

species was recorded by DNA barcoding of tadpoles from two additional localities in the Ranomafana region, namely Ranomafanakely, and near the Kidonafo bridge at approximately 1000 m a.s.l.

Natural history and conservation status: *Boophis popi* is a nocturnal treefrog of the submontane rainforest region. Males were usually found perching on low vegetation at night during the rainy season along small or slow-flowing (quiet) parts of streams. At the end of the rainy season in late April, no calling males were heard at Tsinjoarivo, whereas males were found calling in January at Andringitra. In a preliminary barcoding survey of the herpetofauna of the highland forests east of Tsinjoarivo, we found a single tadpole (PSG 2642) of this species in a rainforest stream with a sandy bottom in late April.

Seemingly, *B. popi* is tolerant to some degree of habitat degradation, as we found the species in disturbed and/or rather fragmented rainforests. The comparatively large distribution range of approximately 300 km from Tsinjoarivo in the north to Andringitra in the south and its occurrence in at least two protected areas lead us to propose an IUCN red list status of “Least Concern” for this newly described species (compare ANDREONE et al. 2005, 2008).

Etymology: The specific name is dedicated to the company “pop-interactive GmbH” (Hamburg, Germany), in recognition of their support of biodiversity research and nature conservation through the BIOPAT initiative. The name is used as an invariable noun in apposition.

Boophis fayi sp. n.

Remark: This species was referred to as *Boophis* sp. aff. *boehmei* [Ca HM364594] from Betampona by ROSA et al. (2011).

Holotype: ZSM 280/2010 (field number FGZC 4261), adult male (Fig. 6a, b), from Ambodivoahangy (Makira Region), 15°17'23.8" S, 49°37'13.0" E, ca. 100 m above sea level, Analanjirofo Region, north-eastern Madagascar, collected on 2 April 2010 by P.-S. GEHRING, F. GLAW, J. KÖHLER, M. PABIJAN and F. M. RATSOAVINA.

Paratypes: ZSM 281/2010 (FGZC 4304), adult female (Fig. 6c,d), UADBA uncatalogued (FGZC 4251), adult male, UADBA uncatalogued (FGZC 4260), adult male, all with the same data as holotype; MRSN A6229 (FAZC 13726), MRSN A6355 (FAZC 13834), two adult males (calling individual MRSN A6355; Fig. 7d) from a campsite locally known as Sahabefoza, Réserve Naturelle Intégrale de Betampona, 17°54'52.5" S, 49°12'32.1" E, ca. 330 m a.s.l., Commune Rurale de Sahambala, Atsinanana Region, east Madagascar, collected on 7 March 2007 and 31 October 2007, respectively, collected by G. M. ROSA, J. NOËL and F. ANDREONE; MRSN A6596 (FAZC 13971) (Fig. 7a), adult male, from a campsite locally known as Vohitsivalana, 17°53'06.2" S, 49°12'11.7" E, ca. 494 m a.s.l., Réserve Naturelle Intégrale de Betampona, Commune Rurale de Sahambala, Atsinanana Region, east Madagascar, collected on 11 December 2007 by G. M. ROSA and J. NOËL.

Diagnosis: Assigned to the genus *Boophis* based on the presence of an intercalary element between the ultimate and penultimate phalanges of fingers and toes (verified by external examination), presence of nuptial pads and absence of femoral glands in males and overall similarity to other *Boophis* species. Assigned to the *Boophis goudoti* group because of its brownish ground colour, presence of dermal flaps or tubercles on heels and elbows, presence of white tubercles ventrally of the cloacal opening, absence of red skin colour and molecular phylogenetic relationships.

A relatively small species (male SVL 30.7–33.9 mm, adult female SVL 42.0 mm) of the *Boophis goudoti* group, characterized by its green colour in the outer iris area, a turquoise iris periphery, comparatively small white tubercles in the cloacal region and a weakly developed supratympanic fold. *Boophis fayi* differs from all described species in the *B. goudoti* group by substantial genetic differentiation (> 5.3% pairwise divergence in a fragment of the 16S rRNA gene) and the poorly developed supratympanic fold (versus well-developed in the other species). Furthermore, it differs from *B. goudoti*, *B. obscurus*, *B. periegetes*, *B. madagascariensis*, *B. roseipalmatus*, *B. brachyehir*, *B. entingae*, and *B. spinophis* by its smaller size (SVL of adult males 30.7–33.9 mm versus > 41 mm) and the presence of green colour in the outer iris area. It differs from the similarly sized *B. burgeri*, *B. popi*, *B. reticulatus*, *B. rufioculis*, and *B. axelmeyeri* by the presence of green colour in the outer iris (versus differently coloured) and the lack of elevated dorsal reticulation. *Boophis fayi* differs from *B. boehmei* and *B. quasiboehmei* by its slightly larger male SVL (30.7–33.9 versus 26.7–30.8 mm), green outer iris colour (versus red or orange outer iris), shorter hindlimbs (tibiotarsal articulation reaching between eye and nostril versus beyond tip of snout), and advertisement call (see below).

Description of holotype: Adult male in good state of preservation, tongue removed as DNA tissue sample. SVL 33.9 mm. Body slender; head slightly longer than wide, wider than body; snout pointed in dorsal view, rounded in lateral view; nostrils directed laterally, slightly nearer to tip of snout than to eye; canthus rostralis rounded, slightly curved in dorsal view from eye to nostril, nearly straight from nostril to tip of snout; loreal region slightly concave; eye large; tympanum distinct, rounded, TD 48% of ED; supratympanic fold very weak, barely recognizable; vomerine odontophores distinct, well separated in two ovoid patches, positioned slightly posteriorly between choanae; choanae medium-sized, rounded. Arms moderately slender; a small pointed dermal appendage on elbow; subarticular tubercles single, round; inner palmar tubercle poorly recognizable; fingers poorly webbed and without lateral dermal fringes; webbing formula 1(--), 2i(--), 2e(1), 3i(2), 3e(2), 4(1.5); relative lengths of fingers 1<2<4<3 (finger 2 distinctly shorter than finger 4); finger discs enlarged. Hind limbs slender; a well-developed pointed dermal appendage on heel; tibiotarsal articulation reaching to between eye and nostril when hind limb is adressed along body; lateral metatarsals separated by webbing; inner metatarsal tubercle small, moderately distinct, elongated; no outer metatarsal tubercle; toes moderately webbed; webbing formula 1(1), 2i(1), 2e(0), 3i(1), 3e(0), 4i(2), 4e(2), 5(1); relative lengths of toes 1<2<3<5<4; toe discs enlarged.

Skin smooth on dorsal faces, smooth on throat and chest, coarsely granular on belly, rather smooth on ventral face of thighs, scattered tubercles around cloaca. Measurements are provided in Table 1.

After 15 months in preservative, ground colour of upper faces of head, dorsum and limbs brown, with few, irregularly scattered, small, cream-coloured spots, and irregular dark brown flecking; supratympanic and tympanic region not distinctly coloured; irregular cream fleck below eye; upper lip creamy white; dorsal faces of thigh, shank, tarsus and outer toe as well as lower arm, hand and outer finger with distinct dark brown crossbands; flanks brown with small pale cream spots and dots, forming a narrow strip of

reticulated pattern along the border to belly; several whitish tubercles below the cloaca, thin white line above cloaca; posterior faces of thighs cream with brown mottling on the proximal part; ventral faces creamy white without any flecks or mottling except some fine brown mottling at the anterior edge of throat.

In life, general pattern similar to that in preservative, but dorsal faces light brown with large dark brown transversal flecks in interorbital area, scapular region and at urostyle level; dorsum and flanks with irregular dark brown flecking and small, irregularly scattered, green spots; distinct green shading in supratympanic region, on anterior snout and surrounding nostril; edges of dermal appendages on

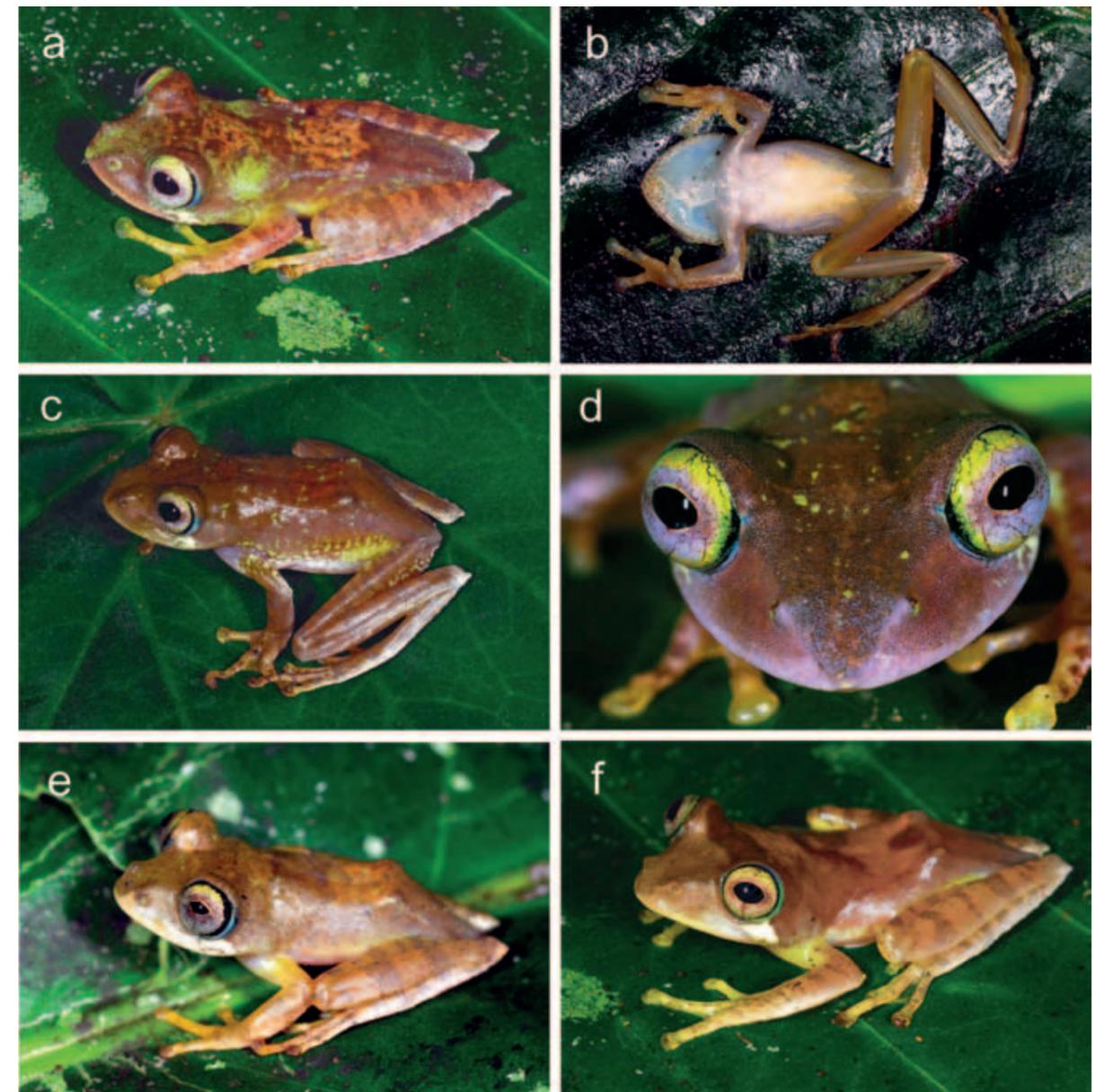


Figure 6. *Boophis fayi* sp. n. from the type locality in life: (a, b) male holotype (ZSM 280/2010) in dorsolateral and ventral views; (c) female paratype (ZSM 281/2010); (d) frontal close up of head of female paratype (note characteristic green iris colour); (e, f) male paratypes deposited at UADBA (FGZC 4251, 4260).