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Two new species of *Philautus* (Anura, Ranidae, Rhacophorinae) from the Western Ghats, India

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Abstract. The oriental shrubfrog genus *Philautus* (Anura, Ranidae, Rhacophorinae) is a large group of direct-developing frogs that still holds several undescribed species on the Indian subcontinent. Here we describe two new species, *Philautus anili* sp. nov. and *Philautus dubois* sp. nov. from Wayanad (Kerala) and Kodaikanal (Tamil Nadu), respectively. Both species were collected from the township, where they are abundant in roadside vegetation and gardens, illustrating that several of the most common Western Ghats frogs are still not scientifically described. The two species are clearly distinct from all known species, but are morphologically similar to each other. However, *Philautus anili* differs from *P. dubois* by its larger snout-to-vent length, the sharp canthus rostralis, and the tibia that is longer than the femur.

Introduction

The anuran fauna of the Western Ghats is extremely diverse, both in terms of species richness (Dutta, 1997; Das, 2000; Bossuyt, 2002; Kuramoto and Joshy, 2003) and high-level endemism (Inger, 1999; Biju and Bossuyt, 2003; Roelants et al., 2004). One of the groups that seems to be very well represented in Asia is the subfamily Rhacophorinae (Ranidae), which contains five genera and about 50 species in India (Frost, 2004). Bossuyt and Dubois (2001) recognized 84 valid species names in the genus *Philautus*, a group of direct developing bushfrogs in that subfamily.

Among the Western Ghats species of *Philautus*, several are known only from their original description. Most of them were recorded from forest areas and the exploration of the batrachofauna is still concentrated in this kind of habitat, especially in National Parks and Wildlife Sanctuaries (e.g., Ravichandran, 1997; Krishnamurthy et al., 2001; Kuramoto and Joshy, 2003). However, during our ongoing study in the Western Ghats, we noticed that many populations of *Philautus* can be found in urban areas, such as hill stations. In the present paper, we describe two new species, *Philautus anili* sp. nov. and *P. dubois* sp. nov., that are very common in the townships of Wayanad and Kodaikanal, respectively. These novelties demonstrate that some species of bushfrogs are not fully dependent on rainforests for their survival, and that also isolated vegetation along the roadside and its vicinity can be extremely valuable for these frogs.

Materials and methods

Measurements and terminology follow Bossuyt and Dubois (2001). The following measurements were taken, to the nearest 0.1 mm, using a digital slide-caliper (SVL, HL, and TL) or a binocular microscope with a micrometer ocular. SVL (snout-vent length), HW (head width, at the angle of the jaws), HL (head length, from rear of mandible to tip of snout), MN (distance from rear of mandible to nostril), MFE (distance from rear of mandible to anterior orbital border of eye), MBE (distance from rear of mandible to posterior orbital border of eye), SL (snout length, from tip of snout to anterior orbital border of eye), EL (eye length, horizontal distance between bony orbital borders of eye), IUE (inter upper eyelid width, the short distance between the upper eyelids), UEW (maximum upper eyelid width), IN (distance between internal border of nostrils), IFE (internal front of eyes, shortest distance between anterior orbital border of eyes), IBE (internal back of eyes, shortest distance between posterior orbital border of eyes), NS (distance from nostril to tip of snout), EN (distance from nostril to anterior orbital border of eye), TYD (largest tympanum diameter), TYE (distance from posterior orbital border of eye to tympanum), FLL (forelimb length, from elbow to base of outer palmar tubercle), HAL (hand length,

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from base of outer palmar tubercle to tip of third finger), TFL (third finger length, from base of first subarticular tubercle), $FD_{I\text{-}IV}$ (disc width on finger I-IV), $FW_{I\text{-}IV}$ (width of finger I-IV, at base of disk), $TD_{I\text{-}V}$ (disk width on toe I-V), $TW_{I\text{-}V}$ (width of toe I-V, at base of disk), TL (tibia length), TW (maximum shank width), FL (femur length), FOL (foot length, from base of inner metatarsal tubercle to tip of fourth toe), FTL (length of fourth toe, from base of first subarticular tubercle to tip of fourth toe), TFOL (distance from heel to tip of fourth toe), IMT (inner metatarsal tubercle length), and ITL (inner toe length). Drawings of the holotype were made using a stereomicroscope with a drawing tube.

The following institutional abbreviations are used: BNHS, Bombay Natural History Society, Bombay, Maharashtra, India; TBGRI, Tropical Botanic Garden and Research Institute, Thiruvananthapuram, Kerala, India. The new rhacophorine species are placed in the genus *Philautus* because of their relatively small snout-to-vent size, granular belly, the male having a large subgular pouch which is transparent while calling, and the female having a relatively low number of large unpigmented eggs. The new species were compared with all valid species currently recognized in the genus *Philautus* (Bossuyt and Dubois, 2003; Frost, 2004), and especially with the name-bearing types of all Indian species (Appendix).

Philutus anili sp. nov. (figs. 1 and 2)

Diagnosis. *Philautus anili* can be distinguished from all known species in the genus by the combination of the following characters: (a) medium adult size (male SVL < 25.2 mm), (b) pointed snout, (c) flanks and groin deep brown with light grey blotches, (d) anterior surface of thighs and inner side of tibia light chocolate brown blotches, alternated with variable sizes of grey patches, (e) ventral side grey and dark brown vermiculated throughout. This species is morphologically similar to *Philautus dubois*, the second species described in this paper. However, *P. anili* differs from *P. dubois* by its larger size (SVL 24.1 ± 0.8 mm, $n = 5$, vs. 20.2 ± 0.6 mm, $n = 5$ in *P. dubois*), the sharp canthus rostralis (vs. rounded in *P. dubois*), and the tibia that is longer than the thigh (ratio TL/FL ratio > 1, vs. TL/FL ratio < 1 in *P. dubois*).

Holotype. BNHS 4276, an adult male (SVL 23.8 mm) collected by S.D. Biju on 28 July 1997 at an altitude of 1000 m elevation, from Kalpatta, approximately, 11°38′N, 76°08′E, in Wayanad district, Kerala, India.

Paratypes. BNHS 4277, an adult male, and BNHS 4280, an adult female collected along with the holotype; BNHS 4278, BNHS 4279 and TBGRI 2002.0057, three adult males collected by S.D. Biju on 8 August 2001 at an alti-

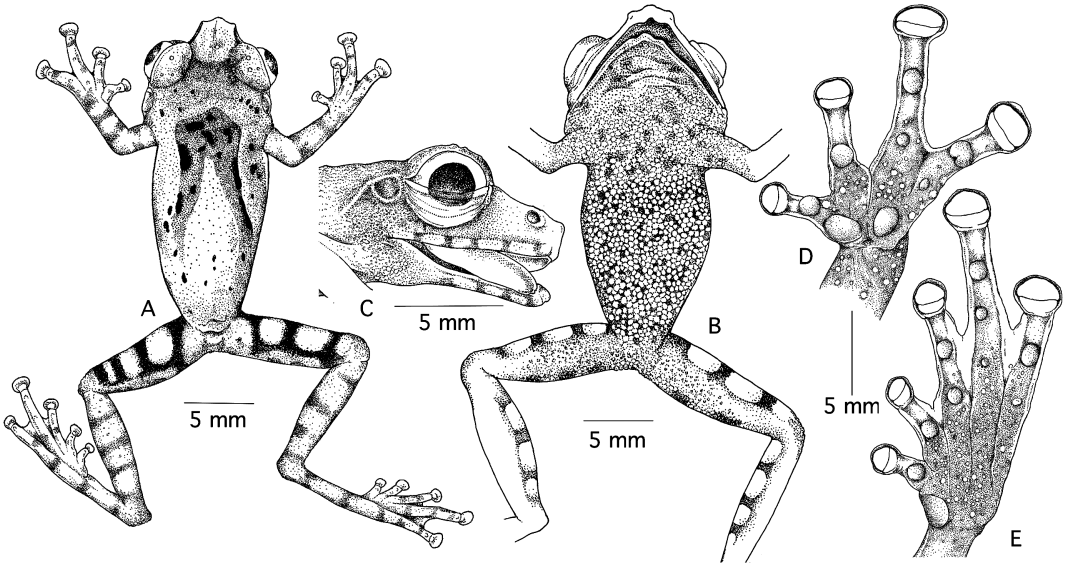

Figure 1. Holotype of *Philautus anili* sp. nov.: A. Dorsal view; B. ventral view; C. lateral view of head; D. ventral view of hand; E. ventral view of foot.

Figure 2. Dorsolateral view of *Philautus anili* holotype in life.

tude of 1050 m elevation, from Sulthanbethery, approximately 11°37′N, 76°17′E, in Wayanad district, about 30 km from Kalpatta.

Description of the Holotype (all measurements in mm). Medium-sized *Philautus* (SVL 23.8), body slender to slightly elongate (figs 1A, 2); head length almost equal to width (HW 9.0; HL 9.2; MN 7.5; MFE 5.8; MBE 2.6), flat above; outline of snout in dorsal view (fig. 1A) and in profile (fig. 1C) pointed, slightly protruding, snout length (SL 3.6) longer than horizontal diameter of eye (EL 3.1); canthus rostralis sharp, loreal region acutely concave; interorbital area flat, about as wide (IUE 2.5) as upper eyelid (UEW 2.4) and slightly wider than internarial distance (IN 2.1); distance between anterior margins of eyes (IFE 4.9) 1.7 times in distance between posterior margins of eyes (IBE 8.3); nostrils oval, without lateral flap of skin, closer to tip of snout (NS 1.0) than to front of eye (EN 2.1); pupil oval, horizontal; tympanum (TYD 1.0) rather distinct, rounded, 3 times in eye diameter, 1.4 times distance from tympanum to eye (TYE 0.7) (fig. 1C); vomerine teeth absent; tongue large (7.0 × 3.7), cordate, emarginate, lobes obtuse, sparsely granular, lingual papilla absent; supratympanic fold distinct, from back of eye to shoulder (fig. 1C). Forelimb (FLL 5.5) shorter than hand (HAL 6.3; TFL 3.7); relative length of fingers: I < II < IV < III; tips of fingers with disks ($FD_I = 0.8$, $FW_I = 0.5$; $FD_{II} = 1.0$, $FW_{II} = 0.4$; $FD_{III} = 1.2$, $FW_{III} = 0.5$; $FD_{IV} = 1.5$, $FW_{IV} = 0.5$) with distinct cirummarginal grooves; all fingers with lateral dermal fringe on both edges, webbing absent; subarticular tubercles prominent, rounded, single, III2 and IV2 weakly developed (fig. 1D); prepollex rather distinct, oval; single palmar tubercle, oval, distinct; supernumerary tubercles present on all fingers (fig. 1D). Hind limbs moderately long, heels touch with limbs folded at right angles to the body, tibia 5.2 times longer (TL 11.6) than wide (TW 2.1),

longer than thigh (FL 10.8), length of toe IV (FTL 4.4) 2 times in distance from base of tarsus to tip of toe IV (FOL 8.9); relative length of toes: I < II < III < V < IV; tips of toes with disks; rather wide compared to toe width ($TD_I = 0.7$, $TW_I = 0.4$; $TD_{II} = 0.8$, $TW_{II} = 0.5$; $TD_{III} = 0.9$, $TW_{III} = 0.5$; $TD_{IV} = 1.0$, $TW_{IV} = 0.5$; $TD_V = 0.9$, $TW_V = 0.5$) with a distinct circummarginal groove; webbing reduced (fig. 1E); dermal fringe along toe V present; subarticular tubercles rather prominent, rounded, simple, IV3 and V2 weakly developed; inner metatarsal tubercle distinct (IMT 0.8), oval, 2 times in length of toe I (ITL 1.7); supernumerary tubercle present on all toes (fig. 1E). Skin of snout and between eyes shagreened with a few tubercles, upper eyelids shagreened with some prominent granular tubercles, side of head shagreened, back shagreened with some scattered weakly developed tubercles; upper part of flanks shagreened with some granular projections, lower part of flanks granular; dorsal part of forelimb, thigh, tibia and tarsus shagreened; throat shagreened to granular, chest, belly and posterior surface of thighs granular (fig. 1B).

Colour in life. Dorsum light brown with various amounts of deep brown irregular patches, a light brown strip between the eyes forming a triangular grey snout, loreal and tympanic region light brown, a broad dark brown inverted 'V' on the back, running from the level of the forelimb and dividing into two unequal ends, reaching to the level of the hind limbs (figs 1A, 2), numerous minute blackish brown spots throughout the dorsum, upper eyelids light brown, lateral side of abdomen with dark brown blotches alternated with light grey patches, flanks and groin deep brown with light grey blotches; iris yellowish red, encircled by a grey ring; limbs light brown dorsally, forelimbs and hind limbs with dark brownish cross bands, anterior surface of thighs and inner side of tibia with light chocolate brown blotches (fig. 1B), alternated with variable sizes of grey patches; ventrally grey with variable sized dark brown specks, forming a vermiculated belly; hands and feet greyish.

Colour in alcohol. Dorsal coloration and markings almost like in life, but faded, minute black spots throughout, upper eyelid blackish, loreal and tympanic region light grey-brown, lateral abdominal area light brown alternated with light grey, flanks and groin brown with grey blotches; forelimbs light brown, hind limbs light brown with strong dark brown cross bands, anterior surface of thighs and inner side of tibia with light brown patches, alternated with light grey; ventrally uniform grey with dark brownish irregular spots united into patches (fig. 1B).

Secondary male sexual characters. Median subgular vocal sac present; a pair of openings present at the base of lower jaw.

Secondary female sexual characters. Oviduct in paratype BNHS 4280 zigzag, translucent; ovary large, creamy white, eggs about 4 mm in diameter.

Etymology. The species is named after Anil Zachariah in appreciation of his tremendous support and assistance to SDB right from the beginning of his study.

Variation. Measurements (in mm) of the type series are given in table 1. The supernumerary tubercles are weakly developed in the three paratypes (BNHS 4277, BNHS 4279 and TBGRI 2002.0057) in comparison with the rest of the type series. In captivity, the frogs go through a considerable range of colour changes, which is reflected in the preserved specimens. Freshly caught specimens have a uniform light tan dorsum, and after captivity they turn to brownish black (fig. 2). The inverted 'V' marking on the dorsum can be complete or incomplete.

Distribution and Natural History. Philautus anili is widely distributed in Wayanad district. It was first located at Kalpatta near a coffee plantation. The three paratypes were collected from Sulthanbethery in Wayanad district, about 30 km from Kalpatta. Three specimens were collected from about two meters high on wayside vegetation in Kalpatta town; the three others were found about one meter high on a cof-

Table 1. Morphometric measurements (all in mm; range, mean and standard deviation) for the type specimens of *Philautus anili* and *P. dubois*.

	Philautus anili				*Philautus dubois*					
	Males (5)			Female (1)	Males (5)			Females (2)		
	Range	Mean	SD		Range	Mean	SD	Range	Mean	SD
SVL	23.2-25.2	24.1	0.8	29.3	19.2-20.8	20.2	0.6	25.1-25.3	25.2	0.1
HW	9.0-9.3	9.1	1.2	11.8	7.8-8.6	8.2	0.3	9.3-10.1	9.7	0.6
HL	9.2-9.4	9.3	0.1	12.5	7.4-8.5	8.0	0.5	9-9.6	9.3	0.4
IFE	4.3-5.2	4.9	0.3	6.0	3.3-4.2	3.8	0.4	4.4-4.7	4.6	0.2
IBE	8.0-8.7	8.3	0.3	10.4	6.7-7.5	7.3	0.3	8.3-8.5	8.4	0.0
IUE	2.5-3.4	2.9	0.4	3.6	2.6-3.0	2.8	0.2	3.5-3.6	3.6	0.1
UEW	2.0-2.7	2.0	0.3	3.1	1.5-2.1	1.8	0.2	1.9-2.1	2.0	0.4
SL	3.5-4.3	3.9	0.3	5.1	3.0-3.2	3.1	0.1	3.6-3.9	3.8	0.2
EL	3.0-3.9	3.3	0.3	4.1	2.4-2.8	2.7	0.2	2.7-3.1	2.9	0.3
TYD	1.0-1.0	1.0	0.0	1.7	0.9-1.6	1.1	0.3	1.2-1.5	1.4	0.2
FLL	5.5-5.8	5.6	0.1	6.7	4.1-4.9	4.3	4.4	5.2-5.8	5.5	0.4
HAL	6.1-6.8	6.5	0.3	6.9	5.1-6.3	5.6	0.5	7.2-7.3	7.3	0.1
TFL	3.2-4.0	3.6	0.3	3.2	2.7-3.6	2.7	0.3	3.6-4.0	3.8	0.3
TL	11.6-12.9	12.2	0.5	15.8	8.9-9.3	9.2	0.1	11.8-12.4	12.1	0.4
FL	10.2-12.0	11.1	0.7	14.7	9.3-10.1	9.8	0.3	10.9-11.8	11.4	0.6
FOL	8.9-9.6	9.0	0.3	12.7	7.1-8.3	7.7	0.5	9.5-10.3	9.9	0.6
FTL	4.4-5.6	5.1	0.4	6.2	3.6-4.1	3.8	0.2	5.3-5.3	5.3	0.0
IMT	0.5-0.9	0.8	0.1	1.0	0.6-0.9	0.7	0.1	0.8-0.9	0.8	0.1
ITL	1.7-2.2	2.0	0.2	2.8	1.5-1.9	1.7	0.2	2.2-2.3	2.3	0.1

fee plant. This species starts calling in the late evening, i.e., during or immediately after sunset.

Philautus dubois sp. nov. (figs. 3 and 4)

Diagnosis. *Philautus dubois* can be distinguished from all species in the genus by the combination of the following characters: (a) rather small adult size (male SVL $<$ 20.8 mm), (b) tibia longer than foot length, (c) supernumerary tubercles well-developed on all toes, (d) dorsum, and especially flanks prominently granular, (e) femur coffee brown with variable-sized light brown and yellowish brown blotches, (f) ventral side of forelimb coarsely granular. *Philautus dubois* is morphologically most similar to *P. anili* (see diagnosis of the latter for differences). Some colour morphs of *P. dubois* could be confused with *P. tinniens*. However, *P. dubois* differs from *P. tinniens* in having an elongate body (vs. rather robust body in *P. tinniens*) and the tibia longer than the foot length (TL 9.2 ± 0.1; FOL 7.7 ± 0.5 mm, $n = 5$) (vs. tibia shorter than foot length, TL 9.3 ± 0.1; FOL 10.1 ± 1.1, $n = 5$, in *P. tinniens*).

Holotype. BNHS 4281, an adult male (SVL 20.5 mm) collected by S.D. Biju on 17 March 2001 at an altitude of 1900 m elevation, from Kodaikanal, 10°13′N, 77°29′E, in Dindigal Anna district, Tamil Nadu, India.

Paratypes. BNHS 4282-4285, four adult males and BNHS 4286-4287, two adult females collected along with the holotype.

Description of the Holotype (all measurements in mm). Small-sized *Philautus* (SVL 20.5), body slightly elongate (fig. 3A); head length almost equal to width (HW 8.6; HL 8.5; MN 7.3; MFE 5.4; MBE 2.7), flat above; outline of snout in dorsal view nearly pointed (fig. 3A) in profile rounded (fig. 3B), slightly protruding, snout length (SL 3.1) slightly longer than horizontal diameter of eye (EL 2.8); canthus rostralis rounded, loreal region acutely concave; interorbital area concave, 1.5 times wider (IUE 2.7) than upper eyelid (UEW 1.8) and wider than internarial distance (IN 2.0); distance between

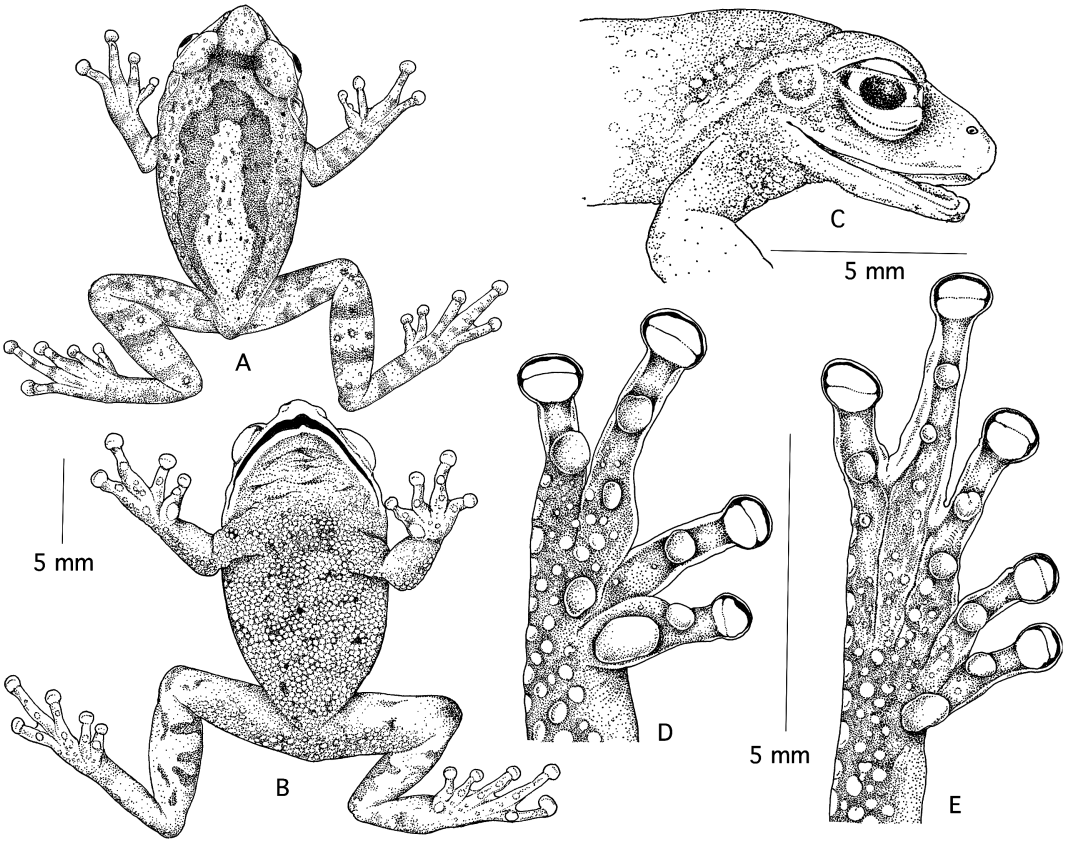

Figure 3. Holotype of *Philautus dubois* sp. nov.: A. Dorsal view; B. ventral view; C. lateral view of head; D. ventral view of hand; E. ventral view of foot.

anterior margins of eyes (IFE 4.1) 1.8 times in distance between posterior margins of eye (IBE 7.5); nostrils oval, without lateral flap of skin, closer to tip of snout (NS 1.4) than to front of eye (EN 1.7); pupil oval, tympanum (TYD 1.6) rather distinct, rounded, about 1.7 times in eye diameter (fig. 3C), larger than distance from tympanum to eye (TYE 0.5); vomerine teeth absent; tongue large (4.5 × 2.9), cordate, deeply emarginate, lobes obtuse, smooth, lingual papilla absent; supratympanic fold distinct, from back of eye to shoulder (fig. 3C). Forelimbs (FLL 4.4) shorter than hand (HAL 6.3; TFL 3.1); relative length of fingers: I < II < IV < III; tips of fingers with disks ($FD_I = 0.7$, $FW_I = 0.5$; $FD_{II} = 0.8$, $FW_{II} = 0.5$; $FD_{III} = 1.4$, $FW_{III} = 0.6$; $FD_{IV} = 1.5$, $FW_{IV} = 0.6$) with distinct cirummarginal grooves; all fingers without lateral dermal fringe, webbing absent; subarticular tubercles prominent, rounded, single, III2 weakly developed and IV2 absent (fig. 3D); prepollex rather distinct, rounded; single palmar tubercle, oval, distinct; supernumerary tubercles present on all fingers (fig. 3D). Hind limbs moderately long, heels barely touch with limbs folded at right angles to the body, tibia 3.3 times longer (TL 9.0) than wide (TW 2.7), shorter than thigh (FL 9.4), length of toe IV (FTL 3.8) 2.1 times in distance from base of tarsus to tip of toe IV (FOL 8.0); relative length of toes: I < II < III < V < IV; tips of toes with disks, rather wide compared to toe width ($TD_I = 0.7$, $TW_I = 0.5$; $TD_{II} = 0.7$, $TW_{II} = 0.5$; $TD_{III} = 0.8$, $TW_{III} = 0.5$; $TD_{IV} = 1.0$, $TW_{IV} = 0.7$; $TD_V = 1.0$, $TW_V = 0.6$), with a distinct circummarginal groove; webbing small (fig. 3E); dermal fringe or ridge along toe V present; subarticular tuber-

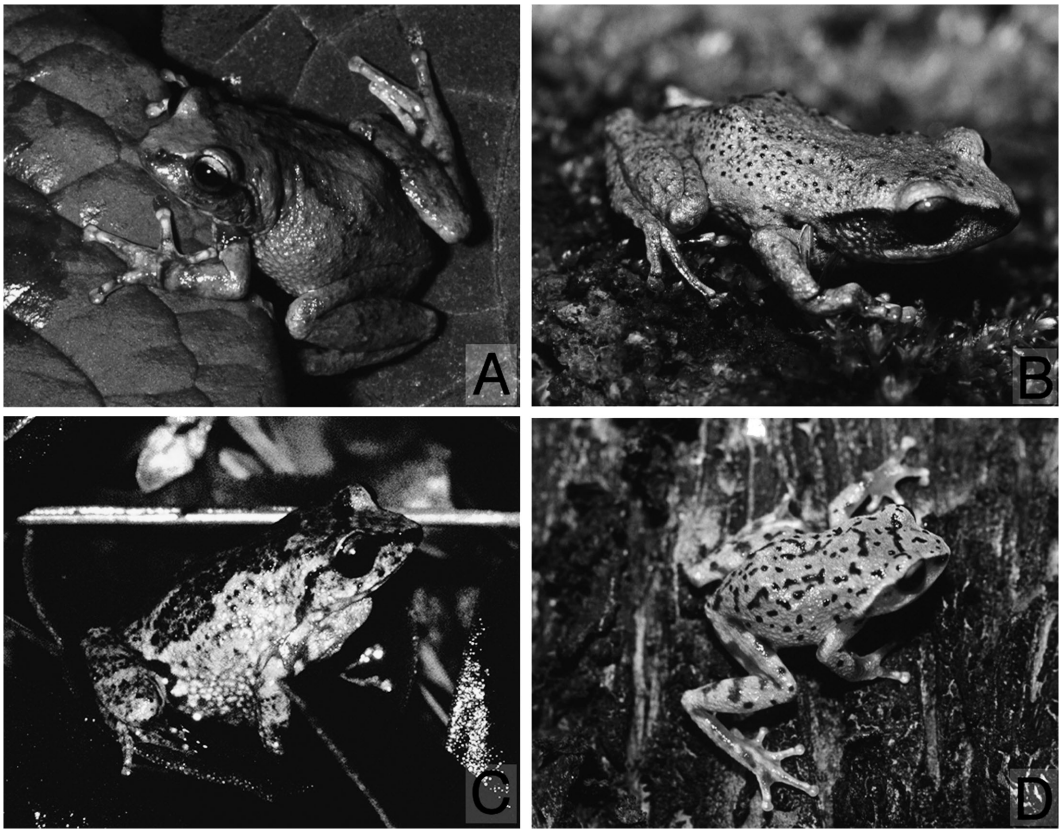

Figure 4. Life specimens of *Philautus dubois* from the type locality. A. Paratype (BNHS 4286, female) dorsolateral view; B. Paratype (BNHS 4287, female) dorsolateral view; C. Male, lateral view (not captured); D. male, dorsal view (not captured).

cles rather prominent, rounded, simple, IV 2, 3 and V2 weakly developed; inner metatarsal tubercle distinct (IMT 0.9), oval, more than 2 times in length of toe I (ITL 1.9); supernumerary tubercle present on all toes (fig. 3E). Skin of snout and between eyes shagreened, upper eyelids slightly granular, side of head, especially tympanic region, granular (fig. 3C), back and flanks granular; dorsal part of forelimbs shagreened to sparsely granular, thigh and tibia granular, tarsus shagreened; ventral part of forelimbs granular, throat shagreened to granular, chest, belly and posterior surface of thighs granular (fig. 3B).

Colour in life. Dorsally pale grayish green tinged with shining silver and cobalt violet, a dark grey inverted 'V' on the dorsum, running from the level of the eye to nearly the level of the vent (fig. 3A), with black, brown and silver violet spots of variable size, present especially on flanks; loreal and temporal region brownish black; iris golden brown with a greenish brown outer ring, pupil with a golden outer ring; limbs light grey-brown with blackish cross bands, finger tips white; femur coffee brown with variable-sized light brown and yellowish brown blotches; tibia and tarsus dark brown with grayish cross bands; toe discs white; ventrally with variable amounts of dark and light patches and spots; side of the belly with light yellowish brown blotches; ventral surface of thigh, tibia and tarsus grayish brown intermingled with brown blotches; feet and hands dark grayish brown with black spots.

Colour in alcohol. Dorsum light grayish brown, black and grey spots throughout, in-

verted 'V' dark grey; loreal and tympanic region dark brown; forelimbs and hind limbs with light grey and light brown cross bands; femur light brown with light grey blotches; tibia and tarsus light brown; ventrally uniform grayish brown in different intensity; throat light brown with minute black spots, lateral side of the abdomen with grayish white blotches surrounded by dark blackish brown area; ventral surface of thigh, tibia and tarsus brown intermingled with black spots; feet and hands light grayish brown with black spots.

Secondary male sexual characters. Median subgular vocal sac present; a pair of openings present at the base of lower jaw.

Secondary female sexual characters. Oviduct of both females zigzag, translucent; ovary large, creamy white, eggs about 3 mm in diameter.

Etymology. This species is named after Alain Dubois of the Paris Museum of Natural History, France, as a token of appreciation for his contribution in batrachological research in general, and his guidance to SDB and FB in their first steps in batrachology in particular. The species name is used as a noun in the nominative singular standing in apposition to the generic name.

Variation. Measurements (in mm) of the type series are given in table 1. These frogs are highly variable in coloration: dorsally grey-white, light green, yellowish green, dark cobalt green, dark orange reddish, brown, reddish brown, or brownish green; in all the colour forms, one inverted 'V' or two concave lines or scattered spots extend from the posterior border of orbit to the vent. BNHS 4286 uniform light brown dorsum with continuous faint concave marking (fig. 4A); BNHS 4287, light brown dorsum and grey lateral side with prominent dark granular projections throughout (fig. 4B); BNHS 4284, dark red-brown with black granular projections in the shape of a concave line, from behind the eye to the level of the vent, faint grey connection between eyes; BNHS 4282, light greenish-yellow, discontinuous concave line and faint grey connection between eye; BNHS 4285, grey-white with faint concave line and a grey connection between eye. The Limb colour varies in a similar way as the dorsal colour; the colour during the breeding period is generally brighter than that of the non-breeding period (hibernating under stones or crevices). Palmar and supernumerary tubercles on fingers are of different size and prominent in several specimens. The skin texture also shows considerable variation, especially in female specimens. One female (BNHS 4286) collected from rock crevices has less granular projections on flanks (fig. 4A).

Distribution and Natural History. Philautus dubois is currently known only from the type locality in Kodaikanal, south of the 'Palghat Gap'. The holotype and six paratypes were collected during a rainy night from leaves, about one meter high in shrubs near the roadside.

Discussion

Although frogs of the genus *Philautus* can be found in a wide range of habitats, the highest species densities in Peninsular India are in the rainforests of the Western Ghats (Biju, 2001), where climatic conditions for their direct development are ideal. Because this genus is a speciose group of small frogs with sometimes highly variable coloration (Inger et al., 1984; Bossuyt and Dubois, 2001), it has been considered a particularly difficult group for taxonomists. We undertook an extensive survey throughout the Western Ghats for the last decade and documented not only the distribution of known species, but also found many undescribed taxa (Biju, 2001). Museum studies further demonstrated that at least fifty percent of the undescribed species we discovered were in fact already present in collections under an incorrect name. In addition, our studies revealed that a large part of the literature on identification and distribution of Indian *Philautus* is highly questionable. The two

new species described herein perfectly fit in the above described framework. Indeed, both *Philautus anili* and *P. dubois* were collected from the township of Wayanad and Kodaikanal, respectively, where they are abundant not only in rainforests, but also in microhabitats ranging from roadside vegetation to gardens. This illustrates that indeed several of the most common Western Ghats anuran species are not scientifically recorded yet and that there is still a long way to go before the richness of the Western Ghats fauna will be fully described.

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Appendix 1

Specimens Examined

Philautus annandalii (BMNH 1947.2.26.58); *P. beddomii* (BMNH 1947.2.26.59-66, NMW 22884, SDB 456); *P. bombayensis* (ZSIC 18287, SDB 40175); *P. chalazodes* (BMNH 1947.2.6.35); *P. charius* (MNHN 1999.5597, SDB 4210-13); *P. flaviventris* (BMNH 1947.2.26.98); *P. garo* (ZSIC 19187); *P. glandulosus* (BMNH 1947.2.27.22, SDB 40239); *P. griet* (KBIN 1919-1922, 1926, SDB 465); *P. jerdonii* (BMNH 1947.2.7.84); *P. kempiae* (BMNH collection number unknown); *P. luteolus* (BNHS 4191; SDB 1126-1128); *P. microdiscus* (ZSIC 16924); *P. namdaphaensis* (ZSIC A.7177); *P. sanctisilvaticus* (ZSIC A.1778); *P. 'shillongensis'* (ZSIC A.6971, SDB 1280); *P. signatus* (BMNH 1947.2.27.36; SDB 4006); *P. terebrans* (USNM 239428); *P. similipalensis* (ZSI A 9061); *P. tinniens* (MNHN 1985.0527; SDB 523-524); *P. travancoricus* (BMNH 1947.2.6.20; SDB 4500); *P. tuberohumerus* (BNHS 4193-94; SDB1101-1104); *P. wynaadensis* (MNHN 1999. 5596; SDB 3010-11).