackish margin. *Rhacophorus macropus* (*Pseudophilautus macropus*) is restricted to the Knuckles

Range (Manamendra-Arachchi & Pethiyagoda 2005), but the specimen's locality Dimbula is closer to the Peak Wilderness, hence given the geographical similarity and the unique marking we feel that this specimen could be *Pseudophilautus dayawansai*.

#### *Pseudophilautus jagathgunawardanai* sp. nov.

(Figs. 8–10; Images 13–20; Tables 7–9)

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**Holotype:** NMSL 2013.03.01 NH, 05.ii.2009, adult female 35.8mm SVL (Image 13, 14A,D). Sripada (Peak Wilderness), Ratnapura District, Sabaragamuwa Province, Sri Lanka (06°48'31"N & 80°29'10"E; 1642m) (Fig. 1), coll. L.J.M.W, D.R.V., M.D.G.R., S.C.A., A.W.A.C., L.L.D.P. & I.N.B.

**Paratypes:** DWC 2013.01.005, adult female, SVL 40.4mm (Image 14 B&E); DWC 2013.01.006, adult female, SVL 36.3 mm (Image 14 C&F, 15); data same as holotype.

**Diagnosis:** *Pseudophilautus jagathgunawardanai* sp. nov., can be distinguished from known congeners by the following combination of characters: Body moderate size (SVL adult female 35.8–40.4 mm); head dorsally, loreal region, and interorbital space convex; lateral snout rounded; canthus rostralis sharp; internarial space concave; vomerine teeth, fringe on fingers, rudimentary webbing on fingers, calcar, and nuptial pad absent; lingual papilla present; snout, side of head, anterior dorsum, posterior dorsum, upper flank smooth; interorbital area smooth, with two cross dermal fringes; throat and chest weakly granular; underside of thigh granular; supernumerary tubercles on palm and foot present. Comparative details between congeners in tables 8 and 9.

**Description of holotype:** Body moderate size (SVL 35.8), elongate (SVL/HW 2.2); head large (HL/SVL 0.5), as wide as long (HW/HL 1.0), convex above; snout rounded in lateral and ventral aspects, truncate in dorsal aspect (Fig. 8 A–C) (ES/DFE 0.8, SN/IN 0.6) its length slightly longer than the horizontal diameter of eye (ES/ED 1.1); internasal space concave; canthus rostralis sharp, loreal region and interorbital space convex, upper eyelid smaller than interorbital distance (IO/UEW 1.2), internasal distance equal to upper eyelid (IN/UEW 1.0); distance between front of eyes almost half the distance between back of eyes (DBE/DFE 1.9); nostrils oval without flap of skin laterally, closer to tip of snout than to eye (SN/EN 0.6); pupil horizontally elliptical; tympanum distinct, oval (TYH/TYW 1.4), one third the eye diameter (TYH/

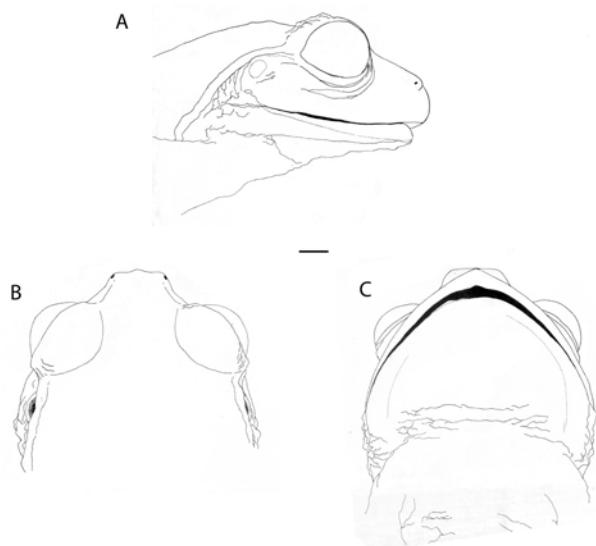


Figure 8. *Pseudophilautus jagathgunawardanai* sp. nov. holotype (NMSL 2013.03.01 NH), head; (A) lateral aspect (B) dorsal aspect (C) ventral aspect. Scale bar: 2mm. (© Dulan Ranga Vidanapathirana)

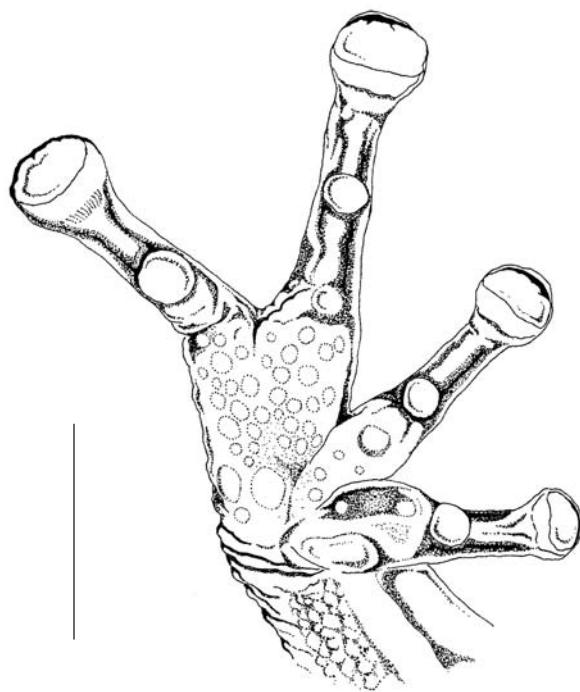


Figure 9. *Pseudophilautus jagathgunawardanai* sp. nov. holotype (NMSL 2013.03.01 NH), ventral aspect of right hand. Scale bar: 5mm (© L.J. Mendis Wickramasinghe)

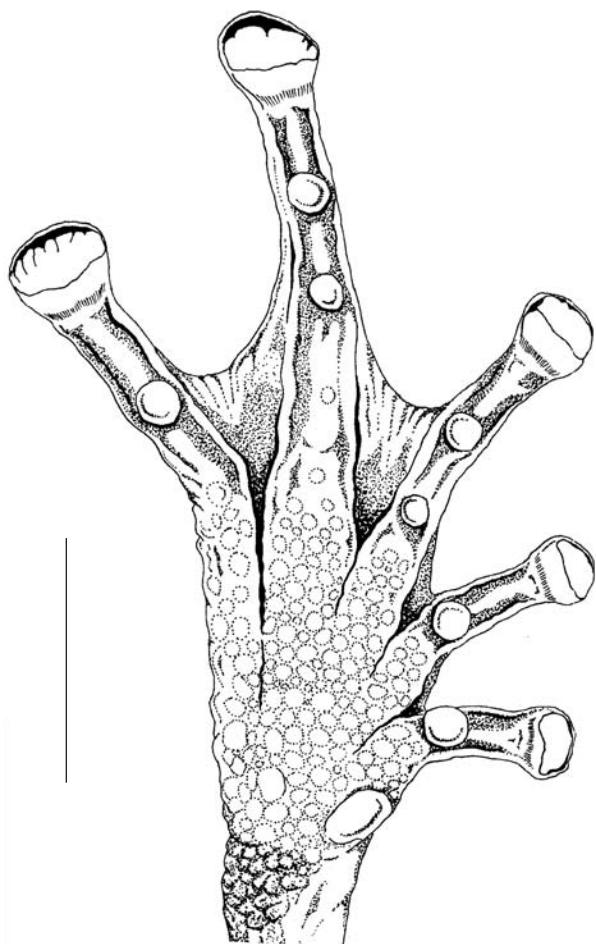


Figure 10. *Pseudophilautus jagathgunawardanai* sp. nov. holotype (NMSL 2013.03.01 NH), ventral aspect of right foot. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)



Image 13. *Pseudophilautus jagathgunawardanai* sp. nov. holotype in life (NMSL 2013.03.01 NH).

ED 0.3), tympanum-eye distance equal to tympanum width (TAD/TYW 1.0); pineal ocellus and vomerine teeth absent; tongue large, lanceolate, lingual papilla present, rounded and blunt with several conical tubercles present evenly distributed on tongue.

Arm short, thin (LAL/FEL 0.5, UAL/FEL 0.4); forearm shorter than hand length (LAL/HNL 0.8); forearm longer than upper arm (LAL/UAL 1.4); fore-arm distinctly enlarged; fingers thin, (Fig. 9), relative length of fingers I

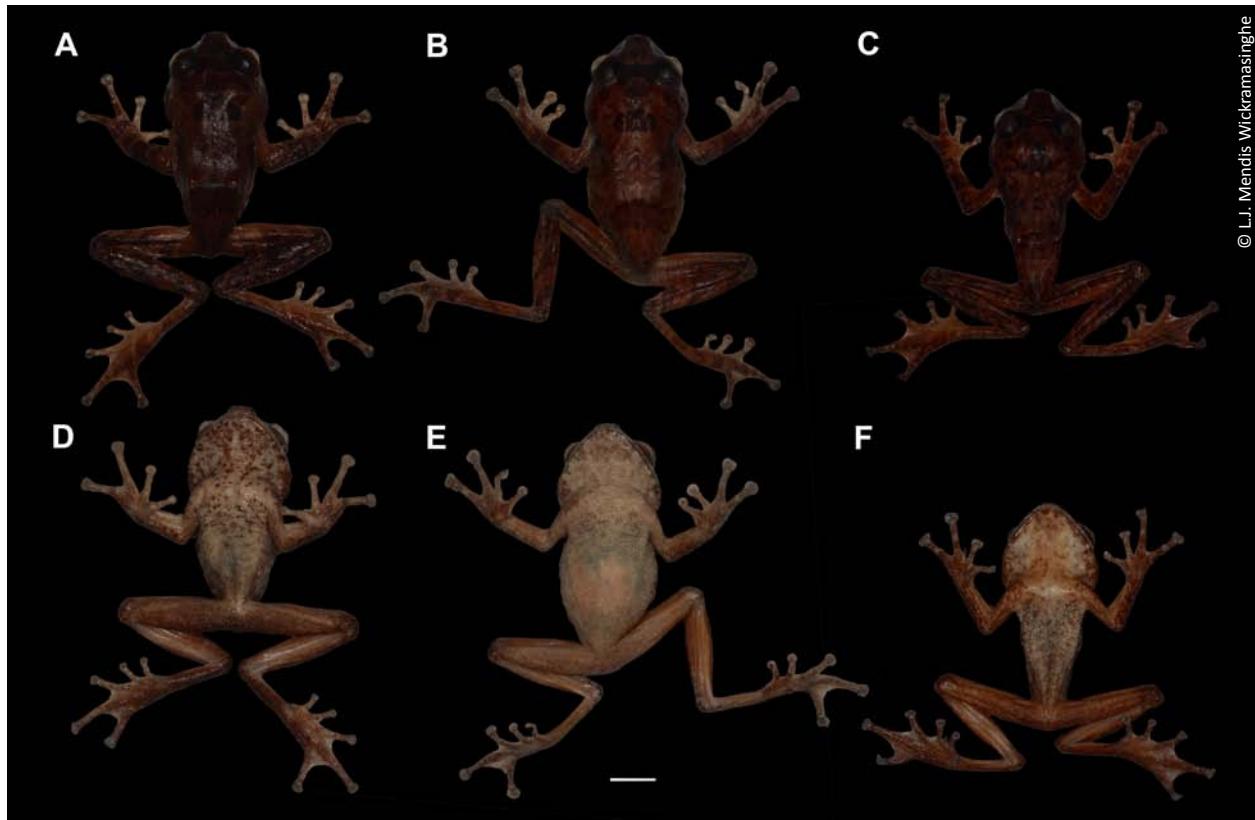


Image 14. Type series of *Pseudophilautus jagathgunawardanai* sp. nov. Left to right, NMSL 2013.03.01 NH, DWC 2013.01.005, DWC 2013.01.006. A-B dorsal aspect and C-D ventral aspect. Scale bar: 5mm.



Image 15. *Pseudophilautus jagathgunawardanai* sp. nov. paratype in life (DWC 2013.01.006).



Image 16. *Pseudophilautus jagathgunawardanai* sp. nov. unpreserved specimen.

$< II < IV < III$  (FL-1/FL-3 0.5, FL-2/FL-3 0.6, FL-4/FL-3 0.7); tips of fingers rounded enlarged, discs present on all fingers, with distinct basal and circum marginal grooves; no dermal fringe on fingers, but indistinct dermal fringe present on exterior edge of finger IV; webbing formula I<sup>3+</sup>—3<sup>+</sup>II<sup>2</sup>—3<sup>+</sup>III<sup>3+</sup>—3<sup>+</sup>IV; subarticular tubercles prominent, rounded or oval, single, IV<sup>2</sup> very small and



**Image 17.** *Pseudophilautus jagathgunawardanai* sp. nov.  
unpreserved specimen.



**Image 18.** *Pseudophilautus jagathgunawardanai* sp. nov.  
unpreserved specimen.



**Image 19.** *Pseudophilautus jagathgunawardanai* sp. nov.  
unpreserved specimen.



**Image 20.** *Pseudophilautus jagathgunawardanai* sp. nov.  
unpreserved specimen.

indistinct; inner palmar tubercle single, oval, prominent, larger than outer palmer tubercle; nuptial pads absent; outer palmar tubercle single, oval, indistinct, smaller than the distal subarticular tubercles; supernumerary tubercles present on all fingers, and palm; prepollex absent; femur twice as long as the fourth toe length (FEL/TL-4 2.1); foot length longer than thigh (FOL/FEL 1.5); toes thin, (Fig. 10), relative length of toes I < II < V < III < IV (TL-1/TL-4 0.4, TL-2/TL-4 0.4, TL-3/TL-4 0.7, TL-5/TL-4 0.5) (Tables 7); tips of toes rounded, enlarged, discs present on all toes with distinct basal and circum marginal grooves; webbing formula I2—2<sup>II</sup>2<sup>+</sup>—3<sup>III</sup>2<sup>+</sup>—3<sup>IV</sup>2<sup>—</sup>2<sup>V</sup>; dermal fringe on all toes and fringe along exterior edge of toe V present; fringe absent on metatarsus and tarsus but tubercles present; subarticular tubercles prominent, rounded, single, all present, IV3, and V2 relatively

smaller; supernumerary tubercles concentrated on foot, present on all toes; inner metatarsal tubercle oval prominent and large, its length 2/3 times the length of toe I (IML/TL-1 0.6); outer metatarsal tubercle absent.

Skin on dorsal and lateral part of snout smooth; interorbital space smooth, with two cross dermal fringes one connecting the front of eyes and the other placed behind it, a faint median dermal ridge from tip of snout to vent; upper eyelid bearing a prominent tubercle and a few intermediate sized tubercles on top; head laterally smooth a few prominent tubercle cluster behind gape of mouth, dorsal body smooth, except behind eyes which is shagreen; upper part of flank smooth; lower part of flank weakly granular; supratympanic fold prominent; upper

**Table 7.** The morphometric measurements (mm) of the type series of *Pseudophilautus jagathgunawardanai* sp. nov.

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.03.01 NH | 2013.01.005 | 2013.01.006 |      |     |           |
| DB           | 1.2           | 1.3         | 1.2         | 1.2  | 0.0 | 1.2–1.3   |
| DBE          | 14.0          | 14.2        | 12.9        | 13.7 | 0.7 | 12.9–14.2 |
| DFE          | 7.6           | 7.5         | 6.9         | 7.3  | 0.4 | 6.9–7.6   |
| DL           | 1.8           | 1.9         | 2.2         | 1.9  | 0.2 | 1.8–2.2   |
| DW           | 1.9           | 2.3         | 2.0         | 2.0  | 0.2 | 1.9–2.3   |
| ED           | 5.5           | 5.3         | 5.1         | 5.3  | 0.2 | 5.1–5.5   |
| EN           | 3.4           | 4.5         | 3.9         | 3.9  | 0.6 | 3.4–4.5   |
| ES           | 5.8           | 6.1         | 5.8         | 5.9  | 0.1 | 5.8–6.1   |
| FEL          | 19.2          | 20.6        | 18.9        | 19.5 | 0.9 | 18.9–20.6 |
| FL-1         | 3.6           | 3.1         | 3.2         | 3.3  | 0.2 | 3.1–3.6   |
| FL-2         | 4.4           | 4.4         | 3.8         | 4.2  | 0.3 | 3.8–4.4   |
| FL-3         | 7.5           | 7.4         | 7.9         | 7.6  | 0.3 | 7.4–7.9   |
| FL-4         | 4.9           | 4.7         | 6.2         | 5.3  | 0.8 | 4.7–6.2   |
| FOL          | 28.6          | 28.8        | 27.1        | 28.2 | 0.9 | 27.1–28.8 |
| GK           | 17.4          | 15.9        | 16.5        | 16.6 | 0.8 | 15.9–17.4 |
| HD           | 8.2           | 7.7         | 7.2         | 7.7  | 0.5 | 7.2–8.2   |
| HL           | 16.2          | 16.6        | 17.5        | 16.8 | 0.7 | 16.2–17.5 |
| HNL          | 12.7          | 12.8        | 11.1        | 12.2 | 1.0 | 11.1–12.8 |
| HW           | 16.2          | 16.3        | 15.5        | 16.0 | 0.4 | 15.5–16.3 |
| IML          | 1.9           | 1.9         | 1.7         | 1.8  | 0.1 | 1.7–1.9   |
| IN           | 3.7           | 3.9         | 3.4         | 3.7  | 0.2 | 3.4–3.9   |
| IO           | 4.4           | 4.2         | 4.5         | 4.4  | 0.2 | 4.2–4.5   |

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.03.01 NH | 2013.01.005 | 2013.01.006 |      |     |           |
| KT           | 17.6          | 18.2        | 16.9        | 17.6 | 0.7 | 16.9–18.2 |
| LAL          | 9.5           | 10.1        | 9.9         | 9.8  | 0.3 | 9.5–10.1  |
| MBE          | 7.9           | 7.2         | 8.0         | 7.7  | 0.4 | 7.2–8.0   |
| MFE          | 12.1          | 11.5        | 12.9        | 12.2 | 0.7 | 11.5–12.9 |
| MN           | 14.5          | 12.3        | 15.9        | 14.2 | 1.8 | 12.3–15.9 |
| SN           | 2.1           | 2.2         | 2.1         | 2.1  | 0.1 | 2.1–2.2   |
| SVL          | 35.8          | 40.4        | 36.3        | 37.5 | 2.5 | 35.8–40.4 |
| TAD          | 1.2           | 1.4         | 1.4         | 1.3  | 0.1 | 1.2–1.4   |
| TAS          | 12.5          | 13.3        | 12.2        | 12.6 | 0.6 | 12.2–13.3 |
| TBL          | 20.6          | 20.3        | 19.5        | 20.1 | 0.5 | 19.5–20.6 |
| TL-1         | 3.3           | 3.4         | 3.1         | 3.2  | 0.2 | 3.1–3.4   |
| TL-2         | 3.5           | 4.1         | 3.6         | 3.7  | 0.3 | 3.5–4.1   |
| TL-3         | 6.1           | 6.5         | 5.7         | 6.1  | 0.4 | 5.7–6.5   |
| TL-4         | 9.2           | 9.6         | 8.9         | 9.2  | 0.4 | 8.9–9.6   |
| TL-5         | 4.9           | 5.5         | 6.7         | 5.7  | 0.9 | 4.9–6.7   |
| TND          | 10.6          | 11.2        | 10.2        | 10.7 | 0.5 | 10.2–11.2 |
| TPD          | 7.2           | 7.5         | 6.3         | 7.0  | 0.6 | 6.3–7.5   |
| TYH          | 1.7           | 2.3         | 2.0         | 2.0  | 0.3 | 1.7–2.3   |
| TYW          | 1.2           | 1.6         | 1.6         | 1.5  | 0.2 | 1.2–1.6   |
| UAL          | 7.1           | 6.7         | 6.6         | 6.8  | 0.3 | 6.6–7.1   |
| UEW          | 3.8           | 3.7         | 3.8         | 3.8  | 0.1 | 3.7–3.8   |
| VKL          | 16.9          | 18.4        | 17.1        | 17.5 | 0.8 | 16.9–18.4 |

**Table 8. Characters that differentiate *Pseudophilautus jagathgunawardanai* sp. nov. among congeners of the genus *Pseudophilautus***

| Species name                          | SVL       | Head dorsally   | Snout lateral    | Canthus rostralis | Loreal region   | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Fingers Rudimentary webbing | Calcar  | Nuptial pad |
|---------------------------------------|-----------|-----------------|------------------|-------------------|-----------------|--------------------|-------------------|----------------|-----------------|-------------------|-----------------------------|---------|-------------|
| <i>P. jagathgunawardanai</i> sp. nov. | 35.8–40.4 | Convex          | Rounded          | Sharp             | Convex          | Convex             | Concave           | Absent         | Present         | Absent            | Absent                      | Absent  | Absent      |
| <i>P. bambadeniyai</i> sp. nov.       | 17.3–20.2 |                 | Truncate         | Rounded           | Concave         |                    | Flat              |                | Absent          |                   | Present                     |         |             |
| <i>P. dayawansai</i> sp. nov.         | 24.5–30.1 |                 | Truncate         | Rounded           | Concave         | Concave            |                   |                |                 | Present           | Present                     | Present |             |
| <i>P. karunaratnai</i> sp. nov.       | 16.2–19.2 |                 |                  | Rounded           | Concave         |                    |                   | Present        | Absent          | Present           | Present                     |         | Present     |
| <i>P. newtonjayawardanei</i> sp. nov. | 38.4      | Concave         |                  | Rounded           | Concave         | Concave            |                   |                | Absent          | Present           | Present                     |         |             |
| <i>P. puranappu</i> sp. nov.          | 33.6–51.1 | Concave         |                  | Rounded           | Concave         | Flat               |                   | Present        |                 |                   | Present                     |         | Present     |
| <i>P. samarakoon</i> sp. nov.         | 20.4–24.6 |                 | Truncate         | Rounded           | Concave         |                    | Flat              |                | Absent          | Present           | Present                     | Present |             |
| <i>P. sirilwijesundarai</i> sp. nov.  | 22.3–32.5 |                 |                  | Rounded           | Concave         |                    | Flat              | Present        | Absent          | Present           | Present                     |         |             |
| <i>P. abundus</i>                     | 25.4–37.0 | Concave         | Pointed or oval  | Rounded           | Concave         | Flat               |                   | Present        |                 | Present           | Present                     |         |             |
| <i>P. adspersus</i>                   | 33.3–41.7 | Flat            | Truncate         |                   | Concave or flat | Concave or flat    | Flat              |                | Absent          | Present           |                             |         |             |
| <i>P. alto</i>                        | 17.0–27.5 |                 | Obtusely pointed | Rounded           | Concave         |                    |                   |                | Absent          | Present           |                             | Present | Present     |
| <i>P. asankai</i>                     | 18.9–27.3 |                 | Obtusely pointed | Rounded           | Flat            |                    | Flat              |                | Absent          | Present           | Present                     |         |             |
| <i>P. auratus</i>                     | 21.7–26.4 | Flat            | Blunt            | Rounded           | Flat            | Flat               |                   | Present        | Absent          | Present           | Fingers III and IV          |         |             |
| <i>P. caeruleus</i>                   | 16.3–19.0 | Flat            | Obtusely pointed |                   | Concave         | Flat               |                   |                |                 |                   |                             |         |             |
| <i>P. cavirostris</i>                 | 38.4–48.9 | Concave         | Oval             |                   | Concave         | Concave            |                   | Present        | Absent          | Present           | Present                     | Present |             |
| <i>P. cuspis</i>                      | 17.6–28.9 |                 | Sharply Pointed  |                   | Concave or flat |                    | Flat              |                | Absent          |                   |                             | Present | Present     |
| <i>P. decoris</i>                     | 18.3–23.9 | Flat            | Obtusely pointed | Rounded or sharp  | Concave         | Concave            |                   |                |                 | Present           | Present                     | Present |             |
| <i>P. dimbulae</i>                    | 44.8      |                 | Truncate         |                   | Concave         | Flat               | Flat              | Present        | Absent          | Present           | Fingers 1 and 2             |         |             |
| <i>P. eximus</i>                      | 35.3      | Flat            |                  |                   | Concave         | Flat               | Flat              |                |                 | Present           |                             |         |             |
| <i>P. extirpo</i>                     | 43.5      | Flat            | Blunt            |                   | Concave         | Concave            |                   |                |                 | Present           |                             |         |             |
| <i>P. femoralis</i>                   | 23.4–28.8 | Flat            | Truncate         | Rounded           | Concave         | Flat               |                   |                | Absent          | Present           |                             |         |             |
| <i>P. fergusonianus</i>               | 26.9–44.5 | Concave or flat |                  | Rounded           | Concave         | Concave or flat    |                   | Present        | Absent          | Present           | Present                     |         | Present     |

| Species name            | SVL       | Head dorsally | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Fingers Rudimentary webbing | Calcar  | Nuptial pad |
|-------------------------|-----------|---------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|-----------------------------|---------|-------------|
| <i>P. folicola</i>      | 23.7–29.4 | Flat          |                  |                   | Concave       | Flat               |                   | Present        |                 | Present           |                             |         |             |
| <i>P. frankenbergi</i>  | 26.7–29.3 | Flat          |                  |                   | Concave       | Flat               | Flat              |                | Absent          | Present           | Present                     |         |             |
| <i>P. fulvus</i>        | 33.4–46.8 |               |                  |                   | Concave       | Flat               |                   | Present        | Absent          | Present           | Present                     | Present | Present     |
| <i>P. hallidayi</i>     | 32.9–42.9 |               |                  | Rounded           | Concave       | Flat               |                   | Present        | Absent          | Present           |                             |         | Present     |
| <i>P. halyi</i>         | 27.9      | Uneven        |                  |                   | Concave       | Flat               | Flat              |                | Absent          | Present           |                             |         | Present     |
| <i>P. hankeni</i>       | 18.3–21.9 |               | Pointed          | Rounded           | Concave       |                    |                   |                | Absent          |                   |                             |         |             |
| <i>P. hoffmanni</i>     | 21.2–23.4 | Flat          |                  | Rounded           | Flat          | Flat               | Flat              |                | Absent          | Present           |                             |         |             |
| <i>P. hoipolloi</i>     | 22.0–28.6 |               | Blunt            | Rounded           | Flat          | Flat               |                   |                |                 | Present           | Present                     |         |             |
| <i>P. hypomelas</i>     | 11.2–22.4 |               | Acuminate        | Rounded           | Concave       |                    | Flat              |                | Absent          |                   | Present                     |         |             |
| <i>P. leucorhinus</i>   | 19.8      | Flat          | Oval             |                   | Concave       | Concave            |                   |                | Absent          |                   |                             |         |             |
| <i>P. limbus</i>        | 25.7      | Concave       | Obtusely pointed | Rounded           | Concave       | Concave            |                   | Present        |                 |                   |                             | Present |             |
| <i>P. lunatus</i>       | 40.9      | Flat          | Oval             | Rounded           | Concave       | Concave            |                   | Present        |                 | Present           |                             | Present |             |
| <i>P. macropus</i>      | 27.4–42.7 |               | Oval             | Rounded           | Concave       | Flat               | Flat              | Present        |                 | Present           | Present                     |         | Present     |
| <i>P. maia</i>          | 46.6      | Concave       | Truncate         |                   | Concave       | Concave            | Flat              | Present        | Absent          | Present           | Present                     |         |             |
| <i>P. malcolmsmithi</i> | 14.9      |               | Pointed          |                   | Concave       | Flat               | Flat              |                | Absent          |                   |                             | Present |             |
| <i>P. microtympanum</i> | 23.9–49.0 |               | Oval             | Rounded           | Concave       | Flat               |                   | Present        | Absent          | Present           |                             |         | Present     |
| <i>P. mittermeieri</i>  | 16.3–18.4 |               | Pointed          | Rounded           | Concave       | Concave            |                   |                | Absent          | Present           |                             | Present |             |
| <i>P. mooreorum</i>     | 29.4–35.0 | Flat          |                  | Rounded           | Concave       | Flat               |                   |                | Absent          | Present           |                             |         |             |
| <i>P. nanus</i>         | 34.8      |               | Oval             | Rounded           | Concave       | Flat               |                   | Present        | Absent          |                   |                             |         | Present     |
| <i>P. nasutus</i>       | 17.4      |               | Pointed          |                   | Concave       | Flat               |                   |                | Absent          |                   |                             | Present |             |
| <i>P. nemus</i>         | 20.7      |               | Obtusely pointed | Rounded           | Concave       | Flat               | Flat              |                | Absent          |                   |                             |         | Present     |
| <i>P. ocularis</i>      | 23.1–33.4 | Flat          | Blunt            | Rounded           | Concave       | Flat               |                   | Present        | Absent          | Present           |                             |         |             |
| <i>P. oxyrhynchus</i>   | 18.6      | Flat          | Pointed          |                   | Flat          | Concave            |                   |                | Absent          |                   |                             | Present |             |
| <i>P. papillosum</i>    | 40        |               | Truncate         |                   | Concave       | Concave            | Flat              | Present        |                 | Present           |                             | Present | Present     |
| <i>P. pardus</i>        | 32.1      |               |                  | Indistinct        | Flat          | Flat               |                   |                | Absent          |                   |                             |         |             |
| <i>P. pleurotaenia</i>  | 25.6–30.3 |               | Truncate         | Rounded           | Concave       |                    |                   |                |                 | Present           | Present                     |         |             |
| <i>P. poppiae</i>       | 21.3–26.0 |               |                  | Rounded           | Concave       | Flat               |                   |                | Absent          | Present           |                             |         |             |
| <i>P. popularis</i>     | 17.7–24.7 |               |                  | Rounded           | Concave       | Flat               | Flat              |                | Absent          |                   |                             |         | Present     |

| Species name          | SVL       | Head dorsally | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Fingers Rudimentary webbing | Calcar  | Nuptial pad |
|-----------------------|-----------|---------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|-----------------------------|---------|-------------|
| <i>P. procax</i>      | 25.1–26.8 | Concave       | Pointed or oval  | Rounded           | Concave       | Flat               |                   | Present        |                 | Present           |                             |         |             |
| <i>P. regius</i>      | 18.3–21.7 | Flat          | Oval             | Rounded           | Concave       | Concave            |                   |                | Absent          | Present           |                             |         | Present     |
| <i>P. reticulatus</i> | 42.5–61.1 |               | Truncate or oval |                   | Concave       |                    | Convex or concave | Present        |                 | Present           |                             | Present | Present     |
| <i>P. rugatus</i>     | 17.5      |               |                  |                   | Concave       |                    |                   |                | Absent          |                   |                             |         |             |
| <i>P. rus</i>         | 20.6–24.1 | Flat          | Oval             | Rounded           | Concave       | Flat               | Flat              | Present        | Absent          |                   |                             |         |             |
| <i>P. sarasinorum</i> | 22.6–38.1 | Flat          |                  | Rounded           | Concave       | Flat               |                   |                |                 |                   |                             |         |             |
| <i>P. schmarda</i>    | 17.7–30.0 |               | Obtusely pointed |                   | Concave       |                    |                   |                | Absent          | Present           | Present                     | Present |             |
| <i>P. schneideri</i>  | 19.9–22.8 |               | Pointed          |                   | Flat          |                    | Flat              | Present        | Absent          |                   |                             |         |             |
| <i>P. semiruber</i>   | 13.4      |               | Oval             | Rounded           | Flat          | Concave            | Flat              |                | Absent          | Present           | Present                     |         |             |
| <i>P. silus</i>       | 35.4–51.8 |               | Oval             |                   | Concave       | Flat               | Flat              | Present        | Absent          | Present           |                             |         | Present     |
| <i>P. silvaticus</i>  | 24.3–31.3 |               | Oval             |                   | Concave       | Flat               | Flat              | Present        |                 |                   |                             |         |             |
| <i>P. simba</i>       | 12.6–15.6 |               | Truncate         | Rounded           | Flat          |                    | Flat              |                | Absent          |                   | Present                     |         |             |
| <i>P. singu</i>       | 16.1–16.6 |               |                  | Rounded           | Concave       |                    |                   |                |                 |                   |                             |         |             |
| <i>P. sordidus</i>    | 22.2–39.4 |               | Blunt            | Rounded           | Concave       |                    | Flat              | Present        |                 |                   |                             |         |             |
| <i>P. steineri</i>    | 30.4–41.6 | Flat          |                  |                   | Concave       | Flat               |                   | Present        | Absent          | Present           |                             |         | Present     |
| <i>P. stellatus</i>   | 39.6–55.3 | Concave       |                  | Rounded           | Concave       | Concave            | Concave           | Present        | Absent          | Present           | Present                     | Present |             |
| <i>P. stictomerus</i> | 23.2–36.0 |               | Obtusely pointed | Rounded           | Concave       | Concave or flat    |                   | Present        | Absent          |                   |                             |         | Present     |
| <i>P. stuarti</i>     | 24.2–32.4 | Flat          |                  |                   | Concave       | Flat               | Flat              |                | Absent          |                   |                             |         |             |
| <i>P. tanu</i>        | 13.5–13.9 |               | Obtusely pointed | Rounded           | Flat          | Flat               | Flat              |                | Absent          |                   |                             |         |             |
| <i>P. temporalis</i>  | 28.4–31.0 |               |                  | Rounded           | Concave       | Concave            |                   | Present        | Absent          |                   |                             |         |             |
| <i>P. variabilis</i>  | 35.7      | Flat          | Truncate         | Rounded           | Concave       | Flat               |                   |                | Absent          | Present           | Present                     |         |             |
| <i>P. viridis</i>     | 27.4–36.3 |               | Blunt or rounded | Indistinct        | Concave       | Flat               | Flat              |                | Absent          | Present           |                             |         |             |
| <i>P. zal</i>         | 20.0–32.5 |               |                  |                   | Concave       |                    | Concave           |                | Absent          | Present           |                             |         | Present     |
| <i>P. zimmeri</i>     | 31.6      |               | Blunt            |                   | Concave       | Flat               | Flat              | Present        | Absent          | Present           |                             |         | Present     |
| <i>P. zorro</i>       | 22.9–30.1 | Concave       | Pointed          |                   | Concave       | Flat               |                   |                | Absent          |                   | Present                     | Present |             |

**Table 9. Characters in the skin structure that differentiate *Pseudophilautus jagathgunawardanai* sp. nov. among congeners of the genus *Pseudophilautus***

| Species name                          | Snout  | Interorbital area                                 | Side of head                                      | Anterior dorsum                                   | Posterior dorsum                          | Upper flank             | Throat          | Chest           | Underside of thigh | Supernumerary tubercles on palm | Supernumerary tubercles on foot |
|---------------------------------------|--|---|---|---|---|-------------------------|-----------------|-----------------|--------------------|---------------------------------|---------------------------------|
| <i>P. jagathgunawardanai</i> sp. nov. | Smooth   | Smooth, with two cross dermal fringes             | Smooth  | Smooth  | Smooth                                    | Smooth                  | Weakly granular | Weakly granular | Granular           | Present                         | Present                         |
| <i>P. bambaradeniyai</i> sp. nov.     |  | Smooth  |   | Prominent tubercles and horny spinules            | Horny spinules                            |                         |                 |                 | Smooth             |                                 |                                 |
| <i>P. dayawansai</i> sp. nov.         | Tuberculated, with a single prominent tubercle medially placed | Smooth, with a ridge across braking medially      | Tubercular  |   | Weakly tubercular                         | Granular                | Shagreen        |                 |                    |                                 |                                 |
| <i>P. karunarathnai</i> sp. nov.      | Smooth, a prominent blunt tubercle present                     | Weakly tubercular                                 | Weakly tubercular                                 |   | Spinulate                                 | Weakly granular         |                 |                 |                    | Absent                          | Absent                          |
| <i>P. newtonjayawardanei</i> sp. nov. | Shagreen   | Shagreen, with a prominent ridge                  | Shagreen  | Shagreen  | Shagreen                                  | Shagreen                |                 |                 |                    |                                 |                                 |
| <i>P. puranappu</i> sp. nov.          | Smooth, with a blunt tubercle                                  | Smooth  |   | Weakly shagreen                                   | Few horny spinules, Prominent tubercles   | Weakly tubercular       |                 |                 |                    |                                 | Indistinct                      |
| <i>P. samarakoon</i> sp. nov.         | Prominent tubercle present on centre of snout                  | Tubercular  |   | Tubercular  | Tubercular                                | Tubercular              |                 |                 |                    |                                 |                                 |
| <i>P. sirilwijesundarai</i> sp. nov.  | Shagreen, with prominent dermal fold                           | A prominent tubercle present                      | Weakly shagreen                                   | Shagreen with few tubercles                       | Shagreen                                  | Areolate                | Shagreen        |                 |                    |                                 |                                 |
| <i>P. abundus</i>                     |  | Smooth  |   | Horny spinules (absent in females)                | Horny spinules (Absent in females)        |                         |                 |                 |                    |                                 | Absent                          |
| <i>P. adspersus</i>                   | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts |   | Granular                |                 |                 |                    |                                 |                                 |
| <i>P. alto</i>                        | Horny spinules in males  | Horny spinules in males                           |   | Horny spinules in males, warty in females         | Horny spinules in males, warty in females | Horny spinules in males |                 |                 |                    |                                 |                                 |
| <i>P. asankai</i>                     | Very fine, horny spinules                                      | Very fine, horny spinules                         | Very fine, horny spinules                         | Very fine, horny spinules                         | Very fine, horny spinules                 | Horny spinules          |                 |                 |                    | Absent                          | Absent                          |
| <i>P. auratus</i>                     | Shagreen   | Shagreen  | Shagreen  | Shagreen  | Shagreen                                  | Granular or smooth      |                 |                 |                    |                                 |                                 |

| Species name            | Snout  | Interorbital area                                  | Side of head   | Anterior dorsum  | Posterior dorsum   | Upper flank   | Throat | Chest  | Underside of thigh | Supernumerary tubercles on palm | Supernumerary tubercles on foot |
|-------------------------|--|--|--|--|--|---|--------|--------|--------------------|---------------------------------|---------------------------------|
| <i>P. caeruleus</i>     | Glandular warts and horny spinules                 | Glandular warts and horny spinules                 | Glandular warts and horny spinules                       | Glandular warts and horny spinules (females lack horny spinules) | Glandular warts and horny spinules (females lack horny spinules)   | Glandular warts and horny spinules                      |        |        |                    |                                 |                                 |
| <i>P. cavirostris</i>   | Glandular warts                                    | Glandular warts                                    | Glandular warts  | Heavily tuberculated, glandular warts                            | Heavily tuberculated, glandular warts                              |   | Smooth | Smooth |                    |                                 |                                 |
| <i>P. cuspis</i>        | Horny spinules                                     | Horny spinules                                     |  | Horny spinules with a "J"-shaped pattern of tubercles            | Horny spinules   |   | Smooth |        |                    |                                 | Absent                          |
| <i>P. decoris</i>       | Glandular warts                                    | Glandular warts                                    | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts   |        |        |                    |                                 |                                 |
| <i>P. dimbuliae</i>     | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen  |        |        |                    |                                 |                                 |
| <i>P. eximus</i>        |  | Smooth   |  |  |  |   | Smooth |        |                    |                                 |                                 |
| <i>P. extirpo</i>       | Shagreen, with a few glandular warts               | Shagreen   | Shagreen   | Shagreen, with a few glandular warts                             | Shagreen, with a few glandular warts                               | Granular  |        |        |                    |                                 |                                 |
| <i>P. femoralis</i>     | Finely granular                                    | Finely granular                                    | Finely granular  | Finely granular  | Finely granular  | Finely granular   | Smooth |        |                    | Absent                          | Absent                          |
| <i>P. fergusonianus</i> | Shagreen, males glandular warts and horny spinules | Shagreen, males glandular warts and horny spinules | Few glandular warts                                      | Shagreen, Males glandular warts and horny spinules               | Few glandular warts, males with glandular warts and horny spinules | Shagreen, males with glandular warts and horny spinules |        |        |                    |                                 |                                 |
| <i>P. folicola</i>      |  | Smooth   | Shagreen, smooth or with a few scattered glandular warts |  |  | Granular  |        |        |                    |                                 | Absent                          |
| <i>P. frankenbergi</i>  | Shagreen   | Shagreen   | Glandular warts  | Shagreen, horny spinules scattered                               | Shagreen, horny spinules scattered                                 | Shagreen  |        |        |                    |                                 | Absent                          |
| <i>P. fulvus</i>        | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen  |        |        |                    |                                 |                                 |
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males      | Glandular warts, with horny spinules in males      | Glandular warts  | Glandular warts, with horny spinules in males                    | Glandular warts, with horny spinules in males                      | Glandular warts, with horny spinules in males           |        |        |                    |                                 | Absent                          |

| Species name            | Snout                                  | Interorbital area                           | Side of head                           | Anterior dorsum  | Posterior dorsum   | Upper flank                                   | Throat   | Chest    | Underside of thigh | Supernumerary tubercles on palm | Supernumerary tubercles on foot |
|-------------------------|--|---|--|--|--|---|----------|----------|--------------------|---------------------------------|---------------------------------|
| <i>P. halyi</i>         | Shagreen with glandular warts          | Shagreen with glandular warts               | Shagreen with glandular warts          | Shagreen with glandular warts  | Shagreen with glandular warts  | Glandular warts                               |          |          |                    |                                 |                                 |
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules | Glandular warts bearing horny spinules      | Glandular warts bearing horny spinules | Glandular warts bearing horny spinules   | Glandular warts bearing horny spinules   | Glandular warts bearing horny spinules        |          |          | Smooth             |                                 |                                 |
| <i>P. hoffmanni</i>     |  | Smooth                                      |  |  |  |   |          |          | Smooth             |                                 |                                 |
| <i>P. hoipolloi</i>     |  | Smooth or shagreen                          |  |  |  |   | Shagreen | Shagreen |                    |                                 | Absent                          |
| <i>P. hypomelas</i>     |  |   |  |  |  |   | Smooth   | Smooth   | Smooth             | Absent                          | Absent                          |
| <i>P. leucorhinus</i>   |  | Smooth                                      |  | Smooth with a few scattered glandular warts                                    | Smooth with a few scattered glandular warts                                    | Smooth with glandular warts                   |          |          |                    |                                 |                                 |
| <i>P. limbus</i>        | Weakly granular                        | Weakly granular                             | Weakly granular                        | Weakly granular  | Weakly granular  | Granular                                      |          |          |                    | Absent                          |                                 |
| <i>P. lunatus</i>       |  | Smooth                                      |  |  |  | Glandular warts                               | Smooth   | Smooth   | Smooth             |                                 |                                 |
| <i>P. macropus</i>      |  | Smooth with a few scattered glandular warts | Glandular warts                        | Shagreen or smooth, with a few scattered glandular warts                       | Shagreen or smooth, with a few scattered glandular warts                       | Granular with a few scattered glandular warts |          |          |                    |                                 | Absent                          |
| <i>P. maia</i>          |  | Smooth                                      |  | Glandular warts  | Glandular warts  | Glandular warts                               |          |          |                    |                                 | Absent                          |
| <i>P. malcolmsmithi</i> |  | Smooth                                      |  | Smooth, 'V' shaped ridge   |  | Glandular warts                               | Smooth   | Smooth   |                    |                                 |                                 |
| <i>P. microtympanum</i> |  | Smooth or tuberculated                      | Shagreen                               | Smooth above, shagreen and with glandular warts, males with horn like spinules | Smooth above, shagreen and with glandular warts, males with horn like spinules | Granular                                      |          |          |                    |                                 |                                 |
| <i>P. mittermeieri</i>  | Glandular warts                        | Glandular warts                             | Glandular warts                        | Glandular warts  | Glandular warts  | Glandular warts                               |          |          |                    |                                 |                                 |
| <i>P. mooreorum</i>     | Horny spinules in males                | Horny spinules in males                     | Horny spinules in males                | Horny spinules in males, finely granular or shagreen in female                 | Horny spinules in males, finely granular or shagreen in female                 | Horny spinules in males                       |          |          |                    | Absent                          | Absent                          |

| Species name           | Snout  | Interorbital area  | Side of head   | Anterior dorsum  | Posterior dorsum   | Upper flank  | Throat  | Chest  | Underside of thigh | Supernumerary tubercles on palm | Supernumerary tubercles on foot |
|------------------------|--|--|--|--|--|--|---|--------|--------------------|---------------------------------|---------------------------------|
| <i>P. nanus</i>        | Glandular warts  | Few glandular warts  | Few glandular warts  | Few glandular warts  | Few glandular warts  | Glandular folds  |   |        | Smooth             |                                 |                                 |
| <i>P. nasutus</i>      | Glandular warts  | Glandular warts  | Glandular warts  | Tuberculated, horn like spinules   | Tuberculated, horn like spinules                                   |  |   |        |                    |                                 |                                 |
| <i>P. nemus</i>        | Glandular warts  | Smooth   | Glandular warts  | Glandular warts  | Glandular warts  |  |   |        |                    |                                 | Absent                          |
| <i>P. oocularis</i>    | Shagreen or with glandular warts   | Shagreen or with glandular warts                                   | Shagreen or glandular warts  |   |        |                    |                                 |                                 |
| <i>P. oxyrhynchus</i>  |  | Smooth   |  |  |  |  | Smooth  | Smooth | Smooth             |                                 |                                 |
| <i>P. papillosum</i>   | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  |   |        |                    |                                 |                                 |
| <i>P. pardus</i>       |  | Smooth   |  |  |  | Granular   |   |        |                    |                                 |                                 |
| <i>P. pleurotaenia</i> | Shagreen   | Shagreen   | Shagreen   | Shagreen with a few scattered glandular warts and horny spinules (males) | Shagreen, few scattered glandular warts and horny spinules (males) | Shagreen, few scattered glandular warts, and horny spinules        |   |        |                    |                                 |                                 |
| <i>P. poppiae</i>      | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female           | Horny spinules in males, finely granular or shagreen in female     | Horny spinules in males, finely granular or shagreen in female     |   |        | Smooth             | Absent                          | Absent                          |
| <i>P. popularis</i>    | Glandular warts  | Smooth   | Glandular warts  | Horny spinules   | Horny spinules   | Horny spinules   |   |        |                    |                                 |                                 |
| <i>P. procax</i>       |  | Smooth   |  |  | Horny spinules (spinules Absent in females)                        | Horny spinules (spinules Absent in females)                        |   |        |                    |                                 | Absent                          |
| <i>P. regius</i>       | Horny spinules   | Horny spinules   | Horny spinules   | Horny spinules   | Horny spinules   | Glandular  |   |        |                    |                                 |                                 |
| <i>P. reticulatus</i>  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts, finely tuberculated       | Shagreen with a few scattered glandular warts, finely tuberculated | Shagreen with a few scattered glandular warts, finely tuberculated | Shagreen with a few scattered glandular warts |        |                    |                                 |                                 |

| Species name          | Snout   | Interorbital area                                   | Side of head                                      | Anterior dorsum   | Posterior dorsum  | Upper flank   | Throat          | Chest  | Underside of thigh                   | Supernumerary tubercles on palm | Supernumerary tubercles on foot |
|-----------------------|---|---|---|---|---|---|-----------------|--------|--------------------------------------|---------------------------------|---------------------------------|
| <i>P. rugatus</i>     | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts   | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts               | Smooth except for a few scattered glandular warts               | Glandular warts                                     |                 |        |                                      |                                 |                                 |
| <i>P. rus</i>         |   | Smooth  | Glandular warts                                   | Glandular warts   | Glandular warts   | Granular  |                 |        |                                      |                                 |                                 |
| <i>P. sarasinorum</i> | Glandular warts                                   | Glandular warts                                     | Glandular warts                                   | Glandular warts, males with horny spinules scattered            | Glandular warts, males with horny spinules scattered            | Glandular folds                                     | Glandular warts | Smooth | Smooth                               |                                 |                                 |
| <i>P. schmarda</i>    | Glandular warts                                   | Glandular folds, glandular warts and horny spinules | Glandular warts                                   | Glandular folds, glandular warts and horny spinules             | Glandular folds, glandular warts and horny spinules             | Glandular folds, glandular warts and horny spinules | Glandular warts |        |                                      |                                 |                                 |
| <i>P. schneideri</i>  | Small tubercles with horny spinules               | Small tubercles with horny spinules                 | Small tubercles with horny spinules               | Small tubercles with horny spinules                             | Small tubercles with horny spinules                             | Small tubercles with horny spinules                 |                 |        | Smooth                               | Absent                          |                                 |
| <i>P. semiruber</i>   |   | Smooth  |   |   |   |   | Smooth          | Smooth | Smooth                               |                                 |                                 |
| <i>P. silus</i>       |   | Smooth  | Glandular warts                                   | Glandular warts   | Glandular warts   | Glandular warts                                     |                 |        |                                      |                                 |                                 |
| <i>P. silvaticus</i>  | Glandular warts                                   | Glandular warts                                     | Glandular warts                                   | Glandular warts   |   | Glandular warts                                     |                 |        | Granular in males, smooth in females |                                 |                                 |
| <i>P. simba</i>       |   | Smooth  | Glandular warts                                   | Glandular warts   |   |   |                 |        |                                      |                                 |                                 |
| <i>P. singu</i>       | Scattered, glandular tubercles                    | Scattered, glandular tubercles                      | Scattered, glandular tubercles                    | Scattered, glandular tubercles                                  | Scattered, glandular tubercles                                  | Scattered, glandular tubercles                      |                 |        | Smooth                               |                                 |                                 |
| <i>P. sordidus</i>    | Glandular warts                                   | Glandular warts                                     | Glandular warts                                   | Glandular warts, males with horny spinules scattered            | Glandular warts, males with horny spinules scattered            | Glandular warts, with horny spinules in males       | Smooth          | Smooth |                                      |                                 |                                 |
| <i>P. steineri</i>    | Glandular warts and horny spinules                | Glandular warts and horny spinules                  |   | Glandular warts and horny spinules, females lack horny spinules | Glandular warts and horny spinules, females lack horny spinules | Glandular warts and horny spinules                  |                 |        |                                      |                                 |                                 |

| Species name          | Snout   | Interorbital area                                     | Side of head  | Anterior dorsum  | Posterior dorsum                                      | Upper flank                       | Throat             | Chest              | Underside of thigh | Supernumerary tubercles on palm | Supernumerary tubercles on foot |
|-----------------------|---|---|---|--|---|-----------------------------------|--------------------|--------------------|--------------------|---------------------------------|---------------------------------|
| <i>P. stellatus</i>   | Weakly shagreen                                       | Weakly shagreen                                       | Weakly shagreen                                       | Weakly shagreen  | Weakly shagreen                                       | Shagreen to weakly areolate       |                    |                    |                    |                                 |                                 |
| <i>P. stictomerus</i> |   | Smooth  |   | Shagreen, horny spinules in males                                    | Shagreen, horny spinules in males                     | Shagreen, horny spinules in males | Smooth or shagreen | Smooth or shagreen |                    |                                 |                                 |
| <i>P. stuarti</i>     | Horny spinules  | Horny spinules  |   | Horny spinules, females lack horny spinules                          | Horny spinules, females lack horny spinules           |                                   |                    |                    |                    |                                 |                                 |
| <i>P. tanu</i>        | Shagreen  | Shagreen  | Shagreen  | Shagreen   | Shagreen  | Granular                          |                    |                    |                    |                                 |                                 |
| <i>P. temporalis</i>  |   | Smooth  |   |  |   |                                   | Smooth             | Smooth             |                    |                                 |                                 |
| <i>P. variabilis</i>  |   | Smooth  |   |  |   | Granular                          |                    |                    |                    |                                 |                                 |
| <i>P. viridis</i>     | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males)                | Horny spinules (smooth in females and immature males) |                                   |                    |                    |                    |                                 |                                 |
| <i>P. zal</i>         | Weakly shagreen                                       | Shagreen  | Shagreen  | Weakly tubercular  | Weakly tubercular                                     | Granular                          |                    |                    |                    |                                 |                                 |
| <i>P. zimmeri</i>     | Glandular warts                                       | Glandular warts                                       | Glandular warts                                       | Glandular warts  | Glandular warts                                       | Granular                          |                    |                    |                    |                                 |                                 |
| <i>P. zorro</i>       | Horny spinules  | Horny spinules  | Glandular warts                                       | Horny spinules, Anterior dorsum with "I"-shaped pattern of tubercles | Horny spinules  | Glandular warts                   | Smooth             | Mid chest smooth   | Smooth             |                                 |                                 |

arm smooth; forearm weakly tubercular; few tubercles present on hand; inner and outer thigh smooth, dorsally weakly tubercular; leg dorsally with tubercles, a small calcar like tubercle at heel; tarsus bearing indistinct tubercles; foot weakly tubercular.

Ventral side of body: Throat and chest weakly granular; belly granular; forearm and upper arm weakly granular; thigh granular; leg smooth; tarsus with prominent tubercles.

**Colour in life:** Dorsum light brown with a green tinge, a dark brown circle on snout and a broad dark brown band connecting upper eyelids, dark brown triangular patch pointed towards head on anterior dorsum, another broad dark brown cross band on sacrum, side olive green; limbs light brown with a green tinge, forelimbs, hind limbs, fingers and toes with dark brown cross bands, finger tips off white; ventral side off white, throat and chest marbled with brown blotches, belly, hands, feet and webbing darker (Image 13).

**Colour in alcohol:** Colour darkens, pattern remains, light brown with green tinge changes to dark brown and dark brown patches to maroon, and ventrally off white colour changes to a light brown (Image 14 A&D).

**Paratype and variation:** The species showed quite a variation of dorsal colour depending on its surrounding environment, ranging from maroonish tinges to light brown to cream colour, where they lacked the prominent greenish tinge found on holotype. Markings and patterns remained the same even with change in colour (Image 16–20).

**Etymology:** The species epithet *jagathgunawardanai* is named after Jagath Gunawardana, a leading attorney at law and naturalist, in great appreciation of his services towards the conservation of Sri Lanka's biodiversity and for his efforts on environmental policy making in the island. The species name *jagathgunawardanai* is a noun in the genitive case.

**Suggested vernacular names:** Jagath Gunawardanage panduru madiya and Jagath Gunawardana's Shrub Frog in Sinhala and English, respectively.

**Natural History:** The species is found mainly in cloud forests of elevation 1600–1750 m from forest floor to about 6m high trees. They are commonly observed on tree trunks with lichens, or were hidden on crevices of barks, or on shrubs.

**Remarks:** *Pseudophilautus jagathgunawardanai* sp. nov. is not confused with its congeners, due to its unique patterns and markings on dorsum.

### *Pseudophilautus karunarathnai* sp. nov.

(Figs. 11–13; Images 21–25; Tables 10–12)

urn:lsid:zoobank.org:act:0B077FB6-CC9D-48AA-8AC8-D5822D4BC0CA

**Holotype:** NMSL 2013.04.01 NH, 03.iv.2010, adult male 16.2mm SVL (Images 21, 22A,D). Sripada (Peak Wilderness), Ratnapura District, Sabaragamuwa Province, Sri Lanka ( $06^{\circ}48'31''N$  &  $80^{\circ}28'14''E$ ; 1334m) (Fig. 1), coll. L.J.M.W, D.R.V., M.D.G.R., S.C.A. & A.W.A.C..

**Paratypes:** DWC 2013.01.007, adult female, 19.2mm SVL (Images 22 B,E, 23); DWC 2013.01.008, adult male, 16.3mm (Images 22 C,F, 24); the same date, locality and collectors.

**Diagnosis:** *Pseudophilautus karunarathnai* sp. nov. can be distinguished from known congeners by the following combination of characters: body rather small (males SVL 16.2–16.3 mm, females 19.2mm); dorsal head and Interorbital space convex; lateral snout, canthus rostralis rounded; loreal region and internarial space concave; lingual papilla and calcar absent; vomerine teeth and nuptial pad present; snout smooth, a prominent blunt tubercle present; interorbital area weakly tubercular; anterior dorsum and dorsal thigh smooth; posterior dorsum spinulate; upper flank weakly granular; lower flank, throat and chest granular; supernumerary tubercles on palm and foot absent. Comparative characters that distinguish the species from its congeners are provided in tables 11 and 12.

**Description of holotype:** Body rather small (SVL 16.2), moderately elongate (SVL/HW 2.1); head large (HL/SVL



Figure 11. *Pseudophilautus karunarathnai* sp. nov. holotype (NMSL 2013.04.01 NH), head; (A) lateral aspect (B) dorsal aspect (C) ventral aspect. Scale bar: 2mm. (© Dulan Ranga Vidanapathirana)

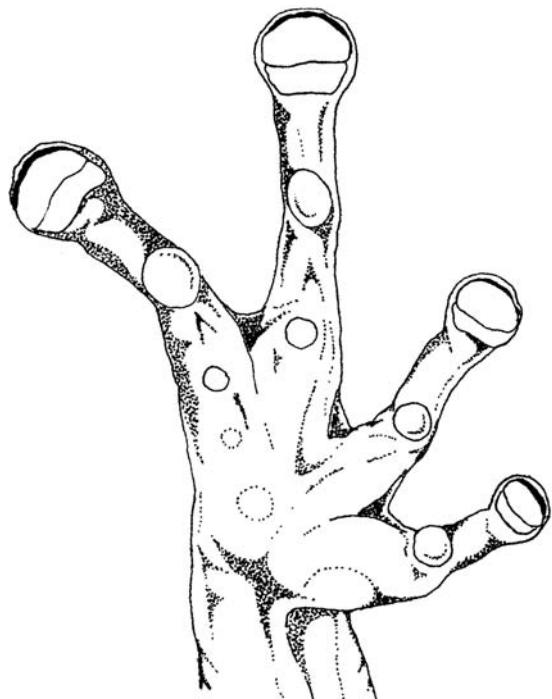


Figure 12. *Pseudophilautus karunarathnai* sp. nov. holotype (NMSL 2013.04.01 NH), ventral aspect of left hand. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)

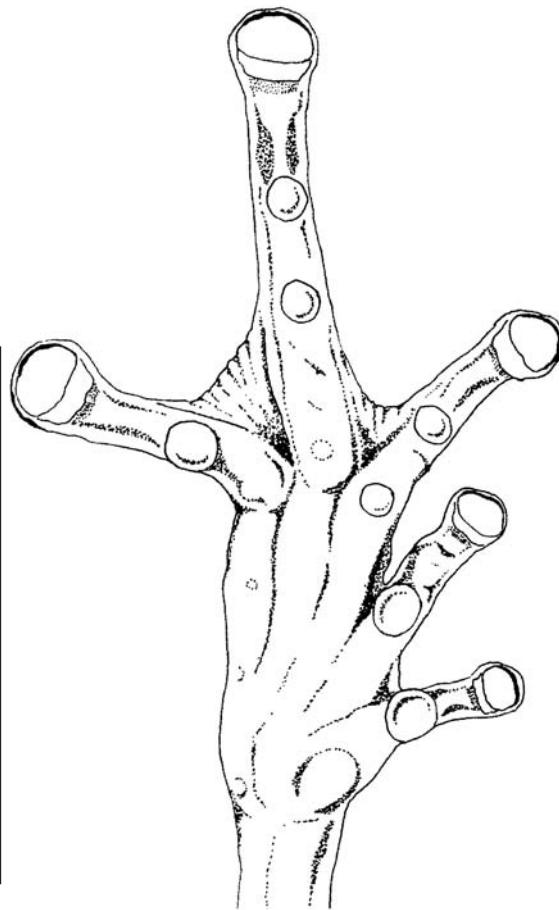


Figure 13. *Pseudophilautus karunarathnai* sp. nov. holotype (NMSL 2013.04.01 NH), ventral aspect of left foot. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)



Image 21. *Pseudophilautus karunarathnai* sp. nov. holotype in life (NMSL 2013.04.01 NH).

0.5), wider than long (HW/HL 0.9), convex above; snout rounded in lateral aspect, mucronate in dorsal and sub-elliptical in ventral aspects (Fig. 11 A–C) (ES/DFE 0.8, SN/IN 0.6), longer than the horizontal diameter of eye (ES/ED 1.1); internasal space concave; canthus rostralis rounded, loreal region concave; interorbital space convex, larger than upper eyelid (IO/UEW 1.1), equal to internasal distance (IN/UEW 1.1); distance between front of eyes 3/5<sup>th</sup> the distance between back of eyes



Image 23. *Pseudophilautus karunarathnai* sp. nov. paratype in life (DWC 2013.01.007).

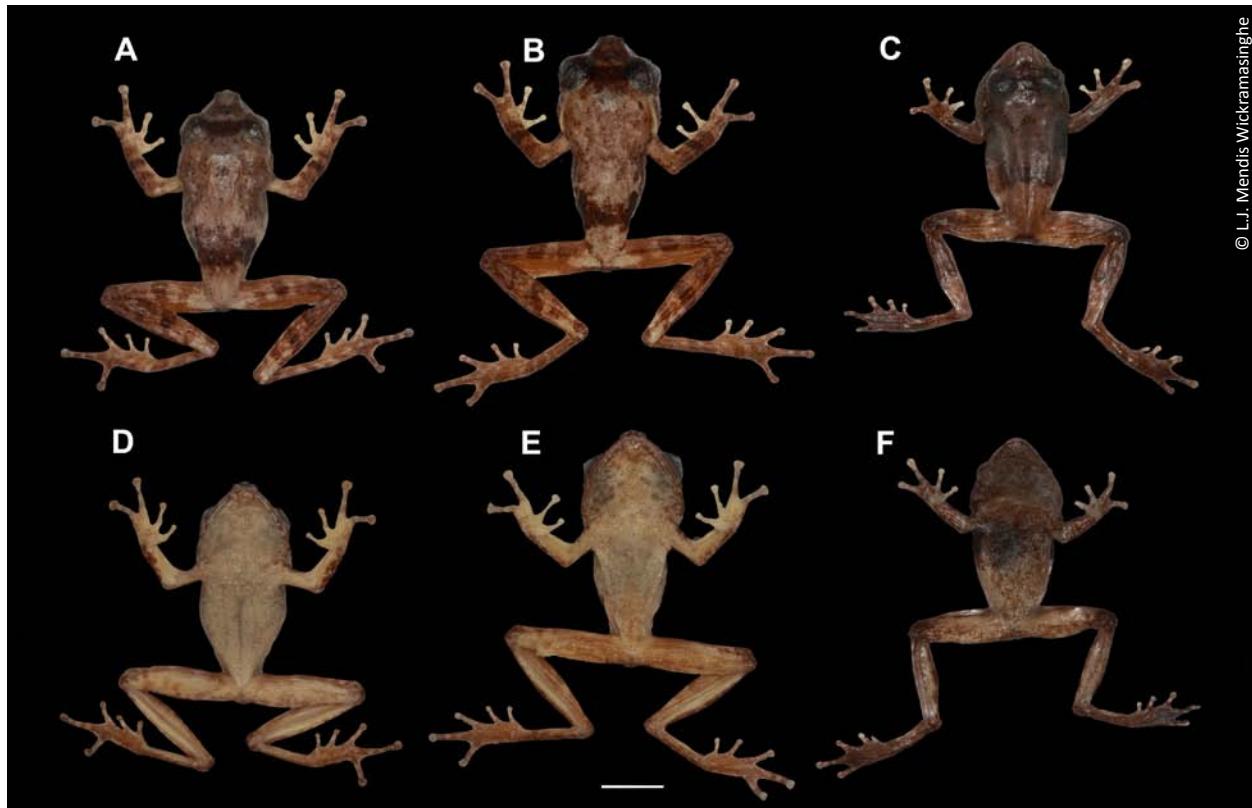


Image 22. Type series of *Pseudophilautus karunarathnai* sp. nov. Left to right, NMSL 2013.04.01 NH, DWC 2013.01.007, DWC 2013.01.008. A-C dorsal aspect and D-F ventral aspect. Scale bar: 5mm.



Image 24. *Pseudophilautus karunarathnai* sp. nov. paratype in life (DWC 2013.01.008).



Image 25. *Pseudophilautus karunarathnai* sp. nov. unpreserved specimen.

(DBE/DFE 1.7); nostrils oval, without flap of skin laterally, closer to tip of snout than to eye (SN/EN 0.7); pupil horizontally elliptical; tympanum distinct, oval (TYH/TYW 1.4), smaller than the eye diameter (TYH/ED 0.4), tympanum-eye distance 2/3<sup>rd</sup> tympanum width (TAD/TYW 0.7); pineal ocellus absent; vomerine teeth present, small, few, odontophores oblique and widely separated, between choanae with an angle of 60° relative to body

axis; tongue large, lanceolate; lingual papilla absent, depression with conical tubercles present on tongue.

Arm short, thin (LAL/FEL 0.49, UAL/FEL 0.3); forearm shorter than hand length (LAL/HNL 0.9); forearm longer than upper arm (LAL/UAL 1.5); fingers thin, (Fig. 12),

**Table 10.** The morphometric measurements (mm) of the type series of *Pseudophilautus karunarathnai* sp. nov.

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.04.01 NH | 2013.01.007 | 2013.01.008 |      |     |           |
| DB           | 0.5           | 0.5         | 0.4         | 0.5  | 0.1 | 0.4–0.5   |
| DBE          | 6.8           | 7.4         | 5.5         | 6.6  | 0.9 | 5.5–7.4   |
| DFE          | 4.0           | 4.2         | 3.3         | 3.8  | 0.5 | 3.3–4.2   |
| DL           | 0.8           | 0.8         | 0.7         | 0.8  | 0.1 | 0.7–0.8   |
| DW           | 0.9           | 0.9         | 0.8         | 0.9  | 0.1 | 0.8–0.9   |
| ED           | 3.0           | 3.0         | 2.2         | 2.8  | 0.5 | 2.2–3.0   |
| EN           | 1.8           | 1.9         | 1.5         | 1.8  | 0.2 | 1.5–1.9   |
| ES           | 3.2           | 3.3         | 2.6         | 3.0  | 0.4 | 2.6–3.3   |
| FEL          | 9.9           | 10.3        | 8.2         | 9.5  | 1.2 | 8.2–10.3  |
| FL-1         | 1.6           | 1.5         | 1.3         | 1.4  | 0.2 | 1.3–1.6   |
| FL-2         | 2.0           | 2.0         | 1.8         | 1.9  | 0.1 | 1.8–2.0   |
| FL-3         | 3.3           | 3.2         | 2.7         | 3.1  | 0.3 | 2.7–3.3   |
| FL-4         | 2.8           | 2.8         | 2.0         | 2.5  | 0.5 | 2.0–2.8   |
| FOL          | 12.0          | 12.9        | 11.1        | 12.0 | 0.9 | 11.1–12.9 |
| GK           | 8.8           | 9.2         | 6.9         | 8.3  | 1.2 | 6.9–9.2   |
| HD           | 4.4           | 4.5         | 4.0         | 4.3  | 0.3 | 4.0–4.5   |
| HL           | 8.4           | 8.7         | 6.7         | 7.9  | 1.1 | 6.7–8.7   |
| HNL          | 5.8           | 5.1         | 4.2         | 5.0  | 0.8 | 4.2–5.8   |
| HW           | 7.6           | 8.2         | 7.0         | 7.6  | 0.6 | 7.0–8.2   |
| IML          | 0.8           | 0.8         | 0.7         | 0.8  | 0.1 | 0.7–0.8   |
| IN           | 1.9           | 1.9         | 1.7         | 1.8  | 0.1 | 1.7–1.9   |
| IO           | 2.0           | 2.1         | 1.9         | 2.0  | 0.1 | 1.9–2.1   |

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.04.01 NH | 2013.01.007 | 2013.01.008 |      |     |           |
| KT           | 9.1           | 9.4         | 7.9         | 8.8  | 0.8 | 7.9–9.4   |
| LAL          | 4.9           | 5.0         | 3.6         | 4.5  | 0.7 | 3.6–5.0   |
| MBE          | 3.2           | 3.8         | 2.5         | 3.2  | 0.7 | 2.5–3.8   |
| MFE          | 6.0           | 6.9         | 4.7         | 5.8  | 1.1 | 4.7–6.9   |
| MN           | 7.3           | 7.9         | 6.2         | 7.1  | 0.9 | 6.2–7.9   |
| SN           | 1.2           | 1.2         | 1.1         | 1.2  | 0.1 | 1.1–1.2   |
| SVL          | 16.2          | 19.2        | 16.3        | 17.2 | 1.7 | 16.2–19.2 |
| TAD          | 0.6           | 0.6         | 0.3         | 0.5  | 0.2 | 0.3–0.6   |
| TAS          | 6.1           | 6.5         | 5.4         | 6.0  | 0.6 | 5.4–6.5   |
| TBL          | 10.6          | 10.8        | 8.8         | 10.1 | 1.1 | 8.8–10.8  |
| TL-1         | 1.6           | 1.6         | 1.5         | 1.6  | 0.1 | 1.5–1.6   |
| TL-2         | 1.9           | 1.9         | 1.6         | 1.8  | 0.2 | 1.6–1.9   |
| TL-3         | 2.8           | 3.2         | 2.5         | 2.9  | 0.4 | 2.5–3.2   |
| TL-4         | 4.3           | 5.1         | 3.6         | 4.4  | 0.8 | 3.6–5.1   |
| TL-5         | 3.0           | 3.2         | 2.4         | 2.9  | 0.4 | 2.4–3.2   |
| TND          | 5.2           | 5.8         | 4.5         | 5.1  | 0.7 | 4.5–5.8   |
| TPD          | 3.4           | 3.9         | 3.0         | 3.4  | 0.5 | 3.0–3.9   |
| TYH          | 1.2           | 1.3         | 1.0         | 1.2  | 0.1 | 1.0–1.3   |
| TYW          | 0.9           | 1.0         | 0.9         | 0.9  | 0.1 | 0.9–1.0   |
| UAL          | 3.3           | 3.4         | 2.4         | 3.0  | 0.5 | 2.4–3.4   |
| UEW          | 1.8           | 1.9         | 1.4         | 1.7  | 0.3 | 1.4–1.9   |
| VKL          | 8.7           | 8.8         | 7.6         | 8.4  | 0.7 | 7.6–8.8   |

**Table 11.** Characters that differentiate *Pseudophilautus karunarathnai* sp. nov. among congeners of the genus *Pseudophilautus*

| Species name                          | SVL       | Head dorsally   | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Calcar  | Nuptial pad |
|---------------------------------------|-----------|-----------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|---------|-------------|
| <i>P. karunarathnai</i> sp. nov.      | 16.2–19.2 | Convex          | Rounded          | Rounded           | Concave       | Convex             | Concave           | Present        | Absent          | Absent  | Present     |
| <i>P. bambaradeniyai</i> sp. nov.     | 17.3–20.2 |                 | Truncate         |                   |               |                    | Flat              | Absent         |                 |         | Absent      |
| <i>P. dayawansai</i> sp. nov.         | 24.5–30.1 |                 | Truncate         |                   |               | Concave            |                   | Absent         | Present         | Present | Absent      |
| <i>P. jagathgunawardanai</i> sp. nov. | 35.8–40.4 |                 |                  | Sharp             | Convex        |                    |                   | Absent         | Present         |         | Absent      |
| <i>P. newtonjayawardanei</i> sp. nov. | 38.4      | Concave         |                  |                   |               | Concave            |                   | Absent         |                 |         | Absent      |
| <i>P. puranappu</i> sp. nov.          | 33.6–51.1 | Concave         |                  |                   |               | Flat               |                   |                | Present         |         |             |
| <i>P. samarakoon</i> sp. nov.         | 20.4–24.6 |                 | Truncate         |                   |               |                    | Flat              | Absent         |                 | Present | Absent      |
| <i>P. sirilwijesundarai</i> sp. nov.  | 22.3–32.5 |                 |                  |                   |               |                    | Flat              |                |                 |         | Absent      |
| <i>P. abundus</i>                     | 25.4–37.0 | Concave         | Pointed or oval  |                   |               | Flat               |                   |                | Present         |         | Absent      |
| <i>P. adspersus</i>                   | 33.3–41.7 | Flat            | Truncate         | Sharp             |               | Concave or flat    | Flat              | Absent         |                 |         |             |
| <i>P. alto</i>                        | 17.0–27.5 |                 | Obtusely pointed |                   |               |                    |                   | Absent         |                 | Present |             |
| <i>P. asankai</i>                     | 18.9–27.3 |                 | Obtusely pointed |                   | Flat          |                    | Flat              | Absent         |                 |         | Absent      |
| <i>P. auratus</i>                     | 21.7–26.4 | Flat            | Blunt            |                   | Flat          | Flat               |                   |                |                 |         | Absent      |
| <i>P. caeruleus</i>                   | 16.3–19.0 | Flat            | Obtusely pointed | Sharp             |               | Flat               |                   | Absent         | Present         |         | Absent      |
| <i>P. cavirostris</i>                 | 38.4–48.9 | Concave         | Oval             | Sharp             |               | Concave            |                   |                | Present         |         |             |
| <i>P. cuspis</i>                      | 17.6–28.9 |                 | Sharply Pointed  | Sharp             |               |                    | Flat              | Absent         | Present         |         |             |
| <i>P. decoris</i>                     | 18.3–23.9 | Flat            | Obtusely pointed |                   |               | Concave            |                   | Absent         | Present         | Present | Absent      |
| <i>P. dimbulae</i>                    | 44.8      |                 | Truncate         | Sharp             |               | Flat               | Flat              |                |                 |         |             |
| <i>P. eximus</i>                      | 35.3      | Flat            |                  | Sharp             |               | Flat               | Flat              | Absent         | Present         |         |             |
| <i>P. extirpo</i>                     | 43.5      | Flat            | Blunt            | Sharp             |               | Concave            |                   | Absent         | Present         |         |             |
| <i>P. femoralis</i>                   | 23.4–28.8 | Flat            | Truncate         |                   |               | Flat               |                   | Absent         |                 |         |             |
| <i>P. fergusonianus</i>               | 26.9–44.5 | Concave or flat |                  |                   |               | Concave or flat    |                   |                |                 |         |             |
| <i>P. folicola</i>                    | 23.7–29.4 | Flat            |                  | Sharp             |               | Flat               |                   |                |                 |         | Absent      |
| <i>P. frankenbergi</i>                | 26.7–29.3 | Flat            |                  | Sharp             |               | Flat               | Flat              | Absent         |                 |         | Absent      |
| <i>P. fulvus</i>                      | 33.4–46.8 |                 |                  | Sharp             |               | Flat               |                   |                | Present         |         |             |
| <i>P. hallidayi</i>                   | 32.9–42.9 |                 |                  |                   |               | Flat               |                   |                |                 |         |             |
| <i>P. halyi</i>                       | 27.9      | Uneven          |                  | Sharp             |               | Flat               | Flat              | Absent         |                 |         |             |
| <i>P. hankeni</i>                     | 18.3–21.9 |                 | Pointed          |                   |               |                    |                   | Absent         |                 |         | Absent      |
| <i>P. hoffmanni</i>                   | 21.2–23.4 | Flat            |                  |                   | Flat          | Flat               | Flat              | Absent         |                 |         | Absent      |
| <i>P. hoipolloi</i>                   | 22.0–28.6 |                 | Blunt            |                   | Flat          | Flat               |                   | Absent         |                 |         | Absent      |
| <i>P. hypomelas</i>                   | 11.2–24.4 |                 | Acuminate        |                   |               |                    | Flat              | Absent         |                 |         | Absent      |
| <i>P. leucorhinus</i>                 | 19.8      | Flat            | Oval             | Sharp             |               | Concave            |                   | Absent         |                 |         |             |
| <i>P. limbus</i>                      | 25.7      | Concave         | Obtusely pointed |                   |               | Concave            |                   |                | Present         | Present | Absent      |
| <i>P. lunatus</i>                     | 40.9      | Flat            | Oval             |                   |               | Concave            |                   |                | Present         | Present |             |
| <i>P. macropus</i>                    | 27.4–42.7 |                 | Oval             |                   |               | Flat               | Flat              |                | Present         |         |             |
| <i>P. maia</i>                        | 46.6      | Concave         | Truncate         | Sharp             |               | Concave            | Flat              |                |                 |         |             |
| <i>P. malcolmsmithi</i>               | 14.9      |                 | Pointed          | Sharp             |               | Flat               | Flat              | Absent         |                 | Present |             |

| Species name            | SVL       | Head dorsally | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Calcar   | Nuptial pad    |
|-------------------------|-----------|---------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|----------|----------------|
| <i>P. microtympanum</i> | 23.9–49.0 |               | Oval             |                   |               | Flat               |                   |                |                 |          |                |
| <i>P. mittermeieri</i>  | 16.3–18.4 |               | Pointed          |                   |               | Concave            |                   | Absent         |                 | Present. | Absent         |
| <i>P. mooreorum</i>     | 29.4–35.0 | Flat          |                  |                   |               | Flat               |                   | Absent         |                 |          | Absent         |
| <i>P. nanus</i>         | 34.8      |               | Oval             |                   |               | Flat               |                   |                |                 |          |                |
| <i>P. nasutus</i>       | 17.4      |               | Pointed          | Sharp             |               | Flat               |                   | Absent         | Present         |          | Absent         |
| <i>P. nemus</i>         | 20.7      |               | Obtusely pointed |                   |               | Flat               | Flat              | Absent         |                 |          |                |
| <i>P. ocularis</i>      | 23.1–33.4 | Flat          | Blunt            |                   |               | Flat               |                   |                |                 |          | Absent         |
| <i>P. oxyrhynchus</i>   | 18.6      | Flat          | Pointed          | Sharp             | Flat          | Concave            |                   | Absent         | Present         |          |                |
| <i>P. papillosus</i>    | 40        |               | Truncate         | Sharp             |               | Concave            | Flat              |                | Present         | Present  |                |
| <i>P. pardus</i>        | 32.1      |               |                  | Indistinct        | Flat          | Flat               |                   | Absent         |                 |          | Absent         |
| <i>P. pleurotaenia</i>  | 25.6–30.3 |               | Truncate         |                   |               |                    |                   | Absent         |                 |          | Absent         |
| <i>P. poppiae</i>       | 21.3–26.0 |               |                  |                   |               | Flat               |                   | Absent         |                 |          | Absent         |
| <i>P. popularis</i>     | 17.7–24.7 |               |                  |                   |               | Flat               | Flat              | Absent         |                 |          |                |
| <i>P. procax</i>        | 25.1–26.8 | Concave       | Pointed or oval  |                   |               | Flat               |                   |                | Present         |          | Absent         |
| <i>P. regius</i>        | 18.3–21.7 | Flat          | Oval             |                   |               | Concave            |                   | Absent         |                 |          |                |
| <i>P. reticulatus</i>   | 42.5–61.1 |               | Truncate or oval | Sharp             |               |                    |                   |                | Present         | Present  |                |
| <i>P. rugatus</i>       | 17.5      |               |                  | Sharp             |               |                    |                   | Absent         |                 |          |                |
| <i>P. rus</i>           | 20.6–24.1 | Flat          | Oval             |                   |               | Flat               | Flat              |                |                 |          | Absent         |
| <i>P. sarasinorum</i>   | 22.6–38.1 | Flat          |                  |                   |               | Flat               |                   | Absent         | Present         |          | Absent         |
| <i>P. schmarda</i>      | 17.7–30.0 |               | Obtusely pointed | Sharp             |               |                    |                   | Absent         |                 |          | Present Absent |
| <i>P. schneideri</i>    | 19.9–22.8 |               | Pointed          | Sharp             | Flat          |                    | Flat              |                |                 |          | Absent         |
| <i>P. semiruber</i>     | 13.4      |               | Oval             |                   | Flat          | Concave            | Flat              | Absent         |                 |          | Absent         |
| <i>P. silus</i>         | 35.4–51.8 |               | Oval             | Sharp             |               | Flat               | Flat              |                |                 |          |                |
| <i>P. silvaticus</i>    | 24.3–31.3 |               | Oval             | Sharp             |               | Flat               | Flat              |                | Present         |          | Absent         |
| <i>P. simba</i>         | 12.6–15.6 |               | Truncate         |                   | Flat          |                    | Flat              | Absent         |                 |          | Absent         |
| <i>P. singu</i>         | 16.1–16.6 |               |                  |                   |               |                    |                   | Absent         | Present         |          | Absent         |
| <i>P. sordidus</i>      | 22.2–39.4 |               | Blunt            |                   |               |                    | Flat              |                | Present         |          | Absent         |
| <i>P. steineri</i>      | 30.4–41.6 | Flat          |                  | Sharp             |               | Flat               |                   |                |                 |          |                |
| <i>P. stellatus</i>     | 39.6–55.3 | Concave       |                  |                   |               | Concave            |                   |                |                 | Present  |                |
| <i>P. stictomerus</i>   | 23.2–36.0 |               | Obtusely pointed |                   |               | Concave or flat    |                   |                |                 |          |                |
| <i>P. stuarti</i>       | 24.2–32.4 | Flat          |                  | Sharp             |               | Flat               | Flat              | Absent         |                 |          | Absent         |
| <i>P. tanu</i>          | 13.5–13.9 |               | Obtusely pointed |                   | Flat          | Flat               | Flat              | Absent         |                 |          | Absent         |
| <i>P. temporalis</i>    | 28.4–31.0 |               |                  |                   |               | Concave            |                   |                |                 |          | Absent         |
| <i>P. variabilis</i>    | 35.7      | Flat          | Truncate         |                   |               | Flat               |                   | Absent         |                 |          |                |
| <i>P. viridis</i>       | 27.4–36.3 |               | Blunt or rounded | Indistinct        |               | Flat               | Flat              | Absent         |                 |          | Absent         |
| <i>P. zal</i>           | 20.0–32.5 |               |                  |                   |               |                    |                   | Absent         |                 |          |                |
| <i>P. zimmeri</i>       | 31.6      |               | Blunt            | Sharp             |               | Flat               | Flat              |                |                 |          |                |
| <i>P. zorro</i>         | 22.9–30.1 | Concave       | Pointed          | Sharp             |               | Flat               |                   | Absent         | Present         |          |                |

**Table 12. Characters in the skin structure that differentiate *Pseudophilautus karunarathnai* sp. nov. among congeners of the genus *Pseudophilautus***

| Species name                          | Snout  | Interorbital area                                 | Anterior dorsum  | Posterior dorsum          | Upper flank                        | Lower flank               | Dorsal thigh              | Throat   | Chest    | Super-numerary tubercles on palm | Super-numerary tubercles on foot |
|---------------------------------------|--|---|--|---------------------------|------------------------------------|---------------------------|---------------------------|----------|----------|----------------------------------|----------------------------------|
| <i>P. karunarathnai</i> sp. nov.      | Smooth, a prominent blunt tubercle present                     | Weakly tubercular                                 | Smooth   | Spinulate                 | Weakly granular                    | Granular                  | Smooth                    | Granular | Granular | Absent                           | Absent                           |
| <i>P. bambaradeniyai</i> sp. nov.     |  | Smooth  | Prominent tubercles and horny spinules                           |                           | Smooth                             | Smooth                    | Tuberculated              |          |          | Present                          | Present                          |
| <i>P. dayawansai</i> sp. nov.         | Tuberculated, with a single prominent tubercle medially placed | Smooth, with a ridge across braking medially      |  | Weakly tubercular         |                                    |                           |                           | Shagreen |          | Present                          | Present                          |
| <i>P. jagathgunawardanai</i> sp. nov. |  | Smooth, with two cross dermal fringes             |  | Smooth                    | Smooth                             |                           | Weakly tubercular         |          |          | Present                          | Present                          |
| <i>P. newtonjayawardanei</i> sp. nov. | Shagreen   | Shagreen, with a prominent ridge                  | Shagreen   | Shagreen                  | Shagreen                           |                           | Shagreen                  |          |          | Present                          | Present                          |
| <i>P. puranappu</i> sp. nov.          |  | Smooth  | Weakly shagreen  |                           |                                    |                           | Weakly shagreen           |          |          | Present                          |                                  |
| <i>P. samarakoon</i> sp. nov.         | Prominent tubercle present on centre of snout                  |   | Tubercular   | Tubercular                | Tubercular                         |                           | Tuberculated              |          |          | Present                          | Present                          |
| <i>P. sirilwijesundarai</i> sp. nov.  | Shagreen, with prominent dermal fold                           | A prominent tubercle present                      | Shagreen with few tubercles                                      | Shagreen                  | Areolate                           |                           |                           | Shagreen |          | Present                          | Present                          |
| <i>P. abundus</i>                     |  | Smooth  |  |                           | Smooth                             |                           |                           |          |          | Present                          |                                  |
| <i>P. adspersus</i>                   |  | Smooth except for a few scattered glandular warts |  | Smooth                    |                                    |                           |                           |          |          | Present                          | Present                          |
| <i>P. alto</i>                        | Horny spinules in males  | Horny spinules in males                           | Horny spinules in males, warty in females                        |                           | Horny spinules in males            |                           |                           |          |          | Present                          | Present                          |
| <i>P. asankai</i>                     | Very fine, horny spinules                                      | Very fine, horny spinules                         | Very fine, horny spinules  | Very fine, horny spinules | Horny spinules                     | Very fine, horny spinules | Very fine, horny spinules |          |          |                                  |                                  |
| <i>P. auratus</i>                     | Shagreen   | Shagreen  | Shagreen   | Shagreen                  |                                    |                           |                           |          |          | Present                          | Present                          |
| <i>P. caeruleus</i>                   | Glandular warts and horny spinules                             | Glandular warts and horny spinules                | Glandular warts and horny spinules (females lack horny spinules) |                           | Glandular warts and horny spinules |                           |                           |          |          | Present                          |                                  |

| Species name            | Snout  | Interorbital area                                  | Anterior dorsum                                       | Posterior dorsum                            | Upper flank   | Lower flank        | Dorsal thigh                        | Throat   | Chest    | Super-numerary tubercles on palm | Super-numerary tubercles on foot |
|-------------------------|--|--|---|---|---|--------------------|-------------------------------------|----------|----------|----------------------------------|----------------------------------|
| <i>P. cavirostris</i>   | Glandular warts                                    | Glandular warts                                    | Heavily tuberculated, glandular warts                 | Heavily tuberculated, glandular warts       | Smooth  |                    |                                     | Smooth   | Smooth   | Present                          | Present                          |
| <i>P. cuspis</i>        | Horny spinules                                     | Horny spinules                                     | Horny spinules with a "J"-shaped pattern of tubercles |   | Smooth or with glandular warts                          | Smooth or granular |                                     | Smooth   |          | Present                          |                                  |
| <i>P. decoris</i>       | Glandular warts                                    | Glandular warts                                    | Glandular warts                                       | Glandular warts                             | Glandular warts   | Glandular warts    | Glandular warts                     |          |          | Present                          |                                  |
| <i>P. dimbuliae</i>     | Shagreen   | Shagreen   | Shagreen  | Shagreen                                    | Shagreen  |                    |                                     |          |          | Present                          | Present                          |
| <i>P. eximus</i>        |  | Smooth   |   | Smooth                                      | Smooth  | Weakly granular    |                                     | Smooth   |          | Present                          | Present                          |
| <i>P. extirpo</i>       | Shagreen, with a few glandular warts               | Shagreen   | Shagreen, with a few glandular warts                  | Shagreen, with a few glandular warts        |   |                    | Shagreen, few glandular warts       |          |          | Present                          |                                  |
| <i>P. femoralis</i>     | Finely granular                                    | Finely granular                                    | Finely granular                                       | Finely granular                             |   |                    |                                     | Smooth   |          |                                  |                                  |
| <i>P. fergusonianus</i> | Shagreen, males glandular warts and horny spinules | Shagreen, males glandular warts and horny spinules | Shagreen, Males glandular warts and horny spinules    |   | Shagreen, males with glandular warts and horny spinules |                    |                                     |          |          |                                  |                                  |
| <i>P. folicola</i>      |  | Smooth   |   | Smooth                                      |   |                    |                                     |          |          | Present                          |                                  |
| <i>P. frankenbergi</i>  | Shagreen   | Shagreen   | Shagreen, horny spinules scattered                    |   | Shagreen  |                    |                                     |          |          |                                  |                                  |
| <i>P. fulvus</i>        | Shagreen   | Shagreen   | Shagreen  | Shagreen                                    | Shagreen  |                    | Shagreen                            |          |          | Present                          | Present                          |
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males      | Glandular warts, with horny spinules in males      | Glandular warts, with horny spinules in males         |   | Glandular warts, with horny spinules in males           |                    | Glandular warts                     |          |          | Present                          |                                  |
| <i>P. halyi</i>         | Shagreen with glandular warts                      | Shagreen with glandular warts                      | Shagreen with glandular warts                         | Shagreen with glandular warts               | Glandular warts   |                    | Glandular warts                     |          |          | Present                          | Present                          |
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules                |   | Glandular warts bearing horny spinules                  |                    | Glandular warts with horny spinules |          |          | Present                          | Present                          |
| <i>P. hoffmanni</i>     |  | Smooth   |   | Smooth                                      | Smooth  | Glandular          |                                     |          |          |                                  |                                  |
| <i>P. hoipolloi</i>     |  | Smooth or shagreen                                 |   | Smooth or shagreen                          |   |                    |                                     | Shagreen | Shagreen | Present                          |                                  |
| <i>P. hypomelas</i>     |  |  |   | Smooth                                      |   |                    |                                     | Smooth   | Smooth   |                                  |                                  |
| <i>P. leucorhinus</i>   |  | Smooth   |   | Smooth with a few scattered glandular warts | Smooth with glandular warts                             |                    |                                     |          |          | Present                          |                                  |

| Species name            | Snout                            | Interorbital area                           | Anterior dorsum  | Posterior dorsum   | Upper flank  | Lower flank             | Dorsal thigh                            | Throat | Chest  | Super-numerary tubercles on palm | Super-numerary tubercles on foot |
|-------------------------|----------------------------------|---|--|--|--|-------------------------|---|--------|--------|----------------------------------|----------------------------------|
| <i>P. limbus</i>        | Weakly granular                  |   | Weakly granular  | Weakly granular  |  |                         | Granular, not rough                     |        |        |                                  | Present                          |
| <i>P. lunatus</i>       |                                  | Smooth                                      |  | Smooth   | Glandular warts  |                         |   | Smooth | Smooth | Present                          | Present                          |
| <i>P. macropus</i>      |                                  | Smooth with a few scattered glandular warts |  | Shagreen or smooth, with a few scattered glandular warts           |  |                         |   |        |        | Present                          |                                  |
| <i>P. maia</i>          |                                  | Smooth                                      | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts         |   |        |        | Present                          |                                  |
| <i>P. malcolmsmithi</i> |                                  | Smooth                                      | Smooth, 'V' shaped ridge   | Smooth   | Glandular warts  | Glandular warts         |   | Smooth | Smooth | Present                          | Present                          |
| <i>P. microtympanum</i> |                                  |   | Smooth above, shagreen and with glandular warts, males with horn like spinules |  |  |                         | Shagreen, few scattered glandular warts |        |        | Present                          | Present                          |
| <i>P. mittermeieri</i>  | Glandular warts                  | Glandular warts                             | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts         |   |        |        |                                  |                                  |
| <i>P. mooreorum</i>     | Horny spinules in males          | Horny spinules in males                     | Horny spinules in males, finely granular or shagreen in female                 |  | Horny spinules in males  | Horny spinules in males | Shagreen                                |        |        |                                  |                                  |
| <i>P. nanus</i>         | Glandular warts                  | Few glandular warts                         | Few glandular warts  | Few glandular warts  | Glandular folds  |                         |   |        |        | Present                          | Present                          |
| <i>P. nasutus</i>       | Glandular warts                  | Glandular warts                             | tuberculated, horn like spinules   | Tuberculated, horn like spinules                                   | Smooth   |                         | Glandular warts                         |        |        | Present                          | Present                          |
| <i>P. nemus</i>         | Glandular warts                  | Smooth                                      | Glandular warts  | Glandular warts  | Smooth   |                         |   |        |        | Present                          |                                  |
| <i>P. ocularis</i>      | Shagreen or with glandular warts | Shagreen or with glandular warts            | Shagreen or with glandular warts   | Shagreen or with glandular warts                                   | Shagreen or glandular warts  |                         | Glandular warts                         |        |        | Present                          |                                  |
| <i>P. oxyrhynchus</i>   |                                  | Smooth                                      |  | Smooth   | Smooth   | Smooth                  |   | Smooth |        |                                  |                                  |
| <i>P. papillosum</i>    | Glandular warts                  | Glandular warts                             | Glandular warts  | Glandular warts  | Glandular warts  |                         | Glandular warts                         |        |        | Present                          |                                  |
| <i>P. pardus</i>        |                                  | Smooth                                      |  | Smooth   |  |                         |   |        |        |                                  |                                  |
| <i>P. pleurotaenia</i>  | Shagreen                         | Shagreen                                    | Shagreen with a few scattered glandular warts and horny spinules (males)       | Shagreen, few scattered glandular warts and horny spinules (males) | Shagreen, few scattered glandular warts and horny spinules, and horny spinules |                         |   |        |        | Present                          |                                  |

| Species name          | Snout  | Interorbital area  | Anterior dorsum  | Posterior dorsum   | Upper flank  | Lower flank                        | Dorsal thigh   | Throat | Chest  | Super-numerary tubercles on palm | Super-numerary tubercles on foot |
|-----------------------|--|--|--|--|--|------------------------------------|--|--------|--------|----------------------------------|----------------------------------|
| <i>P. poppiae</i>     | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female     |  | Horny spinules in males, finely granular or shagreen in female | Smooth                             | Horny spinules in males, finely granular or shagreen in female |        |        |                                  |                                  |
| <i>P. popularis</i>   | Glandular warts  | Smooth   | Horny spinules   |  | Horny spinules   |                                    | Glandular warts  |        |        | Present                          | Present                          |
| <i>P. procax</i>      |  | Smooth   | Horny spinules (spinules Absent in females)                        |  | Smooth   |                                    |  |        |        | Present                          |                                  |
| <i>P. regius</i>      | Horny spinules   | Horny spinules   | Horny spinules   |  | Glandular  | Glandular                          | Glandular warts  |        |        | Present                          | Present                          |
| <i>P. reticulatus</i> | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts, finely tuberculated | Shagreen with a few scattered glandular warts, finely tuberculated | Shagreen with a few scattered glandular warts                  |                                    |  |        |        | Present                          |                                  |
| <i>P. rugatus</i>     |  | Smooth except for a few scattered glandular warts              |  | Smooth except for a few scattered glandular warts                  | Glandular warts  |                                    |  |        |        | Present                          | Present                          |
| <i>P. rus</i>         |  | Smooth   | Glandular warts  | Glandular warts  |  |                                    |  |        |        | Present                          |                                  |
| <i>P. sarasinorum</i> | Glandular warts  | Glandular warts  | Glandular warts, males with horny spinules scattered               |  | Glandular folds  |                                    |  |        | Smooth | Present                          |                                  |
| <i>P. schmarda</i>    | Glandular warts  | Glandular folds, glandular warts and horny spinules            | Glandular folds, glandular warts and horny spinules                |  | Glandular folds, glandular warts and horny spinules            | Glandular warts and horny spinules | Glandular warts  |        |        | Present                          | Present                          |
| <i>P. schneideri</i>  | Small tubercles with horny spinules                            | Small tubercles with horny spinules                            | Small tubercles with horny spinules                                | Small tubercles with horny spinules                                | Small tubercles with horny spinules                            |                                    |  |        |        |                                  | Present                          |
| <i>P. semiruber</i>   |  | Smooth   |  | Smooth   | Smooth   | Smooth                             |  | Smooth | Smooth | Present                          | Present                          |
| <i>P. silus</i>       |  | Smooth   | Glandular warts  | Glandular warts  | Glandular warts  |                                    |  |        |        | Present                          | Present                          |
| <i>P. silvaticus</i>  | Glandular warts  | Glandular warts  | Glandular warts  | Smooth   | Glandular warts  |                                    |  |        |        | Present                          |                                  |
| <i>P. simba</i>       |  | Smooth   | Glandular warts  | Smooth   |  |                                    |  |        |        | Present                          |                                  |
| <i>P. singu</i>       | Scattered, glandular tubercles                                 | Scattered, glandular tubercles                                 | Scattered, glandular tubercles                                     | Scattered, glandular tubercles                                     | Scattered, glandular tubercles                                 | Scattered, glandular tubercles     | Scattered glandular tubercles                                  |        |        | Present                          | Present                          |

| Species name          | Snout  | Interorbital area  | Anterior dorsum   | Posterior dorsum     | Upper flank   | Lower flank        | Dorsal thigh         | Throat                | Chest  | Super-<br>numerary<br>tubercles<br>on palm | Super-<br>numerary<br>tubercles<br>on foot |
|-----------------------|--|--|---|----------------------|---|--------------------|----------------------|-----------------------|--------|--|--|
| <i>P. sordidus</i>    | Glandular warts  | Glandular warts  | Glandular warts,<br>males horny<br>spinules scattered                       |                      | Glandular<br>warts, with<br>horny spinules<br>in males            |                    | Glandular<br>warts   | Smooth                | Smooth | Present                                    |  |
| <i>P. steineri</i>    | Glandular warts<br>and horny spinules                          | Glandular warts<br>and horny spinules                          | Glandular warts<br>and horny<br>spinules, females<br>lack horny<br>spinules |                      | Glandular warts<br>and horny<br>spinules                          |                    |                      |                       |        | Present                                    | present                                    |
| <i>P. stellatus</i>   | Weakly shagreen  | Weakly shagreen  | Weakly shagreen   | Weakly shagreen      | Shagreen to<br>weakly areolate                                    | Weakly<br>areolate | Weakly<br>shagreen   |                       |        | Present                                    | Present                                    |
| <i>P. stictomerus</i> |  | Smooth   | Shagreen, horny<br>spinules in males  |                      | Shagreen,<br>horny spinules<br>in males                           |                    |                      | Smooth or<br>shagreen |        | Present                                    |  |
| <i>P. stuarti</i>     | Horny spinules   | Horny spinules   | Horny spinules,<br>females lack<br>horny spinules                           |                      | Smooth  | Smooth             |                      |                       |        | Present                                    | Present                                    |
| <i>P. tanu</i>        | Shagreen   | Shagreen   | Shagreen  | Shagreen             |   |                    |                      |                       |        | Present                                    | Present                                    |
| <i>P. temporalis</i>  |  | Smooth   |   | Smooth               | Smooth  |                    |                      | Smooth                | Smooth | Present                                    | Present                                    |
| <i>P. variabilis</i>  |  | Smooth   |   | Smooth               |   |                    |                      |                       |        | Present                                    | Present                                    |
| <i>P. viridis</i>     | Horny spinules<br>(smooth in females<br>and immature<br>males) | Horny spinules<br>(smooth in females<br>and immature<br>males) |   |                      | Horny spinules<br>(smooth in<br>females and<br>immature<br>males) |                    | Shagreen             |                       |        | Present                                    |  |
| <i>P. zal</i>         | Weakly shagreen  | Shagreen   | Weakly<br>tubercular  | Weakly<br>tubercular |   |                    | Weakly<br>tubercular |                       |        | Present                                    | Present                                    |
| <i>P. zimmeri</i>     | Glandular warts  | Glandular warts  | Glandular warts   | Glandular warts      |   |                    | Glandular<br>warts   |                       |        | Present                                    |  |

relative length of fingers I < II < IV < III (FL-1/FL-3 0.5, FL-2/FL-3 0.6, FL-4/FL-3 0.9) (Table 10); tips of fingers rounded enlarged, discs present on all fingers, with distinct basal and circum marginal grooves; dermal fringe present on fingers; webbing formula I2—2 1/3 II2—3 2/3 III3+—2 1/2 IV; subarticular tubercles prominent, rounded, single, all present, IV2 and III2 relatively smaller; inner palmar tubercle indistinct, single, oval, larger than outer palmar tubercle; nuptial pads present; outer palmar tubercle indistinct, single, oval, smaller than the distal subarticular tubercles; supernumerary tubercles absent on fingers indistinct on palm; prepollex absent; femur 1 1/3 times longer than fourth toe length (FEL/TL-4 2.3); foot length longer than thigh (FOL/FEL 1.2); toes thin, (Fig. 13), relative length of toes I < II < III < V < IV (TL-1/TL-4 0.4, TL-2/TL-4 0.5, TL-3/TL-4 0.7, TL-5/TL-4 0.7); tips of toes rounded, enlarged, discs present on all toes with distinct basal and circum marginal grooves; webbing formula I2—2 1/2 II2+—3 1/2 III2+—3 1/2 IV2 1/2—2 1/2 V; dermal fringe present on inside of toes III, IV and V, thin fringe along exterior edge of toe V, and absent on metatarsus and tarsal fold; subarticular tubercles prominent, rounded, single, all present, V2 and IV3 relatively smaller; supernumerary tubercles absent; inner metatarsal tubercle oval prominent and large, its length half the length of toe I (IML/TL-1 0.5); outer metatarsal tubercle present, smaller than penultimate subarticular tubercles.

Skin of snout dorsally smooth, a large, prominent, blunt tubercle present, snout laterally weakly tubercular; interorbital space and upper eyelid weakly tubercular; head laterally weakly tuberculated, a faint median dermal ridge intermittent with tubercles extends from tip of snout to back of the head; dorsum anteriorly smooth, posteriorly spinulate; upper part of flank weakly granular; lower part of flank granular; supratympanic fold distinct; upper arm, forearm and hand smooth; inner, outer and dorsal thigh smooth; leg and tarsus smooth; small calcar like tubercle present at heel; foot smooth.

Ventral side of body: Throat, chest and belly granular; upper arm proximally granular, distally smooth; forearm smooth; thigh granular; leg and tarsus smooth.

**Colour in life:** Dorsum uniform cream, with dark brown blotches, dark brown cross band between eyes, and another faint cross band on snout, broad dark brown cross band on sacral hump; laterally head dark brown with a light brown unpronounced spot, dark brown band below supratympanic fold; limbs cream colour, forelimbs, hind limbs, fingers and toes with dark brown cross bands; ventral side off-white, hands blotching all over, belly, and hands lighter, feet and webbing dark brown (Image 21).

**Colour in alcohol:** Colour pattern remains with a little fading. All dark brown patches more prominent in off white, ventral side off-white all over (Image 22 A & D).

**Paratype and variation:** Apart from the slightly dark brownish dorsum colouration all specimens observed had similar colour not much variation seen (Image 23–25).

**Etymology:** The species name *karunarathnai* is named after Y.G.P. Karunaratne (retired Assistant Director, Department of Wildlife Conservation, Sri Lanka), in great appreciation for his commendable services to wildlife management which has resulted in the minimizing of the human-wildlife conflict on the island. The species name is a noun in the genitive case.

**Suggested vernacular names:** Karunarathnage panduru madiya and Karunaratne's Shrub Frog in Sinhala and English, respectively.

**Natural history:** The species is found in elevations of 750–1400 m, from the forest floor to about 1.5m high shrubs in lowland rain forests and lower montane rain forests. Apart from forests they are also observed in home gardens without much canopy cover.

**Remarks:** *Pseudophilautus karunarathnai* sp. nov. possesses a unique colour pattern which is not possessed by any of its congeners, hence can easily be identified.

#### *Pseudophilautus newtonjayawardanei* sp. nov.

(Figs. 14–16; Images 26–28; Tables 13–15)

urn:lsid:zoobank.org:act:54DAD829-148A-47C4-BCD4-92B994D8E581

**Holotype:** NMSL 2013.05.01 NH, 05.ii.2010, adult female 38.4mm SVL (Images 26–27). Sripada (Peak

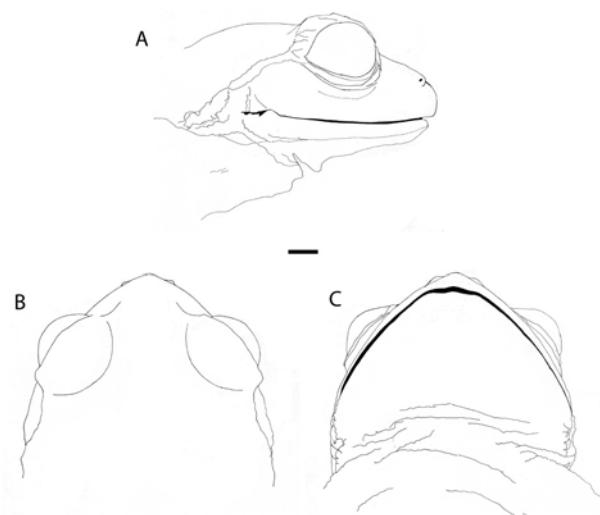


Figure 14. *Pseudophilautus newtonjayawardanei* sp. nov. holotype (NMSL 2013.05.01 NH), head; (A) lateral aspect (B) dorsal aspect (C) ventral aspect. Scale bar: 2mm. (© Dulan Ranga Vidanapathirana)

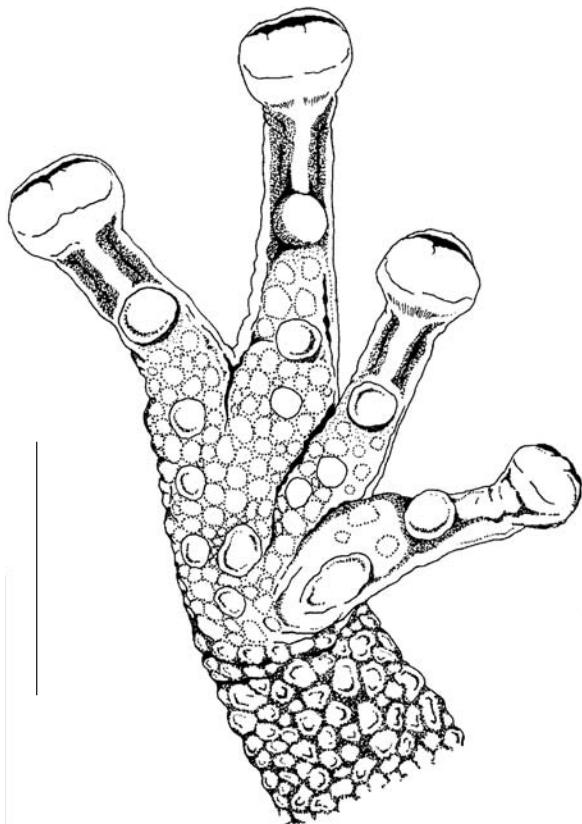


Figure 15. *Pseudophilautus newtonjayawardanei* sp. nov. holotype (NMSL 2013.05.01 NH), ventral aspect of left hand. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)

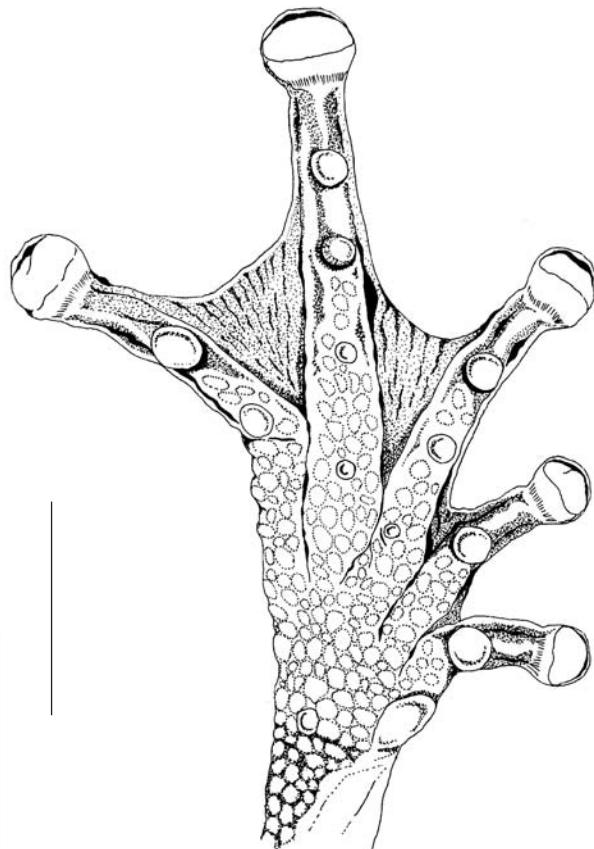


Figure 16. *Pseudophilautus newtonjayawardanei* sp. nov. holotype (NMSL 2013.05.01 NH), ventral aspect of left foot. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)



Image 26. *Pseudophilautus newtonjayawardanei* sp. nov. holotype in life (NMSL 2013.05.01 NH).

Wilderness), Ratnapura District, Sabaragamuwa Province, Sri Lanka ( $06^{\circ}48'36''N$  &  $80^{\circ}28'59''E$ ; 1559m) (Fig. 1), coll. L.J.M.W, D.R.V., M.D.G.R., S.C.A. & A.W.A.C.

**Diagnosis:** *Pseudophilautus newtonjayawardanei* sp. nov. can be distinguished from known congeners by the following combination of characters: moderate size (SVL



Image 28. *Pseudophilautus newtonjayawardanei* sp. nov. unpreserved specimen.

38.4); dorsal head, interorbital space and internarial space concave; lateral snout, canthus rostralis and tips of toes rounded; vomerine teeth, lingual papilla, calcar, nuptial pad, and tympanum absent; fringe on



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**Image 27.** Holotype of *Pseudophilautus newtonjayawardanei* sp. nov. NMSL 2013.05.01 NH. A dorsal aspect and B ventral aspect. Scale bar: 5mm.

**Table 13.** The morphometric measurements (mm) of the holotype of *Pseudophilautus newtonjayawardanei* sp. nov.

| <i>Pseudophilautus newtonjayawardanei</i> sp. nov. NMSL 2013.05.01 NH |       |      |       |     |       |     |       |      |      |     |       |
|---|-------|------|-------|-----|-------|-----|-------|------|------|-----|-------|
| DB  | 1.65  | FEL  | 19.03 | HL  | 16.55 | MBE | 7.41  | TL-1 | 3.3  | TYW | 0     |
| DBE   | 14.57 | FL-1 | 3.66  | HNL | 11.96 | MFE | 12.17 | TL-2 | 3.8  | UAL | 7.64  |
| DFE   | 7.48  | FL-2 | 4.35  | HW  | 16.68 | MN  | 15.03 | TL-3 | 5.61 | UEW | 3.59  |
| DL  | 2.06  | FL-3 | 7.28  | IML | 1.96  | SN  | 1.93  | TL-4 | 8.43 | VKL | 14.94 |
| DW  | 2.14  | FL-4 | 6.27  | IN  | 3.32  | SVL | 38.4  | TL-5 | 6.96 |     |       |
| ED  | 5.76  | FOL  | 28.19 | IO  | 4.53  | TAD | 0     | TND  | 0    |     |       |
| EN  | 3.97  | GK   | 17.81 | KT  | 17.85 | TAS | 13.14 | TPD  | 0    |     |       |
| ES  | 5.54  | HD   | 8.85  | LAL | 10.82 | TBL | 19.92 | TYH  | 0    |     |       |

fingers present; tarsal tubercle present; snout, side of head, anterior and posterior dorsum, upper flank and dorsal thigh shagreen; interorbital area shagreen, with a prominent ridge; lower flank weakly granular; throat and underside of thigh granular; supernumerary tubercles present on palm. Comparative characters that distinguish the species from its congeners are provided in tables 14 and 15.

**Description of holotype:** Body moderate size (SVL

38.4), elongate (SVL/HW 2.3); head large (HL/SVL 0.4), about as wide as long (HW/HL 1.0), concave above; snout rounded in lateral, dorsal and ventral aspects (Fig. 14 A–C) (ES/DFE 0.7, SN/IN 0.6), its length equal to horizontal diameter of eye (ES/ED 1.0); internasal space concave; canthus rostralis rounded, loreal region concave; interorbital space concave, upper eyelid smaller than interorbital distance (IO/UEW 1.3); internasal distance less than upper eye width (IN/UEW

**Table 14.** Characters that differentiate *Pseudophilautus newtonjayawardanei* sp. nov. among congeners of the genus *Pseudophilautus*

| Species name                          | SVL       | Head dorsally  | Snout lateral    | Canthus rostralis | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Tips of toes | Tarsal tubercle | Calcar  | Nuptial pad |
|---------------------------------------|-----------|----------------|------------------|-------------------|--------------------|-------------------|----------------|-----------------|-------------------|--------------|-----------------|---------|-------------|
| <i>P. newtonjayawardanei</i> sp. nov. | 38.4      | Concave        | Rounded          | Rounded           | Concave            | Concave           | Absent         | Absent          | Present           | Rounded      | Present         | Absent  | Absent      |
| <i>P. bambaradeniyai</i> sp. nov.     | 17.3–20.2 | Convex         | Truncate         |                   | Convex             | Flat              |                |                 | Absent            |              |                 |         |             |
| <i>P. dayawansai</i> sp. nov.         | 24.5–30.1 | Convex         | Truncate         |                   |                    |                   |                | Present         |                   |              |                 | Present |             |
| <i>P. jagathgunawardanai</i> sp. nov. | 35.8–40.4 | Convex         |                  | Sharp             | Convex             |                   |                | Present         | Absent            |              |                 |         |             |
| <i>P. karunaratnai</i> sp. nov.       | 16.2–19.2 |                |                  |                   | Convex             |                   | Present        |                 |                   |              | Absent          |         | Present     |
| <i>P. puranappu</i> sp. nov.          | 33.6–51.1 |                |                  |                   | Flat               |                   | Present        | Present         | Absent            |              |                 |         | Present     |
| <i>P. samarakoon</i> sp. nov.         | 20.4–24.6 | Convex         | Truncate         |                   | Convex             | Flat              |                |                 |                   |              |                 | Present |             |
| <i>P. sirilwisesundarai</i> sp. nov.  | 22.3–32.5 | Convex         |                  |                   | Convex             | Flat              | Present        |                 |                   |              |                 |         |             |
| <i>P. abundus</i>                     | 25.4–37.0 |                | Pointed or oval  |                   | Flat               |                   | Present        | Present         |                   |              |                 |         |             |
| <i>P. adspersus</i>                   | 33.3–41.7 | Flat           | Truncate         | Sharp             |                    | Flat              |                |                 |                   |              |                 |         |             |
| <i>P. alto</i>                        | 17.0–27.5 | Convex         | Obtusely pointed |                   | Convex             |                   |                |                 |                   |              |                 | Present | Present     |
| <i>P. asankai</i>                     | 18.9–27.3 | Convex         | Obtusely pointed |                   | Convex             | Flat              |                |                 |                   |              |                 |         |             |
| <i>P. auratus</i>                     | 21.7–26.4 | Flat           | Blunt            |                   | Flat               |                   | Present        |                 |                   |              |                 |         |             |
| <i>P. caeruleus</i>                   | 16.3–19.0 | Flat           | Obtusely pointed | Sharp             | Flat               |                   |                | Present         | Absent            |              |                 |         |             |
| <i>P. cavirostris</i>                 | 38.4–48.9 |                | Oval             | Sharp             |                    |                   | Present        |                 |                   |              |                 | Present |             |
| <i>P. cuspis</i>                      | 17.6–28.9 | Convex         | Sharply Pointed  | Sharp             | Convex             | Flat              |                |                 | Absent            |              |                 | Present | Present     |
| <i>P. decoris</i>                     | 18.3–23.9 | Flat           | Obtusely pointed |                   |                    |                   |                | Present         |                   |              |                 | Present |             |
| <i>P. dimbulae</i>                    | 44.8      | Convex         | Truncate         | Sharp             | Flat               | Flat              | Present        |                 |                   |              |                 |         |             |
| <i>P. eximius</i>                     | 35.3      | Flat           |                  | Sharp             | Flat               | Flat              |                | Present         |                   |              |                 |         |             |
| <i>P. extirpo</i>                     | 43.5      | Flat           | Blunt            | Sharp             |                    |                   |                | Present         |                   |              |                 |         |             |
| <i>P. femoralis</i>                   | 23.4–28.8 | Flat           | Truncate         |                   | Flat               |                   |                |                 |                   |              |                 |         |             |
| <i>P. fergusonianus</i>               | 26.9–44.5 |                |                  |                   |                    |                   | Present        |                 |                   | Triangular   |                 |         | Present     |
| <i>P. folicola</i>                    | 23.7–29.4 | Flat           |                  | Sharp             | Flat               |                   | Present        |                 |                   |              |                 |         |             |
| <i>P. frankenbergi</i>                | 26.7–29.3 | Flat           |                  | Sharp             | Flat               | Flat              |                |                 |                   |              |                 |         |             |
| <i>P. fulvus</i>                      | 33.4–46.8 | Convex         |                  | Sharp             | Flat               |                   | Present        |                 |                   |              | Present         | Present |             |
| <i>P. hallidayi</i>                   | 32.9–42.9 | Convex or Flat |                  |                   | Flat               |                   | Present        |                 |                   |              |                 |         | Present     |

| Species name            | SVL       | Head dorsally  | Snout lateral    | Canthus rostralis | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Tips of toes | Tarsal tubercle | Calcar   | Nuptial pad |
|-------------------------|-----------|----------------|------------------|-------------------|--------------------|-------------------|----------------|-----------------|-------------------|--------------|-----------------|----------|-------------|
| <i>P. halyi</i>         | 27.9      | Uneven         |                  | Sharp             | Flat               | Flat              |                |                 |                   |              |                 |          | Present     |
| <i>P. hankeni</i>       | 18.3–21.9 |                | Pointed          |                   | Convex             |                   |                |                 | Absent            |              |                 |          |             |
| <i>P. hoffmanni</i>     | 21.2–23.4 | Flat           |                  |                   | Flat               | Flat              |                |                 |                   |              |                 |          |             |
| <i>P. hoipolloi</i>     | 22.0–28.6 | Convex         | Blunt            |                   | Flat               |                   |                |                 |                   |              |                 |          |             |
| <i>P. hypomelas</i>     | 11.2–22.4 | Convex         | Acuminate        |                   | Convex             | Flat              |                |                 | Absent            |              | Absent          |          |             |
| <i>P. leucorhinus</i>   | 19.8      | Flat           | Oval             | Sharp             |                    |                   |                |                 | Absent            |              |                 |          |             |
| <i>P. limbus</i>        | 25.7      |                | Obtusely pointed |                   |                    |                   | Present        | Present         | Absent            |              |                 | Present  |             |
| <i>P. lunatus</i>       | 40.9      | Flat           | Oval             |                   |                    |                   | Present        | Present         |                   |              |                 | Present  |             |
| <i>P. macropus</i>      | 27.4–42.7 |                | Oval             |                   | Flat               | Flat              | Present        | Present         |                   |              |                 |          | Present     |
| <i>P. maia</i>          | 46.6      |                | Truncate         | Sharp             |                    | Flat              | Present        |                 |                   |              |                 |          |             |
| <i>P. malcolmsmithi</i> | 14.9      | Convex         | Pointed          | Sharp             | Flat               | Flat              |                |                 | Absent            |              |                 | Present  |             |
| <i>P. microtympanum</i> | 23.9–49.0 | Convex         | Oval             |                   | Flat               |                   | Present        |                 |                   |              | Absent          |          | Present     |
| <i>P. mittermeieri</i>  | 16.3–18.4 | Convex         | Pointed          |                   |                    |                   |                |                 |                   |              |                 | Present. |             |
| <i>P. mooreorum</i>     | 29.4–35.0 | Flat           |                  |                   | Flat               |                   |                |                 |                   |              |                 |          |             |
| <i>P. nanus</i>         | 34.8      | Convex         | Oval             |                   | Flat               |                   | Present        |                 | Absent            |              | Absent          |          | Present     |
| <i>P. nasutus</i>       | 17.4      |                | Pointed          | Sharp             | Flat               |                   |                |                 | Absent            |              |                 | Present  |             |
| <i>P. nemus</i>         | 20.7      | Convex         | Obtusely pointed |                   | Flat               | Flat              |                |                 | Absent            |              |                 |          | Present     |
| <i>P. oocularis</i>     | 23.1–33.4 | Flat           | Blunt            |                   | Flat               |                   | Present        |                 |                   |              |                 |          |             |
| <i>P. oxyrhynchus</i>   | 18.6      | Flat           | Pointed          | Sharp             |                    |                   |                |                 | Absent            |              |                 | Present  |             |
| <i>P. papillosum</i>    | 40        | Convex         | Truncate         | Sharp             |                    | Flat              | Present        | Present         |                   |              |                 | Present  | Present     |
| <i>P. pardus</i>        | 32.1      | Convex         |                  | Indistinct        | Flat               |                   |                |                 | Absent            |              |                 |          |             |
| <i>P. pleurotaenia</i>  | 25.6–30.3 | Convex         | Truncate         |                   | Convex             |                   |                |                 |                   |              |                 |          |             |
| <i>P. poppiiæ</i>       | 21.3–26.0 | Convex         |                  |                   | Flat               |                   |                |                 |                   |              |                 |          |             |
| <i>P. popularis</i>     | 17.7–24.7 | Convex         |                  |                   | Flat               | Flat              |                |                 | Absent            |              |                 |          | Present     |
| <i>P. procax</i>        | 25.1–26.8 |                | Pointed or oval  |                   | Flat               |                   | Present        | Present         |                   |              |                 |          |             |
| <i>P. regius</i>        | 18.3–21.7 | Flat           | Oval             |                   |                    |                   |                |                 |                   |              |                 |          | Present     |
| <i>P. reticulatus</i>   | 42.5–61.1 | Convex or flat | Truncate or oval | Sharp             |                    |                   | Present        | Present         |                   |              |                 | Present  | Present     |
| <i>P. rugatus</i>       | 17.5      | Convex         |                  | Sharp             | Convex             |                   |                |                 | Absent            |              | Absent          |          |             |
| <i>P. rus</i>           | 20.6–24.1 | Flat           | Oval             |                   | Flat               | Flat              | Present        |                 | Absent            |              |                 |          |             |

| Species name          | SVL       | Head dorsally  | Snout lateral    | Canthus rostralis | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Tips of toes | Tarsal tubercle | Calcar  | Nuptial pad |
|-----------------------|-----------|----------------|------------------|-------------------|--------------------|-------------------|----------------|-----------------|-------------------|--------------|-----------------|---------|-------------|
| <i>P. sarasinorum</i> | 22.6–38.1 | Flat           |                  |                   | Flat               |                   |                | Present         | Absent            |              |                 |         |             |
| <i>P. schmarda</i>    | 17.7–30.0 | Convex         | Obtusely pointed | Sharp             | Convex             |                   |                |                 |                   |              |                 | Present |             |
| <i>P. schneideri</i>  | 19.9–22.8 |                | Pointed          | Sharp             | Convex             | Flat              | Present        |                 | Absent            |              | Absent          |         |             |
| <i>P. semiruber</i>   | 13.4      | Convex         | Oval             |                   |                    | Flat              |                |                 |                   |              | Absent          |         |             |
| <i>P. silus</i>       | 35.4–51.8 | Convex above   | Oval             | Sharp             | Flat               | Flat              | Present        |                 |                   |              |                 |         | Present     |
| <i>P. sylvaticus</i>  | 24.3–31.3 | Convex         | Oval             | Sharp             | Flat               | Flat              | Present        | Present         | Absent            |              |                 |         |             |
| <i>P. simba</i>       | 12.6–15.6 | Convex         | Truncate         |                   | Convex             | Flat              |                |                 | Absent            |              |                 |         |             |
| <i>P. singu</i>       | 16.1–16.6 | Convex         |                  |                   | Convex             |                   |                | Present         | Absent            |              | Absent          |         |             |
| <i>P. sordidus</i>    | 22.2–39.4 | Convex         | Blunt            |                   | Convex             | Flat              | Present        | Present         | Absent            |              |                 |         |             |
| <i>P. steineri</i>    | 30.4–41.6 | Flat           |                  | Sharp             | Flat               |                   | Present        |                 |                   |              |                 |         | Present     |
| <i>P. stellatus</i>   | 39.6–55.3 |                |                  |                   |                    |                   | Present        |                 |                   |              |                 | Present |             |
| <i>P. stictomerus</i> | 23.2–36.0 | Flat or convex | Obtusely pointed |                   |                    |                   | Present        |                 | Absent            |              |                 |         | Present     |
| <i>P. stuarti</i>     | 24.2–32.4 | Flat           |                  | Sharp             | Flat               | Flat              |                |                 | Absent            |              |                 |         |             |
| <i>P. tanu</i>        | 13.5–13.9 | Convex         | Obtusely pointed |                   | Flat               | Flat              |                |                 | Absent            |              | Absent          |         |             |
| <i>P. temporalis</i>  | 28.4–31.0 | Convex         |                  |                   |                    |                   | Present        |                 | Absent            |              |                 |         |             |
| <i>P. variabilis</i>  | 35.7      | Flat           | Truncate         |                   | Flat               |                   |                |                 |                   |              |                 | Absent  |             |
| <i>P. viridis</i>     | 27.4–36.3 | Convex         | Blunt or rounded | Indistinct        | Flat               | Flat              |                |                 |                   |              |                 |         |             |
| <i>P. zal</i>         | 20.0–35.5 | Convex         |                  | Sharp             | Convex             |                   |                |                 |                   |              |                 |         | Present     |
| <i>P. zimmeri</i>     | 31.6      | Convex         | Blunts           | Sharp             | Flat               | Flat              | Present        |                 |                   |              |                 |         | Present     |
| <i>P. zorro</i>       | 22.9–30.1 |                | Pointed          | Sharp             | Flat               |                   |                |                 | Absent            |              |                 | Present | Present     |

**Table 15. Characters in the skin structure that differentiate *Pseudophilautus newtonjayawardanei* sp. nov. among congeners of the genus *Pseudophilautus***

| Species name                          | Snout  | Interorbital area                                 | Side of head                                      | Anterior dorsum                                   | Posterior dorsum                          | Upper flank             | Lower flank               | Dorsal thigh              | Throat   | Underside of thigh | Super-numerary tubercles on palm |
|---------------------------------------|--|---|---|---|---|-------------------------|---------------------------|---------------------------|----------|--------------------|----------------------------------|
| <i>P. newtonjayawardanei</i> sp. nov. | Shagreen   | Shagreen, with a prominent ridge                  | Shagreen  | Shagreen  | Shagreen                                  | Shagreen                | Weakly granular           | Shagreen                  | Granular | Granular           | Present                          |
| <i>P. bambaradeniyai</i> sp. nov.     | Smooth   | Smooth  | Smooth  | Prominent tubercles and horny spinules            | Horny spinules                            | Smooth                  | Smooth                    | Tuberculated              |          | Smooth             |                                  |
| <i>P. dayawansai</i> sp. nov.         | Tuberculated, with a single prominent tubercle medially placed | Smooth, with a ridge across breaking medially     | Tubercular  | Smooth  | Weakly tubercular                         | Granular                |                           | Smooth                    | Shagreen |                    |                                  |
| <i>P. jagathgunawardanai</i> sp. nov. | Smooth   | Smooth, with two cross dermal fringes             | Smooth  | Smooth  | Smooth                                    | Smooth                  |                           | Weakly tubercular         |          |                    |                                  |
| <i>P. karunarathnai</i> sp. nov.      | Smooth, a prominent blunt tubercle present                     | Weakly tubercular                                 | Weakly tubercular                                 | Smooth  | Spinulate                                 | Weakly granular         |                           | Smooth                    |          |                    | Absent                           |
| <i>P. puranappu</i> sp. nov.          | Smooth, with a blunt tubercle                                  | Smooth  | Smooth  |   | Few horny spinules, Prominent tubercles   | Weakly tubercular       |                           | Weakly shagreen           |          |                    |                                  |
| <i>P. samarakoon</i> sp. nov.         | Prominent tubercle present on centre of snout                  | Tubercular  | Smooth  | Tubercular  | Tubercular                                | Tubercular              |                           | Tubercular                |          |                    |                                  |
| <i>P. sirilwisesundarai</i> sp. nov.  | Shagreen, with prominent dermal fold                           | A prominent tubercle present                      |   |   |   | Areolate                |                           | Smooth                    | Shagreen |                    |                                  |
| <i>P. abundus</i>                     | Smooth   | Smooth  | Smooth  | Horny spinules (absent in females)                | Horny spinules (Absent in females)        | Smooth                  |                           | Smooth                    |          |                    |                                  |
| <i>P. adspersus</i>                   | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts | Smooth                                    | Granular                |                           | Smooth                    |          |                    |                                  |
| <i>P. alto</i>                        | Horny spinules in males  | Horny spinules in males                           | Smooth  | Horny spinules in males, warty in females         | Horny spinules in males, warty in females | Horny spinules in males |                           | Smooth                    |          |                    |                                  |
| <i>P. asankai</i>                     | Very fine, horny spinules                                      | Very fine, horny spinules                         | Very fine, horny spinules                         | Very fine, horny spinules                         | Very fine, horny spinules                 | Horny spinules          | Very fine, horny spinules | Very fine, horny spinules |          |                    | Absent                           |

| Species name            | Snout   | Interorbital area                                  | Side of head                       | Anterior dorsum  | Posterior dorsum   | Upper flank                                   | Lower flank     | Dorsal thigh                   | Throat                    | Underside of thigh | Supernumerary tubercles on palm |
|-------------------------|---|--|------------------------------------|--|--|---|-----------------|--------------------------------|---------------------------|--------------------|---------------------------------|
| <i>P. auratus</i>       |   | Shagreen   |                                    |  |  | Granular or smooth                            |                 | Smooth                         |                           |                    |                                 |
| <i>P. caeruleus</i>     | Glandular warts and horny spinules            | Glandular warts and horny spinules                 | Glandular warts and horny spinules | Glandular warts and horny spinules (females lack horny spinules) | Glandular warts and horny spinules (females lack horny spinules)   | Glandular warts and horny spinules            |                 | Smooth                         |                           |                    |                                 |
| <i>P. cavirostris</i>   | Glandular warts                               | Glandular warts                                    | Glandular warts                    | Heavily tuberculated, glandular warts                            | Heavily tuberculated, glandular warts                              | Smooth  |                 | Smooth                         | Smooth                    |                    |                                 |
| <i>P. cuspis</i>        | Horny spinules                                | Horny spinules                                     | Smooth                             | Horny spinules with a ")("-shaped pattern of tubercles           | Horny spinules   | Smooth or with glandular warts                |                 | Smooth or with glandular warts | Smooth                    |                    |                                 |
| <i>P. decoris</i>       | Glandular warts                               | Glandular warts                                    | Glandular warts                    | Glandular warts  | Glandular warts  | Glandular warts                               | Glandular warts | Glandular warts                |                           |                    |                                 |
| <i>P. dimbuliae</i>     |   | Shagreen   |                                    |  |  |   |                 | Smooth                         |                           |                    |                                 |
| <i>P. eximius</i>       | Smooth  | Smooth   | Smooth                             | Smooth   | Smooth   | Smooth  |                 | Smooth                         | Smooth                    |                    |                                 |
| <i>P. extirpo</i>       |   | Shagreen   |                                    |  |  | Granular                                      |                 |                                |                           |                    |                                 |
| <i>P. femoralis</i>     | Finely granular                               | Finely granular                                    | Finely granular                    | Finely granular  | Finely granular  | Finely granular                               |                 | Smooth                         | Smooth                    |                    | Absent                          |
| <i>P. fergusonianus</i> |   | Shagreen, males glandular warts and horny spinules | Few glandular warts                |  | Few glandular warts, males with glandular warts and horny spinules |   |                 | Smooth with glandular warts,   |                           |                    |                                 |
| <i>P. folicola</i>      | Smooth  | Smooth   |                                    | Smooth or granular   | Smooth   | Granular                                      |                 | Smooth                         |                           |                    |                                 |
| <i>P. frankenbergi</i>  |   | Shagreen   | Glandular warts                    |  |  |   |                 | Smooth                         |                           |                    |                                 |
| <i>P. fulvus</i>        |   | Shagreen   |                                    |  |  |   |                 |                                |                           |                    |                                 |
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males | Glandular warts, with horny spinules in males      | Glandular warts                    | Glandular warts, with horny spinules in males                    | Glandular warts, with horny spinules in males                      | Glandular warts, with horny spinules in males |                 | Glandular warts                | Smooth, granular in males |                    |                                 |
| <i>P. halyi</i>         |   | Shagreen with glandular warts                      |                                    |  |  | Glandular warts                               |                 | Glandular warts                |                           |                    |                                 |

| Species name            | Snout                                  | Interorbital area                           | Side of head                           | Anterior dorsum                             | Posterior dorsum                            | Upper flank                                   | Lower flank                   | Dorsal thigh                                | Throat   | Underside of thigh | Super-numerary tubercles on palm |
|-------------------------|--|---|--|---|---|---|-------------------------------|---|----------|--------------------|----------------------------------|
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules | Glandular warts bearing horny spinules      | Glandular warts bearing horny spinules | Glandular warts bearing horny spinules      | Glandular warts bearing horny spinules      | Glandular warts bearing horny spinules        |                               | Glandular warts with horny spinules         |          | Smooth             |                                  |
| <i>P. hoffmanni</i>     | Smooth                                 | Smooth                                      | Smooth                                 | Smooth                                      | Smooth                                      | Smooth  |                               | Smooth                                      |          | Smooth             |                                  |
| <i>P. hoipolloi</i>     |  | Smooth or shagreen                          |  |   | Smooth or shagreen                          | Smooth or granular                            |                               | Smooth                                      | Shagreen |                    |                                  |
| <i>P. hypomelas</i>     | Smooth                                 | Smooth                                      | Smooth                                 | Smooth                                      | Smooth                                      | Smooth  | Smooth                        | Smooth                                      | Smooth   |                    | Absent                           |
| <i>P. leucorhinus</i>   | Smooth                                 | Smooth                                      | Smooth                                 | Smooth with a few scattered glandular warts | Smooth with a few scattered glandular warts | Smooth with glandular warts                   | Granular with glandular warts | Smooth                                      |          |                    |                                  |
| <i>P. limbus</i>        | Weakly granular                        | Weakly granular                             | Weakly granular                        | Weakly granular                             | Weakly granular                             | Granular                                      |                               | Granular, not rough                         |          |                    | Absent                           |
| <i>P. lunatus</i>       | Smooth                                 | Smooth                                      | Smooth                                 | Smooth                                      | Smooth                                      | Glandular warts                               |                               | Smooth                                      | Smooth   | Smooth             |                                  |
| <i>P. macropus</i>      | Smooth                                 | Smooth with a few scattered glandular warts | Glandular warts                        |   |   | Granular with a few scattered glandular warts |                               | Smooth with a few scattered glandular warts |          |                    |                                  |
| <i>P. maia</i>          | Smooth                                 | Smooth                                      | Smooth                                 | Glandular warts                             | Glandular warts                             | Glandular warts                               | Glandular warts               | Smooth                                      |          |                    |                                  |
| <i>P. malcolmsmithi</i> | Smooth                                 | Smooth                                      | Smooth                                 | Smooth, ' \ / ' shaped ridge                | Smooth                                      | Glandular warts                               | Glandular warts               | Smooth, few scattered glandular warts       | Smooth   |                    |                                  |
| <i>P. microtympanum</i> | Smooth or tuberculated                 | Smooth or tuberculated                      |  |   |   | Granular                                      |                               |   |          |                    |                                  |
| <i>P. mittermeieri</i>  | Glandular warts                        | Glandular warts                             | Glandular warts                        | Glandular warts                             | Glandular warts                             | Glandular warts                               | Glandular warts               | Smooth                                      |          |                    |                                  |
| <i>P. mooreorum</i>     | Horny spinules in males                | Horny spinules in males                     | Horny spinules in males                |   |   | Horny spinules in males                       | Horny spinules in males       |   |          |                    | Absent                           |
| <i>P. nanus</i>         | Glandular warts                        | Few glandular warts                         | Few glandular warts                    | Few glandular warts                         | Few glandular warts                         | Glandular folds                               |                               | Smooth                                      |          | Smooth             |                                  |
| <i>P. nasutus</i>       | Glandular warts                        | Glandular warts                             | Glandular warts                        | Glandular warts                             | Tuberculated, horn like spinules            | Tuberculated, horn like spinules              | Smooth                        | Glandular warts                             |          |                    |                                  |
| <i>P. nemus</i>         | Glandular warts                        | Smooth                                      | Glandular warts                        | Glandular warts                             | Glandular warts                             | Glandular warts                               | Smooth                        | Smooth                                      |          |                    |                                  |

| Species name           | Snout   | Interorbital area  | Side of head                                      | Anterior dorsum                                      | Posterior dorsum                                     | Upper flank                                       | Lower flank     | Dorsal thigh   | Throat          | Underside of thigh | Supernumerary tubercles on palm |
|------------------------|---|--|---|--|--|---|-----------------|--|-----------------|--------------------|---------------------------------|
| <i>P. oocularis</i>    |   | Shagreen or with glandular warts                               |   |  |  |   |                 | Glandular warts  |                 |                    |                                 |
| <i>P. oxyrhynchus</i>  | Smooth  | Smooth   | Smooth  | Smooth   | Smooth   | Smooth  | Smooth          | Smooth   | Smooth          | Smooth             |                                 |
| <i>P. papillosum</i>   | Glandular warts                                   | Glandular warts  | Glandular warts                                   | Glandular warts                                      | Glandular warts                                      | Glandular warts                                   |                 | Glandular warts  |                 |                    |                                 |
| <i>P. pardus</i>       | Smooth  | Smooth   | Smooth  | Smooth   | Smooth   | Granular  |                 | Smooth   |                 |                    |                                 |
| <i>P. pleurotaenia</i> |   | Shagreen   |   |  |  |   |                 | Smooth   |                 |                    |                                 |
| <i>P. poppiae</i>      |   | Horny spinules in males, finely granular or shagreen in female |   |  |  |   | Smooth          | Horny spinules in males, finely granular or shagreen in female |                 | Smooth             | Absent                          |
| <i>P. popularis</i>    | Glandular warts                                   | Smooth   | Glandular warts                                   | Horny spinules                                       | Horny spinules                                       | Horny spinules                                    |                 | Glandular warts  |                 |                    |                                 |
| <i>P. procax</i>       | Smooth  | Smooth   | Smooth  | Horny spinules (spinules Absent in females)          | Horny spinules (spinules Absent in females)          | Smooth  |                 | Smooth   |                 |                    |                                 |
| <i>P. regius</i>       | Horny spinules                                    | Horny spinules   | Horny spinules                                    | Horny spinules                                       | Horny spinules                                       | Glandular   | Glandular       | Glandular warts  |                 |                    |                                 |
| <i>P. reticulatus</i>  |   | Shagreen with a few scattered glandular warts                  |   |  |  |   |                 | Smooth   |                 |                    |                                 |
| <i>P. rugatus</i>      | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts    | Smooth except for a few scattered glandular warts    | Smooth except for a few scattered glandular warts | Glandular warts | Smooth, few scattered glandular warts                          |                 |                    |                                 |
| <i>P. rus</i>          | Smooth  | Smooth   | Glandular warts                                   | Glandular warts                                      | Glandular warts                                      | Granular  |                 | Smooth   |                 |                    |                                 |
| <i>P. sarasinorum</i>  | Glandular warts                                   | Glandular warts  | Glandular warts                                   | Glandular warts, males with horny spinules scattered | Glandular warts, males with horny spinules scattered | Glandular folds                                   |                 | Smooth   | Glandular warts | Smooth             |                                 |

| Species name          | Snout                               | Interorbital area                                   | Side of head                        | Anterior dorsum   | Posterior dorsum  | Upper flank   | Lower flank                        | Dorsal thigh                      | Throat             | Underside of thigh | Super-numerary tubercles on palm |
|-----------------------|-------------------------------------|---|-------------------------------------|---|---|---|------------------------------------|-----------------------------------|--------------------|--------------------|----------------------------------|
| <i>P. schmarda</i>    | Glandular warts                     | Glandular folds, glandular warts and horny spinules | Glandular warts                     | Glandular folds, glandular warts and horny spinules             | Glandular folds, glandular warts and horny spinules             | Glandular folds, glandular warts and horny spinules | Glandular warts and horny spinules | Glandular warts                   | Glandular warts    |                    |                                  |
| <i>P. schneideri</i>  | Small tubercles with horny spinules | Small tubercles with horny spinules                 | Small tubercles with horny spinules | Small tubercles with horny spinules                             | Small tubercles with horny spinules                             | Small tubercles with horny spinules                 |                                    | Smooth                            |                    | Smooth             | Absent                           |
| <i>P. semiruber</i>   | Smooth                              | Smooth  | Smooth                              | Smooth  | Smooth  | Smooth  | Smooth                             | Smooth                            | Smooth             | Smooth             |                                  |
| <i>P. silus</i>       | Smooth                              | Smooth  | Glandular warts                     | Glandular warts   | Glandular warts   | Glandular warts                                     |                                    | Smooth                            |                    |                    |                                  |
| <i>P. silvaticus</i>  | Glandular warts                     | Glandular warts                                     | Glandular warts                     | Glandular warts   | Smooth  | Glandular warts                                     |                                    | Smooth                            |                    |                    |                                  |
| <i>P. simba</i>       | Smooth                              | Smooth  | Glandular warts                     | Glandular warts   | Smooth  |   |                                    | Smooth                            |                    |                    |                                  |
| <i>P. singu</i>       |                                     | Scattered, glandular tubercles                      | Scattered, glandular tubercles      | Scattered, glandular tubercles                                  | Scattered, glandular tubercles                                  | Scattered, glandular tubercles                      | Scattered, glandular tubercles     | Scattered glandular tubercles     |                    | Smooth             |                                  |
| <i>P. sordidus</i>    | Glandular warts                     | Glandular warts                                     | Glandular warts                     | Glandular warts, males horny spinules scattered                 | Glandular warts, males horny spinules scattered                 | Glandular warts, with horny spinules in males       |                                    | Glandular warts                   | Smooth             |                    |                                  |
| <i>P. steineri</i>    | Glandular warts and horny spinules  | Glandular warts and horny spinules                  | Smooth or with glandular warts      | Glandular warts and horny spinules, females lack horny spinules | Glandular warts and horny spinules, females lack horny spinules | Glandular warts and horny spinules                  |                                    | Smooth, scattered glandular warts |                    |                    |                                  |
| <i>P. stellatus</i>   |                                     | Weakly shagreen                                     |                                     |   |   |   | Weakly areolate                    |                                   |                    |                    |                                  |
| <i>P. stictomerus</i> | Smooth                              | Smooth  | Smooth or with glandular warts      |   |   |   |                                    | Smooth                            | Smooth or shagreen |                    |                                  |
| <i>P. stuarti</i>     | Horny spinules                      | Horny spinules                                      | Smooth                              | Horny spinules, females lack horny spinules                     | Horny spinules, females lack horny spinules                     | Smooth  | Smooth                             | Smooth                            |                    |                    |                                  |

| Species name         | Snout   | Interorbital area                                     | Side of head  | Anterior dorsum  | Posterior dorsum                                      | Upper flank   | Lower flank | Dorsal thigh      | Throat | Underside of thigh | Super-numerary tubercles on palm |
|----------------------|---|---|---|--|---|---|-------------|-------------------|--------|--------------------|----------------------------------|
| <i>P. tanu</i>       |   | Shagreen  |   |  |   | Granular  |             | Smooth            |        |                    |                                  |
| <i>P. temporalis</i> | Smooth  | Smooth  | Smooth  | Smooth   | Smooth  | Smooth  |             | Smooth            | Smooth |                    |                                  |
| <i>P. variabilis</i> | Smooth  | Smooth  | Smooth  | Smooth   | Smooth  | Granular  |             | Smooth            |        |                    |                                  |
| <i>P. viridis</i>    | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males)                | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) |             |                   |        |                    |                                  |
| <i>P. zal</i>        |   |   |   | Weakly tubercular  | Weakly tubercular                                     | Granular  |             | Weakly tubercular |        |                    |                                  |
| <i>P. zimmeri</i>    | Glandular warts                                       | Glandular warts                                       | Glandular warts                                       | Glandular warts  | Glandular warts                                       | Granular  |             | Glandular warts   |        |                    |                                  |
| <i>P. zorro</i>      | Horny spinules  | Horny spinules  | Glandular warts                                       | Horny spinules, Anterior dorsum with "J"-shaped pattern of tubercles | Horny spinules  | Glandular warts                                       |             | Glandular warts   | Smooth | Smooth             |                                  |

0.9); distance between front of eyes half the distance between back of eyes (DBE/DFE 2.0); nostrils oval without flap of skin laterally, closer to tip of snout; pupil horizontally elliptical; tympanum absent; pineal ocellus and vomerine teeth absent; tongue large, lanceolate, lingual papilla absent, but conical tubercles present on tongue.

Arm short, robust (LAL/FEL 0.6, UAL/FEL 0.4); forearm shorter than hand length (LAL/HNL 0.9), longer than upper arm (LAL/UAL 1.4); fore arm distinctly enlarged.; fingers robust, (Fig. 15), relative length of fingers I < II < IV < III (FL-1/FL-3 0.5, FL-2/FL-3 0.6, FL-4/FL-3 0.9) (Table 13); tips of finger disks semi circular, enlarged, discs present on all fingers, with distinct basal and circum marginal grooves; dermal fringe present on inside of all fingers, but indistinct dermal fringe present on exterior edge of finger IV and hand, absent on ulnar fold; webbing formula I2—2II2—3<sup>+</sup>III3—3IV; subarticular tubercles prominent, rounded, single, all present, IV2 and III2 relatively smaller; inner palmar tubercle, large, single, oval, prominent; outer palmar tubercle single, oval, distinct, larger than the distal subarticular tubercles; supernumerary tubercles prominent and widespread on palm and on all fingers; prepollex absent; femur 2 1/4 times longer than fourth toe length (FEL/TL-4 2.3); foot length longer than thigh (FOL/FEL 1.5); toes thin, (Fig. 16), relative length of toes I < II < III < V < IV (TL-1/TL-4 0.4, TL-2/TL-4 0.5, TL-3/TL-4 0.7, TL-5/TL-4 0.8), tips of toes rounded, enlarged, discs present on all toes with distinct basal and circum marginal grooves; webbing formula I2—2II2<sup>+</sup>—3<sup>+</sup>III2<sup>+</sup>—3<sup>+</sup>IV2—1<sup>+</sup>V; lateral dermal fringe on inside of all toes and undulating fringe along exterior edge of toe V and metatarsal fold, fringe absent on tarsus but tubercles present; subarticular tubercles prominent, rounded and single, IV3 relatively small; supernumerary tubercles prominent, wide spread and concentrated on foot and all toes; inner metatarsal tubercle oval prominent and large, its length 2/3<sup>rd</sup> the length of toe I (IML/TL-1 0.6); outer metatarsal tubercle absent.

Skin on dorsal and lateral parts of snout shagreen, with four tubercles; interorbital space shagreen with a prominent ridge; upper eyelid shagreen with prominent tubercles; head laterally shagreen, a prominent tubercle present near the gape of mouth; a median dermal ridge extends from tip of snout to vent (more prominent till back of head); dorsum shagreen; upper part of flank shagreen; lower part of flank weakly granular; supratympanic fold prominent; upper arm, forearm and hand shagreen; inner thigh smooth, dorsally shagreen, outer thigh weakly granular; leg shagreen; many

prominent tubercles at heel; tarsal fold absent but tarsus shagreen with prominent tubercles; foot shagreen.

Ventral side of body: Throat, chest and belly granular; upper arm granular; forearm weakly granular; thigh granular, leg smooth; tarsus weakly granular.

**Colour in life:** Dorsum bronze with dark brown patches, vertebral stripe off white, a pair of broad dark brown longitudinal dorsal bands extends from the back of the eye to the groin, dark brown cross band between eyes, small bronze blotch on snout, dark brown band on canthal edge, below eye bronze patch, lateral body lighter with a green tinge dark brown spots marbled with off white spots; limbs dorsally bronze, fore limbs, hind limbs, fingers and toes with brown cross bands, finger tips off white; ventral side off white all over, hands feet and webbing darker (Images 26 & 28).

**Colour in alcohol:** All bronze in life turns to dark brown, and the colour pattern remains with a little fading (Image 27).

**Etymology:** The species epithet *newtonjayawardanei* named after Newton Jayawardane, a leading surgeon by profession and is an ardent naturalist, in great appreciation of his dedicated service to the country, both as a surgeon and a wildlife conservationist.

**Suggested vernacular names:** Newton Jayawardanege panduru madiya and Newton Jayawardane's Shrub Frog in Sinhala and English, respectively.

**Natural history:** The specimen was observed in the forest canopy at very high altitudes with elevations ranging from 1800–2000 m and was very rare. Only two specimens have been observed so far, from about 8m high trees. They perch on leaves and are very hard to sight.

#### *Pseudophilautus puranappu* sp. nov.

(Figs. 17–19; Images 29–34; Tables 16–18)

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**Holotype:** NMSL 2013.06.01 NH, 21.xi.2009, adult male 34.2mm SVL (Images 29, 30A,D). Sripada (Peak Wilderness), Nuwara Eliya District, Central Province, Sri Lanka (06° 48'26"N & 80°29'58"E; 2100m) (Fig. 1), coll. L.J.M.W, D.R.V. & S.C.A.

**Paratypes:** DWC 2013.01.009, 14.xi.2011, adult male, 33.6mm SVL (Images 30 B,E, 31); DWC 2013.01.010, adult female, 51.1mm (Images 30C,F, 32); the same locality, coll. D.R.V. & S.C.A.

**Diagnosis:** *Pseudophilautus puranappu* sp. nov. can be distinguished from known congeners by the following combination of characters: Moderate size

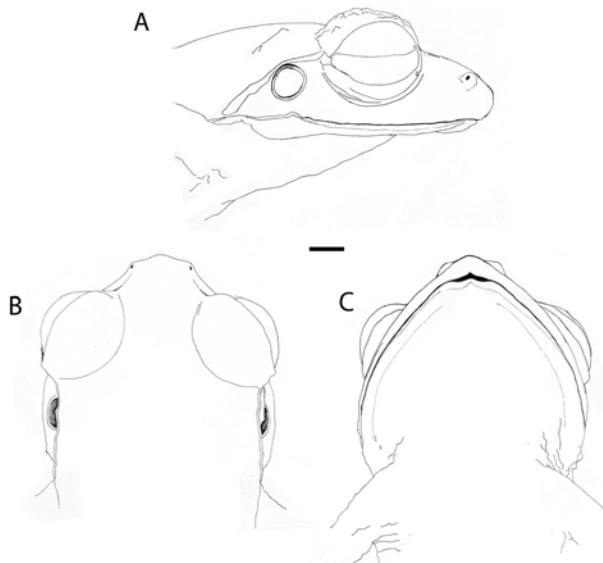


Figure 17. *Pseudophilautus puranappu* sp. nov. holotype (NMSL 2013.06.01 NH), head; (A) lateral aspect (B) dorsal aspect (C) ventral aspect. Scale bar: 2mm. (© Dulan Ranga Vidananaphirana)

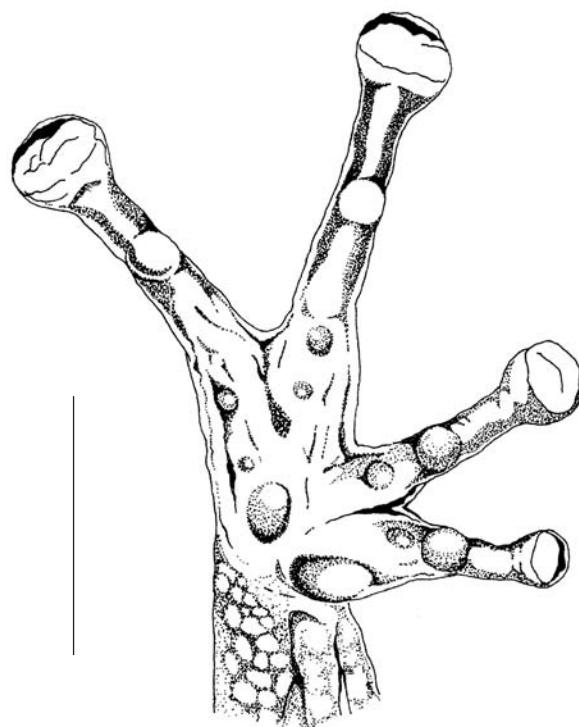


Figure 18. *Pseudophilautus puranappu* sp. nov. holotype (NMSL 2013.06.01 NH), ventral aspect of left hand. Scale bars: 5mm. (© L.J. Mendis Wickramasinghe)

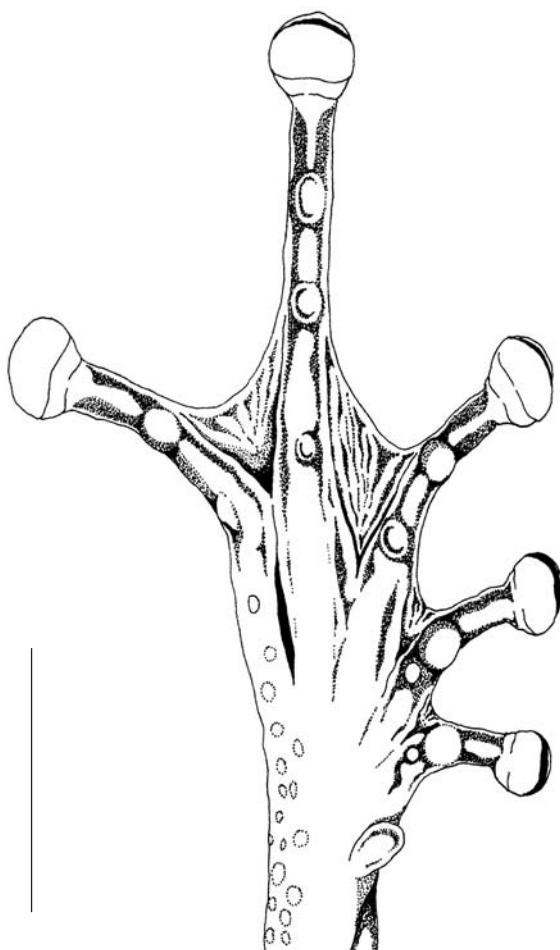
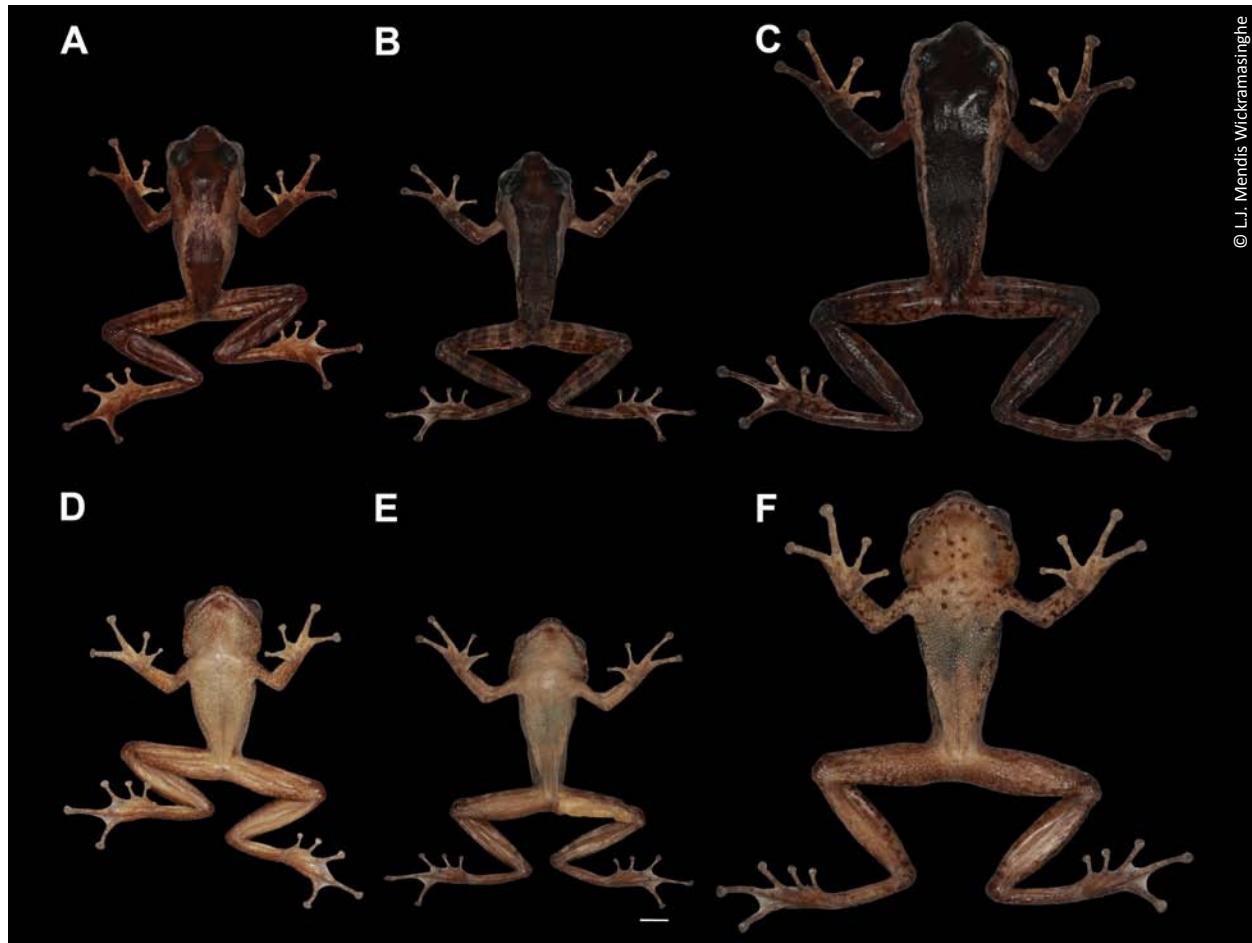


Figure 19. *Pseudophilautus puranappu* sp. nov. holotype (NMSL 2013.06.01 NH), ventral aspect of left foot. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)



Image 29. *Pseudophilautus puranappu* sp. nov. holotype in life (NMSL 2013.06.01 NH).

(males SVL 33.6–34.2 mm; female 51.1mm); dorsal head, loreal region and internarial space concave; lateral snout and canthus rostralis rounded; interorbital space flat; vomerine teeth, lingual papilla and nuptial pad present; fringe on fingers and calcar absent; snout smooth, with a blunt tubercle; interorbital area and side of head smooth; anterior dorsum and dorsal thigh



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**Image 30.** Type series of *Pseudophilautus puranappu* sp. nov. Left to right, NMSL 2013.06.01 NH, DWC 2013.01.009, DWC 2013.01.010. A-C dorsal aspect and D-F ventral aspect. Scale bar: 5mm.

weakly shagreen; posterior dorsum few horny spinules, prominent tubercles; upper flank weakly tubercular; lower flank granular; throat, chest and underside of thigh weakly granular; supernumerary tubercles on foot indistinct. Comparative characters that distinguish the species from its congeners are provided in tables 17 and 18.

**Description of holotype:** moderate size (SVL 34.2), body moderately elongate (SVL/HW 2.6); head large (HL/SVL 0.4), concave above; snout rounded in lateral, truncate in dorsal and nearly rounded in ventral aspects (Fig. 17 A–C) (ES/DFE 0.7, SN/IN 0.7), its length shorter than horizontal diameter of eye (ES/ED 0.9); canthus rostralis rounded; loreal region concave; interorbital space flat, less than upper eyelid (IO/UEW 0.9), larger than internasal distance (IO/IN 1.2), internarial space concave; distance between front of eyes 3/5<sup>th</sup> the distance between back of eyes (DBE/DFE 1.7); pupil

horizontally elliptical; tympanum prominent, oval (TYH/TYW 1.2), vertical, smaller than the eye (TYH/ED 0.3); tympanum-eye distance 4/5<sup>th</sup> tympanum width (TAD/TYW 0.8); pineal ocellus absent; vomerine teeth present, (N=7) prominent, odontophores oblique and widely separated, between choanae with an angle of 65° relative to body axis; tongue large, tip bifurcate, lanceolate, lingual papilla and conical tubercles present on tongue.

Arm short (HNL/LAL 1.1); lower-arm longer than upper arm (UAL/LAL 0.7); fore-arm distinctly enlarged; fingers long and thin (Fig. 18), relative length of fingers I < II < IV < III (FL-1/FL-3 0.4, FL-2/FL-3 0.7, FL-4/FL-3 0.9) (Table 16), tips of fingers rounded, enlarged; discs present on fingers I – II – III – IV, with distinct basal and circum marginal grooves; dermal fringe absent on inside of fingers, but indistinct on exterior edge of finger IV and hand; ulnar fold absent; webbing formula I3<sup>+</sup>–2 ½II3<sup>+</sup>–2 2/3<sup>rd</sup> III2 2/3 – 2 ½IV; subarticular tubercles prominent,



Image 31. *Pseudophilautus puranappu* sp. nov. paratype in life (DWC 2013.01.009).



Image 32. *Pseudophilautus puranappu* sp. nov. paratype in life (DWC 2013.01.010).



Image 33. *Pseudophilautus puranappu* sp. nov. unpreserved specimen.



Image 34. *Pseudophilautus puranappu* sp. nov. unpreserved specimen.

rounded, single, all present, IV2 & III2 relatively smaller; inner palmar tubercle single, oval, prominent, equal to outer palmar tubercle; nuptial pads present; outer palmar tubercle single, oval, and prominent; supernumerary tubercle present on all fingers; prepollex absent; femur about twice as long as the fourth toe length (FEL/TL-4 2.2); foot length longer than thigh (FOL/FEL 1.5); toes long (Fig. 19), thin; relative length of toes I < II < III < V < IV (TL-1/TL-4 0.4, TL-2/TL-4 0.5, TL-3/TL-4 0.7, TL-5/TL-4 0.8); tips of toes rounded, discs present on all toes, with distinct basal and circum marginal grooves; webbing formula I2 – 2·II2+ –2 ½ III2+3·IV3+ – 2·V; lateral dermal fringe on inside of all toes; fringe along exterior edge of toe V and metatarsal fold; fringe absent on tarsus but few small undulating tubercles present; subarticular tubercles prominent, rounded, single, all present, V2, IV3, and III2 relatively smaller; supernumerary tubercles indistinct; inner metatarsal tubercle oval prominent and large, its length about 1/2 times in length to that of toe I

(IML/TL-1 0.50), outer metatarsal tubercle absent.

Dorsal snout smooth with a blunt tubercle, lateral snout smooth; between eyes smooth; upper eyelid tubercular; head laterally smooth with prominent tubercles present near the gape of mouth; supratympanic fold prominent; a median dermal ridge extends from tip of snout to back of the head, with tubercles; back of head with a large prominent tubercle, and a pair of prominent tubercles on either side of the ridge end; anterior part of back weakly shagreen, few horny spinules, posterior part of back with few horny spinules and prominent tubercles; upper part of flank weakly tubercular, lower part of flank granular; upper arm smooth; forearm weakly tubercular; hand smooth with few tubercles; inner thigh smooth, dorsal part of thigh weakly shagreen, outer thigh smooth; leg tuberculated; tarsal fold absent but tarsus weakly tuberculated; calcar absent but small tubercles present at heel; foot smooth with few tubercles present on fifth toe.

**Table 16.** The morphometric measurements (mm) of the type series of *Pseudophilautus puranappu* sp. nov.

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.06.01 NH | 2013.01.009 | 2013.01.010 |      |     |           |
| DB           | 0.9           | 1.0         | 1.4         | 1.1  | 0.3 | 0.9–1.4   |
| DBE          | 12.2          | 11.9        | 17.3        | 13.8 | 3.0 | 11.9–17.3 |
| DFE          | 7.2           | 6.3         | 9.5         | 7.7  | 1.6 | 6.3–9.5   |
| DL           | 1.6           | 1.7         | 1.9         | 1.7  | 0.2 | 1.6–1.9   |
| DW           | 1.9           | 1.7         | 2.1         | 1.9  | 0.2 | 1.7–2.1   |
| ED           | 5.7           | 5.2         | 6.6         | 5.8  | 0.7 | 5.2–6.6   |
| EN           | 3.2           | 3.1         | 4.3         | 3.5  | 0.7 | 3.1–4.3   |
| ES           | 5.3           | 4.9         | 7.1         | 5.8  | 1.2 | 4.9–7.1   |
| FEL          | 18.5          | 17.2        | 25.8        | 20.5 | 4.6 | 17.8–25.8 |
| FL-1         | 2.7           | 3.1         | 4.6         | 3.5  | 1.0 | 2.7–4.6   |
| FL-2         | 4.7           | 3.7         | 6.2         | 4.9  | 1.3 | 3.7–6.2   |
| FL-3         | 7.2           | 8.1         | 10.9        | 8.7  | 1.9 | 7.2–10.9  |
| FL-4         | 6.5           | 6.2         | 8.7         | 7.1  | 1.4 | 6.2–8.7   |
| FOL          | 27.0          | 26.4        | 37.8        | 30.4 | 6.4 | 26.4–37.8 |
| GK           | 15.7          | 15.0        | 22.9        | 17.9 | 4.4 | 15.0–22.9 |
| HD           | 6.9           | 6.9         | 10.1        | 8.0  | 1.9 | 6.9–10.1  |
| HL           | 13.6          | 13.8        | 19.1        | 15.5 | 3.2 | 13.6–19.1 |
| HNL          | 10.9          | 11.6        | 15.6        | 12.7 | 2.5 | 10.9–15.6 |
| HW           | 13.0          | 13.6        | 20.3        | 15.6 | 4.0 | 13.0–20.3 |
| IML          | 1.7           | 2.0         | 2.8         | 2.1  | 0.6 | 1.7–2.8   |
| IN           | 3.2           | 3.4         | 4.7         | 3.8  | 0.8 | 3.2–4.7   |
| IO           | 3.7           | 3.6         | 5.5         | 4.3  | 1.0 | 3.6–5.5   |

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.06.01 NH | 2013.01.009 | 2013.01.010 |      |     |           |
| KT           | 17.4          | 15.4        | 23.2        | 18.7 | 4.1 | 15.4–23.2 |
| LAL          | 9.6           | 7.7         | 13.1        | 10.1 | 2.7 | 7.7–13.1  |
| MBE          | 5.3           | 5.5         | 8.1         | 6.3  | 1.6 | 5.3–8.1   |
| MFE          | 10.2          | 9.9         | 13.6        | 11.2 | 2.1 | 9.9–13.6  |
| MN           | 12.1          | 12.0        | 17.1        | 13.7 | 2.9 | 12.0–17.1 |
| SN           | 2.4           | 2.3         | 3.4         | 2.7  | 0.6 | 2.3–3.4   |
| SVL          | 34.2          | 33.6        | 51.1        | 39.6 | 9.9 | 33.6–51.1 |
| TAD          | 1.3           | 0.9         | 2.0         | 1.4  | 0.6 | 0.9–2.0   |
| TAS          | 12.2          | 12.1        | 16.9        | 13.7 | 2.8 | 12.1–16.9 |
| TBL          | 19.8          | 18.6        | 27.9        | 22.1 | 5.1 | 18.6–27.9 |
| TL-1         | 3.3           | 2.9         | 4.2         | 3.5  | 0.7 | 2.9–4.2   |
| TL-2         | 3.7           | 3.5         | 4.8         | 4.0  | 0.7 | 3.5–4.8   |
| TL-3         | 5.6           | 5.0         | 7.6         | 6.0  | 1.4 | 5.0–7.6   |
| TL-4         | 8.3           | 8.5         | 12.1        | 9.6  | 2.1 | 8.3–12.1  |
| TL-5         | 6.2           | 6.4         | 8.4         | 7.0  | 1.2 | 6.2–8.4   |
| TND          | 9.3           | 8.5         | 12.9        | 10.3 | 2.3 | 8.5–12.9  |
| TPD          | 6.3           | 6.1         | 8.9         | 7.1  | 1.6 | 6.1–8.9   |
| TYH          | 1.9           | 1.6         | 2.4         | 2.0  | 0.4 | 1.6–2.4   |
| TYW          | 1.6           | 1.4         | 2.2         | 1.7  | 0.4 | 1.4–2.2   |
| UAL          | 6.3           | 6.7         | 8.7         | 7.3  | 1.3 | 6.3–8.7   |
| UEW          | 4.0           | 3.0         | 4.7         | 3.9  | 0.9 | 3.0–4.7   |
| VKL          | 16.5          | 14.5        | 21.7        | 17.6 | 3.7 | 14.5–21.7 |

**Table 17.** Characters that differentiate *Pseudophilautus puranappu* sp. nov. among congeners of the genus *Pseudophilautus*

| Species name                          | SVL       | Head dorsally | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|---------------------------------------|-----------|---------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|-------------|
| <i>P. puranappu</i> sp. nov.          | 33.6–51.1 | Concave       | Rounded          | Rounded           | Concave       | Flat               | Concave           | Present        | Present         | Absent            | Absent  | Present     |
| <i>P. bambadeniyai</i> sp. nov.       | 17.3–20.2 | Convex        | Truncate         |                   |               | Convex             | Flat              | Absent         | Absent          |                   |         | Absent      |
| <i>P. dayawansai</i> sp. nov.         | 24.5–30.1 | Convex        | Truncate         |                   |               | Concave            |                   | Absent         |                 | Present           | Present | Absent      |
| <i>P. jagathgunawardanai</i> sp. nov. | 35.8–40.4 | Convex        |                  | Sharp             | Convex        | Convex             |                   | Absent         |                 |                   |         | Absent      |
| <i>P. karunarathnai</i> sp. nov.      | 16.2–19.2 |               |                  |                   |               | Convex             |                   |                | Absent          | Present           |         |             |
| <i>P. newtonjayawardanei</i> sp. nov. | 38.4      |               |                  |                   |               | Concave            |                   | Absent         | Absent          | Present           |         | Absent      |
| <i>P. samarakoon</i> sp. nov.         | 20.4–24.6 | Convex        | Truncate         |                   |               | Convex             | Flat              | Absent         | Absent          | Present           | Present | Absent      |
| <i>P. sirilwijesundarai</i> sp. nov.  | 22.3–32.5 | Convex        |                  |                   |               | Convex             | Flat              |                | Absent          | Present           |         | Absent      |
| <i>P. abundus</i>                     | 25.4–37.0 |               | Pointed or oval  |                   |               |                    |                   |                |                 | Present           |         | Absent      |
| <i>P. adspersus</i>                   | 33.3–41.7 | Flat          | Truncate         | Sharp             |               |                    | Flat              | Absent         | Absent          | Present           |         |             |
| <i>P. alto</i>                        | 17.0–27.5 | Convex        | Obtusely pointed |                   |               | Convex             |                   | Absent         | Absent          | Present           | Present |             |
| <i>P. asankai</i>                     | 18.9–27.3 | Convex        | Obtusely pointed |                   | Flat          | Convex             | Flat              | Absent         | Absent          | Present           |         | Absent      |
| <i>P. auratus</i>                     | 21.7–26.4 | Flat          | Blunt            |                   | Flat          |                    |                   |                | Absent          | Present           |         | Absent      |
| <i>P. caeruleus</i>                   | 16.3–19.0 | Flat          | Obtusely pointed | Sharp             |               |                    |                   | Absent         |                 |                   |         | Absent      |
| <i>P. cavirostris</i>                 | 38.4–48.9 |               | Oval             | Sharp             |               | Concave            |                   |                | Absent          | Present           | Present |             |
| <i>P. cuspis</i>                      | 17.6–28.9 | Convex        | Sharply Pointed  | Sharp             |               | Convex             | Flat              | Absent         | Absent          |                   | Present |             |
| <i>P. decoris</i>                     | 18.3–23.9 | Flat          | Obtusely pointed |                   |               | Concave            |                   | Absent         |                 | Present           | Present | Absent      |
| <i>P. dimbuliae</i>                   | 44.8      | Convex        | Truncate         | Sharp             |               |                    | Flat              |                | Absent          | Present           |         |             |
| <i>P. eximus</i>                      | 35.3      | Flat          |                  | Sharp             |               |                    | Flat              | Absent         |                 | Present           |         |             |
| <i>P. extirpo</i>                     | 43.5      | Flat          | Blunt            | Sharp             |               | Concave            |                   | Absent         |                 | Present           |         |             |
| <i>P. femoralis</i>                   | 23.4–28.8 | Flat          | Truncate         |                   |               |                    |                   | Absent         | Absent          | Present           |         |             |
| <i>P. fergusonianus</i>               | 26.9–44.5 |               |                  |                   |               |                    |                   |                | Absent          | Present           |         |             |
| <i>P. folicola</i>                    | 23.7–29.4 | Flat          |                  | Sharp             |               |                    |                   |                |                 | Present           |         | Absent      |
| <i>P. frankenbergi</i>                | 26.7–29.3 | Flat          |                  | Sharp             |               |                    | Flat              | Absent         | Absent          | Present           |         | Absent      |
| <i>P. fulvus</i>                      | 33.4–46.8 | Convex        |                  | Sharp             |               |                    |                   |                | Absent          | Present           | Present |             |

| Species name            | SVL       | Head dorsally  | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|-------------------------|-----------|----------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|-------------|
| <i>P. hallidayi</i>     | 32.9–42.9 | Convex or Flat |                  |                   |               |                    |                   |                | Absent          | Present           |         |             |
| <i>P. halyi</i>         | 27.9      | Uneven         |                  | Sharp             |               |                    | Flat              | Absent         | Absent          | Present           |         |             |
| <i>P. hankeni</i>       | 18.3–21.9 |                | Pointed          |                   |               | Convex             |                   | Absent         | Absent          |                   |         | Absent      |
| <i>P. hoffmanni</i>     | 21.2–23.4 | Flat           |                  |                   | Flat          |                    | Flat              | Absent         | Absent          | Present           |         | Absent      |
| <i>P. hoipolloi</i>     | 22.0–28.6 | Convex         | Blunt            |                   | Flat          |                    |                   | Absent         |                 | Present           |         | Absent      |
| <i>P. hypomelas</i>     | 11.2–22.4 | Convex         | Acuminate        |                   |               | Convex             | Convex            | Absent         | Absent          |                   |         | Absent      |
| <i>P. leucorhinus</i>   | 19.8      | Flat           | Oval             | Sharp             |               | Concave            |                   | Absent         | Absent          |                   |         |             |
| <i>P. limbus</i>        | 25.7      |                | Obtusely pointed |                   |               | Concave            |                   |                |                 | Present           |         | Absent      |
| <i>P. lunatus</i>       | 40.9      | Flat           | Oval             |                   |               | Concave            |                   |                |                 | Present           | Present |             |
| <i>P. macropus</i>      | 27.4–42.7 |                | Oval             |                   |               |                    | Flat              |                |                 | Present           |         |             |
| <i>P. maia</i>          | 46.6      |                | Truncate         | Sharp             |               | Concave            | Flat              |                | Absent          | Present           |         |             |
| <i>P. malcolmsmithi</i> | 14.9      | Convex         | Pointed          | Sharp             |               |                    | Flat              | Absent         | Absent          |                   | Present |             |
| <i>P. microtympanum</i> | 23.9–49.0 | Convex         | Oval             |                   |               |                    |                   |                | Absent          | Present           |         |             |
| <i>P. mittermeieri</i>  | 16.3–18.4 | Convex         | Pointed          |                   |               | Concave            |                   | Absent         | Absent          | Present           | Present | Absent      |
| <i>P. mooreorum</i>     | 29.4–35.0 | Flat           |                  |                   |               |                    |                   | Absent         | Absent          | Present           |         | Absent      |
| <i>P. nanus</i>         | 34.8      | Convex         | Oval             |                   |               |                    |                   |                | Absent          |                   |         |             |
| <i>P. nasutus</i>       | 17.4      |                | Pointed          | Sharp             |               |                    |                   | Absent         | Absent          |                   | Present | Absent      |
| <i>P. nemus</i>         | 20.7      | Convex         | Obtusely pointed |                   |               |                    | Flat              | Absent         | Absent          |                   |         |             |
| <i>P. oocularis</i>     | 23.1–33.4 | Flat           | Blunt            |                   |               |                    |                   |                | Absent          | Present           |         | Absent      |
| <i>P. oxyrhynchus</i>   | 18.6      | Flat           | Pointed          | Sharp             | Flat          | Concave            |                   | Absent         | Absent          |                   | Present |             |
| <i>P. papillosum</i>    | 40        | Convex         | Truncate         | Sharp             |               | Concave            | Flat              |                |                 | Present           | Present |             |
| <i>P. pardus</i>        | 32.1      | Convex         |                  | Indistinct        | Flat          |                    |                   | Absent         | Absent          |                   |         | Absent      |
| <i>P. pleurotaenia</i>  | 25.6–30.3 | Convex         | Truncate         |                   |               | Convex             |                   | Absent         |                 | Present           |         | Absent      |
| <i>P. poppiae</i>       | 21.3–26.0 | Convex         |                  |                   |               |                    |                   | Absent         | Absent          | Present           |         | Absent      |
| <i>P. popularis</i>     | 17.7–24.7 | Convex         |                  |                   |               |                    | Flat              | Absent         | Absent          |                   |         |             |
| <i>P. procax</i>        | 25.1–26.8 |                | Pointed or oval  |                   |               |                    |                   |                |                 | Present           |         | Absent      |
| <i>P. regius</i>        | 18.3–21.7 | Flat           | Oval             |                   |               | Concave            |                   | Absent         | Absent          | Present           |         |             |
| <i>P. reticulatus</i>   | 42.5–61.1 | Convex or flat | Truncate or oval | Sharp             |               | Convex or concave  | Convex or concave |                |                 | Present           | Present |             |

| Species name          | SVL       | Head dorsally  | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|-----------------------|-----------|----------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|-------------|
| <i>P. rugatus</i>     | 17.5      | Convex         |                  | Sharp             |               | Convex             |                   | Absent         | Absent          |                   |         |             |
| <i>P. rus</i>         | 20.6–24.1 | Flat           | Oval             |                   |               |                    | Flat              |                | Absent          |                   |         | Absent      |
| <i>P. sarasinorum</i> | 22.6–38.1 | Flat           |                  |                   |               |                    |                   | Absent         |                 |                   |         | Absent      |
| <i>P. schmarda</i>    | 17.7–30.0 | Convex         | Obtusely pointed | Sharp             |               | Convex             |                   | Absent         | Absent          | Present           | Present | Absent      |
| <i>P. schneideri</i>  | 19.9–22.8 |                | Pointed          | Sharp             | Flat          | Convex             | Flat              |                | Absent          |                   |         | Absent      |
| <i>P. semiruber</i>   | 13.4      | Convex         | Oval             |                   | Flat          | Concave            | Flat              | Absent         | Absent          | Present           |         | Absent      |
| <i>P. silus</i>       | 35.4–51.8 | Convex above   | Oval             | Sharp             |               |                    | Flat              |                | Absent          | Present           |         |             |
| <i>P. sylvaticus</i>  | 24.3–31.3 | Convex         | Oval             | Sharp             |               |                    | Flat              |                |                 |                   |         | Absent      |
| <i>P. simba</i>       | 12.6–15.6 | Convex         | Truncate         |                   | Flat          | Convex             | Flat              | Absent         | Absent          |                   |         | Absent      |
| <i>P. singu</i>       | 16.1–16.6 | Convex         |                  |                   |               | Convex             |                   | Absent         |                 |                   |         | Absent      |
| <i>P. sordidus</i>    | 22.2–39.4 | Convex         | Blunt            |                   |               | Convex             | Flat              |                |                 |                   |         | Absent      |
| <i>P. steineri</i>    | 30.4–41.6 | Flat           |                  | Sharp             |               |                    |                   |                | Absent          | Present           |         |             |
| <i>P. stellatus</i>   | 39.6–55.3 |                |                  |                   |               | Concave            |                   |                | Absent          | Present           | Present |             |
| <i>P. stictomerus</i> | 23.2–36.0 | Flat or convex | Obtusely pointed |                   |               |                    |                   |                | Absent          |                   |         |             |
| <i>P. stuarti</i>     | 24.2–32.4 | Flat           |                  | Sharp             |               |                    | Flat              | Absent         | Absent          |                   |         | Absent      |
| <i>P. tanu</i>        | 13.5–13.9 | Convex         | Obtusely pointed |                   | Flat          |                    | Flat              | Absent         | Absent          |                   |         | Absent      |
| <i>P. temporalis</i>  | 28.4–31.0 | Convex         |                  |                   |               | Concave            |                   |                | Absent          |                   |         | Absent      |
| <i>P. variabilis</i>  | 35.7      | Flat           | Truncate         |                   |               |                    |                   | Absent         | Absent          | Present           |         |             |
| <i>P. viridis</i>     | 27.4–36.3 | Convex         | Blunt or rounded | Indistinct        |               |                    | Flat              | Absent         | Absent          | Present           |         | Absent      |
| <i>P. zal</i>         | 20.0–32.5 | Convex         |                  | Sharp             |               | Convex             |                   | Absent         | Absent          | Present           |         |             |
| <i>P. zimmeri</i>     | 31.6      | Convex         | Blunt            | Sharp             |               |                    | Flat              |                | Absent          | Present           |         |             |
| <i>P. zorro</i>       | 22.9–30.1 |                | Pointed          | Sharp             |               |                    |                   | Absent         | Absent          |                   | Present |             |

**Table 18.** Characters in the skin structure that differentiate *Pseudophilautus puranappu* sp. nov. among congeners of the genus *Pseudophilautus*

| Species name                          | Snout  | Interorbital area                             | Side of head      | Anterior dorsum                                   | Posterior dorsum                        | Upper flank             | Lower flank | Dorsal thigh      | Throat          | Chest           | Underside of thigh | Super-numerary tubercles on foot |
|---------------------------------------|--|---|-------------------|---|---|-------------------------|-------------|-------------------|-----------------|-----------------|--------------------|----------------------------------|
| <i>P. puranappu</i> sp. nov.          | Smooth, with a blunt tubercle                                  | Smooth  | Smooth            | Weakly shagreen                                   | Few horny spinules, Prominent tubercles | Weakly tubercular       | Granular    | Weakly shagreen   | Weakly granular | Weakly granular | Weakly granular    | Indistinct                       |
| <i>P. bambaradeniyai</i> sp. nov.     |  |   |                   | Prominent tubercles and horny spinules            |   | Smooth                  | Smooth      | Tuberculated      |                 |                 | Smooth             | Present                          |
| <i>P. dayawansai</i> sp. nov.         | Tuberculated, with a single prominent tubercle medially placed | Smooth, with a ridge across breaking medially | Tubercular        | Smooth  | Weakly tubercular                       | Granular                |             | Smooth            | Shagreen        |                 |                    | Present                          |
| <i>P. jagathgunawardanai</i> sp. nov. |  | Smooth, with two cross dermal fringes         |                   | Smooth  | Smooth                                  | Smooth                  |             | Weakly tubercular |                 |                 |                    | Present                          |
| <i>P. karunaratnai</i> sp. nov.       |  | Weakly tubercular                             | Weakly tubercular | Smooth  |   | Weakly granular         |             | Smooth            |                 |                 |                    |                                  |
| <i>P. newtonjayawardanei</i> sp. nov. | Shagreen   | Shagreen, with a prominent ridge              | Shagreen          |   | Shagreen                                | Shagreen                |             |                   |                 |                 |                    | Present                          |
| <i>P. samarakoon</i> sp. nov.         |  | Tubercular                                    |                   | Tubercular  |   |                         |             | Tuberculated      |                 |                 |                    | Present                          |
| <i>P. sirilwijjesundarai</i> sp. nov. | Shagreen, with prominent dermal fold                           | A prominent tubercle present                  | Weakly shagreen   |   | Shagreen                                | Areolate                |             | Smooth            | Shagreen        |                 |                    | Present                          |
| <i>P. abundus</i>                     |  |   |                   | Horny spinules (absent in females)                |   | Smooth                  |             | Smooth            |                 |                 |                    |                                  |
| <i>P. adspersus</i>                   |  |   |                   | Smooth except for a few scattered glandular warts | Smooth                                  | Granular                |             | Smooth            |                 |                 |                    | Present                          |
| <i>P. alto</i>                        | Horny spinules in males  | Horny spinules in males                       |                   | Horny spinules in males, warty in females         |   | Horny spinules in males |             | Smooth            |                 |                 |                    | Present                          |

| Species name            | Snout  | Interorbital area                                  | Side of head   | Anterior dorsum  | Posterior dorsum                     | Upper flank   | Lower flank               | Dorsal thigh                   | Throat | Chest  | Underside of thigh | Super-numerary tubercles on foot |
|-------------------------|--|--|--|--|--------------------------------------|---|---------------------------|--------------------------------|--------|--------|--------------------|----------------------------------|
| <i>P. asankai</i>       | Very fine, horny spinules                          | Very fine, horny spinules                          | Very fine, horny spinules                                | Very fine, horny spinules  |                                      | Horny spinules  | Very fine, horny spinules | Very fine, horny spinules      |        |        |                    |                                  |
| <i>P. auratus</i>       | Shagreen   | Shagreen   | Shagreen   |  | Shagreen                             | Granular or smooth                                      |                           | Smooth                         |        |        |                    | Present                          |
| <i>P. caeruleus</i>     | Glandular warts and horny spinules                 | Glandular warts and horny spinules                 | Glandular warts and horny spinules                       | Glandular warts and horny spinules (females lack horny spinules) |                                      | Glandular warts and horny spinules                      |                           | Smooth                         |        |        |                    |                                  |
| <i>P. cavirostris</i>   | Glandular warts                                    | Glandular warts                                    | Glandular warts  | Heavily tuberculated, glandular warts                            |                                      | Smooth  |                           | Smooth                         | Smooth | Smooth |                    | Present                          |
| <i>P. cuspis</i>        | Horny spinules                                     | Horny spinules                                     |  | Horny spinules with a ")("-shaped pattern of tubercles           |                                      | Smooth or with glandular warts                          |                           | Smooth or with glandular warts | Smooth |        |                    |                                  |
| <i>P. decoris</i>       | Glandular warts                                    | Glandular warts                                    | Glandular warts  | Glandular warts  | Glandular warts                      | Glandular warts   | Glandular warts           | Glandular warts                |        |        |                    |                                  |
| <i>P. dimbuliae</i>     | Shagreen   | Shagreen   | Shagreen   |  | Shagreen                             | Shagreen  |                           | Smooth                         |        |        |                    | Present                          |
| <i>P. eximus</i>        |  |  |  | Smooth   | Smooth                               | Smooth  |                           | Smooth                         | Smooth |        |                    | Present                          |
| <i>P. extirpo</i>       | Shagreen, with a few glandular warts               | Shagreen   | Shagreen   |  | Shagreen, with a few glandular warts | Granular  |                           |                                |        |        |                    |                                  |
| <i>P. femoralis</i>     | Finely granular                                    | Finely granular                                    | Finely granular  | Finely granular  | Finely granular                      | Finely granular   |                           | Smooth                         | Smooth |        |                    |                                  |
| <i>P. fergusonianus</i> | Shagreen, males glandular warts and horny spinules | Shagreen, males glandular warts and horny spinules | Few glandular warts                                      |  |                                      | Shagreen, males with glandular warts and horny spinules |                           | Smooth with glandular warts,   |        |        |                    |                                  |
| <i>P. folicola</i>      |  |  | Shagreen, smooth or with a few scattered glandular warts | Smooth or granular   | Smooth                               | Granular  |                           | Smooth                         |        |        |                    |                                  |

| Species name            | Snout   | Interorbital area                             | Side of head                           | Anterior dorsum                               | Posterior dorsum   | Upper flank                                   | Lower flank     | Dorsal thigh                                | Throat   | Chest    | Underside of thigh | Super-numerary tubercles on foot |
|-------------------------|---|---|--|---|--|---|-----------------|---|----------|----------|--------------------|----------------------------------|
| <i>P. frankenbergi</i>  | Shagreen                                      | Shagreen                                      | Glandular warts                        |   |  | Shagreen                                      |                 | Smooth                                      |          |          |                    |                                  |
| <i>P. fulvus</i>        | Shagreen                                      | Shagreen                                      | Shagreen                               |   | Shagreen   | Shagreen                                      |                 |   |          |          |                    | Present                          |
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males | Glandular warts, with horny spinules in males | Glandular warts                        | Glandular warts, with horny spinules in males |  | Glandular warts, with horny spinules in males |                 | Glandular warts                             |          |          |                    |                                  |
| <i>P. halyi</i>         | Shagreen with glandular warts                 | Shagreen with glandular warts                 | Shagreen with glandular warts          |   | Shagreen with glandular warts                            | Glandular warts                               |                 | Glandular warts                             |          |          |                    | Present                          |
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules        | Glandular warts bearing horny spinules        | Glandular warts bearing horny spinules | Glandular warts bearing horny spinules        |  | Glandular warts bearing horny spinules        |                 | Glandular warts with horny spinules         |          |          | Smooth             | Present                          |
| <i>P. hoffmanni</i>     |   |   |  | Smooth  | Smooth   | Smooth  | Glandular       | Smooth                                      |          |          | Smooth             |                                  |
| <i>P. hoipolloi</i>     |   |   |  |   | Smooth or shagreen                                       | Smooth or granular                            |                 | Smooth                                      | Shagreen | Shagreen |                    |                                  |
| <i>P. hypomelas</i>     |   |   |  | Smooth  | Smooth   | Smooth  | Smooth          | Smooth                                      | Smooth   | Smooth   |                    | Absent                           |
| <i>P. leucorhinus</i>   |   |   |  | Smooth with a few scattered glandular warts   | Smooth with a few scattered glandular warts              | Smooth with glandular warts                   |                 | Smooth                                      |          |          |                    |                                  |
| <i>P. limbus</i>        | Weakly granular                               | Weakly granular                               | Weakly granular                        | Weakly granular                               | Weakly granular  | Granular                                      |                 | Granular, not rough                         |          |          |                    | Present                          |
| <i>P. lunatus</i>       |   |   |  | Smooth  | Smooth   | Glandular warts                               |                 | Smooth                                      | Smooth   | Smooth   | Smooth             | Present                          |
| <i>P. macropus</i>      |   |   | Glandular warts                        |   | Shagreen or smooth, with a few scattered glandular warts | Granular with a few scattered glandular warts |                 | Smooth with a few scattered glandular warts |          |          |                    |                                  |
| <i>P. maia</i>          |   |   |  | Glandular warts                               | Glandular warts  | Glandular warts                               | Glandular warts | Smooth                                      |          |          |                    |                                  |
| <i>P. malcolmsmithi</i> |   |   |  | Smooth, 'V/' shaped ridge                     | Smooth   | Glandular warts                               | Glandular warts | Smooth, few scattered glandular warts       | Smooth   | Smooth   |                    | Present                          |
| <i>P. microtympanum</i> |   |   | Shagreen                               |   |  | Granular                                      |                 |   |          |          |                    | Present                          |

| Species name           | Snout  | Interorbital area  | Side of head   | Anterior dorsum  | Posterior dorsum                 | Upper flank  | Lower flank             | Dorsal thigh   | Throat | Chest  | Underside of thigh | Super-numerary tubercles on foot |
|------------------------|--|--|--|--|----------------------------------|--|-------------------------|--|--------|--------|--------------------|----------------------------------|
| <i>P. mittermeieri</i> | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts                  | Glandular warts  | Glandular warts         | Smooth   |        |        |                    |                                  |
| <i>P. mooreorum</i>    | Horny spinules in males  | Horny spinules in males  | Horny spinules in males  |  |                                  | Horny spinules in males  | Horny spinules in males |  |        |        |                    |                                  |
| <i>P. nanus</i>        | Glandular warts  | Few glandular warts  | Few glandular warts  | Few glandular warts  | Few glandular warts              | Glandular folds  |                         | Smooth   |        |        | Smooth             | Present                          |
| <i>P. nasutus</i>      | Glandular warts  | Glandular warts  | Glandular warts  | tuberculated, horn like spinules                               |                                  | Smooth   |                         | Glandular warts  |        |        |                    | Present                          |
| <i>P. nemus</i>        | Glandular warts  |  | Glandular warts  | Glandular warts  | Glandular warts                  | Smooth   |                         | Smooth   |        |        |                    |                                  |
| <i>P. ocularis</i>     | Shagreen or with glandular warts                               | Shagreen or with glandular warts                               | Shagreen or with glandular warts                               |  | Shagreen or with glandular warts | Shagreen or with glandular warts                               |                         | Glandular warts  |        |        |                    |                                  |
| <i>P. oxyrhynchus</i>  |  |  |  | Smooth   | Smooth                           | Smooth   | Smooth                  | Smooth   | Smooth | Smooth | Smooth             |                                  |
| <i>P. papillosum</i>   | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts                  | Glandular warts  |                         | Glandular warts  |        |        |                    |                                  |
| <i>P. pardus</i>       |  |  |  | Smooth   | Smooth                           | Granular   |                         | Smooth   |        |        |                    |                                  |
| <i>P. pleurotaenia</i> | Shagreen   | Shagreen   | Shagreen   |  |                                  | Shagreen, few scattered glandular warts, and horny spinules    |                         | Smooth   |        |        |                    |                                  |
| <i>P. poppiae</i>      | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female |                                  | Horny spinules in males, finely granular or shagreen in female | Smooth                  | Horny spinules in males, finely granular or shagreen in female |        |        | Smooth             |                                  |
| <i>P. popularis</i>    | Glandular warts  |  | Glandular warts  | Horny spinules   |                                  | Horny spinules   |                         | Glandular warts  |        |        |                    | Present                          |
| <i>P. procox</i>       |  |  |  | Horny spinules (spinules Absent in females)                    |                                  | Smooth   |                         | Smooth   |        |        |                    |                                  |
| <i>P. regius</i>       | Horny spinules   | Horny spinules   | Horny spinules   | Horny spinules   |                                  | Glandular  | Glandular               | Glandular warts  |        |        |                    | Present                          |

| Species name          | Snout   | Interorbital area                                   | Side of head                                  | Anterior dorsum                                      | Posterior dorsum   | Upper flank   | Lower flank                        | Dorsal thigh                          | Throat          | Chest  | Underside of thigh | Super-numerary tubercles on foot |
|-----------------------|---|---|---|--|--|---|------------------------------------|---------------------------------------|-----------------|--------|--------------------|----------------------------------|
| <i>P. reticulatus</i> | Shagreen with a few scattered glandular warts | Shagreen with a few scattered glandular warts       | Shagreen with a few scattered glandular warts |  | Shagreen with a few scattered glandular warts, finely tuberculated | Shagreen with a few scattered glandular warts       |                                    | Smooth                                |                 |        |                    |                                  |
| <i>P. rugatus</i>     |   | Smooth except for a few scattered glandular warts   |   | Smooth except for a few scattered glandular warts    | Smooth except for a few scattered glandular warts                  | Glandular warts                                     |                                    | Smooth, few scattered glandular warts |                 |        |                    | Present                          |
| <i>P. rus</i>         |   |   | Glandular warts                               | Glandular warts                                      | Glandular warts  | Granular  |                                    | Smooth                                |                 |        |                    |                                  |
| <i>P. sarasinorum</i> | Glandular warts                               | Glandular warts                                     | Glandular warts                               | Glandular warts, males with horny spinules scattered |  | Glandular folds                                     |                                    | Smooth                                | Glandular warts | Smooth | Smooth             |                                  |
| <i>P. schmarda</i>    | Glandular warts                               | Glandular folds, glandular warts and horny spinules | Glandular warts                               | Glandular folds, glandular warts and horny spinules  |  | Glandular folds, glandular warts and horny spinules | Glandular warts and horny spinules | Glandular warts                       | Glandular warts |        |                    | Present                          |
| <i>P. schneideri</i>  | Small tubercles with horny spinules           | Small tubercles with horny spinules                 | Small tubercles with horny spinules           | Small tubercles with horny spinules                  |  | Small tubercles with horny spinules                 |                                    | Smooth                                |                 |        | Smooth             | Present                          |
| <i>P. semiruber</i>   |   |   |   | Smooth   | Smooth   | Smooth  | Smooth                             | Smooth                                | Smooth          | Smooth | Smooth             | Present                          |
| <i>P. silus</i>       |   |   | Glandular warts                               | Glandular warts                                      | Glandular warts  | Glandular warts                                     |                                    | Smooth                                |                 |        |                    | Present                          |
| <i>P. silvaticus</i>  | Glandular warts                               | Glandular warts                                     | Glandular warts                               | Glandular warts                                      | Smooth   | Glandular warts                                     |                                    | Smooth                                |                 |        |                    |                                  |
| <i>P. simba</i>       |   |   | Glandular warts                               | Glandular warts                                      | Smooth   |   |                                    | Smooth                                |                 |        |                    |                                  |
| <i>P. singu</i>       | Scattered, glandular tubercles                | Scattered, glandular tubercles                      | Scattered, glandular tubercles                | Scattered, glandular tubercles                       | Scattered, glandular tubercles                                     | Scattered, glandular tubercles                      | Scattered, glandular tubercles     | Scattered glandular tubercles         |                 |        | Smooth             | Present                          |
| <i>P. sordidus</i>    | Glandular warts                               | Glandular warts                                     | Glandular warts                               | Glandular warts, males with horny spinules scattered |  | Glandular warts, with horny spinules in males       |                                    | Glandular warts                       | Smooth          | Smooth |                    |                                  |

| Species name          | Snout   | Interorbital area                  | Side of head    | Anterior dorsum  | Posterior dorsum  | Upper flank   | Lower flank     | Dorsal thigh                      | Throat             | Chest              | Underside of thigh | Super-numerary tubercles on foot |
|-----------------------|---|------------------------------------|-----------------|--|-------------------|---|-----------------|-----------------------------------|--------------------|--------------------|--------------------|----------------------------------|
| <i>P. steineri</i>    | Glandular warts and horny spinules                    | Glandular warts and horny spinules |                 | Glandular warts and horny spinules, females lack horny spinules      |                   | Glandular warts and horny spinules                    |                 | Smooth, scattered glandular warts |                    |                    |                    | Present                          |
| <i>P. stellatus</i>   | Weakly shagreen                                       | Weakly shagreen                    | Weakly shagreen |  | Weakly shagreen   | Shagreen to weakly areolate                           | Weakly areolate |                                   |                    |                    |                    | Present                          |
| <i>P. stictomerus</i> |   |                                    |                 |  |                   | Shagreen, horny spinules in males                     |                 | Smooth                            | Smooth or shagreen | Smooth or shagreen |                    |                                  |
| <i>P. stuarti</i>     | Horny spinules  | Horny spinules                     |                 | Horny spinules, females lack horny spinules                          |                   | Smooth  | Smooth          | Smooth                            |                    |                    |                    | Present                          |
| <i>P. tanu</i>        | Shagreen  | Shagreen                           | Shagreen        |  | Shagreen          | Granular  |                 | Smooth                            |                    |                    |                    | Present on toes and on foot      |
| <i>P. temporalis</i>  |   |                                    |                 | Smooth   | Smooth            | Smooth  |                 | Smooth                            | Smooth             | Smooth             |                    | Present                          |
| <i>P. variabilis</i>  |   |                                    |                 | Smooth   | Smooth            | Granular  |                 | Smooth                            |                    |                    |                    | Present                          |
| <i>P. viridis</i>     | Horny spinules (smooth in females and immature males) |                                    |                 | Horny spinules (smooth in females and immature males)                |                   | Horny spinules (smooth in females and immature males) |                 |                                   |                    |                    |                    |                                  |
| <i>P. zal</i>         | Weakly shagreen                                       | Shagreen                           | Shagreen        | Weakly tubercular  | Weakly tubercular | Granular  |                 | Weakly tubercular                 |                    |                    |                    | Present                          |
| <i>P. zimmeri</i>     | Glandular warts                                       | Glandular warts                    | Glandular warts | Glandular warts  | Glandular warts   | Granular  |                 | Glandular warts                   |                    |                    |                    |                                  |
| <i>P. zorro</i>       | Horny spinules  | Horny spinules                     | Glandular warts | Horny spinules, Anterior dorsum with "J"-shaped pattern of tubercles |                   | Glandular warts                                       |                 | Glandular warts                   | Smooth             | Mid chest smooth   | Smooth             | Present                          |

Ventral side of body: Throat and chest weakly granular, belly granular; upper arm and forearm weakly granular; thigh weakly granular, leg smooth, tarsus weakly granular.

**Colour in life:** Dorsum uniform light brown with a maroon longitudinal band covering snout to vent (hourglass-shaped), mid dorsally colour discontinues, and gets darker down to vent, a faint strip between eyes demarcating a fairly lighter triangular region on snout, canthal edge and tip of snout light brown, laterally lighter with a green tinge; limbs dark brown with a green tinge, forelimbs, hindlimbs, fingers and toes with blackish maroon bars; ventral side off-white marbled with dark brown, hands, feet and webbing lighter (Image 29).

**Colour in alcohol:** All maroon in life changed to a blackish tinge, the colour pattern remains with fading (Image 30 A & D).

**Paratype and variation:** Specimens showed dorsal colour variations. Mainly the hour glass maroonish broad patch remains the same in all and only in the holotype the patch discontinued, but the colouration outside this patch on either side of body changes ranging from pink, and some instances to a yellowish tinge (Image 31–34).

**Etymology:** The species epithet *puranappu* is named after Veera Puran Appu (Veerahennadige Francisco Fernando, 1812–1848) Puran Appu was a leader who stood up against the might of the British Empire, and died a courageous death, named for his sacrifice for freedom of Sri Lanka. The specific name is an invariable noun in apposition to the generic name.

**Suggested vernacular names:** Puran Appuge panduru madiya and Puran Appu's Shrub Frog in Sinhala and English, respectively.

**Natural history:** The species was observed even in day time, commonly seen found perched on rocks in shady places during the day and nocturnally they may be observed perched on 1m high bushes. Mostly seen in places where there was no canopy cover, in disturbed areas even on the Peak top. The species was commonly recorded from the highest elevations of 2000–2100 m, but low populations were also observed from about 1800m.

### *Pseudophilautus samarakoon* sp. nov.

(Figs. 20–22; Images 35–39; Tables 19–21)

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**Holotype:** NMSL 2013.07.01 NH, 03.iv.2010, adult female 24.6mm SVL (Images 35, 36 A&D). Sripada (Peak Wilderness), Ratnapura District, Sabaragamuwa Province, Sri Lanka ( $06^{\circ}48'31''N$  &  $80^{\circ}28'14''E$ ; 1335m) (Fig. 1), coll. L.J.M.W., D.R.V., S.C.A. & A.W.A.C.

**Paratypes:** DWC 2013.01.011, adult male, 20.4mm SVL (Images 36B,E, 37); DWC 2013.01.012, adult female, 22.3mm (Images 36C,F, 38); the same date, locality and collectors.

**Diagnosis:** *Pseudophilautus samarakoon* sp. nov. can be distinguished from known congeners by the following combination of characters: Rather small size (male SVL 22.3mm; females SVL 22.4–24.6); dorsal head and interorbital space convex; snout laterally truncate; canthus rostralis rounded; loreal region concave; internarial space flat; vomerine teeth, lingual papilla and nuptial pad absent; fringe on fingers and calcar present; snout prominent tubercle present on centre of snout; interorbital area tubercular; side of head smooth; anterior and posterior dorsum, upper flank and dorsal thigh tubercular; lower flank granular; throat and chest weakly granular; supernumerary tubercles present on foot.

**Description of holotype:** Body rather small size (SVL 24.6), moderately robust (SVL/HW 2.9); head large size (HL/SVL 0.5), about as wide as long (HW/HL 1.0), convex above; snout truncate in lateral, mucronate in dorsal and

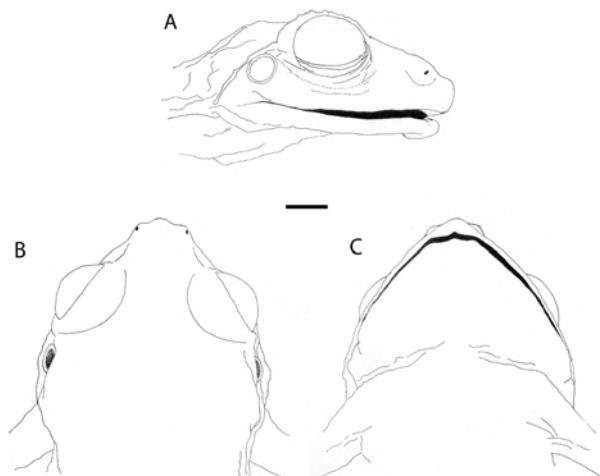


Figure 20. *Pseudophilautus samarakoon* sp. nov. holotype (NMSL 2013.07.01 NH), head; (A) lateral aspect (B) dorsal aspect (C) ventral aspect. Scale bar: 2mm. (© Dulan Ranga Vidanapathirana)

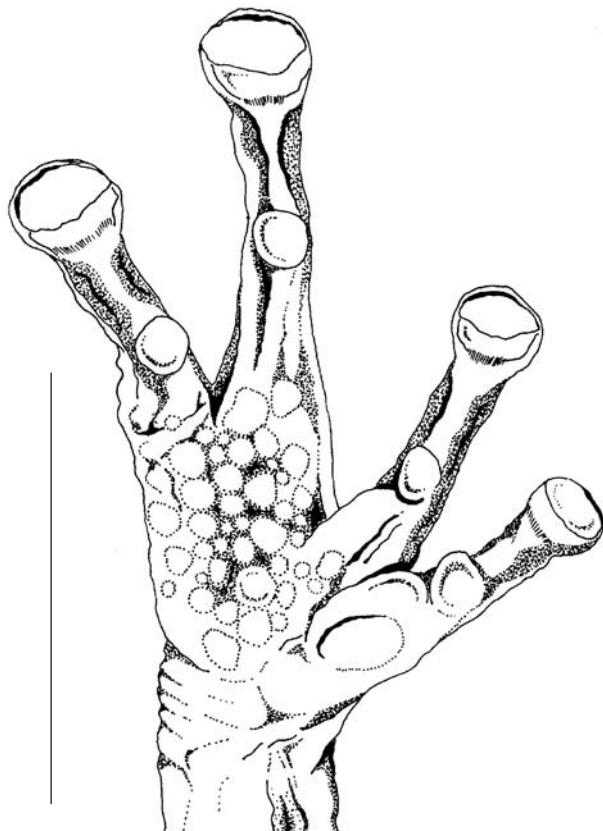


Figure 21. *Pseudophilautus samarakoon* sp. nov. holotype (NMSL 2013.07.01 NH), ventral aspect of left hand. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)

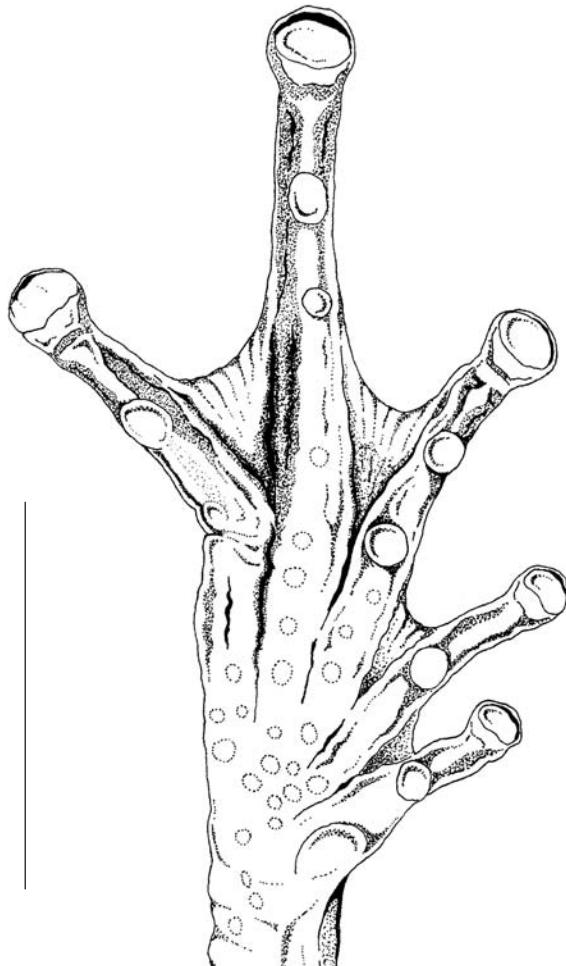


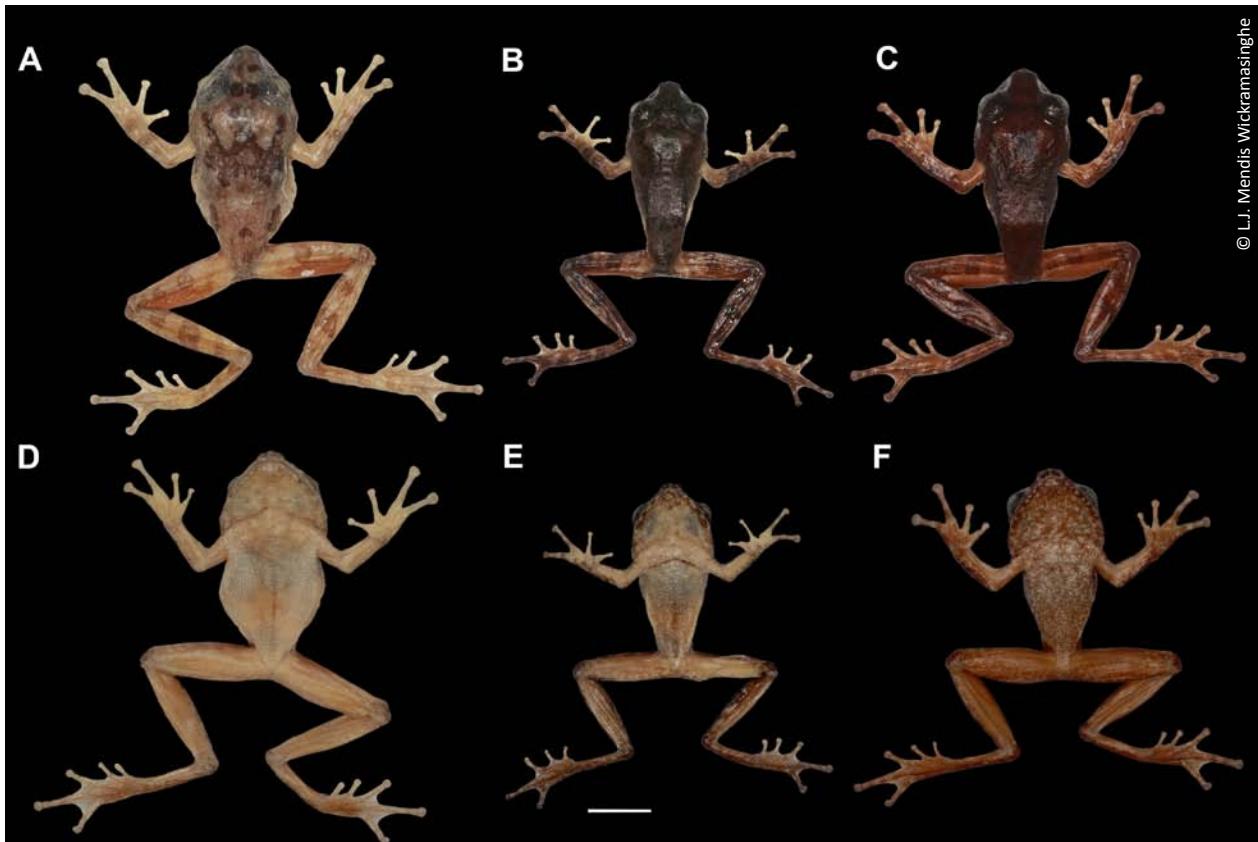
Figure 22. *Pseudophilautus samarakoon* sp. nov. holotype (NMSL 2013.07.01 NH), ventral aspect of left foot. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)



Image 35. *Pseudophilautus samarakoon* sp. nov., holotype in life (NMSL 2013.07.01 NH).



Image 37. *Pseudophilautus samarakoon* sp. nov. paratype in life (DWC 2013.01.011).



**Image 36.** Type series of *Pseudophilautus samarakoon* sp. nov. Left to right, NMSL 2013.07.01 NH, DWC 2013.01.011, DWC 2013.01.012. A-C dorsal aspect and D-F ventral aspect. Scale bar: 5mm.



**Image 38.** *Pseudophilautus samarakoon* sp. nov. paratype in life (DWC 2013.01.012).



**Image 39.** *Pseudophilautus samarakoon* sp. nov. unpreserved specimen.

rounded in ventral and aspects (Fig. 20 A–C), its length (ES/DFE 0.8, SN/IN 0.6) longer than horizontal diameter of eye (ES/ED 1.2); internasal space flat; canthus rostralis

rounded, loreal region concave; interorbital space mid dorsally convex, larger than upper eyelid (IO/UEW 1.6), larger than internasal distance (IO/IN 1.1); distance

between front of eyes 3/5 time the distance between back of eyes (DBE/DFE 1.7); nostrils oval, closer to tip of snout than to eye (SN/EN 0.6); pupil horizontally elliptical; tympanum distinct, elliptical (TYH/TYW 1.2), smaller than the eye (TYH/ED 0.40), tympanum-eye distance 4/5<sup>th</sup> of tympanum width (TAD/TYW 0.8); pineal ocellus and vomerine teeth absent; tongue lanceolate; lingual papilla absent, with few conical tubercles on tongue.

Arm short (LAL/FEL 0.5, UAL/FEL 0.3) thin, lower-arm shorter than hand length (LAL/HNL 0.8), lower-arm longer than upper arm (LAL/UAL 1.4); fingers thin, (Fig. 21), relative length of fingers I < II < IV < III (FL-1/FL-3 0.5, FL-2/FL-3 0.6, FL-4/FL-3 0.8) (Table 19), tips of fingers rounded, enlarged, discs present on all fingers, with distinct basal and circum marginal grooves; dermal fringe on inside of all fingers, and fringe present on postaxial edge of finger IV, metacarpal fold weakly present; webbing formula I2 ½–2 ½II2–3 2/3III3+–2 ½; subarticular tubercles prominent, rounded, single, all present, IV2 and III2 relatively smaller; inner palmar tubercle indistinct, single, oval, larger than outer palmar tubercle; nuptial pads absent; outer palmar tubercle indistinct, single, oval, smaller than the distal subarticular tubercles; supernumerary tubercles present, indistinct; prepollex absent; femur twice as long as the fourth toe length (FEL TL-4 2.2), foot length longer than thigh (FOL/FEL 1.5), toes thin, (Fig. 22), relative length of toes I < II < III < V < IV (TL-1/TL-4 0.4, TL-2/TL-4 0.4, TL-3/TL-4 0.7, TL-5/TL-4 0.7), tips of toes rounded enlarged, discs present on all toes, with distinct basal and circum marginal grooves, webbing formula I2—2 II2+—3 III2+—3 IV2 ½—2+V; dermal fringe present on all toes, thin undulating fringe along exterior edge of toe V, and metatarsal fold; prominent, small tubercles present on outer edge of tarsal fold; subarticular tubercles prominent, rounded, single, all present, V2 and IV3, relatively smaller; supernumerary tubercles present, indistinct; inner metatarsal tubercle oval prominent and large, its length 3/4<sup>th</sup> in length of toe I (IML/TL-1 0.5); outer metatarsal tubercle indistinct.

Skin between eyes tubercular, with a prominent tubercle in the center; a median dermal ridge from tip of snout to vent (more prominent till back of head) and a prominent tubercle present on centre of snout; lateral snout with few tubercles; above nostrils a pair of prominent tubercles present; on upper eyelid prominent tubercles; lateral head smooth, prominent tubercles present near the gape of mouth; supratympanic fold prominent; co-ossified skin on head and cephalic ridges absent; dorsum tubercular; upper part of flank tubercular; lower part of flank granular; upper arm

smooth; forearm tubercular; hand smooth; inner and outer thigh smooth, dorsally tubercular, macroglands absent; leg dorsally tubercular, blunt calcar and small tubercles present at heel; tarsus and foot with a few tubercles. Comparative characters that distinguish the species from its congeners are provided in tables 20 and 21.

Ventral side of body: Throat and chest weakly granular; belly granular; thigh, leg and tarsus weakly granular; vent dorsally shagreen, either side prominent tubercles present.

**Colour in life:** Dorsum uniform creamy light brown with dark brown patches, a dark brown band between eyes and another in front, anteriorly a large dark brown 'M' shaped patch with a creamy light brown oval center, posteriorly two symmetric dark brown diagonal lines; laterally cream colour; limbs dorsally creamy light brown, forelimbs, hind limbs, fingers and toes with brown cross bands; ventral side cream, throat brown, feet and webbing light brown (Image 35).

**Colour in alcohol:** Colour pattern remains with a little fading. The colours change from dark brown to brown and the cream colour to off white (Images 36 A,D).

**Paratype and variation:** Dorsum colour varies ranging from a reddish brown to a lighter brown shade, to a cream colour. The markings and patterns are the same for all (Images 37–39). The ventral side of thigh granular in DWC 2013.01.012, adult female, SVL 22.3mm (Images 36 C,F, 38).

**Etymology:** The species name *samarakoon* is named after Ananda Vijith Samarakoon (Assistant Director, Department of Wildlife), in great appreciation of his efforts in educating the wildlife officers for the conservation of the country's biodiversity at large. The species name *samarakoon* is used as a noun in apposition to the generic name.

**Suggested vernacular names:** Samarakoonge panduru madiya and Samrakoon's Shrub Frog in Sinhala and English, respectively.

**Natural history:** The species was found in elevations of 1000–1400 m from the forest floor to about 2m high shrubs and in bamboo of the lower montane rain forests. Sympatric with *P. bambadeniyai* sp. nov. and *P. karunaratnei* sp. nov.. Most abundantly found near the starting point of Kaluganga River. They were commonly found perched on bamboo plants close to the stream.

**Table 19.** The morphometric measurements (mm) of the type series of *Pseudophilautus samarakoon* sp. nov.

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.07.01 NH | 2013.01.011 | 2013.01.012 |      |     |           |
| DB           | 0.7           | 0.3         | 0.5         | 0.5  | 0.2 | 0.3–0.7   |
| DBE          | 9.2           | 7.5         | 8.4         | 8.4  | 0.9 | 7.5–9.2   |
| DFE          | 5.5           | 4.3         | 4.9         | 4.9  | 0.6 | 4.3–5.5   |
| DL           | 1.4           | 0.9         | 0.9         | 1.1  | 0.3 | 0.9–1.4   |
| DW           | 1.2           | 0.8         | 1.1         | 1.0  | 0.2 | 0.8–1.2   |
| ED           | 3.6           | 3.4         | 3.1         | 3.4  | 0.3 | 3.1–3.6   |
| EN           | 2.8           | 2.2         | 2.6         | 2.5  | 0.3 | 2.2–2.8   |
| ES           | 4.4           | 3.5         | 4.1         | 4.0  | 0.4 | 3.5–4.4   |
| FEL          | 13.5          | 10.7        | 10.7        | 11.7 | 1.6 | 10.7–13.5 |
| FL-1         | 2.3           | 1.7         | 2.3         | 2.1  | 0.3 | 1.7–2.3   |
| FL-2         | 2.8           | 2.1         | 2.7         | 2.5  | 0.4 | 2.1–2.8   |
| FL-3         | 5.0           | 4.1         | 4.6         | 4.6  | 0.5 | 4.1–5.0   |
| FL-4         | 4.0           | 3.2         | 3.9         | 3.7  | 0.4 | 3.2–4.0   |
| FOL          | 19.9          | 14.3        | 18.0        | 17.4 | 2.9 | 14.3–19.9 |
| GK           | 12.3          | 9.4         | 10.9        | 10.9 | 1.4 | 9.4–12.3  |
| HD           | 5.5           | 4.5         | 5.4         | 5.1  | 0.5 | 4.5–5.5   |
| HL           | 11.2          | 9.1         | 10.6        | 10.3 | 1.0 | 9.1–11.2  |
| HNL          | 7.9           | 5.3         | 7.5         | 6.9  | 1.4 | 5.3–7.9   |
| HW           | 11.3          | 8.5         | 9.7         | 9.8  | 1.4 | 8.5–11.3  |
| IML          | 1.1           | 0.9         | 1.3         | 1.1  | 0.2 | 0.9–1.3   |
| IN           | 2.8           | 2.1         | 2.4         | 2.4  | 0.3 | 2.1–2.8   |
| IO           | 3.2           | 2.4         | 3.0         | 2.9  | 0.4 | 2.4–3.2   |

| NMSL/<br>DWC | Holotype      | Paratype 1  | Paratype 2  | Mean | SD  | Range     |
|--------------|---------------|-------------|-------------|------|-----|-----------|
|              | 2013.07.01 NH | 2013.01.011 | 2013.01.012 |      |     |           |
| KT           | 13.4          | 10.1        | 11.7        | 11.7 | 1.7 | 10.1–13.4 |
| LAL          | 6.3           | 4.8         | 5.8         | 5.6  | 0.8 | 4.8–6.3   |
| MBE          | 4.6           | 3.9         | 4.2         | 4.2  | 0.3 | 3.9–4.6   |
| MFE          | 7.9           | 6.7         | 7.8         | 7.5  | 0.7 | 6.7–7.9   |
| MN           | 10.0          | 8.2         | 9.8         | 9.3  | 1.0 | 8.2–10.0  |
| SN           | 1.8           | 1.0         | 1.6         | 1.5  | 0.4 | 1.0–1.8   |
| SVL          | 24.6          | 20.4        | 22.3        | 22.4 | 2.1 | 20.4–24.6 |
| TAD          | 0.9           | 0.5         | 0.8         | 0.7  | 0.2 | 0.5–0.9   |
| TAS          | 9.3           | 6.8         | 8.4         | 8.2  | 1.3 | 6.8–9.3   |
| TBL          | 15.1          | 11.3        | 13.2        | 13.2 | 1.9 | 11.3–15.1 |
| TL-1         | 2.2           | 1.5         | 2.1         | 1.9  | 0.4 | 1.5–2.2   |
| TL-2         | 2.6           | 1.8         | 2.5         | 2.3  | 0.4 | 1.8–2.6   |
| TL-3         | 4.1           | 3.2         | 4.0         | 3.8  | 0.5 | 3.2–4.1   |
| TL-4         | 6.3           | 4.1         | 5.8         | 5.4  | 1.2 | 4.1–6.3   |
| TL-5         | 4.3           | 3.8         | 4.0         | 4.0  | 0.2 | 3.8–4.3   |
| TND          | 7.1           | 5.9         | 7.1         | 6.7  | 0.7 | 5.9–7.1   |
| TPD          | 4.4           | 3.9         | 4.6         | 4.3  | 0.4 | 3.9–4.6   |
| TYH          | 1.4           | 1.2         | 1.4         | 1.4  | 0.1 | 1.2–1.4   |
| TYW          | 1.2           | 1.4         | 1.2         | 1.3  | 0.2 | 1.2–1.4   |
| UAL          | 4.5           | 3.7         | 4.7         | 4.3  | 0.5 | 3.7–4.7   |
| UEW          | 1.9           | 2.2         | 1.9         | 2.0  | 0.2 | 1.9–2.2   |
| VKL          | 11.9          | 9.7         | 10.8        | 10.8 | 1.1 | 9.7–11.9  |

**Table 20.** Characters that differentiate *Pseudophilautus samarakoon* sp. nov. among congeners of the genus *Pseudophilautus*

| Species name                          | SVL       | Head dorsally   | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|---------------------------------------|-----------|-----------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|-------------|
| <i>P. samarakoon</i> sp. nov.         | 20.4–24.6 | Convex          | Truncate         | Rounded           | Concave       | Convex             | Flat              | Absent         | Absent          | Present           | Present | Absent      |
| <i>P. bambaradeniyai</i> sp. nov.     | 17.3–20.2 |                 |                  |                   |               |                    |                   |                |                 | Absent            | Absent  |             |
| <i>P. dayawansai</i> sp. nov.         | 24.5–30.1 |                 |                  |                   |               | Concave            | Concave           |                | Present         |                   |         |             |
| <i>P. jagathgunawardanai</i> sp. nov. | 35.8–40.4 |                 | Rounded          | Sharp             | Convex        |                    | Concave           |                | Present         | Absent            | Absent  |             |
| <i>P. karunaratnai</i> sp. nov.       | 16.2–19.2 |                 | Rounded          |                   |               |                    | Concave           | Present        |                 |                   | Absent  | Present     |
| <i>P. newtonjayawardanei</i> sp. nov. | 38.4      | Concave         | Rounded          |                   |               | Concave            | Concave           |                |                 |                   | Absent  |             |
| <i>P. puranappu</i> sp. nov.          | 33.6–51.1 | Concave         | Rounded          |                   |               | Flat               | Concave           | Present        | Present         | Absent            | Absent  | Present     |
| <i>P. sirilwisesundarai</i> sp. nov.  | 22.3–32.5 |                 | Rounded          |                   |               |                    |                   | Present        |                 |                   | Absent  |             |
| <i>P. abundus</i>                     | 25.4–37.0 | Concave         | Pointed or oval  |                   |               | Flat               | Concave           | Present        | Present         |                   | Absent  |             |
| <i>P. adspersus</i>                   | 33.3–41.7 | Flat            |                  | Sharp             |               | Concave or flat    |                   |                |                 |                   | Absent  |             |
| <i>P. alto</i>                        | 17.0–27.5 |                 | Obtusely pointed |                   |               |                    | Concave           |                |                 |                   |         | Present     |
| <i>P. asankai</i>                     | 18.9–27.3 |                 | Obtusely pointed |                   | Flat          |                    |                   |                |                 |                   | Absent  |             |
| <i>P. auratus</i>                     | 21.7–26.4 | Flat            | Blunt            |                   | Flat          | Flat               | Concave           | Present        |                 |                   | Absent  |             |
| <i>P. caeruleus</i>                   | 16.3–19.0 | Flat            | Obtusely pointed | Sharp             |               | Flat               |                   |                | Present         | Absent            | Absent  |             |
| <i>P. cavirostris</i>                 | 38.4–48.9 | Concave         | Oval             | Sharp             |               | Concave            | Concave           | Present        |                 |                   |         |             |
| <i>P. cuspis</i>                      | 17.6–28.9 |                 | Sharply Pointed  | Sharp             |               |                    |                   |                |                 | Absent            |         | Present     |
| <i>P. decoris</i>                     | 18.3–23.9 | Flat            | Obtusely pointed |                   |               | Concave            |                   |                | Present         |                   |         |             |
| <i>P. dimbuliae</i>                   | 44.8      |                 |                  | Sharp             |               | Flat               |                   |                | Present         |                   | Absent  |             |
| <i>P. eximus</i>                      | 35.3      | Flat            | Rounded          | Sharp             |               | Flat               |                   |                | Present         |                   | Absent  |             |
| <i>P. extirpo</i>                     | 43.5      | Flat            | Blunt            | Sharp             |               | Concave            | Concave           |                | Present         |                   | Absent  |             |
| <i>P. femoralis</i>                   | 23.4–28.8 | Flat            |                  |                   |               | Flat               | Concave           |                |                 |                   | Absent  |             |
| <i>P. fergusonianus</i>               | 26.9–44.5 | Concave or flat | Rounded          |                   |               | Concave or flat    | Concave           | Present        |                 |                   | Absent  | Present     |
| <i>P. folicola</i>                    | 23.7–29.4 | Flat            |                  | Sharp             |               | Flat               | Concave           | Present        |                 |                   | Absent  |             |
| <i>P. frankenbergi</i>                | 26.7–29.3 | Flat            | Rounded          | Sharp             |               | Flat               |                   |                |                 |                   |         |             |
| <i>P. fulvus</i>                      | 33.4–46.8 |                 | Rounded          | Sharp             |               | Flat               | Concave           | Present        |                 |                   |         | Present     |
| <i>P. halyi</i>                       | 27.9      | Uneven          | Rounded          | Sharp             |               | Flat               |                   |                |                 |                   | Absent  | Present     |
| <i>P. hallidayi</i>                   | 32.9–42.9 |                 | Rounded          |                   |               | Flat               |                   | Present        |                 |                   | Absent  | Present     |
| <i>P. hankeni</i>                     | 18.3–21.9 |                 | Pointed          |                   |               |                    | Concave           |                |                 | Absent            |         |             |
| <i>P. hoffmanni</i>                   | 21.2–23.4 | Flat            | Rounded          |                   | Flat          | Flat               |                   |                |                 |                   | Absent  |             |
| <i>P. hoipolloi</i>                   | 22.0–28.6 |                 | Blunt            |                   | Flat          | Flat               | Concave           |                |                 |                   | Absent  |             |
| <i>P. hypomelas</i>                   | 11.2–22.4 |                 | Acuminate        |                   |               |                    |                   |                |                 | Absent            | Absent  |             |

| Species name            | SVL       | Head dorsally | Snout lateral    | Canthus rostral | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar | Nuptial pad |
|-------------------------|-----------|---------------|------------------|-----------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|--------|-------------|
| <i>P. leucorhinus</i>   | 19.8      | Flat          | Oval             | Sharp           |               | Concave            | Concave           |                |                 | Absent            | Absent |             |
| <i>P. limbus</i>        | 25.7      | Concave       | Obtusely pointed |                 |               | Concave            | Concave           | Present        | Present         | Absent            |        |             |
| <i>P. lunatus</i>       | 40.9      | Flat          | Oval             |                 |               | Concave            | Concave           | Present        | Present         |                   |        |             |
| <i>P. macropus</i>      | 27.4–42.7 |               | Oval             |                 |               | Flat               |                   | Present        | Present         |                   | Absent | Present     |
| <i>P. maia</i>          | 46.6      | Concave       |                  | Sharp           |               | Concave            |                   | Present        |                 |                   | Absent |             |
| <i>P. malcolmsmithi</i> | 14.9      |               | Pointed          | Sharp           |               | Flat               |                   |                |                 | Absent            |        |             |
| <i>P. microtympanum</i> | 23.9–49.0 |               | Oval             |                 |               | Flat               | Concave           | Present        |                 |                   |        | Present     |
| <i>P. mittermeieri</i>  | 16.3–18.4 |               | Pointed          |                 |               | Concave            | Concave           |                |                 |                   |        |             |
| <i>P. mooreorum</i>     | 29.4–35.0 | Flat          | Rounded          |                 |               | Flat               | Concave           |                |                 |                   | Absent |             |
| <i>P. nanus</i>         | 34.8      |               | Oval             |                 |               | Flat               | Concave           | Present        |                 | Absent            | Absent | Present     |
| <i>P. nasutus</i>       | 17.4      |               | Pointed          | Sharp           |               | Flat               | Concave           |                |                 | Absent            |        |             |
| <i>P. nemus</i>         | 20.7      |               | Obtusely pointed |                 |               | Flat               |                   |                |                 | Absent            | Absent | Present     |
| <i>P. ocularis</i>      | 23.1–33.4 | Flat          | Blunt            |                 |               | Flat               |                   | Present        |                 |                   |        |             |
| <i>P. oxyrhynchus</i>   | 18.6      | Flat          | Pointed          | Sharp           | Flat          | Concave            | Concave           |                |                 | Absent            |        |             |
| <i>P. papillosus</i>    | 40        |               |                  | Sharp           |               | Concave            |                   | Present        | Present         |                   |        | Present     |
| <i>P. pardus</i>        | 32.1      |               | Rounded          | Indistinct      | Flat          | Flat               | Concave           |                |                 | Absent            | Absent |             |
| <i>P. pleurotaenia</i>  | 25.6–30.3 |               |                  |                 |               |                    | Concave           |                |                 |                   | Absent |             |
| <i>P. poppiae</i>       | 21.3–26.0 |               | Rounded          |                 |               | Flat               | Concave           |                |                 |                   | Absent |             |
| <i>P. popularis</i>     | 17.7–24.7 |               | Rounded          |                 |               | Flat               |                   |                |                 | Absent            | Absent | Present     |
| <i>P. procax</i>        | 25.1–26.8 | Concave       | Pointed or oval  |                 |               | Flat               | Concave           | Present        | Present         |                   | Absent |             |
| <i>P. regius</i>        | 18.3–21.7 | Flat          | Oval             |                 |               | Concave            | Concave           |                |                 |                   | Absent | Present     |
| <i>P. reticulatus</i>   | 42.5–61.1 |               |                  | Sharp           |               |                    | Convex or concave | Present        | Present         |                   |        | Present     |
| <i>P. rugatus</i>       | 17.5      |               | Rounded          | Sharp           |               |                    | Concave           |                |                 | Absent            |        |             |
| <i>P. rus</i>           | 20.6–24.1 | Flat          | Oval             |                 |               | Flat               |                   | Present        |                 | Absent            | Absent |             |
| <i>P. sarasinorum</i>   | 22.6–38.1 | Flat          | Rounded          |                 |               | Flat               | Concave           |                | Present         | Absent            | Absent |             |
| <i>P. schmarda</i>      | 17.7–30.0 |               | Obtusely pointed | Sharp           |               |                    | Concave           |                |                 |                   |        |             |
| <i>P. schneideri</i>    | 19.9–22.8 |               | Pointed          | Sharp           | Flat          |                    |                   | Present        |                 | Absent            |        |             |
| <i>P. semiruber</i>     | 13.4      |               | Oval             |                 | Flat          | Concave            |                   |                |                 |                   | Absent |             |
| <i>P. silus</i>         | 35.4–51.8 |               | Oval             | Sharp           |               | Flat               |                   | Present        |                 |                   | Absent | Present     |
| <i>P. sylvaticus</i>    | 24.3–31.3 |               | Oval             | Sharp           |               | Flat               |                   | Present        | Present         | Absent            | Absent |             |
| <i>P. simba</i>         | 12.6–15.6 |               |                  |                 | Flat          |                    |                   |                |                 | Absent            | Absent |             |
| <i>P. singu</i>         | 16.1–16.6 |               | Rounded          |                 |               |                    | Concave           |                | Present         | Absent            |        |             |

| Species name          | SVL       | Head dorsally | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar | Nuptial pad |
|-----------------------|-----------|---------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|--------|-------------|
| <i>P. sordidus</i>    | 22.2–39.4 |               | Blunt            |                   |               |                    |                   | Present        | Present         | Absent            | Absent |             |
| <i>P. steineri</i>    | 30.4–41.6 | Flat          | Rounded          | Sharp             |               | Flat               | Concave           | Present        |                 |                   | Absent | Present     |
| <i>P. stellatus</i>   | 39.6–55.3 | Concave       | Rounded          | Rounded           |               | Concave            | Concave           | Present        |                 |                   |        |             |
| <i>P. stictomerus</i> | 23.2–36.0 |               | Obtusely pointed |                   |               | Concave or flat    |                   | Present        |                 | Absent            | Absent | Present     |
| <i>P. stuarti</i>     | 24.2–32.4 | Flat          | Rounded          | Sharp             |               | Flat               |                   |                |                 | Absent            | Absent |             |
| <i>P. tanu</i>        | 13.5–13.9 |               | Obtusely pointed |                   | Flat          | Flat               |                   |                |                 | Absent            |        |             |
| <i>P. temporalis</i>  | 28.4–31.0 |               | Rounded          |                   |               | Concave            | Concave           | Present        |                 | Absent            | Absent |             |
| <i>P. variabilis</i>  | 35.7      | Flat          |                  |                   |               | Flat               | Concave           |                |                 |                   |        |             |
| <i>P. viridis</i>     | 27.4–36.3 |               | Blunt or rounded | Indistinct        |               | Flat               |                   |                |                 |                   | Absent |             |
| <i>P. zal</i>         | 20.0–32.5 |               | Rounded          |                   |               |                    | Concave           |                |                 |                   | Absent | Present     |
| <i>P. zimmeri</i>     | 31.6      |               | Blunt            | Sharp             |               | Flat               |                   | Present        |                 |                   |        | Present     |
| <i>P. zorro</i>       | 22.9–30.1 | Concave       | Pointed          | Sharp             |               | Flat               | Concave           |                |                 | Absent            |        | Present     |

**Table 21. Characters in the skin structure that differentiate *Pseudophilautus samarakoon* sp. nov. among congeners of the genus *Pseudophilautus***

| Species name                          | Snout   | Interorbital area                                 | Side of head              | Anterior dorsum                                   | Posterior dorsum                          | Upper flank             | Lower flank               | Dorsal thigh              | Throat          | Chest           | Super-numerary tubercles on foot |
|---------------------------------------|---|---|---------------------------|---|---|-------------------------|---------------------------|---------------------------|-----------------|-----------------|----------------------------------|
| <i>P. samarakoon</i> sp. nov.         | Prominent tubercle present on centre of snout     | Tubercular  | Smooth                    | Tubercular  | Tubercular                                | Tubercular              | Granular                  | Tubercular                | Weakly granular | Weakly granular | Present                          |
| <i>P. bambaradeniyai</i> sp. nov.     | Smooth  | Smooth  |                           | Prominent tubercles and horny spinules            | Horny spinules                            | Smooth                  | Smooth                    |                           |                 |                 |                                  |
| <i>P. dayawansai</i> sp. nov.         |   | Smooth, with a ridge across breaking medially     | Tubercular                | Smooth  |   | Granular                |                           | Smooth                    | Shagreen        |                 |                                  |
| <i>P. jagathgunawardanai</i> sp. nov. | Smooth  | Smooth, with two cross dermal fringes             |                           | Smooth  | Smooth                                    | Smooth                  |                           |                           |                 |                 |                                  |
| <i>P. karunarathnai</i> sp. nov.      |   |   | Weakly tubercular         | Smooth  | Spinulate                                 | Weakly granular         |                           | Smooth                    |                 |                 | Absent                           |
| <i>P. newtonjayawardanei</i> sp. nov. | Shagreen  | Shagreen, with a prominent ridge                  | Shagreen                  | Shagreen  | Shagreen                                  | Shagreen                |                           | Shagreen                  |                 |                 |                                  |
| <i>P. puranappu</i> sp. nov.          |   | Smooth  |                           | Weakly shagreen                                   |   |                         |                           | Weakly shagreen           |                 |                 |                                  |
| <i>P. sirilwisesundarai</i> sp. nov.  | Shagreen, with prominent dermal fold              |   | Weakly shagreen           | Shagreen with few tubercles                       | Shagreen                                  | Areolate                |                           | Smooth                    | Shagreen        |                 |                                  |
| <i>P. abundus</i>                     | Smooth  | Smooth  |                           |   |   | Smooth                  |                           | Smooth                    |                 |                 | Absent                           |
| <i>P. adspersus</i>                   | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts |                           | Smooth except for a few scattered glandular warts | Smooth                                    | Granular                |                           | Smooth                    |                 |                 |                                  |
| <i>P. alto</i>                        | Horny spinules in males                           | Horny spinules in males                           |                           | Horny spinules in males, warty in females         | Horny spinules in males, warty in females | Horny spinules in males |                           | Smooth                    |                 |                 |                                  |
| <i>P. asankai</i>                     | Very fine, horny spinules                         | Very fine, horny spinules                         | Very fine, horny spinules | Very fine, horny spinules                         | Very fine, horny spinules                 | Horny spinules          | Very fine, horny spinules | Very fine, horny spinules |                 |                 | Absent                           |
| <i>P. auratus</i>                     | Shagreen  | Shagreen  | Shagreen                  | Shagreen  | Shagreen                                  | Granular or smooth      |                           | Smooth                    |                 |                 |                                  |

| Species name            | Snout  | Interorbital area                                  | Side of head   | Anterior dorsum  | Posterior dorsum   | Upper flank   | Lower flank     | Dorsal thigh                   | Throat                                | Chest  | Super-numerary tubercles on foot |
|-------------------------|--|--|--|--|--|---|-----------------|--------------------------------|---------------------------------------|--------|----------------------------------|
| <i>P. caeruleus</i>     | Glandular warts and horny spinules                 | Glandular warts and horny spinules                 | Glandular warts and horny spinules                       | Glandular warts and horny spinules (females lack horny spinules) | Glandular warts and horny spinules (females lack horny spinules)   | Glandular warts and horny spinules                      |                 | Smooth                         |                                       |        |                                  |
| <i>P. cavirostris</i>   | Glandular warts                                    | Glandular warts                                    | Glandular warts  |  |  | Smooth  |                 | Smooth                         | Smooth                                | Smooth |                                  |
| <i>P. cuspis</i>        | Horny spinules                                     | Horny spinules                                     |  | Horny spinules with a "J"-shaped pattern of tubercles            | Horny spinules   | Smooth or with glandular warts                          |                 | Smooth or with glandular warts | Smooth                                |        | Absent                           |
| <i>P. decoris</i>       | Glandular warts                                    | Glandular warts                                    | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts   | Glandular warts | Glandular warts                | Glandular, warty, or roughly granular |        |                                  |
| <i>P. dimbuliae</i>     | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen  |                 | Smooth                         |                                       |        |                                  |
| <i>P. eximius</i>       | Smooth   | Smooth   |  | Smooth   | Smooth   | Smooth  |                 | Smooth                         | Smooth                                |        |                                  |
| <i>P. extirpo</i>       | Shagreen, with a few glandular warts               | Shagreen   | Shagreen   | Shagreen, with a few glandular warts                             | Shagreen, with a few glandular warts                               | Granular  |                 | Shagreen, few glandular warts  |                                       |        |                                  |
| <i>P. femoralis</i>     | Finely granular                                    | Finely granular                                    | Finely granular  | Finely granular  | Finely granular  | Finely granular   |                 | Smooth                         | Smooth                                |        | Absent                           |
| <i>P. fergusonianus</i> | Shagreen, males glandular warts and horny spinules | Shagreen, males glandular warts and horny spinules | Few glandular warts                                      | Shagreen, Males glandular warts and horny spinules               | Few glandular warts, males with glandular warts and horny spinules | Shagreen, males with glandular warts and horny spinules |                 | Smooth with glandular warts,   |                                       |        |                                  |
| <i>P. folicola</i>      | Smooth   | Smooth   | Shagreen, smooth or with a few scattered glandular warts | Smooth or granular   | Smooth   | Granular  |                 | Smooth                         |                                       |        | Absent                           |
| <i>P. frankenbergi</i>  | Shagreen   | Shagreen   | Glandular warts  | Shagreen, horny spinules scattered                               | Shagreen, horny spinules scattered                                 | Shagreen  |                 | Smooth                         |                                       |        | Absent                           |
| <i>P. fulvus</i>        | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen  |                 | Shagreen                       |                                       |        |                                  |
| <i>P. halyi</i>         | Shagreen with glandular warts                      | Shagreen with glandular warts                      | Shagreen with glandular warts                            | Shagreen with glandular warts                                    | Shagreen with glandular warts                                      | Glandular warts   |                 | Glandular warts                |                                       |        |                                  |

| Species name            | Snout   | Interorbital area                             | Side of head                           | Anterior dorsum  | Posterior dorsum   | Upper flank                                   | Lower flank     | Dorsal thigh                                | Throat   | Chest    | Super-numerary tubercles on foot |
|-------------------------|---|---|--|--|--|---|-----------------|---|----------|----------|----------------------------------|
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males | Glandular warts, with horny spinules in males | Glandular warts                        | Glandular warts, with horny spinules in males                                  | Glandular warts, with horny spinules in males                                  | Glandular warts, with horny spinules in males |                 | Glandular warts                             |          |          | Absent                           |
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules        | Glandular warts bearing horny spinules        | Glandular warts bearing horny spinules | Glandular warts bearing horny spinules   | Glandular warts bearing horny spinules   | Glandular warts bearing horny spinules        |                 | Glandular warts with horny spinules         |          |          |                                  |
| <i>P. hoffmanni</i>     | Smooth  | Smooth  |  | Smooth   | Smooth   | Smooth  | Glandular       | Smooth                                      |          |          |                                  |
| <i>P. hoipolloi</i>     | Smooth or shagreen                            | Smooth or shagreen                            |  | Smooth or shagreen   | Smooth or shagreen   | Smooth or granular                            |                 | Smooth                                      | Shagreen | Shagreen | Absent                           |
| <i>P. hypomelas</i>     | Smooth  | Smooth  |  | Smooth   | Smooth   | Smooth  | Smooth          | Smooth                                      | Smooth   | Smooth   | Absent                           |
| <i>P. leucorhinus</i>   | Smooth  | Smooth  |  | Smooth with a few scattered glandular warts                                    | Smooth with a few scattered glandular warts                                    | Smooth with glandular warts                   |                 | Smooth                                      |          |          |                                  |
| <i>P. limbus</i>        | Weakly granular                               | Weakly granular                               | Weakly granular                        | Weakly granular  | Weakly granular  | Granular                                      |                 | Granular, not rough                         |          |          |                                  |
| <i>P. lunatus</i>       | Smooth  | Smooth  |  | Smooth   | Smooth   | Glandular warts                               |                 | Smooth                                      | Smooth   | Smooth   |                                  |
| <i>P. macropus</i>      | Smooth  | Smooth with a few scattered glandular warts   | Glandular warts                        | Shagreen or smooth, with a few scattered glandular warts                       | Shagreen or smooth, with a few scattered glandular warts                       | Granular with a few scattered glandular warts |                 | Smooth with a few scattered glandular warts |          |          | Absent                           |
| <i>P. maia</i>          | Smooth  | Smooth  |  | Glandular warts  | Glandular warts  | Glandular warts                               | Glandular warts | Smooth                                      |          |          | Absent                           |
| <i>P. malcolmsmithi</i> | Smooth  | Smooth  |  | Smooth, 'V' shaped ridge   | Smooth   | Glandular warts                               | Glandular warts | Smooth, few scattered glandular warts       | Smooth   | Smooth   |                                  |
| <i>P. microtympanum</i> |   | Smooth or tuberculated                        | Shagreen                               | Smooth above, shagreen and with glandular warts, males with horn like spinules | Smooth above, shagreen and with glandular warts, males with horn like spinules | Granular                                      |                 | Shagreen, few scattered glandular warts     |          |          |                                  |
| <i>P. mittermeieri</i>  | Glandular warts                               | Glandular warts                               | Glandular warts                        | Glandular warts  | Glandular warts  | Glandular warts                               | Glandular warts | Smooth                                      |          |          |                                  |

| Species name           | Snout  | Interorbital area  | Side of head   | Anterior dorsum  | Posterior dorsum   | Upper flank  | Lower flank             | Dorsal thigh   | Throat | Chest | Super-numerary tubercles on foot |
|------------------------|--|--|--|--|--|--|-------------------------|--|--------|-------|----------------------------------|
| <i>P. mooreorum</i>    | Horny spinules in males  | Horny spinules in males  | Horny spinules in males  | Horny spinules in males, finely granular or shagreen in female           | Horny spinules in males, finely granular or shagreen in female     | Horny spinules in males  | Horny spinules in males | Shagreen   |        |       | Absent                           |
| <i>P. nanus</i>        | Glandular warts  | Few glandular warts  | Few glandular warts  | Few glandular warts  | Few glandular warts  | Glandular folds  |                         | Smooth   |        |       |                                  |
| <i>P. nasutus</i>      | Glandular warts  | Glandular warts  | Glandular warts  | tuberculated, horn like spinules   | Tuberculated, horn like spinules                                   | Smooth   |                         | Glandular warts  |        |       |                                  |
| <i>P. nemus</i>        | Glandular warts  | Smooth   | Glandular warts  | Glandular warts  | Glandular warts  | Smooth   |                         | Smooth   |        |       | Absent                           |
| <i>P. ocularis</i>     | Shagreen or with glandular warts   | Shagreen or with glandular warts                                   | Shagreen or glandular warts                                    |                         | Glandular warts  |        |       |                                  |
| <i>P. oxyrhynchus</i>  | Smooth   | Smooth   |  | Smooth   | Smooth   | Smooth   | Smooth                  | Smooth   | Smooth |       |                                  |
| <i>P. papillosum</i>   | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  |                         | Glandular warts  |        |       |                                  |
| <i>P. pardus</i>       | Smooth   | Smooth   |  | Smooth   | Smooth   | Granular   |                         | Smooth   |        |       |                                  |
| <i>P. pleurotaenia</i> | Shagreen   | Shagreen   | Shagreen   | Shagreen with a few scattered glandular warts and horny spinules (males) | Shagreen, few scattered glandular warts and horny spinules (males) | Shagreen, few scattered glandular warts, and horny spinules    |                         | Smooth   |        |       |                                  |
| <i>P. poppiae</i>      | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female           | Horny spinules in males, finely granular or shagreen in female     | Horny spinules in males, finely granular or shagreen in female | Smooth                  | Horny spinules in males, finely granular or shagreen in female |        |       | Absent                           |
| <i>P. popularis</i>    | Glandular warts  | Smooth   | Glandular warts  | Horny spinules   | Horny spinules   | Horny spinules   |                         | Glandular warts  |        |       |                                  |
| <i>P. procax</i>       | Smooth   | Smooth   |  | Horny spinules (spinules Absent in females)                              | Horny spinules (spinules Absent in females)                        | Smooth   |                         | Smooth   |        |       | Absent                           |
| <i>P. regius</i>       | Horny spinules   | Horny spinules   | Horny spinules   | Horny spinules   | Horny spinules   | Glandular  | Glandular               | Glandular warts  |        |       |                                  |
| <i>P. reticulatus</i>  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts, finely tuberculated       | Shagreen with a few scattered glandular warts, finely tuberculated | Shagreen with a few scattered glandular warts                  |                         | Smooth   |        |       |                                  |

| Species name          | Snout   | Interorbital area                                   | Side of head                        | Anterior dorsum   | Posterior dorsum  | Upper flank   | Lower flank                     | Dorsal thigh                          | Throat          | Chest  | Super-numerary tubercles on foot |
|-----------------------|---|---|-------------------------------------|---|---|---|---------------------------------|---------------------------------------|-----------------|--------|----------------------------------|
| <i>P. rugatus</i>     | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts   |                                     | Smooth except for a few scattered glandular warts               | Smooth except for a few scattered glandular warts               | Glandular warts                                     |                                 | Smooth, few scattered glandular warts |                 |        |                                  |
| <i>P. rus</i>         | Smooth  | Smooth  | Glandular warts                     | Glandular warts   | Glandular warts   | Granular  |                                 | Smooth                                |                 |        |                                  |
| <i>P. sarasinorum</i> | Glandular warts                                   | Glandular warts                                     | Glandular warts                     | Glandular warts, males with horny spinules scattered            | Glandular warts, males with horny spinules scattered            | Glandular folds                                     |                                 | Smooth                                | Glandular warts | Smooth |                                  |
| <i>P. schmarda</i>    | Glandular warts                                   | Glandular folds, glandular warts and horny spinules | Glandular warts                     | Glandular folds, glandular warts and horny spinules             | Glandular folds, glandular warts and horny spinules             | Glandular folds, glandular warts and horny spinules | Glandular warts, horny spinules | Glandular warts                       | Glandular warts |        |                                  |
| <i>P. schneideri</i>  | Small tubercles with horny spinules               | Small tubercles with horny spinules                 | Small tubercles with horny spinules | Small tubercles with horny spinules                             | Small tubercles with horny spinules                             | Small tubercles with horny spinules                 |                                 | Smooth                                |                 |        |                                  |
| <i>P. semiruber</i>   | Smooth  | Smooth  |                                     | Smooth  | Smooth  | Smooth  | Smooth                          | Smooth                                | Smooth          | Smooth |                                  |
| <i>P. silus</i>       | Smooth  | Smooth  | Glandular warts                     | Glandular warts   | Glandular warts   | Glandular warts                                     |                                 | Smooth                                |                 |        |                                  |
| <i>P. silvaticus</i>  | Glandular warts                                   | Glandular warts                                     | Glandular warts                     | Glandular warts   | Smooth  | Glandular warts                                     |                                 | Smooth                                |                 |        |                                  |
| <i>P. simba</i>       | Smooth  | Smooth  | Glandular warts                     | Glandular warts   | Smooth  |   |                                 | Smooth                                |                 |        |                                  |
| <i>P. singu</i>       | Scattered, glandular tubercles                    | Scattered, glandular tubercles                      | Scattered, glandular tubercles      | Scattered, glandular tubercles                                  |   | Scattered, glandular tubercles                      | Scattered, glandular tubercles  | Scattered glandular tubercles         |                 |        |                                  |
| <i>P. sordidus</i>    | Glandular warts                                   | Glandular warts                                     | Glandular warts                     | Glandular warts, males horny spinules scattered                 | Glandular warts, males horny spinules scattered                 | Glandular warts, with horny spinules in males       |                                 | Glandular warts                       | Smooth          | Smooth |                                  |
| <i>P. steineri</i>    | Glandular warts and horny spinules                | Glandular warts and horny spinules                  |                                     | Glandular warts and horny spinules, females lack horny spinules | Glandular warts and horny spinules, females lack horny spinules | Glandular warts and horny spinules                  |                                 | Smooth, scattered glandular warts     |                 |        |                                  |
| <i>P. stellatus</i>   | Weakly shagreen                                   | Weakly shagreen                                     | Weakly shagreen                     | Weakly shagreen   | Weakly shagreen   | Shagreen to weakly areolate                         | Weakly areolate                 | Weakly shagreen                       |                 |        |                                  |

| Species name          | Snout   | Interorbital area                                     | Side of head  | Anterior dorsum  | Posterior dorsum                                      | Upper flank   | Lower flank | Dorsal thigh    | Throat             | Chest              | Super-numerary tubercles on foot |
|-----------------------|---|---|---|--|---|---|-------------|-----------------|--------------------|--------------------|----------------------------------|
| <i>P. stictomerus</i> | Smooth  | Smooth  |   | Shagreen, horny spinules in males                                    | Shagreen, horny spinules in males                     | Shagreen, horny spinules in males                     |             | Smooth          | Smooth or shagreen | Smooth or shagreen |                                  |
| <i>P. stuarti</i>     | Horny spinules  | Horny spinules  |   | Horny spinules, females lack horny spinules                          | Horny spinules, females lack horny spinules           | Smooth  | Smooth      | Smooth          |                    |                    |                                  |
| <i>P. tanu</i>        | Shagreen  | Shagreen  | Shagreen  | Shagreen   | Shagreen  | Granular  |             | Smooth          |                    |                    |                                  |
| <i>P. temporalis</i>  | Smooth  | Smooth  |   | Smooth   | Smooth  | Smooth  |             | Smooth          | Smooth             | Smooth             |                                  |
| <i>P. variabilis</i>  | Smooth  | Smooth  |   | Smooth   | Smooth  | Granular  |             | Smooth          |                    |                    |                                  |
| <i>P. viridis</i>     | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males)                | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) |             | Shagreen        |                    |                    |                                  |
| <i>P. zal</i>         | Weakly shagreen                                       | Shagreen  | Shagreen  |  |   | Granular  |             |                 |                    |                    |                                  |
| <i>P. zimmeri</i>     | Glandular warts                                       | Glandular warts                                       | Glandular warts                                       | Glandular warts  | Glandular warts                                       | Granular  |             | Glandular warts |                    |                    |                                  |
| <i>P. zorro</i>       | Horny spinules  | Horny spinules  | Glandular warts                                       | Horny spinules, Anterior dorsum with "J"-shaped pattern of tubercles | Horny spinules  | Glandular warts                                       |             | Glandular warts | Smooth             | Mid chest smooth   |                                  |

***Pseudophilautus sirilwifesundarai* sp. nov.**

(Figs. 23–25; Images 40–42; Tables 22–24)

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**Holotype:** NMSL 2013.08.01 NH, 05.ii.2009, adult female 32.5mm SVL (Images 40, 41A,C). Sripada (Peak Wilderness), Ratnapura District, Sabaragamuwa Province, Sri Lanka ( $06^{\circ}48'30''N$   $80^{\circ}29'19''E$ ; 1679m) (Fig. 1), coll. L.J.M.W, D.R.V., M.D.G.R., S.C.A., A.W.A.C. & I.N.B.

**Paratypes:** DWC 2013.01.013, 11.xi.2011, adult male, 22.3mm SVL (Images 41B,D, 42). The same locality, coll. D.R.V and S.C.A.

**Diagnosis:** *Pseudophilautus sirilwifesundarai* sp. nov., can be distinguished from known congeners by the following combination of characters: Moderate size (male SVL 22.3mm; female SVL 32.5mm); dorsal head and interorbital space convex; lateral snout and canthus rostralis rounded; loreal region concave; internarial space flat; fringe on fingers and vomerine ridge present; lingual papilla, nuptial pad and calcar absent; snout shagreen, with prominent dermal fold; interorbital area tubercular; side of head weakly shagreen; anterior dorsum shagreen with few tubercles; posterior dorsum and throat shagreen; upper flank areolate; dorsal thigh smooth; chest weakly granular; underside of thigh granular; supernumerary tubercles present on foot. Comparative characters that distinguish the species from its congeners are provided in tables 23 and 24.

**Description of holotype:** Body moderate size (SVL 32.5mm), and moderately elongate (SVL/HW 2.5); head moderate size (HL/SVL 0.4), convex above; snout truncate in dorsal, rounded in lateral, and ventral aspects (Fig. 23 A–C) (ES/DFE 0.8, SN/IN 0.4) its length equal to horizontal diameter of eye (ES/ED 1.0); internasal space flat; canthus rostralis rounded; loreal region concave; interorbital space convex, equal to upper eyelid (IO/UEW 1.0), smaller than internasal distance (IO/IN 0.9); distance between front of eyes is half times that of the distance between back of eyes (DBE/DFE 1.9); nostrils oval, small, closer to tip of snout than to eye (SN/EN 0.5); tympanum indistinct, oval (TYH/TYW 1.2), vertical, smaller than the eye (TYH/ED 0.3), tympanum-eye distance greater than tympanum width (TAD/TYW 1.1); pineal ocellus absent; vomerine teeth present, few, small, odontophores oblique and widely separated, between choanae with an angle of  $70^{\circ}$  relative to body axis; tongue large, tip bifurcate, lanceolate, lingual papilla absent, but conical tubercles present on tongue.

Arm short (LAL/FEL 0.5, UAL/FEL 0.4) thin, lower-arm shorter than hand length (LAL/HNL 0.9), lower-arm longer

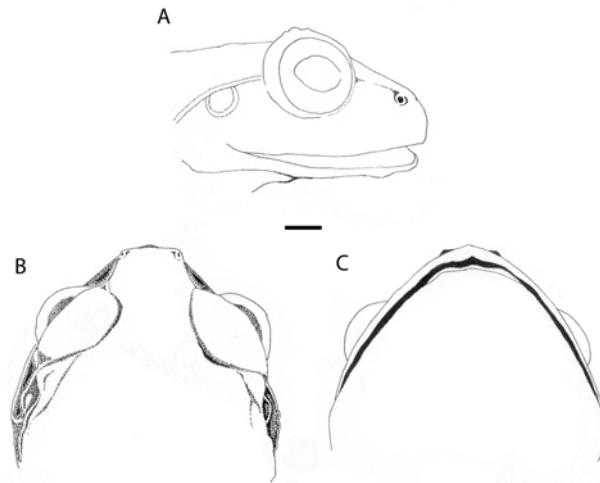


Figure 23. *Pseudophilautus sirilwifesundarai* sp. nov. holotype (NMSL 2013.08.01 NH), head; (A) lateral aspect (B) dorsal aspect (C) ventral aspect. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)

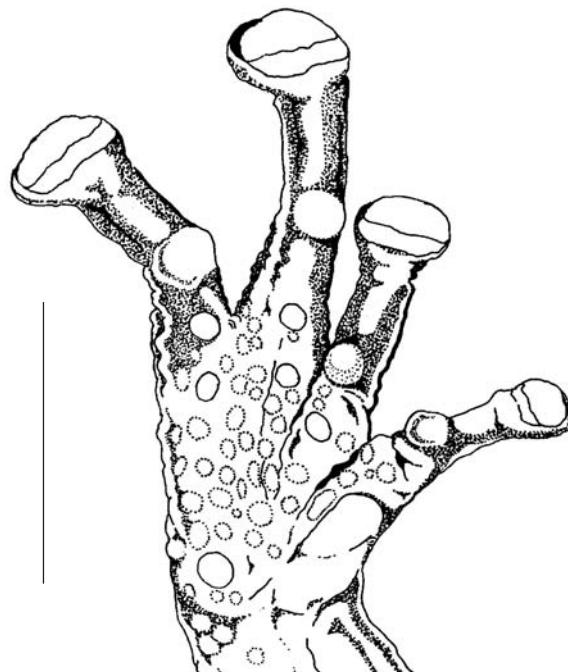
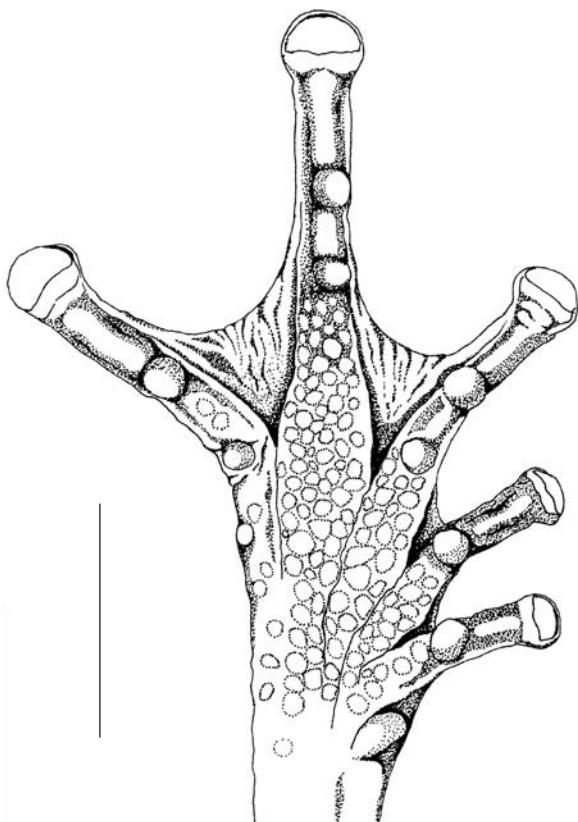


Figure 24. *Pseudophilautus sirilwifesundarai* sp. nov. holotype (NMSL 2013.08.01 NH), ventral aspect of left hand. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)

than upper arm (LAL/UAL 1.4); fingers long and thin, (Fig. 24), relative length of fingers I < II < IV < III (FL-1/FL-3 0.4, FL-2/FL-3 0.6, FL-4/FL-3 0.6) (Tables 22), tips of fingers rounded, enlarged, discs present on fingers I – II – III – IV, with distinct basal and circum marginal grooves; dermal fringe on inside of all fingers, webbing formula I2 2/3 – 2 ½ II2 – 3 III2 2/3 – 2 2/3 IV; prepollex absent; subarticular



**Figure 25.** *Pseudophilautus sirilwijesundarai* sp. nov. holotype (NMSL 2013.08.01 NH), ventral aspect of left foot. Scale bar: 5mm. (© L.J. Mendis Wickramasinghe)



**Image 40.** *Pseudophilautus sirilwijesundarai* sp. nov. holotype in life (NMSL 2013.08.01 NH).

tubercles prominent, rounded, single, all present, IV2 and III2 relatively smaller; inner palmar tubercle single, oval, indistinct, larger than outer palmar tubercle;

nuptial pads absent; outer palmar tubercle single, oval, and indistinct; supernumerary tubercles prominent on palm and all fingers; femur twice as long as the fourth toe length (FEL/TL-4 2.0); foot length longer than thigh (FOL/FEL 1.5); toes long, thin, (Fig. 25), relative length of toes I < II < V < III < IV (TL-1/TL-4 0.3, TL-2/TL-4 0.4, TL-3/TL-4 0.6, TL-5/TL-4 0.5), tips of toes rounded, discs present on all toes, with distinct basal and circum marginal grooves; webbing formula I2—2 II1 2/3—3 III1—3 IV2—1<sup>+</sup>V; lateral dermal fringe on inside of all toes and fringe along exterior edge of toe V, on metatarsal and tarsal folds absent, but a few small tubercles present similar to an undulating fringe; subarticular tubercles prominent, rounded, single, all present, IV3, relatively smaller; supernumerary tubercles prominent, on foot and all toes; inner metatarsal tubercle oval, prominent and large, its length 2/3<sup>rd</sup> in length of toe I (IML/TL-1 0.7); outer metatarsal tubercle absent.

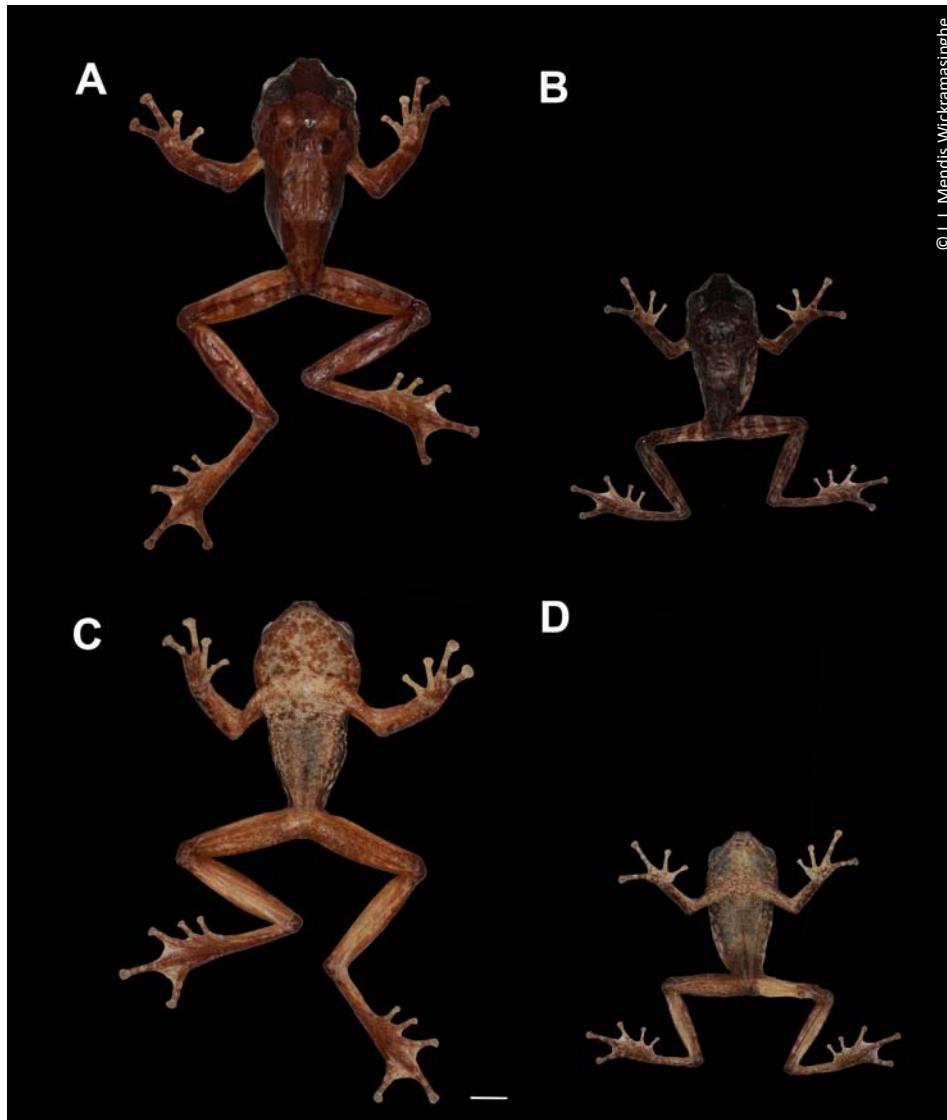
Skin of snout shagreen with prominent dermal folds; upper eyelid shagreen, a few prominent tubercles present; Interorbital area with a prominent tubercle; head laterally weakly shagreen with a few tubercles near the gape of mouth; supratympanic fold prominent; a median dermal ridge extends from tip of snout to back of the head; anterior dorsum shagreen with few tubercles, posterior dorsum shagreen; upper part of flank areolate, lower part of flank granular; upper arm weakly shagreen; forearm shagreen with few tubercles; hand weakly shagreen; inner, dorsal and outer surface of thigh smooth; leg, tarsus and foot smooth; few tubercles present at heel.

**Ventral side of body:** Throat shagreen, chest weakly granular, belly coarsely granular; upper arm and forearm weakly granular; thigh granular, leg smooth, tarsus weakly shagreen.

**Colour in life:** Dorsum dark brown with a green tinge and maroon blotches fairly symmetrically placed, snout and interorbital area maroon demarcating a triangle; lateral head maroon patch below eye, flank yellowish white blotches on maroon; limbs dorsally olive green, fore limbs, hind limbs, fingers and toes with prominent maroon cross bands; ventral side off-white with brown blotches, throat area, hands and feet dark brown (Image 40).

**Colour in alcohol:** Colour pattern remains the same with a little fading, olive green colour changes to yellow (Images 41 A,C).

**Etymology:** The species epithet *sirilwijesundarai* named after Siril Wijesundara (Director, Royal Botanical gardens, Peradeniya, Sri Lanka), in great appreciation of his service to the country. The species name is a noun in



**Image 41.** Type series of *Pseudophilautus sirilwijesundarai* sp. nov. Left to right, NMSL 2013.08.01 NH, DWC 2013.01.013. A-B dorsal aspect and C-D ventral aspect. Scale bar: 5mm.

the genitive case.

**Suggested vernacular names:** Siril Wijesundarage panduru madiya and Siril Wijesundara's Shrub Frog in Sinhala and English, respectively.

**Natural history:** The species was found at high altitudes of elevations ranging from 1600–1700 m, montane cloud forests. They were found in the canopy on trees along side mosses, from about 10m tall tree branches.



**Image 42.** *Pseudophilautus sirilwijesundarai* sp. nov. paratype in life (DWC 2013.01.013).

**Table 22.** The morphometric measurements (mm) of the type series of *Pseudophilautus sirilwejasundarai* sp. nov.

| NMSL/ DWC | Holotype      | Paratype 1 | Mean | SD  | Range     |
|-----------|---------------|------------|------|-----|-----------|
|           | 2013.08.01 NH | 2013.01.13 |      |     |           |
| DB        | 1.0           | 0.6        | 0.8  | 0.2 | 0.6–1.0   |
| DBE       | 12.4          | 8.9        | 10.7 | 1.2 | 8.9–12.4  |
| DFE       | 6.8           | 4.7        | 5.8  | 0.7 | 4.7–6.8   |
| DL        | 1.7           | 1.0        | 1.3  | 0.2 | 1.0–1.7   |
| DW        | 1.7           | 1.2        | 1.4  | 0.2 | 1.2–1.7   |
| ED        | 5.2           | 4.0        | 4.6  | 0.4 | 4.0–5.2   |
| EN        | 3.4           | 2.5        | 3.0  | 0.3 | 2.5–3.4   |
| ES        | 5.3           | 3.5        | 4.4  | 0.7 | 3.5–5.3   |
| FEL       | 18.1          | 12.3       | 15.2 | 2.1 | 12.3–18.1 |
| FL-1      | 3.5           | 2.8        | 3.1  | 0.2 | 2.8–3.5   |
| FL-2      | 4.3           | 3.3        | 3.8  | 0.4 | 3.3–4.3   |
| FL-3      | 6.8           | 5.9        | 6.4  | 0.3 | 5.9–6.8   |
| FL-4      | 5.9           | 4.8        | 5.3  | 0.4 | 4.8–5.9   |
| FOL       | 27.3          | 17.2       | 22.2 | 3.6 | 17.2–27.3 |
| GK        | 18.5          | 10.8       | 14.6 | 2.7 | 10.8–18.5 |
| HD        | 7.4           | 5.0        | 6.2  | 0.9 | 5.0–7.4   |
| HL        | 12.7          | 10.1       | 11.4 | 0.9 | 10.1–12.7 |
| HNL       | 10.9          | 8.1        | 9.5  | 1.0 | 8.1–10.9  |
| HW        | 13.1          | 9.8        | 11.5 | 1.2 | 9.8–13.1  |
| IML       | 1.8           | 0.8        | 1.3  | 0.4 | 0.8–1.8   |
| IN        | 4.9           | 2.5        | 3.7  | 0.9 | 2.5–4.9   |
| IO        | 4.4           | 2.7        | 3.5  | 0.6 | 2.7–4.4   |

| NMSL/ DWC | Holotype      | Paratype 1 | Mean | SD  | Range     |
|-----------|---------------|------------|------|-----|-----------|
|           | 2013.08.01 NH | 2013.01.13 |      |     |           |
| KT        | 18.2          | 10.6       | 14.4 | 2.7 | 10.6–18.2 |
| LAL       | 9.4           | 6.0        | 7.7  | 1.2 | 6.0–9.4   |
| MBE       | 7.4           | 4.7        | 6.0  | 0.9 | 4.7–7.4   |
| MFE       | 11.0          | 7.2        | 9.1  | 1.3 | 7.2–11.0  |
| MN        | 13.1          | 9.3        | 11.2 | 1.3 | 9.3–13.1  |
| SN        | 1.8           | 1.5        | 1.6  | 0.1 | 1.5–1.8   |
| SVL       | 32.5          | 22.3       | 27.4 | 3.6 | 22.3–32.5 |
| TAD       | 1.4           | 1.1        | 1.3  | 0.1 | 1.1–1.4   |
| TAS       | 12.1          | 7.6        | 9.9  | 1.6 | 7.6–12.1  |
| TBL       | 21.1          | 13.0       | 17.0 | 2.9 | 13.0–21.1 |
| TL-1      | 3.0           | 2.2        | 2.6  | 0.3 | 2.2–3.0   |
| TL-2      | 3.6           | 2.9        | 3.2  | 0.2 | 2.9–3.6   |
| TL-3      | 5.5           | 3.8        | 4.7  | 0.6 | 3.8–5.5   |
| TL-4      | 8.9           | 5.9        | 7.4  | 1.1 | 5.9–8.9   |
| TL-5      | 6.2           | 4.4        | 5.3  | 0.6 | 4.4–6.2   |
| TND       | 9.9           | 7.4        | 8.6  | 0.9 | 7.4–9.9   |
| TPD       | 6.3           | 4.9        | 5.6  | 0.5 | 4.9–6.3   |
| TYH       | 1.6           | 1.2        | 1.4  | 0.2 | 1.2–1.6   |
| TYW       | 1.4           | 1.0        | 1.2  | 0.1 | 1.0–1.4   |
| UAL       | 6.7           | 4.6        | 5.7  | 0.7 | 4.6–6.7   |
| UEW       | 4.4           | 2.1        | 3.3  | 0.8 | 2.1–4.4   |
| VKL       | 15.8          | 10.6       | 13.2 | 1.9 | 10.6–15.8 |

**Table 23.** Characters that differentiate *Pseudophilautus sirilwijesundarai* sp. nov. among congeners of the genus *Pseudophilautus*

| Species name                          | SVL       | Head dorsally   | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|---------------------------------------|-----------|-----------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|-------------|
| <i>P. bambaradeniyai</i> sp. nov.     | 22.3–32.5 | Convex          | Rounded          | Rounded           | Concave       | Convex             | Flat              | Present        | Absent          | Present           | Absent  | Absent      |
| <i>P. dayawansai</i> sp. nov.         | 17.3–20.2 |                 | Truncate         |                   |               |                    |                   | Absent         |                 | Absent            |         |             |
| <i>P. jagathgunawardanai</i> sp. nov. | 20.0–32.5 |                 |                  |                   |               | Concave            | Concave           | Absent         |                 |                   |         | Present     |
| <i>P. karunaratnai</i> sp. nov.       | 17–22.4   |                 | Acuminate        |                   |               |                    |                   |                |                 | Absent            |         |             |
| <i>P. newtonjayawardanei</i> sp. nov. | 16.2–19.2 |                 |                  |                   |               |                    | Concave           |                |                 |                   |         | Present     |
| <i>P. puranappu</i> sp. nov.          | 38.4      | Concave         |                  |                   |               | Concave            | Concave           | Absent         |                 |                   |         |             |
| <i>P. samarakoon</i> sp. nov.         | 33.6–51.1 | Concave         |                  |                   |               | Flat               | Concave           |                | Present         | Absent            |         | Present     |
| <i>P. sirilwijesundarai</i> sp. nov.  | 20.4–24.6 |                 | Truncate         |                   |               |                    |                   | Absent         |                 |                   | Present |             |
| <i>P. abundus</i>                     | 25.4–37.0 | Concave         | Pointed or oval  |                   |               | Flat               | Concave           |                | Present         |                   |         |             |
| <i>P. adspersus</i>                   | 33.3–41.7 | Flat            | Truncate         | Sharp             |               | Concave or flat    |                   | Absent         |                 |                   |         |             |
| <i>P. alto</i>                        | 17.0–27.5 |                 | Obtusely pointed |                   |               |                    | Concave           | Absent         |                 |                   | Present | Present     |
| <i>P. asankai</i>                     | 18.9–27.3 |                 | Obtusely pointed |                   | Flat          |                    |                   | Absent         |                 |                   |         |             |
| <i>P. auratus</i>                     | 21.7–26.4 | Flat            | Blunt            |                   | Flat          | Flat               | Concave           |                |                 |                   |         |             |
| <i>P. caeruleus</i>                   | 16.3–19.0 | Flat            | Obtusely pointed | Sharp             |               | Flat               |                   | Absent         | Present         | Absent            |         |             |
| <i>P. cavirostris</i>                 | 38.4–48.9 | Concave         | Oval             | Sharp             |               | Concave            | Concave           |                |                 |                   | Present |             |
| <i>P. cuspis</i>                      | 17.6–28.9 |                 | Sharply Pointed  | Sharp             |               |                    |                   | Absent         |                 | Absent            | Present | Present     |
| <i>P. decoris</i>                     | 18.3–23.9 | Flat            | Obtusely pointed |                   |               | Concave            |                   | Absent         | Present         |                   | Present |             |
| <i>P. dimbuliae</i>                   | 44.8      |                 | Truncate         | Sharp             |               | Flat               |                   |                |                 |                   |         |             |
| <i>P. eximius</i>                     | 35.3      | Flat            |                  | Sharp             |               | Flat               |                   | Absent         | Present         |                   |         |             |
| <i>P. extirpo</i>                     | 43.5      | Flat            | Blunt            | Sharp             |               | Concave            | Concave           | Absent         | Present         |                   |         |             |
| <i>P. femoralis</i>                   | 23.4–28.8 | Flat            | Truncate         |                   |               | Flat               | Concave           | Absent         |                 |                   |         |             |
| <i>P. fergusonianus</i>               | 26.9–44.5 | Concave or flat |                  |                   |               | Concave or flat    | Concave           |                |                 |                   |         | Present     |
| <i>P. folicola</i>                    | 23.7–29.4 | Flat            |                  | Sharp             |               | Flat               | Concave           |                |                 |                   |         |             |
| <i>P. frankenbergi</i>                | 26.7–29.3 | Flat            |                  | Sharp             |               | Flat               |                   | Absent         |                 |                   |         |             |
| <i>P. fulvus</i>                      | 33.4–46.8 |                 |                  | Sharp             |               | Flat               | Concave           |                |                 | Present           | Present |             |
| <i>P. halyi</i>                       | 27.9      | Uneven          |                  | Sharp             |               | Flat               |                   | Absent         |                 |                   |         | Present     |
| <i>P. hallidayi</i>                   | 32.9–42.9 |                 |                  |                   |               | Flat               |                   |                |                 |                   |         | Present     |

| Species name            | SVL       | Head dorsally | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|-------------------------|-----------|---------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|-------------|
| <i>P. hankeni</i>       | 18.3–21.9 |               | Pointed          |                   |               |                    | Concave           | Absent         |                 | Absent            |         |             |
| <i>P. hoffmanni</i>     | 21.2–23.4 | Flat          |                  |                   | Flat          | Flat               |                   | Absent         |                 |                   |         |             |
| <i>P. hoipolloi</i>     | 22.0–28.6 |               | Blunt            |                   | Flat          | Flat               | Concave           | Absent         |                 |                   |         |             |
| <i>P. hypomelas</i>     | 11.2–22.4 |               | Acuminate        |                   |               | Flat               |                   | Absent         |                 |                   |         |             |
| <i>P. leucorhinus</i>   | 19.8      | Flat          | Oval             | Sharp             |               | Concave            | Concave           | Absent         |                 | Absent            |         |             |
| <i>P. limbus</i>        | 25.7      | Concave       | Obtusely pointed |                   |               | Concave            | Concave           |                | Present         | Absent            | Present |             |
| <i>P. lunatus</i>       | 40.9      | Flat          | Oval             |                   |               | Concave            | Concave           |                | Present         |                   | Present |             |
| <i>P. macropus</i>      | 27.4–42.7 |               | Oval             |                   |               | Flat               |                   |                | Present         |                   |         | Present     |
| <i>P. maia</i>          | 46.6      | Concave       | Truncate         | Sharp             |               | Concave            |                   |                |                 |                   |         |             |
| <i>P. malcolmsmithi</i> | 14.9      |               | Pointed          | Sharp             |               | Flat               |                   | Absent         |                 | Absent            | Present |             |
| <i>P. microtympanum</i> | 23.9–49.0 |               | Oval             |                   |               | Flat               | Concave           |                |                 |                   |         | Present     |
| <i>P. mittermeieri</i>  | 16.3–18.4 |               | Pointed          |                   |               | Concave            | Concave           | Absent         |                 |                   | Present |             |
| <i>P. mooreorum</i>     | 29.4–35.0 | Flat          |                  |                   |               | Flat               | Concave           | Absent         |                 |                   |         |             |
| <i>P. nanus</i>         | 34.8      |               | Oval             |                   |               | Flat               | Concave           |                |                 | Absent            |         | Present     |
| <i>P. nasutus</i>       | 17.4      |               | Pointed          | Sharp             |               | Flat               | Concave           | Absent         |                 | Absent            | Present |             |
| <i>P. nemus</i>         | 20.7      |               | Obtusely pointed |                   |               | Flat               |                   | Absent         |                 | Absent            |         | present     |
| <i>P. oocularis</i>     | 23.1–33.4 | Flat          | Blunt            |                   |               | Flat               |                   |                |                 |                   |         |             |
| <i>P. oxyrhynchus</i>   | 18.6      | Flat          | Pointed          | Sharp             | Flat          | Concave            | Concave           | Absent         |                 | Absent            | Present |             |
| <i>P. papillosum</i>    | 40        |               | Truncate         | Sharp             |               | Concave            |                   |                | Present         |                   | Present | Present     |
| <i>P. pardus</i>        | 32.1      |               |                  | Indistinct        | Flat          | Flat               | Concave           | Absent         |                 | Absent            |         |             |
| <i>P. pleurotaenia</i>  | 25.6–30.3 |               | Truncate         |                   |               |                    | Concave           | Absent         |                 |                   |         |             |
| <i>P. poppiiæ</i>       | 21.3–26.0 |               |                  |                   |               | Flat               | Concave           | Absent         |                 |                   |         |             |
| <i>P. popularis</i>     | 17.7–24.7 |               |                  |                   |               | Flat               |                   | Absent         |                 | Absent            |         | Present     |
| <i>P. procax</i>        | 25.1–26.8 | Concave       | Pointed or oval  |                   |               | Flat               | Concave           |                | Present         |                   |         |             |
| <i>P. regius</i>        | 18.3–21.7 | Flat          | Oval             |                   |               | Concave            | Concave           | Absent         |                 |                   |         | Present     |
| <i>P. reticulatus</i>   | 42.5–61.1 |               | Truncate or oval | Sharp             |               |                    | Convex or concave |                | Present         |                   | Present | Present     |
| <i>P. rugatus</i>       | 17.5      |               |                  | Sharp             |               |                    | Concave           | Absent         |                 | Absent            |         |             |
| <i>P. rus</i>           | 20.6–24.1 | Flat          | Oval             |                   |               | Flat               |                   |                |                 | Absent            |         |             |

| Species name          | SVL       | Head dorsally | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Vomerine teeth | Lingual papilla | Fringe on fingers | Calcar  | Nuptial pad |
|-----------------------|-----------|---------------|------------------|-------------------|---------------|--------------------|-------------------|----------------|-----------------|-------------------|---------|-------------|
| <i>P. sarasinorum</i> | 22.6–38.1 | Flat          |                  |                   |               | Flat               | Concave           | Absent         | Present         | Absent            |         |             |
| <i>P. schmarda</i>    | 17.7–30.0 |               | Obtusely pointed | Sharp             |               |                    | Concave           | Absent         |                 |                   | Present |             |
| <i>P. schneideri</i>  | 19.9–22.8 |               | Pointed          | Sharp             | Flat          |                    |                   |                |                 | Absent            |         |             |
| <i>P. semiruber</i>   | 13.4      |               | Oval             |                   | Flat          | Concave            |                   | Absent         |                 |                   |         |             |
| <i>P. silus</i>       | 35.4–51.8 |               | Oval             | Sharp             |               | Flat               |                   |                |                 |                   | Present |             |
| <i>P. silvaticus</i>  | 24.3–31.3 |               | Oval             | Sharp             |               | Flat               |                   |                | Present         | Absent            |         |             |
| <i>P. simba</i>       | 12.6–15.6 |               | Truncate         |                   | Flat          |                    |                   | Absent         |                 | Absent            |         |             |
| <i>P. singu</i>       | 16.1–16.6 |               |                  |                   |               |                    | Concave           | Absent         | Present         | Absent            |         |             |
| <i>P. sordidus</i>    | 22.2–39.4 |               | Blunt            |                   |               |                    |                   |                | Present         | Absent            |         |             |
| <i>P. steineri</i>    | 30.4–41.6 | Flat          |                  | Sharp             |               | Flat               | Concave           |                |                 |                   | Present |             |
| <i>P. stellatus</i>   | 39.6–55.3 | Concave       |                  |                   |               | Concave            | Concave           |                |                 |                   | Present |             |
| <i>P. stictomerus</i> | 23.2–36.0 |               | Obtusely pointed |                   |               | Concave or flat    |                   |                |                 | Absent            |         | Present     |
| <i>P. stuarti</i>     | 24.2–32.4 | Flat          |                  | Sharp             |               | Flat               |                   | Absent         |                 | Absent            |         |             |
| <i>P. tanu</i>        | 13.5–13.9 |               | Obtusely pointed |                   | Flat          | Flat               |                   | Absent         |                 | Absent            |         |             |
| <i>P. temporalis</i>  | 28.4–31.0 |               |                  |                   |               | Concave            | Concave           |                |                 | Absent            |         |             |
| <i>P. variabilis</i>  | 35.7      | Flat          | Truncate         |                   |               | Flat               | Concave           | Absent         |                 |                   |         |             |
| <i>P. viridis</i>     | 27.4–36.3 |               | Blunt or rounded | Indistinct        |               | Flat               |                   | Absent         |                 |                   |         |             |
| <i>P. zal</i>         | 20.0–32.5 |               |                  |                   |               |                    | Concave           | Absent         |                 |                   | Present |             |
| <i>P. zimmeri</i>     | 31.6      |               | Blunt            | Sharp             |               | Flat               |                   |                |                 |                   | Present |             |
| <i>P. zorro</i>       | 22.9–30.1 | Concave       | Pointed          | Sharp             |               | Flat               | Concave           | Absent         |                 | Absent            | Present | Present     |

**Table 24. Characters in the skin structure that differentiate *Pseudophilautus sirilwifesundarai* sp. nov. among congeners of the genus *Pseudophilautus***

| Species name                          | Dorsal snout  | Interorbital area                                 | Side of head                                      | Anterior dorsum  | Posterior dorsum   | Upper flank                        | Throat                                      |
|---------------------------------------|---|---|---|--|--|------------------------------------|---|
| <i>P. sirilwifesundarai</i> sp. nov.  | Shagreen, with prominent dermal fold                      | A prominent tubercle present                      | Weakly shagreen                                   | Shagreen with few tubercles                                      | Shagreen   | Areolate                           | Shagreen                                    |
| <i>P. bambadeniyai</i> sp. nov.       | Smooth  | Smooth  | Smooth  | Prominent tubercles and horny spinules                           | Horny spinules   | Smooth                             | Weakly granular                             |
| <i>P. dayawansai</i> sp. nov.         | Tuberculated, a single prominent tubercle medially placed | Smooth, with a ridge across braking medially      | Tubercular  | Smooth   | Weakly tubercular  | Granular                           |   |
| <i>P. jagathgunawardanai</i> sp. nov. | Smooth  | Smooth, with two cross dermal fringes             | Smooth  | Smooth   | Smooth   | Smooth                             | Weakly granular                             |
| <i>P. karunaratnai</i> sp. nov.       | Smooth, a prominent blunt tubercle present                |   | Weakly tubercular                                 | Smooth   | Spinulate  | Weakly granular                    | Granular                                    |
| <i>P. newtonjayawardanei</i> sp. nov. | Shagreen  | Shagreen, with a prominent ridge                  |   |  |  | Shagreen                           | Granular                                    |
| <i>P. puranappu</i> sp. nov.          | Smooth, with a blunt tubercle                             | Smooth  | Smooth  |  | Few horny spinules, Prominent tubercles                          | Weakly tubercular                  | Weakly granular                             |
| <i>P. samarakoon</i> sp. nov.         | Prominent tubercle present on centre of snout             |   | Smooth  | Tubercular   | Tubercular   | Tubercular                         | Weakly granular                             |
| <i>P. abundus</i>                     | Smooth  | Smooth  | Smooth  | Horny spinules (absent in females)                               | Horny spinules (Absent in females)                               | Smooth                             | Coarsely granular                           |
| <i>P. adspersus</i>                   | Smooth except for a few scattered glandular warts         | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts                | Smooth   | Granular                           | Weakly granular                             |
| <i>P. alto</i>                        | Horny spinules in males                                   | Horny spinules in males                           | Smooth  | Horny spinules in males, warty in females                        | Horny spinules in males, warty in females                        | Horny spinules in males            | Granular                                    |
| <i>P. asankai</i>                     | Very fine, horny spinules                                 | Very fine, horny spinules                         | Very fine, horny spinules                         | Very fine, horny spinules  | Very fine, horny spinules  | Horny spinules                     | Granular                                    |
| <i>P. auratus</i>                     | Shagreen  | Shagreen  |   |  |  | Granular or smooth                 | Smooth or granular                          |
| <i>P. caeruleus</i>                   | Glandular warts and horny spinules                        | Glandular warts and horny spinules                | Glandular warts and horny spinules                | Glandular warts and horny spinules (females lack horny spinules) | Glandular warts and horny spinules (females lack horny spinules) | Glandular warts and horny spinules | Granular, glandular warts, smooth in female |
| <i>P. cavirostris</i>                 | Glandular warts   | Glandular warts                                   | Glandular warts                                   | Heavily tuberculated, glandular warts                            | Heavily tuberculated, glandular warts                            | Smooth                             | Smooth                                      |
| <i>P. cuspis</i>                      | Horny spinules  | Horny spinules                                    | Smooth  | Horny spinules with a "J"-shaped pattern of tubercles            | Horny spinules   | Smooth or with glandular warts     | Smooth                                      |
| <i>P. decoris</i>                     | Glandular warts   | Glandular warts                                   | Glandular warts                                   | Glandular warts  | Glandular warts  | Glandular warts                    | Glandular, warty, or roughly granular       |
| <i>P. dimbuliae</i>                   | Shagreen  | Shagreen  |   |  |  | Shagreen                           | Weakly granular                             |

| Species name            | Dorsal snout                                       | Interorbital area                                  | Side of head                           | Anterior dorsum                               | Posterior dorsum  | Upper flank   | Throat                    |
|-------------------------|--|--|--|---|---|---|---------------------------|
| <i>P. eximius</i>       | Smooth   | Smooth   | Smooth                                 | Smooth  | Smooth  | Smooth  | Smooth                    |
| <i>P. extirpo</i>       | Shagreen, with a few glandular warts               | Shagreen   |  |   |   | Granular  | Weakly granular           |
| <i>P. femoralis</i>     | Finely granular                                    | Finely granular                                    | Finely granular                        | Finely granular                               | Finely granular   | Finely granular   | Smooth                    |
| <i>P. fergusonianus</i> | Shagreen, males glandular warts and horny spinules | Shagreen, males glandular warts and horny spinules | Few glandular warts                    |   | Few glandular warts, male with glandular warts and horny spinules | Shagreen, males with glandular warts and horny spinules | Weakly granular           |
| <i>P. folicola</i>      | Smooth   | Smooth   |  | Smooth or granular                            | Smooth  | Granular  | Granular or smooth        |
| <i>P. frankenbergi</i>  | Shagreen   | Shagreen   | Glandular warts                        |   |   | Shagreen  | Granular                  |
| <i>P. fulvus</i>        | Shagreen   | Shagreen   |  |   |   | Shagreen  | Granular                  |
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males      | Glandular warts, with horny spinules in males      | Glandular warts                        | Glandular warts, with horny spinules in males | Glandular warts, with horny spinules in males                     | Glandular warts, with horny spinules in males           | Smooth, granular in males |
| <i>P. halyi</i>         | Shagreen with glandular warts                      | Shagreen with glandular warts                      |  |   |   | Glandular warts   | Granular                  |
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules | Glandular warts bearing horny spinules        | Glandular warts bearing horny spinules                            | Glandular warts bearing horny spinules                  | Granular                  |
| <i>P. hoffmanni</i>     | Smooth   | Smooth   | Smooth                                 | Smooth  | Smooth  | Smooth  | Granular                  |
| <i>P. hoipolloi</i>     | Smooth or shagreen                                 | Smooth or shagreen                                 |  |   |   | Smooth or granular                                      |                           |
| <i>P. hypomelas</i>     | Smooth   | Smooth   | Smooth                                 | Smooth  | Smooth  | Smooth  | Smooth                    |
| <i>P. leucorhinus</i>   | Smooth   | Smooth   | Smooth                                 | Smooth with a few scattered glandular warts   | Smooth with a few scattered glandular warts                       | Smooth with glandular warts                             | Granular, but not rough   |
| <i>P. limbus</i>        | Weakly granular                                    | Weakly granular                                    | Weakly granular                        | Weakly granular                               | Weakly granular   | Granular  | Granular                  |
| <i>P. lunatus</i>       | Smooth   | Smooth   | Smooth                                 | Smooth  | Smooth  | Glandular warts   | Smooth                    |
| <i>P. macropus</i>      | Smooth   | Smooth with a few scattered glandular warts        | Glandular warts                        |   |   | Granular with a few scattered glandular warts           | Smooth or granular        |
| <i>P. maia</i>          | Smooth   | Smooth   | Smooth                                 | Glandular warts                               | Glandular warts   | Glandular warts   | Granular                  |
| <i>P. malcolmsmithi</i> | Smooth   | Smooth   | Smooth                                 | Smooth, 'V' shaped ridge                      | Smooth  | Glandular warts   | Smooth                    |

| Species name            | Dorsal snout   | Interorbital area  | Side of head   | Anterior dorsum  | Posterior dorsum   | Upper flank  | Throat                              |
|-------------------------|--|--|--|--|--|--|-------------------------------------|
| <i>P. microtympanum</i> | Smooth or tuberculated   |  |  | Smooth above,<br>shagreen and with<br>glandular warts,<br>males with horn like<br>spinules |  | Granular   | Granular                            |
| <i>P. mittermeieri</i>  | Glandular warts  | Glandular warts  | Glandular warts                                      | Glandular warts  | Glandular warts  | Glandular warts  | Granular                            |
| <i>P. mooreorum</i>     | Horny spinules in males  | Horny spinules in males  | Horny spinules in males                              |  |  | Horny spinules in<br>males   | Granular                            |
| <i>P. nanus</i>         | Glandular warts  | Few glandular warts  | Few glandular warts                                  | Few glandular warts  | Few glandular warts  | Glandular folds  | Weakly granular                     |
| <i>P. nasutus</i>       | Glandular warts  | Glandular warts  | Glandular warts                                      | tuberculated, horn<br>like spinules  | Tuberculated, horn like<br>spinules                        | Smooth   | Granular                            |
| <i>P. nemus</i>         | Glandular warts  | Smooth   | Glandular warts                                      | Glandular warts  | Glandular warts  | Smooth   | Granular but not<br>rough           |
| <i>P. oocularis</i>     | Shagreen or with glandular<br>warts                            | Shagreen or with glandular<br>warts                            |  |  |  | Shagreen or<br>glandular warts                                       | Granular or with<br>glandular folds |
| <i>P. oxyrhynchus</i>   | Smooth   | Smooth   | Smooth   | Smooth   | Smooth   | Smooth   | Smooth                              |
| <i>P. papillosus</i>    | Glandular warts  | Glandular warts  | Glandular warts                                      | Glandular warts  | Glandular warts  | Glandular warts  | Granular                            |
| <i>P. pardus</i>        | Smooth   | Smooth   | Smooth   | Smooth   | Smooth   | Granular   | Weakly granular                     |
| <i>P. pleurotaenia</i>  | Shagreen   | Shagreen   |  |  |  | Shagreen, few<br>scattered glandular<br>warts, and horny<br>spinules | Granular                            |
| <i>P. poppiae</i>       | Horny spinules (male), finely<br>granular or shagreen (female) | Horny spinules (male), finely<br>granular or shagreen (female) |  |  |  | Horny spinules<br>(male), finely<br>granular or shagreen<br>(female) | Granular                            |
| <i>P. popularis</i>     | Glandular warts  | Smooth   | Glandular warts                                      | Horny spinules   | Horny spinules   | Horny spinules   | Granular                            |
| <i>P. procax</i>        | Smooth   | Smooth   | Smooth   | Horny spinules<br>(spinules Absent in<br>females)  | Horny spinules (spinules<br>Absent in females)             | Smooth   | Coarsely granular                   |
| <i>P. regius</i>        | Horny spinules   | Horny spinules   | Horny spinules                                       | Horny spinules   | Horny spinules   | Glandular  | Granular                            |
| <i>P. reticulatus</i>   | Shagreen with a few<br>scattered glandular warts               | Shagreen with a few<br>scattered glandular warts               |  |  |  | Shagreen with a few<br>scattered glandular<br>warts                  | Smooth or granular                  |
| <i>P. rugatus</i>       | Smooth except for a few<br>scattered glandular warts           | Smooth except for a few<br>scattered glandular warts           | Smooth except for a few<br>scattered glandular warts | Smooth except for<br>a few scattered<br>glandular warts                                    | Smooth except for a few<br>scattered glandular warts       | Glandular warts  | Weakly granular                     |
| <i>P. rus</i>           | Smooth   | Smooth   | Glandular warts                                      | Glandular warts  | Glandular warts  | Granular   | Granular                            |
| <i>P. sarasinorum</i>   | Glandular warts  | Glandular warts  | Glandular warts                                      | Glandular warts,<br>males with horny<br>spinules scattered                                 | Glandular warts, males<br>with horny spinules<br>scattered | Glandular folds  | Glandular warts                     |

| Species name          | Dorsal snout  | Interorbital area                                     | Side of head  | Anterior dorsum  | Posterior dorsum  | Upper flank   | Throat                               |
|-----------------------|---|---|---|--|---|---|--------------------------------------|
| <i>P. schmarda</i>    | Glandular warts                                       | Glandular folds, glandular warts and horny spinules   | Glandular warts                                     | Glandular folds, glandular warts and horny spinules                  | Glandular folds, glandular warts and horny spinules             | Glandular folds, glandular warts and horny spinules   | Glandular warts                      |
| <i>P. schneideri</i>  | Small tubercles with horny spinules                   | Small tubercles with horny spinules                   | Small tubercles with horny spinules                 | Small tubercles with horny spinules                                  | Small tubercles with horny spinules                             | Small tubercles with horny spinules                   | Granular                             |
| <i>P. semiruber</i>   | Smooth  | Smooth  | Smooth  | Smooth   | Smooth  | Smooth  | Smooth                               |
| <i>P. silus</i>       | Smooth  | Smooth  | Glandular warts                                     | Glandular warts  | Glandular warts   | Glandular warts                                       | Granular                             |
| <i>P. silvaticus</i>  | Glandular warts                                       | Glandular warts                                       | Glandular warts                                     | Glandular warts  | Smooth  | Glandular warts                                       | Granular in males, smooth in females |
| <i>P. simba</i>       | Smooth  | Smooth  | Glandular warts                                     | Glandular warts  | Smooth  |   | Weakly granular                      |
| <i>P. singu</i>       | Scattered, glandular tubercles                        |   | Scattered, glandular tubercles                      | Scattered, glandular tubercles                                       | Scattered, glandular tubercles                                  | Scattered, glandular tubercles                        | Granular                             |
| <i>P. sordidus</i>    | Glandular warts                                       | Glandular warts                                       | Glandular warts                                     | Glandular warts, males horny spinules scattered                      | Glandular warts, males horny spinules scattered                 | Glandular warts, with horny spinules in males         | Smooth                               |
| <i>P. steineri</i>    | Glandular warts and horny spinules                    | Glandular warts and horny spinules                    | Smooth or with glandular warts                      | Glandular warts and horny spinules, females lack horny spinules      | Glandular warts and horny spinules, females lack horny spinules | Glandular warts and horny spinules                    | Granular                             |
| <i>P. stellatus</i>   | Weakly shagreen                                       | Weakly shagreen                                       |   |  |   |   | Weakly granular                      |
| <i>P. stictomerus</i> | Smooth  | Smooth  | Smooth or with glandular warts                      | Shagreen, horny spinules in males                                    |   | Shagreen, horny spinules in males                     |                                      |
| <i>P. stuarti</i>     | Horny spinules  | Horny spinules  | Smooth  | Horny spinules, females lack horny spinules                          | Horny spinules, females lack horny spinules                     | Smooth  | Granular                             |
| <i>P. tanu</i>        | Shagreen  | Shagreen  |   | Shagreen   |   | Granular  | Granular                             |
| <i>P. temporalis</i>  | Smooth  | Smooth  | Smooth  | Smooth   | Smooth  | Smooth  | Smooth                               |
| <i>P. variabilis</i>  | Smooth  | Smooth  | Smooth  | Smooth   | Smooth  | Granular  | Granular                             |
| <i>P. viridis</i>     | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in female and immature male) | Horny spinules (smooth in females and immature males)                | Horny spinules (smooth in females and immature males)           | Horny spinules (smooth in females and immature males) | Granular                             |
| <i>P. zal</i>         | Weakly shagreen                                       | Shagreen  |   | Shagreen with glandular warts  | Weakly tubercular   | Granular  | Granular                             |
| <i>P. zimmeri</i>     | Glandular warts                                       | Glandular warts                                       | Glandular warts                                     | Glandular warts  | Glandular warts   | Granular  | Granular                             |
| <i>P. zorro</i>       | Horny spinules  | Horny spinules  | Glandular warts                                     | Horny spinules, Anterior dorsum with "I"-shaped pattern of tubercles | Horny spinules  | Glandular warts                                       | Smooth                               |

## DISCUSSION

PCA extracted 10 factors with eigenvalue more than unity. First three PCA axes explained total 61.29% of the total variation in the data with 34.92% being explained by the first component, 16.58% by the second and 9.78% by the third. PCA ordination on the first two axes (Fig. 26a) could virtually separate *Pseudophilautus newtonjayawardanei*, *P. sirilwijesundarai*, *P. bambaradeniyai* and *P. puranappu*, however the remaining species showed overlaps within the convex hulls. PCA ordination on the first three axes (Fig. 26b) could separate all the eight species. Correlation values for the variables along the first three PCA axes are provided in Fig. 27. These characters define the separation of different species from related species. For instance, variables with negative loadings on first and third principle axis and positive on the second principle component define the separation of *P. newtonjayawardanei* from other species as this species have high values for such variables.

Dendrogram depicting the similarity and differences among the species (Fig. 28) suggested that the eight species are divided into three morphometrical clusters. *Pseudophilautus newtonjayawardanei* was distinctly different from all other species and its separation was supported by high bootstrap value of 100. Out of the remaining species, the cluster comprising of *Pseudophilautus bambaradeniyai*, *P. karunarathnai*, *P. samarakoon* and *P. sirilwijesundarai* was separated from the cluster of *P. dayawansai*, *P. jagathgunawardanai* and *P. puranappu* with high value of bootstrap of 86.

Statistical analysis presented here has limited application as the number of individuals in each species is less. However, the analysis does reveal that proposed species are morphometrically distinct from each other. Most importantly, *P. newtonjayawardanei*, which is represented by a single individual, is distinctly different from all other species described in the current study. Further morphometric data of different species could be helpful in determining the morphological species boundaries among the proposed species (Appendix 3).

The conservation status of all species described here, except for *P. newtonjayawardanei* sp. nov., have been considered Critically Endangered, according to the IUCN Red List criteria, because for all species the extent of occurrence is <100km<sup>2</sup>, are recorded from single locations, and their habitats are under severe threat. *P. newtonjayawardanei* sp. nov., will have to be treated as Data Deficient as it is described based on a single specimen.

The highest point of this mountain range the Sripada

Peak, is a place of worship of all religions in the country and a place of aesthetic beauty. Millions visit this site every year during the pilgrim season which lasts for a period of six months, which is the time where a large amount of garbage gets collected, and the natural forest gets over exploited. Illegal gem mining on either sides of the river bank within the forest is another potential threat to the amphibian diversity. Tea cultivation in the surrounding areas are slowly expanding. Illegal tree felling to cultivate tea, has become a major threat in the area.

Amongst the most important findings in this region is the forest die back possibly due to pollution and/or climate change (Image 43). It has never been documented in this region before and a large area has now been effected with the natural forest cover slowly declining.

Most importantly, although these species have been described from a single locality, it must be emphasised that all these species possess quite unique morphological characters and are well distinguishable from one another. *P. newtonjayawardanei* sp. nov. as mentioned under its natural history notes is a very rare species and nothing is known about its behaviour as only two specimens have been observed by us till date. The high altitude, low temperatures, misty conditions, tall canopy dwelling habit and small size make it very difficult to locate the species. Hence, we preserved only a single specimen of the two. We have critically compared the novel species with the 17 extinct species of this genus, as several species morphologically similar have been recorded during these surveys, where further studies are ongoing to clarify their identity. The quite large number of species descriptions in this area in the recent past is due to the increased number of systematic surveys being carried out in the region, and many more species await their discoveries.

Although Peak Wilderness is part of the recently declared Central Hills World Heritage Site, and is one of the few remaining virgin forests with a continuous natural forest cover and altitudinal gradient forest influenced by different climatic zones (Image 44–45), the diversity of this area remains relatively unknown and hence under represented. The new species described here is just a glimpse of what remains to be uncovered. At the current rate of destruction of the natural habitats in the region the amphibians are at a higher risk of extinction, where they may be extirpated without ever being known to science. The novel descriptions presented here hopefully will set a basis for future conservation efforts in the region.

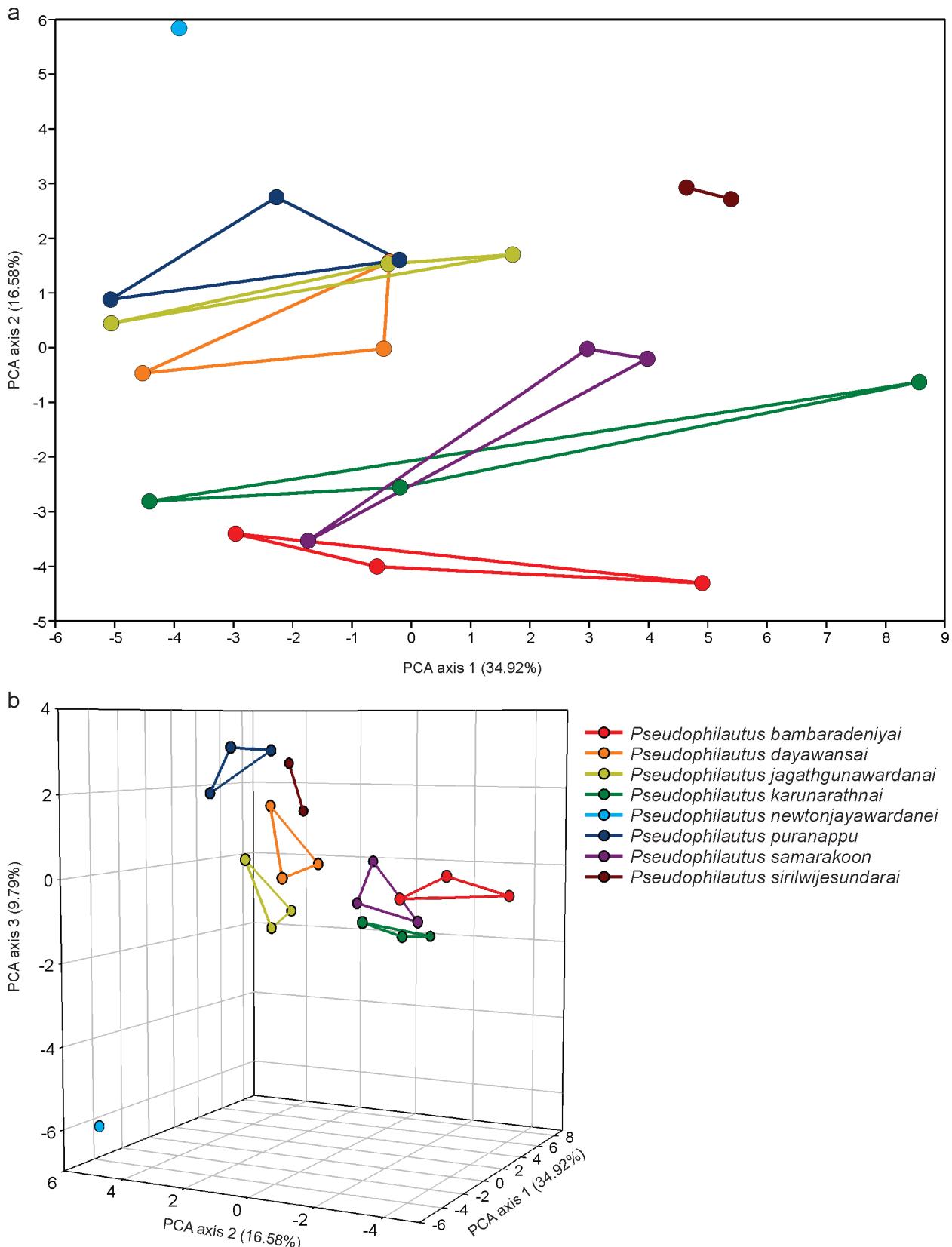


Figure 26. Principle Component Analysis (PCA) of morphometric data of eight new species of *Pseudophilautus* along the first two (a) and three (b) principle axes. Percentages in parenthesis are percent variation explained by each principle axis.

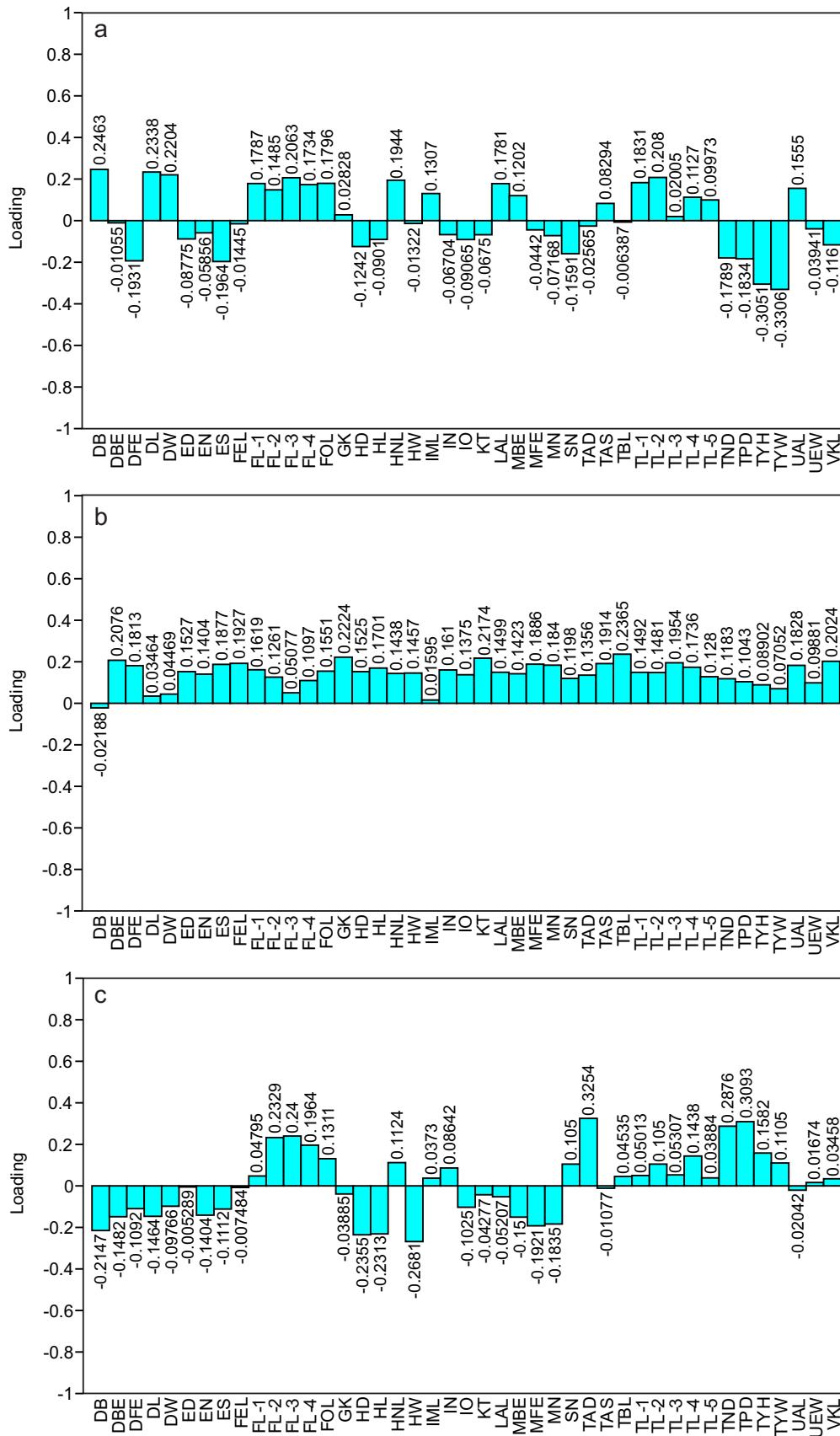


Figure 27. PCA factor loadings. Correlations for each variable are shown along the first (a), second (b) and third (c) principle component.

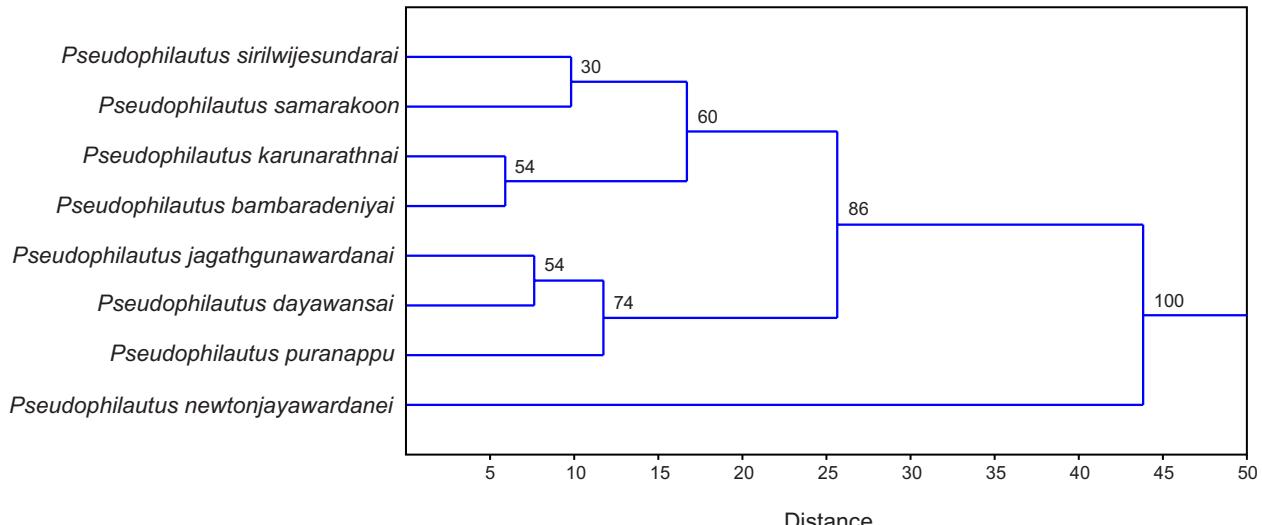


Figure 28. Dendrogram of morphometric relationship among eight new species of *Pseudophilautus*. Clustering is performed using Ward's method on Euclidian distance. Numbers along the branches are bootstrap values in percentage of 10,000 iterations.



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Image 43. The forest die back spread over a large area of the Sripada Peak, caused due to climate change/pollution.



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Image 45. Canopy cover of the sub montane forest of Peak Wilderness.



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Image 44. Panaromic view of the Sripada massif (Peak Wilderness), on a cloudy morning, captured from the Horton Plains National Park.

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**Appendix 1. A complete list of morphological characters considered to differentiate new species among congeners of the genus *Pseudophilautus*.**

| Species name                          | SVL       | Head dorsally   | Snout lateral       | Canthus rostralis | Loreal region   | Interorbital space | Internarial space | Tympanum  |
|---------------------------------------|-----------|-----------------|---------------------|-------------------|-----------------|--------------------|-------------------|---|
| <i>P. bambaradeniyai</i> sp. nov.     | 17.3–20.2 | Convex          | Truncate            | Rounded           | Concave         | Convex             | Flat              | Oval  |
| <i>P. dayawansai</i> sp. nov.         | 24.5–30.1 | Convex          | Truncate            | Rounded           | Concave         | Concave            | Concave           | Oval, rounded                                   |
| <i>P. jagathgunawardanai</i> sp. nov. | 35.8–40.4 | Convex          | Rounded             | Sharp             | Convex          | Convex             | Concave           | Oval  |
| <i>P. karunaratnai</i> sp. nov.       | 16.2–19.2 | Convex          | Rounded             | Rounded           | Concave         | Convex             | Concave           | Oval  |
| <i>P. newtonjayawardanei</i> sp. nov. | 38.4      | Concave         | Rounded             | Rounded           | Concave         | Concave            | Concave           | Indistinct                                      |
| <i>P. puranappu</i> sp. nov.          | 33.6–51.1 | Concave         | Rounded             | Rounded           | Concave         | Flat               | Concave           | Oval, vertical                                  |
| <i>P. samarakoon</i> sp. nov.         | 20.4–24.6 | Convex          | Truncate            | Rounded           | Concave         | Convex             | Flat              | Distinct, elliptical                            |
| <i>P. sirilwijesundarai</i> sp. nov.  | 22.3–32.5 | Convex          | Rounded             | Rounded           | Concave         | Convex             | Flat              | Indistinct, oval, vertical                      |
| <i>P. abundus</i>                     | 25.4–37.0 | Concave         | Pointed or oval     | Rounded           | Concave         | Flat               | Concave           | Oval, vertical                                  |
| <i>P. adspersus</i>                   | 33.3–41.7 | Flat            | Truncate            | Sharp             | Concave or flat | Concave or flat    | Flat              | Not discernible                                 |
| <i>P. alto</i>                        | 17.0–27.5 | Convex          | Obtusely pointed    | Rounded           | Concave         | Convex             | Concave           | Oval, vertical                                  |
| <i>P. asankai</i>                     | 18.9–27.3 | Convex          | Obtusely pointed    | Rounded           | Flat            | Convex             | Flat              | Not discernible or Feebly defined and subdermal |
| <i>P. auratus</i>                     | 21.7–26.4 | Flat            | Blunt               | Rounded           | Flat            | Flat               | Concave           | Half-circle or oval, horizontal                 |
| <i>P. caeruleus</i>                   | 16.3–19.0 | Flat            | Obtusely pointed    | Sharp             | Concave         | Flat               | Concave or flat   | Distinct, oval, vertically Elongate             |
| <i>P. cavirostris</i>                 | 38.4–48.9 | Concave         | Oval                | Sharp             | Concave         | Concave            | Concave           | Oval, vertical                                  |
| <i>P. cuspis</i>                      | 17.6–28.9 | Convex          | Sharply Pointed     | Sharp             | Concave or flat | Convex             | Flat              | Oval, vertical                                  |
| <i>P. decoris</i>                     | 18.3–23.9 | Flat            | Obtusely pointed    | Rounded or sharp  | Concave         | Concave            | Concave or flat   | Distinct, oval, vertical                        |
| <i>P. dimbuliae</i>                   | 44.8      | Convex          | Truncate            | Sharp             | Concave         | Flat               | Flat              | Oblique   |
| <i>P. eximius</i>                     | 35.3      | Flat            | Rounded             | Sharp             | Concave         | Flat               | Flat              | Not discernible, its outer rim Indistinct       |
| <i>P. extirpo</i>                     | 43.5      | Flat            | Blunt               | Sharp             | Concave         | Concave            | Concave           | Not discernible (subdermal)                     |
| <i>P. femoralis</i>                   | 23.4–28.8 | Flat            | Truncate            | Rounded           | Concave         | Flat               | Concave           | Absent (subdermal)                              |
| <i>P. fergusonianus</i>               | 26.9–44.5 | Concave or flat | Rounded             | Rounded           | Concave         | Concave or flat    | Concave           | Rounded or oval, oblique                        |
| <i>P. folicola</i>                    | 23.7–29.4 | Flat            | Rounded or Truncate | Sharp             | Concave         | Flat               | Concave           | Oval, oblique or vertical                       |
| <i>P. frankenbergi</i>                | 26.7–29.3 | Flat            | Rounded             | Sharp             | Concave         | Flat               | Flat              | Distinct, oval, vertically orientated           |
| <i>P. fulvus</i>                      | 33.4–46.8 | Convex          | Rounded             | Sharp             | Concave         | Flat               | Concave           | Distinct, oval, vertical                        |
| <i>P. hallidayi</i>                   | 32.9–42.9 | Convex or Flat  | Rounded             | Rounded           | Concave         | Flat               | Concave or flat   | Rather distinct, rounded                        |
| <i>P. halyi</i>                       | 27.9      | Uneven          | Rounded             | Sharp             | Concave         | Flat               | Flat              | Oval, vertical                                  |
| <i>P. hankeni</i>                     | 18.3–21.9 |                 | Pointed             | Rounded           | Concave         | Convex             | Concave           | Distinct, oval, oblique                         |

| Species name            | SVL       | Head dorsally     | Snout lateral    | Canthus rostralis | Loreal region | Interorbital space | Internarial space | Tympanum                           |
|-------------------------|-----------|-------------------|------------------|-------------------|---------------|--------------------|-------------------|------------------------------------|
| <i>P. hoffmanni</i>     | 21.2–23.4 | Flat              | Rounded          | Rounded           | Flat          | Flat               | Flat              | Distinct                           |
| <i>P. hoipolloi</i>     | 22.0–28.6 | Convex            | Blunt            | Rounded           | Flat          | Flat               | Concave           | Distinct, oval or rounded, oblique |
| <i>P. hypomelas</i>     | 11.2–22.4 | Convex            | Acuminate        | Rounded           | Concave       | Convex             | Flat              | Rounded                            |
| <i>P. leucorhinus</i>   | 19.8      | Flat              | Oval             | Sharp             | Concave       | Concave            | Concave           | Not discernible                    |
| <i>P. limbus</i>        | 25.7      | Concave           | Obtusely pointed | Rounded           | Concave       | Concave            | Concave           | Oval, vertical                     |
| <i>P. lunatus</i>       | 40.9      | Flat              | Oval             | Rounded           | Concave       | Concave            | Concave           | Oval, oblique                      |
| <i>P. macropus</i>      | 27.4–42.7 | Convex or concave | Oval             | Rounded           | Concave       | Flat               | Flat              | Oval, horizontal or vertical       |
| <i>P. maia</i>          | 46.6      | Concave           | Truncate         | Sharp             | Concave       | Concave            | Flat              | Oval, oblique                      |
| <i>P. malcolmsmithi</i> | 14.9      | Convex            | Pointed          | Sharp             | Concave       | Flat               | Flat              | Oval, vertical                     |
| <i>P. microtympanum</i> | 23.9–49.0 | Convex            | Oval             | Rounded           | Concave       | Flat               | Concave           | Discernible                        |
| <i>P. mittermeieri</i>  | 16.3–18.4 | Convex            | Pointed          | Rounded           | Concave       | Concave            | Concave           | Vertically orientated              |
| <i>P. mooreorum</i>     | 29.4–35.0 | Flat              | Rounded          | Rounded           | Concave       | Flat               | Concave           | Absent                             |
| <i>P. nanus</i>         | 34.8      | Convex            | Oval             | Rounded           | Concave       | Flat               | Concave           | Oval, oblique                      |
| <i>P. nasutus</i>       | 17.4      |                   | Pointed          | Sharp             | Concave       | Flat               | Concave           | Oval, vertical                     |
| <i>P. nemus</i>         | 20.7      | Convex            | Obtusely pointed | Rounded           | Concave       | Flat               | Flat              | Oval, vertical                     |
| <i>P. ocularis</i>      | 23.1–33.4 | Flat              | Blunt            | Rounded           | Concave       | Flat               | Concave or flat   | Oval or half circle, horizontal    |
| <i>P. oxyrhynchus</i>   | 18.6      | Flat              | Pointed          | Sharp             | Flat          | Concave            | Concave           | Oval, oblique                      |
| <i>P. papillosum</i>    | 40        | Convex            | Truncate         | Sharp             | Concave       | Concave            | Flat              | Oval, oblique                      |
| <i>P. pardus</i>        | 32.1      | Convex            | Rounded          | Indistinct        | Flat          | Flat               | Concave           | Oval, vertical                     |
| <i>P. pleurotaenia</i>  | 25.6–30.3 | Convex            | Truncate         | Rounded           | Concave       | Convex             | Concave           | Half circle, horizontal            |
| <i>P. poppiae</i>       | 21.3–26.0 | Convex            | Rounded          | Rounded           | Concave       | Flat               | Concave           | Lower tympanic rim distinct        |
| <i>P. popularis</i>     | 17.7–24.7 | Convex            | Rounded          | Rounded           | Concave       | Flat               | Flat              | Oval, oblique                      |
| <i>P. procax</i>        | 25.1–26.8 | Concave           | Pointed or oval  | Rounded           | Concave       | Flat               | Concave           | Oval, vertical                     |
| <i>P. regius</i>        | 18.3–21.7 | Flat              | Oval             | Rounded           | Concave       | Concave            | Concave           | Oval, oblique                      |
| <i>P. reticulatus</i>   | 42.5–61.1 | Convex or flat    | Truncate or oval | Sharp             | Concave       | Convex or concave  | Convex or concave | Oval (vertical or oblique)         |
| <i>P. rugatus</i>       | 17.5      | Convex            | Rounded          | Sharp             | Concave       | Convex             | Concave           | Faintly discernible                |
| <i>P. rus</i>           | 20.6–24.1 | Flat              | Oval             | Rounded           | Concave       | Flat               | Flat              | Oval, oblique                      |
| <i>P. sarasinorum</i>   | 22.6–38.1 | Flat              | Rounded          | Rounded           | Concave       | Flat               | Concave           | Oval                               |
| <i>P. schmarda</i>      | 17.7–30.0 | Convex            | Obtusely pointed | Sharp             | Concave       | Convex             | Concave           | Oval, vertical                     |
| <i>P. schneideri</i>    | 19.9–22.8 |                   | Pointed          | Sharp             | Flat          | Convex             | Flat              | Oval, vertical                     |
| <i>P. semiruber</i>     | 13.4      | Convex            | Oval             | Rounded           | Flat          | Concave            | Flat              | Oval, vertical                     |

| Species name                          | SVL            | Head dorsally  | Snout lateral    | Canthus rostralis  | Loreal region   | Interorbital space | Internarial space | Tympanum                              |
|---------------------------------------|----------------|----------------|------------------|--------------------|-----------------|--------------------|-------------------|---------------------------------------|
| <i>P. silus</i>                       | 35.4–51.8      | Convex above   | Oval             | Sharp              | Concave         | Flat               | Flat              | Oval, oblique                         |
| <i>P. sylvaticus</i>                  | 24.3–31.3      | Convex         | Oval             | Sharp              | Concave         | Flat               | Flat              | Rounded                               |
| <i>P. simba</i>                       | 12.6–15.6      | Convex         | Truncate         | Rounded            | Flat            | Convex             | Flat              | Oval, vertical                        |
| <i>P. singu</i>                       | 16.1–16.6      | Convex         | Rounded          | Rounded            | Concave         | Convex             | Concave           | Oval, oblique, its outer rim distinct |
| <i>P. sordidus</i>                    | 22.2–39.4      | Convex         | Blunt            | Rounded            | Concave         | Convex             | Flat              | Oval, oblique                         |
| <i>P. steineri</i>                    | 30.4–41.6      | Flat           | Rounded          | Sharp              | Concave         | Flat               | Concave           | Oval, oblique                         |
| <i>P. stellatus</i>                   | 39.6–55.3      | Concave        | Rounded          | Rounded            | Concave         | Concave            | Concave           | Indistinct                            |
| <i>P. stictomerus</i>                 | 23.2–36.0      | Flat or convex | Obtusely pointed | Rounded            | Concave         | Concave or flat    | Concave or flat   | Oval, vertical                        |
| <i>P. stuarti</i>                     | 24.2–32.4      | Flat           | Rounded          | Sharp              | Concave         | Flat               | Flat              | Vertically orientated, crescentic     |
| <i>P. tanu</i>                        | 13.5–13.9      | Convex         | Obtusely pointed | Rounded            | Flat            | Flat               | Flat              | Distinct, oval, vertical              |
| <i>P. temporalis</i>                  | 28.4–31.0      | Convex         | Rounded          | Rounded            | Concave         | Concave            | Concave           | Oval, vertical                        |
| <i>P. variabilis</i>                  | 35.7           | Flat           | Truncate         | Rounded            | Concave         | Flat               | Concave           | Feebly defined                        |
| <i>P. viridis</i>                     | 27.4–36.3      | Convex         | Blunt or rounded | Indistinct         | Concave         | Flat               | Flat              | Oval or vertical (rarely Indistinct)  |
| <i>P. zal</i>                         | 20.0–32.5      | Convex         | Rounded          | Rounded or sharp   | Concave         | Convex             | Concave           | Oval                                  |
| <i>P. zimmeri</i>                     | 31.6           | Convex         | Blunt            | Sharp              | Concave         | Flat               | Flat              | Oval, vertical                        |
| <i>P. zorro</i>                       | 22.9–30.1      | Concave        | Pointed          | Sharp              | Concave         | Flat               | Concave           | Oval, vertical                        |
| Species name                          | Pineal ocellus | Vomerine teeth | Lingual papilla  | Supratympanic fold | Cephalic ridges | Co-ossified skin   | Fringe on fingers | Fingers Rudimentary webbing           |
| <i>P. bambaradeniyai</i> sp. nov.     | Absent         | Absent         | Absent           | Distinct           | Absent          | Absent             | Absent            | Present                               |
| <i>P. dayawansai</i> sp. nov.         | Absent         | Absent         | Present          | Prominent          | Absent          | Absent             | Present           | Present                               |
| <i>P. jagathgunawardanai</i> sp. nov. | Absent         | Absent         | Present          | Prominent          | Absent          | Absent             | Absent            | Absent                                |
| <i>P. karunarathnai</i> sp. nov.      | Absent         | Present        | Absent           | Distinct           | Absent          | Absent             | Present           | Present                               |
| <i>P. newtonjayawardanei</i> sp. nov. | Absent         | Absent         | Absent           | Prominent          | Absent          | Absent             | Present           | Present                               |
| <i>P. puranappu</i> sp. nov.          | Absent         | Present        | Present          | Prominent          | Absent          | Absent             | Absent            | Present                               |
| <i>P. samarakoon</i> sp. nov.         | Absent         | Absent         | Absent           | Prominent          | Absent          | Absent             | Present           | Present                               |
| <i>P. sirilwisesundarai</i> sp. nov.  | Absent         | Present        | Absent           | Prominent          | Absent          | Absent             | Present           | Present                               |
| <i>P. abundus</i>                     | Absent         | Present        | Present          | Distinct           |                 |                    | Present           | Present                               |
| <i>P. adpersus</i>                    | Absent         | Absent         | Absent           | Prominent          | Absent          | Absent             | Present           |                                       |
| <i>P. alto</i>                        | Absent         | Absent         | Absent           | Distinct           | Absent          | Absent             | Present           |                                       |
| <i>P. asankai</i>                     | Absent         | Absent         | Absent           | Feebly defined     | Absent          | Absent             | Present           | Present                               |
| <i>P. auratus</i>                     | Absent         | Present        | Absent           | Distinct           | Absent          | Absent             | Present           | Fingers III and IV                    |

| Species name            | Pineal ocellus    | Vomerine teeth | Lingual papilla   | Supratympanic fold   | Cephalic ridges            | Co-ossified skin | Fringe on fingers | Fingers Rudimentary webbing |
|-------------------------|-------------------|----------------|-------------------|----------------------|----------------------------|------------------|-------------------|-----------------------------|
| <i>P. caeruleus</i>     | Absent            | Absent         | Present           | Not prominent        | Absent                     | Absent           | Absent            |                             |
| <i>P. cavirostris</i>   | Absent            | Present        | Absent            | Prominent            | Absent                     | Absent           | Present           | Present                     |
| <i>P. cuspis</i>        | Absent            | Absent         | Absent            | Distinct             | Absent                     | Absent           | Absent            |                             |
| <i>P. decoris</i>       | Absent            | Absent         | Present           | Prominent            | Absent                     | Absent           | Present           | Present                     |
| <i>P. dimbuliae</i>     | Absent            | Present        | Absent            | Prominent            | Absent                     | Absent           | Present           | Fingers 1 and 2             |
| <i>P. eximius</i>       | Absent            | Absent         | Present           | Distinct             | Absent                     | Absent           | Present           |                             |
| <i>P. extirpo</i>       | Absent            | Absent         | Present           | Prominent            | Absent                     | Absent           | Present           |                             |
| <i>P. femoralis</i>     | Absent            | Absent         | Absent            | Absent               | Absent                     | Absent           | Present           |                             |
| <i>P. fergusonianus</i> | Absent            | Present        | Absent            | Prominent            | Absent                     | Absent           | Present           | Present                     |
| <i>P. folicola</i>      | Absent or present | Present        | Absent or present | Distinct             | Two fronto-parietal ridges | Present          | Present           |                             |
| <i>P. frankenbergi</i>  | Absent            | Absent         | Absent            | Distinct             | Absent                     | Absent           | Present           | Present                     |
| <i>P. fulvus</i>        | Absent            | Present        | Absent            | Distinct             | Absent                     | Absent           | Present           | Present                     |
| <i>P. hallidayi</i>     | Absent            | Present        | Absent            | Distinct             | Absent                     | Absent           | Present           |                             |
| <i>P. halyi</i>         | Absent            | Absent         | Absent            | Prominent            | Absent                     | Absent           | Present           |                             |
| <i>P. hankeni</i>       | Absent            | Absent         | Absent            | Distinct             | Absent                     | Absent           | Absent            | Absent                      |
| <i>P. hoffmanni</i>     | Absent            | Absent         | Absent            | Indistinct           | Absent                     | Absent           | Present           |                             |
| <i>P. hoipolloi</i>     | Absent            | Absent         | Absent or present | Not prominent        | Absent                     | Absent           | Present           | Present                     |
| <i>P. hypomelas</i>     | Absent            | Absent         | Absent            | Prominent            | Absent                     | Absent           | Absent            | Present                     |
| <i>P. leucorhinus</i>   | Absent            | Absent         | Absent            | Feebly defined       | Absent                     | Absent           | Absent            |                             |
| <i>P. limbus</i>        | Absent            | Present        | Present           | Prominent            | Two fronto-parietal ridges | Present          | Absent            |                             |
| <i>P. lunatus</i>       | Absent            | Present        | Present           | Distinct             | Absent                     | Absent           | Present           |                             |
| <i>P. macropus</i>      | Absent            | Present        | Present           | Distinct             | Absent                     | Absent           | Present           | Present                     |
| <i>P. maia</i>          | Absent            | Present        | Absent            | Distinct             | Absent                     | Absent           | Present           | Present                     |
| <i>P. malcolmsmithi</i> |                   | Absent         | Absent            | Prominent            | Absent                     | Absent           | Absent            |                             |
| <i>P. microtympanum</i> | Absent            | Present        | Absent            | Distinct             | Absent                     | Absent           | Present           |                             |
| <i>P. mittermeieri</i>  | Absent            | Absent         | Absent            | Distinct             | Absent                     | Absent           | Present           |                             |
| <i>P. mooreorum</i>     | Absent            | Absent         | Absent            | Indistinct or absent | Absent                     | Absent           | Present           |                             |
| <i>P. nanus</i>         | Absent            | Present        | Absent            | Prominent            | Absent                     | Absent           | Absent            |                             |
| <i>P. nasutus</i>       | Absent            | Absent         | Absent            | Prominent            | Absent                     | Absent           | Absent            |                             |
| <i>P. nemus</i>         | Present           | Absent         | Absent            | Distinct             | Absent                     | Absent           | Absent            |                             |

| Species name           | Pineal ocellus    | Vomerine teeth | Lingual papilla | Supratympanic fold     | Cephalic ridges | Co-ossified skin | Fringe on fingers | Fingers Rudimentary webbing |
|------------------------|-------------------|----------------|-----------------|------------------------|-----------------|------------------|-------------------|-----------------------------|
| <i>P. ocularis</i>     | Absent            | Present        | Absent          | Distinct or indistinct | Absent          | Absent           | Present           | Absent or present           |
| <i>P. oxyrhynchus</i>  | Absent            | Absent         | Absent          | Distinct               | Absent          | Absent           | Absent            |                             |
| <i>P. papillosum</i>   | Absent            | Present        | Present         | Distinct               | Absent          | Absent           | Present           |                             |
| <i>P. pardus</i>       | Absent            | Absent         | Absent          | Indistinct             | Absent          | Absent           | Absent            |                             |
| <i>P. pleurotaenia</i> | Absent            | Absent         |                 | Not prominent          | Absent          | Absent           | Present           | Present                     |
| <i>P. poppii</i>       | Absent            | Absent         | Absent          | Present                | Absent          | Absent           | Present           |                             |
| <i>P. popularis</i>    | Absent            | Absent         | Absent          | Prominent              | Absent          | Absent           | Absent            |                             |
| <i>P. procax</i>       | Absent            | Present        | Present         | Distinct               |                 |                  | Present           |                             |
| <i>P. regius</i>       | Absent            | Absent         | Absent          | Distinct               | Absent          | Absent           | Present           |                             |
| <i>P. reticulatus</i>  | Absent            | Present        | Present         | Distinct or prominent  | Absent          | Absent           | Present           |                             |
| <i>P. rugatus</i>      | Absent            | Absent         | Absent          | Prominent              | Absent          | Absent           | Absent            |                             |
| <i>P. rus</i>          | Absent            | Present        | Absent          | Prominent              | Absent          | Absent           | Absent            |                             |
| <i>P. sarasinorum</i>  | Absent            | Absent         | Present         | Prominent              | Absent          | Absent           | Absent            |                             |
| <i>P. schmarda</i>     | Absent            | Absent         | Absent          | Prominent              | Absent          | Absent           | Present           | Present                     |
| <i>P. schneideri</i>   | Absent            | Present        | Absent          | Distinct               | Absent          | Absent           | Absent            | Absent                      |
| <i>P. semiruber</i>    | Absent            | Absent         | Absent          | Feebly defined         | Absent          | Absent           | Present           | Present                     |
| <i>P. silus</i>        | Absent            | Present        | Absent          | Distinct               | Absent          | Absent           | Present           |                             |
| <i>P. silvaticus</i>   | Absent            | Present        | Present         | Distinct               | Absent          | Absent           | Absent            |                             |
| <i>P. simba</i>        | Absent            | Absent         | Absent          | Distinct               | Absent          | Absent           | Absent            | Present                     |
| <i>P. singu</i>        | Absent            | Absent         | Present         | Distinct               | Absent          | Absent           | Absent            | Absent                      |
| <i>P. sordidus</i>     | Present           | Present        | Present         | Distinct               | Absent          | Absent           | Absent            |                             |
| <i>P. steineri</i>     | Absent or present | Present        | Absent          | Distinct               | Absent          | Absent           | Present           |                             |
| <i>P. stellatus</i>    | Absent            | Present        | Absent          | Absent                 | Absent          | Absent           | Present           | Present                     |
| <i>P. stictomerus</i>  | Absent            | Present        | Absent          | Distinct               | Absent          | Absent           | Absent            |                             |
| <i>P. stuarti</i>      | Absent            | Absent         | Absent          | Prominent              | Absent          | Absent           | Absent            |                             |
| <i>P. tanu</i>         | Absent            | Absent         | Absent          | Absent                 | Absent          | Absent           | Absent            | Absent                      |
| <i>P. temporalis</i>   | Present           | Present        | Absent          | Distinct               | Absent          | Absent           | Absent            |                             |
| <i>P. variabilis</i>   | Absent            | Absent         | Absent          | Distinct               | Absent          | Absent           | Present           | Present                     |
| <i>P. viridis</i>      | Absent            | Absent         | Absent          | Distinct               | Absent          | Absent           | Present           |                             |
| <i>P. zal</i>          | Absent            | Absent         | Absent          | Prominent              | Absent          | Absent           | Present           | Present                     |
| <i>P. zimmeri</i>      | Present           | Present        | Absent          | Prominent              | Absent          | Absent           | Present           |                             |

| Species name    | Pineal ocellus | Vomerine teeth | Lingual papilla | Supratympanic fold | Cephalic ridges | Co-ossified skin | Fringe on fingers | Fingers Rudimentary webbing |
|-----------------|----------------|----------------|-----------------|--------------------|-----------------|------------------|-------------------|-----------------------------|
| <i>P. zorro</i> | Absent         | Absent         | Absent          | Prominent          | Absent          | Absent           | Absent            |                             |

| Appendix 1. continued        |   |              |                            |                            |                       |                 |         |  |
|------------------------------|---|--------------|----------------------------|----------------------------|-----------------------|-----------------|---------|--|
| Species name                 | Nuptial pad                                 | Tips of toes | Webbing on toes            | Fringe on toes             | Tarsal fold           | Tarsal tubercle | Calcar  |  |
| <i>P. bambaradeniyai</i>     | Absent                                      | Oval         | Present                    | Present                    | Absent                | Present         | Absent  |  |
| <i>P. dayawansai</i>         | Absent                                      | Rounded      | Present                    | Present                    | Absent                | Present         | Present |  |
| <i>P. jagathgunawardanai</i> | Absent                                      | Rounded      | Present                    | Present                    | Absent                | Present         | Absent  |  |
| <i>P. karunarathnai</i>      | Present                                     | Rounded      | Present                    | Present                    | Absent                | Absent          | Absent  |  |
| <i>P. newtonjayawardanei</i> | Absent                                      | Rounded      | Present                    | Present                    | Absent                | Present         | Absent  |  |
| <i>P. puranappu</i>          | Present                                     | Rounded      | Present                    | Present                    | Absent                | Present         | Absent  |  |
| <i>P. samarakoon</i>         | Absent                                      | Rounded      | Present                    | Present                    | Absent                | Present         | Present |  |
| <i>P. sirilwisesundarai</i>  | Absent                                      | Rounded      | Present                    | Present                    | Absent                | Present         | Absent  |  |
| <i>P. abundus</i>            | Absent                                      | Oval         | Fully webbed               |                            | Absent                |                 | Absent  |  |
| <i>P. adspersus</i>          |   | Oval         | Medially webbed            |                            | Absent                |                 | Absent  |  |
| <i>P. alto</i>               | Present                                     | Oval         | Medially webbed            |                            | Absent                |                 | Present |  |
| <i>P. asankai</i>            | Absent                                      | Oval         | Medially webbed            |                            | Absent                |                 | Absent  |  |
| <i>P. auratus</i>            | Absent                                      | Oval         | Medially webbed            |                            | Absent                |                 | Absent  |  |
| <i>P. caeruleus</i>          | Absent                                      | Oval         | Medially webbed            |                            | Absent                |                 | Absent  |  |
| <i>P. cavirostris</i>        |   | Oval         | 1, 2, 3 and 5 fully webbed |                            | Present, tuberculated |                 | Present |  |
| <i>P. cuspis</i>             | Present                                     | Oval         | Medially webbed            |                            | Absent                |                 | Present |  |
| <i>P. decoris</i>            | Absent                                      | Oval         | Medially webbed            |                            | Present, undulating   |                 | Present |  |
| <i>P. dimbuliae</i>          |   | Oval         | Medially webbed            | On outer edge of fifth toe | Absent                |                 | Absent  |  |
| <i>P. eximius</i>            |   | Oval         | Medially webbed            |                            | Absent                |                 | Absent  |  |
| <i>P. extirpo</i>            |   | Oval         | Medially webbed            |                            | Absent                |                 | Absent  |  |
| <i>P. femoralis</i>          |   | Oval         | Medially webbed            |                            | Absent                |                 | Absent  |  |
| <i>P. fergusonianus</i>      | Present                                     | Triangular   | Medially webbed            |                            |                       |                 | Absent  |  |
| <i>P. folicola</i>           | Absent                                      | Oval         | Medially webbed            |                            | Absent                |                 | Absent  |  |
| <i>P. frankenbergi</i>       | Absent but subdermal nuptial glands Present | Oval         | Webbed                     |                            | Absent                |                 |         |  |
| <i>P. fulvus</i>             | Present                                     | Oval         | Medially webbed            |                            |                       |                 | Present |  |

| Species name            | Pineal ocellus | Vomerine teeth | Lingual papilla  | Supratympanic fold | Cephalic ridges | Co-ossified skin | Fringe on fingers | Fingers Rudimentary webbing |
|-------------------------|----------------|----------------|--|--------------------|-----------------|------------------|-------------------|-----------------------------|
| <i>P. hallidayi</i>     | Present        | Oval           | Webbed   |                    | Absent          |                  | Absent            |                             |
| <i>P. halyi</i>         | Present        | Oval           | Medially webbed  |                    | Absent          |                  | Absent            |                             |
| <i>P. hankeni</i>       | Absent         |                | Present  |                    | Present         | Present          |                   |                             |
| <i>P. hoffmanni</i>     | Absent         | Oval           | Webbed   |                    | Absent          |                  | Absent            |                             |
| <i>P. hoipolloi</i>     | Absent         | Oval           | Medially webbed  |                    | Absent          |                  | Absent            |                             |
| <i>P. hypomelas</i>     | Absent         | Oval           | Present  | Absent             | Absent          | Absent           | Absent            |                             |
| <i>P. leucorhinus</i>   |                | Oval           | Medially webbed  |                    | Absent          |                  | Absent            |                             |
| <i>P. limbus</i>        | Absent         | Oval           | Medially webbed  |                    | Absent          |                  | Present           |                             |
| <i>P. lunatus</i>       |                | Oval           | Webbed   |                    | Absent.         |                  | Present           |                             |
| <i>P. macropus</i>      | Present        | Oval           | 1, 2, 3 and 5 fully webbed                                       |                    | Absent          |                  | Absent            |                             |
| <i>P. maia</i>          |                | Oval           | Webbed   |                    | Absent          |                  | Absent            |                             |
| <i>P. malcolmsmithi</i> |                | Oval           | Medially webbed  |                    | Absent          | Present          | Present           |                             |
| <i>P. microtympanum</i> | Present        | Oval           | Medially webbed  |                    | Absent          | Absent           |                   |                             |
| <i>P. mittermeieri</i>  | Absent         | Oval           | Webbed   |                    | Present.        |                  | Present.          |                             |
| <i>P. mooreorum</i>     | Absent         | Oval           | Webbed   |                    | Absent          |                  | Absent            |                             |
| <i>P. nanus</i>         | Present        | Oval           | Medially webbed  |                    | Absent          | Absent           | Absent            |                             |
| <i>P. nasutus</i>       | Absent         | Oval           | Medially webbed  |                    |                 |                  | Present           |                             |
| <i>P. nemus</i>         | Present        | Oval           | Medially webbed  |                    | Absent          |                  | Absent            |                             |
| <i>P. ocularis</i>      | Absent         | Oval           | Medially webbed  |                    | Absent          | Present          |                   |                             |
| <i>P. oxyrhynchus</i>   |                | Oval           | Medially webbed  |                    | Absent          |                  | Present           |                             |
| <i>P. papillosum</i>    | Present        | Oval           | 2, 3 Fully webbed  |                    | Absent          |                  | Present           |                             |
| <i>P. pardus</i>        | Absent         | Oval           | Webbed   |                    | Absent          |                  | Absent            |                             |
| <i>P. pleurotaenia</i>  | Absent         | Oval           | 2, 3 and 4 Fully webbed  |                    | Absent          |                  | Absent            |                             |
| <i>P. poppiae</i>       | Absent         | Oval           | Webbed   |                    | Absent          |                  | Absent            |                             |
| <i>P. popularis</i>     | Present        | Oval           | Medially webbed  |                    | Absent          |                  | Absent            |                             |
| <i>P. procax</i>        | Absent         | Oval           | Medially webbed  |                    | Absent          |                  | Absent            |                             |
| <i>P. regius</i>        | Present        | Oval           | toe 4 webbing to penultimate subarticular tubercle on outer side |                    | Absent          |                  | Absent            |                             |
| <i>P. reticulatus</i>   | Present        | Oval           | 2, 3 and 5 Fully webbed  |                    | Absent          |                  | Present           |                             |

| Species name          | Pineal ocellus | Vomerine teeth  | Lingual papilla   | Supratympanic fold               | Cephalic ridges | Co-ossified skin | Fringe on fingers | Fingers Rudimentary webbing |
|-----------------------|----------------|-----------------|---|----------------------------------|-----------------|------------------|-------------------|-----------------------------|
| <i>P. rugatus</i>     |                | Oval            | Medially webbed   | Poorly developed fringe on toe 5 | Absent          | Absent           |                   |                             |
| <i>P. rus</i>         | Absent         | Oval            | Medially webbed   |                                  | Absent          |                  | Absent            |                             |
| <i>P. sarasinorum</i> | Absent         | Oval            | Medially or fully webbed; toes 1, 2, 3 and 5 fully webbed |                                  | Absent          |                  | Absent            |                             |
| <i>P. schmarda</i>    | Absent         | Oval            | Medially webbed   |                                  | presernt        | Present          | Present           |                             |
| <i>P. schneideri</i>  | Absent         |                 | Present   |                                  | Absent          | Absent           |                   |                             |
| <i>P. semiruber</i>   | Absent         | Oval            | Present   |                                  | Absent          | Absent           | Absent            |                             |
| <i>P. silus</i>       | Present        | Oval            | Medially webbed   |                                  | Absent          |                  | Absent            |                             |
| <i>P. silvaticus</i>  | Absent         | Oval            | Medially webbed   |                                  | Absent          |                  | Absent            |                             |
| <i>P. simba</i>       | Absent         | Oval            | Rudimentary webbing                                       |                                  | Absent          |                  | Absent            |                             |
| <i>P. singu</i>       | Absent         | Oval            | Present   |                                  | Absent          | Absent           |                   |                             |
| <i>P. sordidus</i>    | Absent         | Oval            | Medially webbed   |                                  | Absent          |                  | Absent            |                             |
| <i>P. steineri</i>    | Present        | Oval            | Webbed  |                                  | Absent          |                  | Absent            |                             |
| <i>P. stellatus</i>   |                | Rounded         | Present   | Present                          | Present         | Absent           | Present           |                             |
| <i>P. stictomerus</i> | Present        | Oval            | Medially webbed   |                                  | Absent          |                  | Absent            |                             |
| <i>P. stuarti</i>     | Absent         | Oval            | Webbed  |                                  | Absent          |                  | Absent            |                             |
| <i>P. tanu</i>        | Absent         | Oval            | Present   | Absent                           | Absent          | Absent           |                   |                             |
| <i>P. temporalis</i>  | Absent         | Oval            | Medially webbed   |                                  | Absent          |                  | Absent            |                             |
| <i>P. variabilis</i>  |                | Oval            | Medially webbed   |                                  | Absent          | Absent           |                   |                             |
| <i>P. viridis</i>     | Absent         | Oval            | Medially webbed   |                                  | Absent          |                  | Absent            |                             |
| <i>P. zal</i>         | Present        | Rounded or oval | Present   | Present                          | Absent          | Present          | Absent            |                             |
| <i>P. zimmeri</i>     | Present        | Oval            | Medially webbed   |                                  | Absent          | Present          |                   |                             |
| <i>P. zorro</i>       | Present        | Oval            | Medially webbed   |                                  | Absent          |                  | Present           |                             |

Appendix 2. A complete list of characters in the skin structure that differentiate *Pseudophilautus* species.

| Species name                          | Snout  | Interorbital area                                 | Side of head                                      | Anterior dorsum  | Posterior dorsum   | Median dermal ridge on mid-dorsum                  |
|---------------------------------------|--|---|---|--|--|--|
| <i>P. bambaradeniyai</i> sp. nov.     | Smooth   | Smooth  | Smooth  | Prominent tubercles and horny spinules                           | Horny spinules   | Absent   |
| <i>P. dayawansai</i> sp. nov.         | Tuberculated, with a single prominent tubercle medially placed | Smooth, with a ridge across braking medially      | Tubercular  | Smooth   | Weakly tubercular  | Absent   |
| <i>P. jagathgunawardanai</i> sp. nov. | Smooth   | Smooth, with two cross dermal fringes             | Smooth  | Smooth   | Smooth   | Faint dermal ridge from tip of snout to vent       |
| <i>P. karunaratnai</i> sp. nov.       | Smooth, a prominent blunt tubercle present                     | Weakly tubercular                                 | Weakly tubercular                                 | Smooth   | Spinulate  | Tip of snout to back of head                       |
| <i>P. newtonjayawardanei</i> sp. nov. | Shagreen   | Shagreen, with a prominent ridge                  | Shagreen  | Shagreen   | Shagreen   | Tip of snout to vent (Prominent till back of head) |
| <i>P. puranappu</i> sp. nov.          | Smooth, with a blunt tubercle                                  | Smooth  | Smooth  | Weakly shagreen  | Few horny spinules, Prominent tubercles                          | Tip of snout to back of head with tubercles        |
| <i>P. samarakoon</i> sp. nov.         | Prominent tubercle present on centre of snout                  | Tubercular  | Smooth  | Tubercular   | Tubercular   | Tip of snout to vent (Prominent till back of head) |
| <i>P. sirilwijesundarai</i> sp. nov.  | Shagreen, with prominent dermal fold                           | A prominent tubercle present                      | Weakly shagreen                                   | Shagreen with few tubercles                                      | Shagreen   | Tip of snout to back of head                       |
| <i>P. abundus</i>                     | Smooth   | Smooth  | Smooth  | Horny spinules (absent in females)                               | Horny spinules (Absent in females)                               |  |
| <i>P. adspersus</i>                   | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts | Smooth except for a few scattered glandular warts                | Smooth   |  |
| <i>P. alto</i>                        | Horny spinules in males  | Horny spinules in males                           | Smooth  | Horny spinules in males, warty in females                        | Horny spinules in males, warty in females                        |  |
| <i>P. asankai</i>                     | Very fine, horny spinules                                      | Very fine, horny spinules                         | Very fine, horny spinules                         | Very fine, horny spinules  | Very fine, horny spinules  |  |
| <i>P. auratus</i>                     | Shagreen   | Shagreen  | Shagreen  | Shagreen   | Shagreen   |  |
| <i>P. caeruleus</i>                   | Glandular warts and horny spinules                             | Glandular warts and horny spinules                | Glandular warts and horny spinules                | Glandular warts and horny spinules (females lack horny spinules) | Glandular warts and horny spinules (females lack horny spinules) |  |
| <i>P. cavirostris</i>                 | Glandular warts  | Glandular warts                                   | Glandular warts                                   | Heavily tuberculated, glandular warts                            | Heavily tuberculated, glandular warts                            |  |
| <i>P. cuspis</i>                      | Horny spinules   | Horny spinules                                    | Smooth  | Horny spinules with a "()" shaped pattern of tubercles           | Horny spinules   | Tip of snout to vent (narrow)                      |
| <i>P. decoris</i>                     | Glandular warts  | Glandular warts                                   | Glandular warts                                   | Glandular warts  | Glandular warts  | Heavily tuberculated                               |
| <i>P. dimbuliae</i>                   | Shagreen   | Shagreen  | Shagreen  | Shagreen   | Shagreen   |  |
| <i>P. eximus</i>                      | Smooth   | Smooth  | Smooth  | Smooth   | Smooth   |  |

| Species name            | Snout  | Interorbital area                                  | Side of head   | Anterior dorsum  | Posterior dorsum   | Median dermal ridge on mid-dorsum  |
|-------------------------|--|--|--|--|--|--|
| <i>P. extirpo</i>       | Shagreen, with a few glandular warts               | Shagreen   | Shagreen   | Shagreen, with a few glandular warts   | Shagreen, with a few glandular warts   |  |
| <i>P. femoralis</i>     | Finely granular                                    | Finely granular                                    | Finely granular  | Finely granular  | Finely granular  |  |
| <i>P. fergusonianus</i> | Shagreen, males glandular warts and horny spinules | Shagreen, males glandular warts and horny spinules | Few glandular warts                                      | Shagreen, Males glandular warts and horny spinules                             | Few glandular warts, males with glandular warts and horny spinules             |  |
| <i>P. folicola</i>      | Smooth   | Smooth   | Shagreen, smooth or with a few scattered glandular warts | Smooth or granular   | Smooth   |  |
| <i>P. frankenbergi</i>  | Shagreen   | Shagreen   | Glandular warts  | Shagreen, horny spinules scattered   | Shagreen, horny spinules scattered   |  |
| <i>P. fulvus</i>        | Shagreen   | Shagreen   | Shagreen   | Shagreen   | Shagreen   |  |
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males      | Glandular warts, with horny spinules in males      | Glandular warts  | Glandular warts, with horny spinules in males                                  | Glandular warts, with horny spinules in males                                  |  |
| <i>P. halyi</i>         | Shagreen with glandular warts                      | Shagreen with glandular warts                      | Shagreen with glandular warts                            | Shagreen with glandular warts  | Shagreen with glandular warts  | Tip of snout to vent   |
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules             | Glandular warts bearing horny spinules                   | Glandular warts bearing horny spinules   | Glandular warts bearing horny spinules   |  |
| <i>P. hoffmanni</i>     | Smooth   | Smooth   | Smooth   | Smooth   | Smooth   |  |
| <i>P. hoipolloi</i>     | Smooth or shagreen                                 | Smooth or shagreen                                 | Smooth or shagreen                                       | Smooth or shagreen   | Smooth or shagreen   |  |
| <i>P. hypomelas</i>     | Smooth   | Smooth   | Smooth   | Smooth   | Smooth   | Thin median dermal ridge on mid dorsum from Tip of snout to back of head |
| <i>P. leucorhinus</i>   | Smooth   | Smooth   | Smooth   | Smooth with a few scattered glandular warts                                    | Smooth with a few scattered glandular warts                                    |  |
| <i>P. limbus</i>        | Weakly granular                                    | Weakly granular                                    | Weakly granular  | Weakly granular  | Weakly granular  |  |
| <i>P. lunatus</i>       | Smooth   | Smooth   | Smooth   | Smooth   | Smooth   |  |
| <i>P. macropus</i>      | Smooth   | Smooth with a few scattered glandular warts        | Glandular warts  | Shagreen or smooth, with a few scattered glandular warts                       | Shagreen or smooth, with a few scattered glandular warts                       |  |
| <i>P. maia</i>          | Smooth   | Smooth   | Smooth   | Glandular warts  | Glandular warts  |  |
| <i>P. malcolmsmithi</i> | Smooth   | Smooth   | Smooth   | Smooth, 'V' shaped ridge   | Smooth   |  |
| <i>P. microtympanum</i> | Smooth or tuberculated                             | Smooth or tuberculated                             | Shagreen   | Smooth above, shagreen and with glandular warts, males with horn like spinules | Smooth above, shagreen and with glandular warts, males with horn like spinules | Side of head shagreen, males with horny spinules on dorsum               |

| Species name           | Snout  | Interorbital area  | Side of head   | Anterior dorsum  | Posterior dorsum   | Median dermal ridge on mid-dorsum            |
|------------------------|--|--|--|--|--|--|
| <i>P. mittermeieri</i> | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  |  |
| <i>P. mooreorum</i>    | Horny spinules in males  | Horny spinules in males  | Horny spinules in males  | Horny spinules in males, finely granular or shagreen in female           | Horny spinules in males, finely granular or shagreen in female     |  |
| <i>P. nanus</i>        | Glandular warts  | Few glandular warts  | Few glandular warts  | Few glandular warts  | Few glandular warts  |  |
| <i>P. nasutus</i>      | Glandular warts  | Glandular warts  | Glandular warts  | tuberculated, horn like spinules   | Tuberculated, horn like spinules                                   | Tip of snout to vent                         |
| <i>P. nemus</i>        | Glandular warts  | Smooth   | Glandular warts  | Glandular warts  | Glandular warts  |  |
| <i>P. oocularis</i>    | Shagreen or with glandular warts   | Shagreen or with glandular warts                                   |  |
| <i>P. oxyrhynchus</i>  | Smooth   | Smooth   | Smooth   | Smooth   | Smooth   |  |
| <i>P. papillosum</i>   | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  |  |
| <i>P. pardus</i>       | Smooth   | Smooth   | Smooth   | Smooth   | Smooth   |  |
| <i>P. pleurotaenia</i> | Shagreen   | Shagreen   | Shagreen   | Shagreen with a few scattered glandular warts and horny spinules (males) | Shagreen, few scattered glandular warts and horny spinules (males) |  |
| <i>P. poppiae</i>      | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female           | Horny spinules in males, finely granular or shagreen in female     | Dorsum finely granular or shagreen in female |
| <i>P. popularis</i>    | Glandular warts  | Smooth   | Glandular warts  | Horny spinules   | Horny spinules   |  |
| <i>P. procax</i>       | Smooth   | Smooth   | Smooth   | Horny spinules (spinules Absent in females)                              | Horny spinules (spinules Absent in females)                        |  |
| <i>P. regius</i>       | Horny spinules   | Horny spinules   | Horny spinules   | Horny spinules   | Horny spinules   |  |
| <i>P. reticulatus</i>  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts                  | Shagreen with a few scattered glandular warts, finely tuberculated       | Shagreen with a few scattered glandular warts, finely tuberculated | Finely tuberculated                          |
| <i>P. rugatus</i>      | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts              | Smooth except for a few scattered glandular warts                        | Smooth except for a few scattered glandular warts                  |  |
| <i>P. rus</i>          | Smooth   | Smooth   | Glandular warts  | Glandular warts  | Glandular warts  |  |
| <i>P. sarasinorum</i>  | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts, males with horny spinules scattered                     | Glandular warts, males with horny spinules scattered               |  |
| <i>P. schmarda</i>     | Glandular warts  | Glandular folds, glandular warts and horny spinules            | Glandular warts  | Glandular folds, glandular warts and horny spinules                      | Glandular folds, glandular warts and horny spinules                |  |

| Species name          | Snout   | Interorbital area                                     | Side of head  | Anterior dorsum   | Posterior dorsum  | Median dermal ridge on mid-dorsum  |
|-----------------------|---|---|---|---|---|--|
| <i>P. schneideri</i>  | Small tubercles with horny spinules                                 | Small tubercles with horny spinules                             |  |
| <i>P. semiruber</i>   | Smooth  | Smooth  | Smooth  | Smooth  | Smooth  | Thin median dermal ridge on mid dorsum from tip of snout to back of head, than to vent |
| <i>P. silus</i>       | Smooth  | Smooth  | Glandular warts                                       | Glandular warts   | Glandular warts   |  |
| <i>P. silvaticus</i>  | Glandular warts                                       | Glandular warts                                       | Glandular warts                                       | Glandular warts   | Smooth  |  |
| <i>P. simba</i>       | Smooth  | Smooth  | Glandular warts                                       | Glandular warts   | Smooth  |  |
| <i>P. singu</i>       | Scattered, glandular tubercles                        | Scattered, glandular tubercles                        | Scattered, glandular tubercles                        | Scattered, glandular tubercles                                      | Scattered, glandular tubercles                                  |  |
| <i>P. sordidus</i>    | Glandular warts                                       | Glandular warts                                       | Glandular warts                                       | Glandular warts, males horny spinules scattered                     | Glandular warts, males horny spinules scattered                 |  |
| <i>P. steineri</i>    | Glandular warts and horny spinules                    | Glandular warts and horny spinules                    | Smooth or with glandular warts                        | Glandular warts and horny spinules, females lack horny spinules     | Glandular warts and horny spinules, females lack horny spinules | Tip of snout to posterior dorsum (feebley-defined)                                     |
| <i>P. stellatus</i>   | Weakly shagreen                                       | Weakly shagreen                                       | Weakly shagreen                                       | Weakly shagreen   | Weakly shagreen   | Absent   |
| <i>P. stictomerus</i> | Smooth  | Smooth  | Smooth or with glandular warts                        | Shagreen, horny spinules in males                                   | Shagreen, horny spinules in males                               |  |
| <i>P. stuarti</i>     | Horny spinules  | Horny spinules  | Smooth  | Horny spinules, females lack horny spinules                         | Horny spinules, females lack horny spinules                     |  |
| <i>P. tanu</i>        | Shagreen  | Shagreen  | Shagreen  | Shagreen  | Shagreen  | Tip of snout to vent (Very narrow)   |
| <i>P. temporalis</i>  | Smooth  | Smooth  | Smooth  | Smooth  | Smooth  |  |
| <i>P. variabilis</i>  | Smooth  | Smooth  | Smooth  | Smooth  | Smooth  |  |
| <i>P. viridis</i>     | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males) | Horny spinules (smooth in females and immature males)               | Horny spinules (smooth in females and immature males)           |  |
| <i>P. zal</i>         | Weakly shagreen                                       | Shagreen  | Shagreen  | Weakly tubercular   | Weakly tubercular   | Present, from tip of snout to back of head ending with a large prominent tubercle      |
| <i>P. zimmeri</i>     | Glandular warts                                       | Glandular warts                                       | Glandular warts                                       | Glandular warts   | Glandular warts   |  |
| <i>P. zorro</i>       | Horny spinules  | Horny spinules  | Glandular warts                                       | Horny spinules, Anterior dorsum with ")-shaped pattern of tubercles | Horny spinules  | Tip of snout to vent (narrow)  |

| Appendix 2. continued        |                                    |                           |  |                                |  |   |
|------------------------------|------------------------------------|---------------------------|--|--------------------------------|--|---|
| Species name                 | Upper flank                        | Lower flank               | Dorsal and lateral forelimbs                                     | Dorsal thigh                   | Shank                                      | Foot  |
| <i>P. bambaradeniyai</i>     | Smooth                             | Smooth                    | Smooth   | Tuberculated                   | Smooth with few tubercles                  | Smooth  |
| <i>P. dayawansai</i>         | Granular                           | Granular                  | Shagreen   | Smooth                         | Weakly tubercular                          | Smooth  |
| <i>P. jagathgunawardanai</i> | Smooth                             | Weakly granular           | Upper arm smooth, forearm weakly tubercular                      | Weakly tubercular              | Tubercular                                 | Weakly tubercular   |
| <i>P. karunarathnai</i>      | Weakly granular                    | Granular                  | Smooth   | Smooth                         | Smooth                                     | Smooth  |
| <i>P. newtonjayawardanei</i> | Shagreen                           | Weakly granular           | Shagreen   | Shagreen                       | Shagreen                                   | Shagreen  |
| <i>P. puranappu</i>          | Weakly tubercular                  | Granular                  | Upper arm smooth, forearm weakly tubercular                      | Weakly shagreen                | Tubercular                                 | Smooth, with few tubercles on toe V   |
| <i>P. samarakoon</i>         | Tubercular                         | Granular                  | Upper arm smooth, forearm tubercular                             | Tuberculated                   | Tubercular                                 | Few tubercles   |
| <i>P. sirilwijesundarai</i>  | Areolate                           | Granular                  | Upper arm weakly shagreen, forearm shagreen with few tubercles   | Smooth                         | Smooth                                     | Smooth  |
| <i>P. abundus</i>            | Smooth                             | Granular                  | Smooth   | Smooth                         | Smooth                                     | Smooth  |
| <i>P. adspersus</i>          | Granular                           | Granular                  | Glandular warts  | Smooth                         | Smooth                                     | Granular  |
| <i>P. alto</i>               | Horny spinules in males            | Granular                  | Smooth   | Smooth                         | Smooth                                     | Smooth  |
| <i>P. asankai</i>            | Horny spinules                     | Very fine, horny spinules | Very fine, horny spinules  | Very fine, horny spinules      | Very fine, horny spinules                  | Very fine, horny spinules   |
| <i>P. auratus</i>            | Granular or smooth                 | Granular                  | Shagreen or smooth   | Smooth                         | Smooth                                     | Shagreen or smooth  |
| <i>P. caeruleus</i>          | Glandular warts and horny spinules | Granular in males         | Smooth   | Smooth                         | Smooth                                     | Smooth  |
| <i>P. cavirostris</i>        | Smooth                             | Granular                  | A tuberculated dermal fold<br>Present on outer edge of lower arm | Smooth                         | Smooth                                     | A tuberculated fringe present on posterior margin                           |
| <i>P. cuspis</i>             | Smooth or with glandular warts     | Smooth or granular        | Smooth or with glandular warts                                   | Smooth or with glandular warts | Glandular folds, scattered glandular warts | Smooth or with glandular warts  |
| <i>P. decoris</i>            | Glandular warts                    | Glandular warts           | Posterior edge of lower arm with an undulating dermal fold       | Glandular warts                | Glandular warts                            | Glandular warts, posterior edge of lower arm with an undulating dermal fold |
| <i>P. dimbuliae</i>          | Shagreen                           | Granular                  | Shagreen with small glandular warts                              | Smooth                         | Smooth                                     | Smooth  |
| <i>P. eximus</i>             | Smooth                             | Weakly granular           | Smooth   | Smooth                         | Smooth                                     | Smooth  |
| <i>P. extirpo</i>            | Granular                           | Granular                  | Shagreen, with a few glandular warts                             | Shagreen, few glandular warts  | Shagreen, few glandular warts              | Shagreen, few glandular warts   |

| Species name            | Upper flank   | Lower flank                   | Dorsal and lateral forelimbs   | Dorsal thigh                                | Shank                                   | Foot  |
|-------------------------|---|-------------------------------|--|---|---|---|
| <i>P. femoralis</i>     | Finely granular   | Granular                      | Smooth   | Smooth                                      | Horny spinules                          | Smooth  |
| <i>P. fergusonianus</i> | Shagreen, males with glandular warts and horny spinules | Granular                      | Smooth with glandular warts, posterior side of lower arm prominent glandular tubercles | Smooth with glandular warts,                | Smooth with glandular warts,            | Smooth with glandular warts, posterior side prominent glandular tubercles |
| <i>P. folicola</i>      | Granular  | Granular                      | Smooth   | Smooth                                      | Smooth                                  | Smooth  |
| <i>P. frankenbergi</i>  | Shagreen  | Granular                      | Glandular warts  | Smooth                                      | Glandular warts                         | Smooth  |
| <i>P. fulvus</i>        | Shagreen  | Granular                      | Shagreen   | Shagreen                                    | Smooth                                  | Smooth  |
| <i>P. hallidayi</i>     | Glandular warts, with horny spinules in males           | Granular                      | Glandular warts  | Glandular warts                             | Glandular warts                         | Glandular warts   |
| <i>P. halyi</i>         | Glandular warts   | Granular                      | Glandular warts  | Glandular warts                             | Glandular warts                         | Glandular warts   |
| <i>P. hankeni</i>       | Glandular warts bearing horny spinules                  | Granular                      | Glandular warts with horny spinules  | Glandular warts with horny spinules         | Glandular warts with horny spinules     | Glandular warts with horny spinules                                       |
| <i>P. hoffmanni</i>     | Smooth  | Glandular                     | Smooth   | Smooth                                      | Smooth                                  | Smooth  |
| <i>P. hoipolloi</i>     | Smooth or granular                                      | Smooth or granular            | Smooth   | Smooth                                      | Smooth                                  | Smooth  |
| <i>P. hypomelas</i>     | Smooth  | Smooth                        | Smooth   | Smooth                                      | Smooth                                  | Smooth  |
| <i>P. leucorhinus</i>   | Smooth with glandular warts                             | Granular with glandular warts | Smooth, with a few scattered glandular warts   | Smooth                                      | Smooth, few scattered glandular warts   | Smooth  |
| <i>P. limbus</i>        | Granular  | Granular                      | Granular, not rough  | Granular, not rough                         | Granular, not rough                     | Granular, not rough   |
| <i>P. lunatus</i>       | Glandular warts   | Granular                      | Smooth   | Smooth                                      | Smooth few scattered glandular warts    | Smooth, few scattered glandular warts                                     |
| <i>P. macropus</i>      | Granular with a few scattered glandular warts           | Granular                      | Shagreen with a few scattered glandular warts  | Smooth with a few scattered glandular warts | Smooth few scattered glandular warts    | Smooth, scattered glandular warts   |
| <i>P. maia</i>          | Glandular warts   | Glandular warts               | Smooth   | Smooth                                      | Smooth                                  | Smooth  |
| <i>P. malcolmsmithi</i> | Glandular warts   | Glandular warts               | Smooth, with a few scattered glandular warts   | Smooth, few scattered glandular warts       | Smooth, few scattered glandular warts   | Smooth, few scattered glandular warts                                     |
| <i>P. microtympanum</i> | Granular  | Granular                      | Shagreen, with a few scattered glandular warts   | Shagreen, few scattered glandular warts     | Shagreen, few scattered glandular warts | Shagreen, few scattered glandular warts                                   |
| <i>P. mittermeieri</i>  | Glandular warts   | Glandular warts               | Smooth   | Smooth                                      | Smooth                                  | Smooth  |
| <i>P. mooreorum</i>     | Horny spinules in males                                 | Horny spinules in males       | Shagreen   | Shagreen                                    | Shagreen                                | Shagreen  |

| Species name           | Upper flank  | Lower flank                        | Dorsal and lateral forelimbs   | Dorsal thigh   | Shank  | Foot   |
|------------------------|--|------------------------------------|--|--|--|--|
| <i>P. nanus</i>        | Glandular folds  | Granular                           | Smooth   | Smooth   | Smooth   | Smooth   |
| <i>P. nasutus</i>      | Smooth   | Granular                           | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  |
| <i>P. nemus</i>        | Smooth   | Granular                           | Glandular warts  | Smooth   | Glandular warts  | Smooth   |
| <i>P. oocularis</i>    | Shagreen or glandular warts                                    | Granular                           | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  |
| <i>P. oxyrhynchus</i>  | Smooth   | Smooth                             | Smooth   | Smooth   | Smooth   | Smooth   |
| <i>P. papillosum</i>   | Glandular warts  | Granular                           | Glandular warts  | Glandular warts  | Glandular warts  | Glandular warts  |
| <i>P. pardus</i>       | Granular   | Granular                           | Smooth   | Smooth   | Smooth   | Smooth   |
| <i>P. pleurotaenia</i> | Shagreen, few scattered glandular warts, and horny spinules    | Granular                           | Smooth   | Smooth   | Smooth   | Smooth   |
| <i>P. poppiae</i>      | Horny spinules in males, finely granular or shagreen in female | Smooth                             | Horny spinules in males, finely granular or shagreen in female           | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female | Horny spinules in males, finely granular or shagreen in female |
| <i>P. popularis</i>    | Horny spinules   | Granular                           | Glandular warts  | Glandular warts  | Glandular warts  | Smooth   |
| <i>P. procax</i>       | Smooth   | Granular                           | Smooth   | Smooth   | Smooth   | Smooth   |
| <i>P. regius</i>       | Glandular  | Glandular                          | Glandular warts  | Glandular warts  | Glandular warts  | Smooth   |
| <i>P. reticulatus</i>  | Shagreen with a few scattered glandular warts                  | Granular                           | Shagreen   | Smooth   | Smooth   | Smooth   |
| <i>P. rugatus</i>      | Glandular warts  | Granular                           | Smooth with a few scattered glandular warts                              | Smooth, few scattered glandular warts                          | Smooth, few scattered glandular warts                          | Smooth, few scattered glandular warts                          |
| <i>P. rus</i>          | Granular   | Granular                           | Smooth   | Smooth   | Smooth   | Smooth   |
| <i>P. sarasinorum</i>  | Glandular folds  | Granular in females                | Smooth   | Smooth   | Smooth   | Glandular warts  |
| <i>P. schmarda</i>     | Glandular folds, glandular warts and horny spinules            | Glandular warts and horny spinules | Glandular warts, outer edge of lower arm with a tuberculated dermal fold | Glandular warts  | Glandular warts  | Glandular warts  |
| <i>P. schneideri</i>   | Small tubercles with horny spinules                            | Granular                           | Smooth   | Smooth   | Smooth   | Smooth   |
| <i>P. semiruber</i>    | Smooth   | Smooth                             | Smooth   | Smooth   | Smooth   | Smooth   |
| <i>P. silus</i>        | Glandular warts  | Granular                           | Smooth   | Smooth   | Smooth   | Smooth   |

| Species name          | Upper flank   | Lower flank                    | Dorsal and lateral forelimbs                        | Dorsal thigh                      | Shank                             | Foot                              |
|-----------------------|---|--------------------------------|---|-----------------------------------|-----------------------------------|-----------------------------------|
| <i>P. silvaticus</i>  | Glandular warts                                       | Granular                       | Glandular warts                                     | Smooth                            | Glandular warts                   | Glandular warts                   |
| <i>P. simba</i>       |   | Granular                       | Smooth  | Smooth                            | Smooth                            | Smooth                            |
| <i>P. singu</i>       | Scattered, glandular tubercles                        | Scattered, glandular tubercles | Scattered glandular tubercles                       | Scattered glandular tubercles     | Scattered glandular tubercles     | Scattered glandular tubercles     |
| <i>P. sordidus</i>    | Glandular warts, with horny spinules in males         | Granular                       | Glandular warts                                     | Glandular warts                   | Glandular warts                   | Granular                          |
| <i>P. steineri</i>    | Glandular warts and horny spinules                    | Granular                       | Smooth with scattered glandular warts               | Smooth, scattered glandular warts | Smooth, scattered glandular warts | Smooth, scattered glandular warts |
| <i>P. stellatus</i>   | Shagreen to weakly areolate                           | Weakly areolate                | Weakly shagreen                                     | Weakly shagreen                   | Weakly shagreen                   | Weakly shagreen                   |
| <i>P. stictomerus</i> | Shagreen, horny spinules in males                     | Granular                       | Glandular warts                                     | Smooth                            | Smooth                            | Smooth                            |
| <i>P. stuarti</i>     | Smooth  | Smooth                         | Smooth  | Smooth                            | Smooth                            | Smooth                            |
| <i>P. tanu</i>        | Granular  | Granular                       | Smooth  | Smooth                            | Smooth                            | Smooth                            |
| <i>P. temporalis</i>  | Smooth  | Coarsely granular              | Smooth with a few scattered glandular warts         | Smooth                            | Smooth                            | Smooth                            |
| <i>P. variabilis</i>  | Granular  | Granular                       | Dorsal part of lower arm smooth, upper arm granular | Smooth                            | Smooth                            | Smooth                            |
| <i>P. viridis</i>     | Horny spinules (smooth in females and immature males) | Granular                       | Shagreen  | Shagreen                          | Shagreen                          | Shagreen                          |
| <i>P. zal</i>         | Granular  | Granular                       | Weakly tubercular                                   | Weakly tubercular                 | Weakly tubercular                 | Smooth                            |
| <i>P. zimmeri</i>     | Granular  | Granular                       | Glandular warts                                     | Glandular warts                   | Glandular warts                   | Glandular warts                   |
| <i>P. zorro</i>       | Glandular warts                                       | Granular                       | Smooth  | Glandular warts                   | Glandular warts                   | Smooth                            |

**Appendix 2. continued**

| Species name                 | Throat            | Chest             | Belly             | Underside of thigh | Supernumerary tubercles on palm | Supernumerary tubercles on foot |
|------------------------------|-------------------|-------------------|-------------------|--------------------|---------------------------------|---------------------------------|
| <i>P. bambaradeniyai</i>     | Weakly granular   | Weakly granular   | Granular          | Smooth             | Present                         | Present                         |
| <i>P. dayawansai</i>         | Shagreen          | Weakly granular   | Granular          | Weakly granular    | Present                         | Present                         |
| <i>P. jagathgunawardanai</i> | Weakly granular   | Weakly granular   | Granular          | Granular           | Present                         | Present                         |
| <i>P. karunaratnai</i>       | Granular          | Granular          | Granular          | Granular           | Absent                          | Absent                          |
| <i>P. newtonjayawardanei</i> | Granular          | Granular          | Granular          | Granular           | Present                         | Present                         |
| <i>P. puranappu</i>          | Weakly granular   | Weakly granular   | Granular          | Weakly granular    | Present                         | Indistinct                      |
| <i>P. samarakoon</i>         | Weakly granular   | Weakly granular   | Granular          | Weakly granular    | Present                         | Present                         |
| <i>P. sirilwisesundarai</i>  | Shagreen          | Weakly granular   | Coarsely granular | Granular           | Present                         | Present                         |
| <i>P. abundus</i>            | Coarsely granular | Coarsely granular | Granular          | Granular           | Present                         | Absent                          |

| Species name            | Throat   | Chest                                | Belly              | Underside of thigh         | Supernumerary tubercles on palm | Supernumerary tubercles on foot |
|-------------------------|--|--------------------------------------|--------------------|----------------------------|---------------------------------|---------------------------------|
| <i>P. adspersus</i>     | Weakly granular  | Coarsely granular                    | Coarsely granular  | Weakly granular            | Present                         | Present                         |
| <i>P. alto</i>          | Granular   | Granular                             | Granular           | Granular                   | Present                         | Present                         |
| <i>P. asankai</i>       | Granular   | Granular                             | Granular           | Granular                   | Absent                          | Absent                          |
| <i>P. auratus</i>       | Smooth or granular   | Smooth or granular                   | Granular           | Granular                   | Present                         | Present                         |
| <i>P. caeruleus</i>     | Granular with scattered glandular warts, smooth in females | Granular in males, smooth in females | Granular in males  | Granular                   | Present                         |                                 |
| <i>P. cavirostris</i>   | Smooth   | Smooth                               | Granular           | Granular                   | Present                         | Present                         |
| <i>P. cuspis</i>        | Smooth   | Smooth or granular                   | Granular           | Granular                   | Present                         | Absent                          |
| <i>P. decoris</i>       | Glandular, warty, or roughly granular                      | Coarsely granular                    | Coarsely granular  | Granular                   | Present                         |                                 |
| <i>P. dimbuliae</i>     | Weakly granular  | Weakly granular                      | Coarsely granular  | Coarsely granular          | Present                         | Present                         |
| <i>P. eximius</i>       | Smooth   | Weakly granular                      | Coarsely granular  | Coarsely granular          | Present                         | Present                         |
| <i>P. extirpo</i>       | Weakly granular  | Weakly granular                      | Coarsely granular. | Coarsely granular          | Present                         |                                 |
| <i>P. femoralis</i>     | Smooth   | Weakly granular                      | Coarsely granular  | Coarsely granular          | Absent                          | Absent                          |
| <i>P. fergusonianus</i> | Weakly granular  | Smooth, granular                     | Granular           | Granular                   |                                 |                                 |
| <i>P. folicola</i>      | Granular or smooth   | Granular or smooth                   | Granular           | Granular                   | Present                         | Absent                          |
| <i>P. frankenbergi</i>  | Granular   | Granular                             | Granular           | Granular                   | Absent or present               | Absent                          |
| <i>P. fulvus</i>        | Granular   | Granular                             | Granular           | Granular                   | Present                         | Present                         |
| <i>P. hallidayi</i>     | Smooth, granular in males                                  | Smooth, granular in males            | Granular           | Granular                   | Present                         | Absent                          |
| <i>P. halyi</i>         | Granular   | Granular                             | Granular           | Granular                   | Present                         | Present                         |
| <i>P. hankeni</i>       | Granular   | Granular                             | Granular           | Smooth                     | Present                         | Present                         |
| <i>P. hoffmanni</i>     | Granular   | Granular                             | Granular           | Smooth                     |                                 |                                 |
| <i>P. hoipolloi</i>     | Shagreen   | Shagreen                             | Granular           | Granular                   | Present                         | Absent                          |
| <i>P. hypomelas</i>     | Smooth   | Smooth                               | Granular           | Weakly granular            | Absent                          | Absent                          |
| <i>P. leucorhinus</i>   | Granular, but not rough                                    | Granular, but not rough              | Coarsely granular  | Coarsely granular          | Present                         |                                 |
| <i>P. limbus</i>        | Granular   | Granular                             | Granular           | Granular                   | Absent                          | Present                         |
| <i>P. lunatus</i>       | Smooth   | Smooth                               | Smooth             | Smooth                     | Present                         | Present                         |
| <i>P. macropus</i>      | Smooth or granular   | Granular                             | Granular           | Smooth, distally granular. | Present                         | Absent                          |
| <i>P. maia</i>          | Granular   | Granular                             | Granular           | Granular                   | Present                         | Absent                          |
| <i>P. malcolmsmithi</i> | Smooth   | Smooth                               | Granular           | Granular                   | Present                         | Present                         |
| <i>P. microtympanum</i> | Granular   | Granular                             | Granular           | Granular                   | Present                         | Present                         |

| Species name           | Throat                               | Chest   | Belly                            | Underside of thigh          | Supernumerary tubercles on palm   | Supernumerary tubercles on foot |
|------------------------|--------------------------------------|---|----------------------------------|-----------------------------|---|---------------------------------|
| <i>P. mittermeieri</i> | Granular                             | Granular                                      | Granular                         | Granular                    |   |                                 |
| <i>P. mooreorum</i>    | Granular                             | Granular                                      | Granular                         | Granular                    | Absent  | Absent                          |
| <i>P. nanus</i>        | Weakly granular                      | Weakly granular                               | Coarsely granular                | Smooth                      | Present   | Present                         |
| <i>P. nasutus</i>      | Granular                             | Granular                                      | Granular                         | Granular                    | Present   | Present                         |
| <i>P. nemus</i>        | Granular but not rough               | Coarsely granular                             | Coarsely granular                | Granular                    | Present   | Absent                          |
| <i>P. oocularis</i>    | Granular or with glandular folds     | Granular or with glandular folds              | Granular or with glandular folds | Granular or glandular folds | Present   |                                 |
| <i>P. oxyrhynchus</i>  | Smooth                               | Smooth  | Granular                         | Smooth                      |   |                                 |
| <i>P. papillosum</i>   | Granular                             | Granular                                      | Granular                         | Granular                    | Present   |                                 |
| <i>P. pardus</i>       | Weakly granular                      | Coarsely granular                             | Coarsely granular                | Coarsely granular           |   |                                 |
| <i>P. pleurotaenia</i> | Granular                             | Granular                                      | Granular                         | Granular                    | Present   |                                 |
| <i>P. poppiae</i>      | Granular                             | Granular                                      | Granular                         | Smooth                      | Absent  | Absent                          |
| <i>P. popularis</i>    | Granular                             | Granular                                      | Granular                         | Granular                    | Present   | Present                         |
| <i>P. procax</i>       | Coarsely granular                    | Coarsely granular                             | Granular                         | Granular                    | Present   | Absent                          |
| <i>P. regius</i>       | Granular                             | Granular                                      | Granular                         | Granular                    | Present   | Present                         |
| <i>P. reticulatus</i>  | Smooth or granular                   | Smooth or granular                            | Granular                         | Granular                    | Present, some mature individuals with a smooth palm, some with a granulated |                                 |
| <i>P. rugatus</i>      | Weakly granular                      | Smooth except for mid-area, which is granular | Coarsely granular                | Coarsely granular           | Present   | Present                         |
| <i>P. rus</i>          | Granular                             | Granular                                      | Granular                         | Granular                    | Present   |                                 |
| <i>P. sarasinorum</i>  | Glandular warts                      | Smooth  | Granular                         | Smooth                      | Present   |                                 |
| <i>P. schmarda</i>     | Glandular warts                      | Granular                                      | Granular                         | Granular                    | Present   | Present                         |
| <i>P. schneideri</i>   | Granular                             | Granular                                      | Granular                         | Smooth                      | Absent  | Present                         |
| <i>P. semiruber</i>    | Smooth                               | Smooth  | Smooth                           | Smooth                      | Present   | Present                         |
| <i>P. silus</i>        | Granular                             | Granular                                      | Granular                         | Granular                    | Present   | Present                         |
| <i>P. silvaticus</i>   | Granular in males, smooth in females | Granular in males, smooth in females          | Granular in males                | Granular                    | Present   |                                 |
| <i>P. simba</i>        | Weakly granular                      | Weakly granular                               | Coarsely granular                | Coarsely granular           | Present   |                                 |
| <i>P. singu</i>        | Granular                             | Granular                                      | Granular                         | Smooth                      | Present   | Present                         |
| <i>P. sordidus</i>     | Smooth                               | Smooth  | Granular                         | Granular                    | Present   |                                 |
| <i>P. steineri</i>     | Granular                             | Granular                                      | Granular                         | Granular                    | Present   | Present                         |
| <i>P. stellatus</i>    | Weakly granular                      | Weakly granular                               | Granular                         | Granular                    | Present   | Present                         |

| Species name          | Throat             | Chest              | Belly             | Underside of thigh | Supernumerary tubercles on palm | Supernumerary tubercles on foot |
|-----------------------|--------------------|--------------------|-------------------|--------------------|---------------------------------|---------------------------------|
| <i>P. stictomerus</i> | Smooth or shagreen | Smooth or shagreen | Granular          | Granular           | Present                         |                                 |
| <i>P. stuarti</i>     | Granular           | Granular           | Granular          | Granular           | Present                         | Present                         |
| <i>P. tanu</i>        | Granular           | Granular           | Granular          | Granular           | Fingers I–III and on palm       | Present on toes and on foot     |
| <i>P. temporalis</i>  | Smooth             | Smooth             | Coarsely granular | Weakly granular    | Present                         | Present                         |
| <i>P. variabilis</i>  | Granular           | Granular           | Granular          | Granular           | Present                         | Present                         |
| <i>P. viridis</i>     | Granular           | Granular           | Granular          | Granular           | Present                         |                                 |
| <i>P. zal</i>         | Granular           | Granular           | Granular          | Granular           | Present                         | Present                         |
| <i>P. zimmeri</i>     | Granular           | Granular           | Granular          | Granular           | Present                         |                                 |
| <i>P. zorro</i>       | Smooth             | Mid chest smooth   | Granular          | Smooth             | Present                         | Present                         |

### Appendix 3. Analysis of morphometric data

Morphometric data of both males and females was considered for statistical analysis to understand the morphometric difference among the individuals of 8 new species of *Pseudophilautus*. To account for the size difference among individuals, all the morphometric characters were taken as %SVL. Principle Component Analysis (PCA) was performed on the correlation matrix between 25 variables using the software PAST (Hammer et al. 2001). Dendrogram showing the relationship between different species was plotted using mean values of morphometric data for each species using Euclidian distances and Ward's method for clustering in PAST.

PCA extracted 10 factors with eigenvalue more than unity. First three PCA axes explained total 61.29% of the total variation in the data with 34.92% being explained by the first component, 16.58% by the second and 9.78% by the third. PCA ordination on the first two axes (Fig. 26a) could virtually separate *Pseudophilautus newtonjayawardanei*, *P. sirilwisesundarai*, *Pseudophilautus bambaradeniyai* and *P. puranappu*, however the remaining species showed overlaps within the convex hulls. PCA ordination on the first three axes (Fig. 26b) could separate all the eight species. Correlation values for the variables along the first three PCA axes are provided in Fig. 27. These characters define the separation of different species from related species. For instance, variables with negative loadings on first and third principle axis and positive on the second principle component define the separation of *P. newtonjayawardanei* from other species as this species have high values for such variables.

Dendrogram depicting the similarity and differences among the species (Fig. 28) suggested that the eight species are divided into three morphometrical clusters. *Pseudophilautus newtonjayawardanei* was distinctly different from all other species and its separation was supported by high bootstrap value of 100. Out of the remaining species, the cluster comprising of *Pseudophilautus bambaradeniyai*, *P. karunaratnai*, *P. samarakoon* and *P. sirilwisesundarai* was separated from the cluster of *P. dayawansai*, *P. jagathgunawardanai* and *P. puranappu* with high value of bootstrap of 86.

Statistical analysis presented here has limited application as the number of individuals in each species is less. However, the analysis does reveal that proposed species are morphometrically distinct from each other. Most importantly, *P. newtonjayawardanei*, which is represented by a single individual, is distinctly different from all other species described in the current study. Further morphometric data of different species could be helpful in determining the morphological species boundaries among the proposed species.

### Appendix 4. Material examined

*Pseudophilautus abundus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3006; Labugama Forest Reserve, Labugama, elevation 78m (06°51'N & 80°10'E); Paratypes: WHT 2302, 2303, 3457, 3459, 3494, 3496; Dediyagala Forest Reserve, Akurella, 150m (06°10'N & 80°26'E); WHT 1711 3455, 3456, 3495; Kanneliya (Galle), 150m (06°15'N & 80°20'E).

*Pseudophilautus adspersus* (Günther, 1872). Holotype: BMNH 1947.2.6.23, Ceylon (Sri Lanka).

*Pseudophilautus alto* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 2721; Paratypes: WHT 2723, 2718, 2719, 2720; 2722, 2724; Horton Plains National Park, 2135m (06°46'N & 80°47'E).

*Pseudophilautus asankai* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3507; Paratypes: WHT 3504, 3505, 3506, 5425; Agra Arboretum, Torrington Estate, near Agarapatana, 1665m (06°50'36"N & 80°40'40"E); WHT 2100, Moray Estate, Rajamally, 1370m (06°48'N & 80°31'E); WHT 5472, Dayagama Estate, 3rd division, Dayagama, 1830m (06°50'N & 80°40'E).

*Pseudophilautus auratus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 2356; Paratypes: WHT 2357, 2375, 2433, 2782; Morningside Forest Reserve (near Rakwana), 1060m (06°24'N & 80°38'E); WHT 3282, Handapan Ella Plains (near Rakwana), 1270m (06°26'N & 80°36'E); WHT 3298, Sinharaja World Heritage Site (near Kudawa), 513m (06°25'N & 080°25' E).

*Pseudophilautus caeruleus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 2514; Paratypes: WHT 2511, 2512, 2513; Bogawantalawa–Balangoda road (near Udugama), 810m (06°44'N & 80°41'E); WHT 2101A; 2101B, Moray Estate, Rajamally, 1370 m (06°48'N & 80°31'E).

*Pseudophilautus cavirostris* (Günther, 1869). Holotype: BMNH 1947.2.7.83, Southern Ceylon (Southern Sri Lanka); WHT 1294, Haycock (Hiniduma, Galle), 660m (06°20'N & 80°18'E); WHT 3299; 3300, Sinharaja World Heritage Site, Weddagala, 513m (06°25'N & 80°25'E); WHT 3389, Kitulgala, 200m (07°00'N & 80°24'E); WHT 2318; Kosmulla near Neluwa, 450m (06°23'N & 80°23'E); WHT 2046; 2425, Pathanegala (Knuckles), 1,000m (07°33'N & 80°44'E); WHT 2045; Kadugannawa, 450m (07°15'N & 80°30'E); WHT 3483; Pussellawe, 986m (07°00'N & 80°54'E).

*Pseudophilautus cuspis* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 1177(e); Paratypes: WHT 1177(a), 1177(b), 1177(c), 1177(d), 1177(f), 1177(g), 1177(h), 1177(i), 1177(j), 1177(k), Koskula (near Panapola), 460m (06°25'N & 80°27'E).

*Pseudophilautus decoris* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: mature female, 23.9mm SVL, WHT 2358; Paratypes: WHT 3194, 3257, 3258, 3265, 3266, 3267, 3268, 3269, 3271, 3270, 3272; Morningside Forest Reserve (near Rakwana), 1060m (06°24'N & 80°38'E).

*Pseudophilautus femoralis* (Günther, 1864). Holotype: 1947.2.26.89, Ceylon (Sri Lanka); WHT 2701; 2702, 2703, 2704, 2705, 2706, 2707, 3540, 3537, 3538, 3539, 2478, 2479; 07.vi.1999, Horton Plains National Park, 2135m (06°46'N & 80°47'E).

*Pseudophilautus fergusonianus* (Ahl, 1927). Holotype: BMNH 1947.2.27.61, Ceylon (Sri Lanka); WHT 731, 2233; Kumaradola, Monaragala, 305m (06°53'N & 81°22'E); WHT 1012, Kitulhela (near Moragahapitiya), Monaragala, 520m (07°20'N & 81°28'E); WHT 2400, 2401; Sera Ella (near Pottotawela), Knuckles, 460m (07°35'N & 80°45'E); WHT 2038, 2039, 2040, Puwakpitiya (near Laggala), Knuckles, 450m (07°34'N & 80°45'E); WHT 3360, Deniyaya, 460m (06°21'N & 80°34'E); WHT 3361, 3362, 3363, 3364, 3365; Pitadeniya (near Watugala), 320m (06°22'N & 80°28'E) WHT 3168, 3177, 3195; Gannoruwa Forest reserve, Kandy, 684m (07°17'N & 80°35'E); WHT 3178, 3179, 27, 3180, 3181, 3182; Puwakpitiya, Knuckles, 414m (07°34'N & 80°44'E); WHT 3229, Hantana, Kandy, 600m (07°15'N & 80°37'E); WHT 3380, WHT 3381; NMSL 2006.64.1, Medapitiya, Wasgamuwa.

*Pseudophilautus folicola* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: mature female, 29.4mm SVL, WHT 2645; Paratypes:

- WHT 2646, 2647, 2649, 2650, 2651, 2652; Kottawa (Galle), 60m (06°06'N & 80°20'E).
- Pseudophilautus frankenbergi* (Meegaskumbura & Manamendra-Arachchi, 2005). Holotype: WHT 2554; Paratypes: WHT 2551, 2552, 2555, 2556; Namunukula Peak, 1980m (06°56'N & 81°07'E); WHT 2726, 2727, 2728; Horton Plains National Park, 2135m (06°46'N & 81°07'E).
- Pseudophilautus fulvus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 2949; Paratypes: WHT 2948, Laggala (Knuckles), 1220m (07°33'N & 80°44'E); WHT 3112, 3114, 3463, Moussakanda, Gammaduwa, Knuckles, 915m (07°34'N & 80°42'E); WHT 3121; Puwakpitiya (near Laggala), Knuckles, 450m (07°34'N & 80°45'E).
- Pseudophilautus hallidayi* (Meegaskumbura & Manamendra-Arachchi, 2005). Holotype: WHT 3575; Paratypes: WHT 3573, 3576, 3577; Hanthana range, Kandy, 510–800 m (07°15'N & 80°34'E); WHT 6072, Toncombe Estate, Namunukula, 1320m (06°52'N & 81°07'E).
- Pseudophilautus halyi* (Boulenger, 1904). Holotype: BMNH 1947.2.6.16, Pattipola (6°51'N & 80°50'E, 1,890m), Ceylon (Sri Lanka).
- Pseudophilautus hoffmanni* (Meegaskumbura & Manamendra-Arachchi, 2005). Holotype: WHT 6120; Paratypes: WHT 3222, 3223, 3542; Corbett's Gap (Knuckles Hills), 1245m (07°22'N & 80°51'E).
- Pseudophilautus hoipolloi* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 2673; Paratypes: WHT 2674, 2675, Haycock (Hiniduma), 660m (06°20'N & 80°18'E); WHT 2405, 2406, 2407, 2408, 2409; Kahaduwatta (Galle), 15m (06°04'N & 80°12'E); WHT 3196, 3197, 3198, 3199, 3200; Udugama (Galle), 30m (06°14'N & 80°20'E); WHT 3201, Kodagoda (Galle), 45m (06°02'N & 80°23'E).
- Pseudophilautus hypomelas* (Günther, 1876). Lectotype BMNH 1947.2.27.8, Ceylon (Sri Lanka); Paralectotypes: BMNH 1947.2.7.47; BMNH 1947.2.7.48; BMNH 1947.2.7.49; BMNH 1947.2.7.50; BMNH 1947.2.7.51; BMNH 1947.2.7.52; BMNH 1947.2.7.53; BMNH 1947.2.7.54; BMNH 1947.2.7.55; BMNH 1947.2.7.56; BMNH 1947.2.7.57, Ceylon (Sri Lanka). BMNH 1947.2.27.9; BMNH 1947.2.27.10, Le Vallon Estate in Nilambe District, Ceylon (Sri Lanka).
- Pseudophilautus limbus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 2700; Haycock, 560m (06°20'N & 80°18'E).
- Pseudophilautus lunatus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3283; Handapan Ella Plains, 1270m (06°26'N & 80°36'E).
- Pseudophilautus macropus* (Günther, 1869). Holotype: BMNH 1947.2.8.78, southern Ceylon (southern Sri Lanka); WHT 3390, 3391, 3392, 3393, 3394, 3395, 3396, 3397, 3398, 3399, 3400, 3401, 3402, 3403, 3404, 3405, 3406, Mousakanda (Gammaduwa), Knuckles, 760m (07°34'N & 80°42'E); WHT 3183, Divulgahapathana, Knuckles, 603m (07°33'N & 80°43'E); WHT 5900, Bambaraella, Knuckles, 1260m (07°24'N & 80°47'E).
- Pseudophilautus maia* (Meegaskumbura, Manamendra-Arachchi, Schneider & Pethiyagoda, 2007). Holotype: BMNH 76.3.21.18; Paratype: BMNH 76.3.21.19. Both Holotype and Paratype collected at "Poojagodde" (Poojagoda) Estate, Ramboda, Sri Lanka.
- Pseudophilautus microtympanum* (Günther, 1859). Lectotype: BMNH 1947.2.8.48, Ceylon (Sri Lanka), WHT 2710, 2708, 2712, 2713, 3436, 3437, 3438, 3439, 3440, 3441, 3442, 3443, 3444, 3446; Horton Plains National Park, 2135m (06°46'N & 80°47'E); WHT 3260, Agra Arboretum, near Agarapatana, 1555m (06°51'N & 80°41'E).
- Pseudophilautus mittermeieri* (Meegaskumbura & Manamendra-Arachchi, 2005). Holotype: WHT 3522; Paratypes: WHT 3523, 3524, 3525, 3526; Kottawa, Galle, 60m (06°06'N & 80°20'E); WHT 2668, Beraliya forest, Elpitiya, 150m (06°16'N & 80°11'E).
- Pseudophilautus mooreorum* (Meegaskumbura & Manamendra-Arachchi, 2005). Holotype: WHT 5862; Paratypes: WHT 5868, 5869; Hunnasgiriya (Knuckles), 1100m (07°23'N & 80°41'E); WHT 2477, 3209, 6124; Corbett's Gap (Knuckles), 1245m (07°22'N & 80°51'E).
- Pseudophilautus nanus* (Günther, 1869). Lectotype: BMNH 1947.2.7.78; BMNH 1947.2.7.79, BMNH 1947.2.7.82, BMNH 1947.2.7.86, southern Ceylon (Southern Sri Lanka).
- Pseudophilautus nasutus* (Günther, 1869). Holotype: BMNH 1947.2.6.21, Ceylon (Sri Lanka).
- Pseudophilautus nemus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 1319; Haycock (Hiniduma), 660m (06°20'N & 80°18'E).
- Pseudophilautus ocularis* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 2360; Paratypes: WHT 3273, 2376, 2377, 2378; Morningside Forest Reserve (near Rakwana), 1060m (06°24'N & 80°38'E); WHT 3288, 3289, 3290, 3291, 3292, 3293; Handapan Ella Plains (near Suriyakanda), 1270m (06°26'N & 80°36'E).
- Pseudophilautus oxyrhynchus* (Günther, 1872). Lectotype of *Ixalus oxyrhynchus* (here designated), mature female, 18.6mm SVL, BMNH 1947.2.6.40, 'Ceylon', coll. K.G.H.K. Thwaites.
- Pseudophilautus papillosum* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3284; Handapan Ella Plains (near Rakwana), 1270m (06°26'N & 080°36'E).
- Pseudophilautus pardus* (Meegaskumbura, Manamendra-Arachchi, Schneider & Pethiyagoda, 2007). Holotype: BMNH 1947.2.7.96.
- Pseudophilautus pleurotaenia* (Boulenger, 1904). BMNH 1947.2.7.64, Kandy, Sri Lanka; WHT 3176, 5824; Gannoruwa Forest Reserve, Kandy, 684m (07°17'N & 80°35'E); WHT 5860, 5861; Nawalapitiya, 700m (07°03'N & 80°32'E).
- Pseudophilautus poppiae* (Meegaskumbura & Manamendra-Arachchi, 2005). Holotype: WHT 3285; Handapan Ella Plains (near Suriyakanda), 1270m (06°26'N & 80°36'E); Paratypes: WHT 2030, 2029, 2475, 2778, 2781, 3533, 3534, 3535, 3536; Morningside (near Rakwana), 1060m (06°24'N & 80°38'E).
- Pseudophilautus procax* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3279; Paratypes: WHT 2786, 2787, 3277, 3278, 3280, 3281; Morningside Forest Reserve (near Rakwana), 1060m (06°24'N & 080°38'E).
- Pseudophilautus regius* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3122; Paratypes: WHT 5827, 5828, 5829; Angammadilla, Polonnaruwa, 90m (07°51'N & 80°55'E).
- Pseudophilautus reticulates* (Günther, 1864). Holotype: BMNH 1947.2.8.60, Ceylon, (Sri Lanka); WHT 2286, 2287, 2290, 2291; Kosmulla (near Nelluwa), 320m (06°24'N & 80°23'E); WHT 2288, 2289; Dediyalaga Forest Reserve, Akurella, 150m (06°10'N & 80°26'E); WHT 2344, Yagirala, 30m (06°22'N & 80°10'E); WHT 3230, Induruwa, (Ratnapura), 150m (06°45'N & 80°26'E); NMSL 2006.66.1; Gileemale forest, 150m (06°45' N, 080°26' E); WHT 2520, 2521; Check Poleat Gap (near Norton Bridge), 800m (06°56'N & 80°30'E); WHT 3366, Haycock (Hiniduma), 660m (06°20'N & 80°18'E).
- Pseudophilautus rus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3474; Paratypes: WHT 3475, 3476, 3477; Kiribatkumbura (near Peradeniya), 450m (07°16'N & 80°34'E); WHT 5437, 5439, 5436; WHT 5440, 5438, 5432, 5435, 5434; Pilimatalawa (near Peradeniya), 658m (07°15'N & 80°34'E).
- Pseudophilautus sarasinorum* (Müller, 1887). WHT 2480, 2481, 2482, 2483; Bogawantalawa-Balangoda road, 1300m (06°45'N & 80°42'E); WHT 2426, 2427, 2428, 2429; Corbett's Gap, 1000m (07°22'N & 80°50'E).
- Pseudophilautus schmidti* (Kelaart, 1854). Neotype: WHT 3353; Horton Plains National Park, 2135m (06°46'N & 80°47'E).
- Pseudophilautus silus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3453; Paratypes: WHT 3451, 3452, 3454, 3460; Agra Arboretum, near Agarapatana, 1555m (06°51'N & 80°41'E); WHT 3412, Tangamalai Sanctuary, near Haputale, 1600m (06°46'N & 80°55'E).
- Pseudophilautus sylvaticus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3295; Paratypes: WHT 3296, 3378, 3379, 3461, 3462; Handapan Ella Plains (near Suriyakanda), 1270m (06°26'N & 80°36'E); WHT 3275, 3276, Morningside Forest Reserve (near Rakwana), 1060m (06°24'N & 80°38'E); WHT 3310, 3316,

Sinharaja World Heritage Site (near Kudawa), 513m (06°25'N & 80°25'E).

*Pseudophilautus simba* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3464; Paratypes: WHT 3465, 3466, 3467; Morningside Forest Reserve (near Rakwana), 1060m (06°24'N & 80°38'E).

*Pseudophilautus sordidus* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 2379; Paratypes: WHT 2383, 2384, 2385, 2386, 2389, 2390, 2391, 2393, 2395, 2397, 2398; Kanneliya Forest Reserve (Galle), 150m (06°15'N & 80°20'E); WHT 2380, 2381, Haycock (Hiniduma), 660m (06°20'N & 80°18'E); WHT 2382, Haycock (Hiniduma), 150m (06°18'N & 80°19'E); 2387; WHT 2396, Millawa Forest Reserve (near Morawaka), 150m (06°17'N & 80°28'E); WHT 2988, Welikanna, Waga (near Labugama), 78m (06°51'N & 80°09'E); WHT 2998, Labugama Forest Reserve, 78m (06°51'N & 80°10'E); WHT 3303, 3304, 3306; Sinharaja Forest Reserve (Halmandiya), 513m (06°25'N & 80°25'E); NMSL 2006.65.1. Denenakanda, Peak Wilderness.

*Pseudophilautus steineri* (Meegaskumbura & Manamendra-Arachchi, 2005). Holotype: WHT 3210; Paratypes: WHT 3519, 3521, 3520, 6116, 3518; Corbett's Gap (Knuckles Hills), 1245m (07°22'N & 80°51'E).

*Pseudophilautus stictomerus* (Günther, 1876). WHT 1173, 2402; Kottawa (Galle), 60m ( $06^{\circ}06'N$  &  $80^{\circ}20'E$ ); WHT 2403, 2404; Kanneliya (Galle), 150m ( $06^{\circ}15'N$  &  $80^{\circ}20'E$ ); WHT 3301, Sinharaja Forest (near Kudawa), 513m ( $06^{\circ}25'N$  &  $80^{\circ}25'E$ ); WHT 3355, 3356, 3357, 3358, 3359; Kosmulla (near Nelluwa), 320m ( $06^{\circ}24'N$  &  $80^{\circ}23'E$ ).

*Pseudophilautus stuarti* (Meegaskumbura & Manamendra-Arachchi, 2005). Holotype: WHT 3208; Paratypes: WHT 3207, 3206, 3218, 3527, 357 Corbett's Gap (Knuckles Hills), 1245m ( $07^{\circ}22'N$  &  $80^{\circ}51'E$ ).

*Pseudophilautus temporalis* (Günther, 1864). Lectotype: BMNH 1947.2.6.9; Paralectotypes: BMNH 1947.2.6.8, BMNH 1947.2.6.10. Ceylon, (Sri Lanka).

*Pseudophilautus variabilis* (Günther, 1859). Lectotype: BMNH 1947.2.7.87. Ceylon (Sri Lanka).

*Pseudophilautus viridis* (Manamendra-Arachchi & Pethiyagoda, 2005).  
 Holotype: WHT 5127; Paratypes: WHT 3488, 3489, 5104, 5105, 5106, 5099, 5100, 5103, 5126; Agra Arboretum, near Agarapatana, 1555m (06°51'N & 80°41'E); WHT 2763, 2764, 2765, 2766, 2767, 2768, 4999; Ambewela (near radio station), 1830m (06°53'N & 80°48'E).

*Pseudophilautus zal* (Manamendra-Arachchi & Pethiyagoda, 2005).  
Holotype: BMNH 1947.2.8.45

*Pseudophilautus zorro* (Manamendra-Arachchi & Pethiyagoda, 2005). Holotype: WHT 3169; Paratypes: WHT 3175, 3204, 3205; Gannoruwa Forest Reserve, Kandy, 684m ( $07^{\circ}17'N$  &  $80^{\circ}35'E$ ); WHT 3508, Tiverton Estate (near Peradeniya), 450m ( $07^{\circ}16'N$ ,  $80^{\circ}34'E$ ).



**Sinhala Abstract** පාරාංයය: මධ්‍ය කුදකර උලේක උරු රුම් රැකිව කළා පෙන්ව ඇත්තේ ශ්‍රී එද රුක්කින්ගෙයි “උව්වන්වය වෙනස්වීම් අනුව උරුයින් සහ උග්‍රයින්හින් වේදින්වය වෙනස්වූ ලබා ආකර්ෂණය” පිළිබඳ සිදු කරනු ලබන පර්යේඛියෙකි ප්‍රථම ප්‍රාග්ධනය වෙනත් උරු උග්‍රයින් වේදින් අනුව (ඕගිරු ප්‍රභු මැයිය) දූෂ්‍යවාග්‍යන් පැවැතු මැයිය, ජෙන් ගුණවර්ධනයන් පැවැතු මැයිය, කරුණාර්ථනාන් පැවැතු මැයිය, තිබුන් ජයවර්ධනයන් පැවැතු මැයිය, පුරුණාර්ථප්‍රභුන් පැවැතු මැයිය, සංරක්ෂකන්ගේන් පැවැතු මැයිය, සහ පිටිල් විශේෂුක්දරන් පැවැතු මැයිය) මෙම විද්‍යාත්මක ප්‍රතික්‍රියා මිනින් ඩැන්ට්‍රික් දෙනි.

## **Author Details:**

L.J. MENDIS WICKRAMASINGHE, is the founder, President of the Herpetological Foundation of Sri Lanka, and is the Principal Investigator in the current project. He has close to two decades of field herpetological (reptile and amphibian) experience in Sri Lanka with a focus on taxonomic identifications, and also providing education and awareness to the general public on Venomous Snakes in the island. He has contributed his expertise towards national projects on identification of threatened species in Sri Lanka, and has facilitated the declaration of several protected areas in Sri Lanka. A member of the Experts Committee on herpetofauna in Sri Lanka, under the National Species Conservation Advisory Group (NSCAG), and in several international bodies including several Species Survival Commission groups of the International Union for Conservation of Nature (IUCN/SSC).

DULAN RANGA VIDANAPATHIRANA, is the Vice-President, and a founder member of the Herpetological Foundation of Sri Lanka, with over 10 years of field herpetological, and birding experience in Sri Lanka, where he is also a Natural History Tour Leader at the Bird and Wildlife Team. Currently working in several projects on herpetology in the country at the HFS.

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L.L. DHARSHANA PRIYANtha, is a Management Accountant by profession doing Management Consultancy for Small & Medium Entrepreneurs of Sri Lanka. He is working as a researcher cum treasurer of Herpetological Foundation of Sri Lanka. He has also been a member of Young Zoologists' Association of Sri Lanka, working to conserve the herpetofauna in the Island.

WORLING TO CONSERVE THE HERPETOFAUNA IN THE ISLAND.

IMESH NUWAN BANDARA, is pursuing his Master Degree from the Heller School for Social Policy and Management at Brandeis university, after having obtained the Bachelor of Science (B.Sc) Degree having specialized in Zoology at the University of Peradeniya - Sri Lanka. He has been a member of the Youth Exploration society, Herpetological Foundation of Sri Lanka and has a keen interest in sustainable development, community based conservation, traditional agricultural practices, ethnobotany, local biodiversity and behavioral ecology of herpetofauna and other wild fauna.

NETHU WICKRAMASINGHE, is the Projects Co-ordinator, at the Herpetological Foundation of Sri Lanka, completed the basic degree in chemistry at the University of Delhi. Currently a freelance Science journalist, contributing to the dissemination of the conservation aspects of herpetofauna to the general public.

**Author Contributions:** JMW was involved in designing the study, conducting the field survey, conducting museum reference work, gathering, and analyzing the data, and compiling the MS. DRVP was involved in conducting the field survey, conducting museum reference work, gathering, analyzing the data, and writing the MS. MDGR was involved in conducting the field survey, conducting museum reference work, gathering, analyzing the data, and writing the MS. SCA was involved in field research work. AWAC was involved in field research work. LLDP was involved in field research work. INB was involved in field research work, writing and data compiling. NW was involved in the writing of the MS.