Two new *Huia* (Amphibia: Ranidae) from Laos and Thailand

**BRYAN L. STUART AND TANYA CHAN-ARD**

*Huia absita*, new species, is described from Xe Sap National Biodiversity Conservation Area, southern Laos. *Huia absita* very closely resembles *H. masonii*, a species endemic to the Indonesian island of Java about 2,500 km away. The description of the holotype of *H. masonii* is expanded. *Huia absita* differs from *H. masonii* by having an outer metatarsal tubercle, having the third and fifth toes equal in length, and having supernumerary tubercles on the fingers. *Huia melasma*, new species, is described from Tham Tarn Lot (= Chalerm Rattanakosin) National Park and Kaeng Krachan National Park, western Thailand, and is distinguished by having males with SVL 53.5–55.1, no visible pineal body, a black spot on the side of the snout separated from the black canthal streak extending from nostril to eye, the first and second fingers equal in length, and all toes webbed to base of discs. The description of *H. absita* and *H. melasma* brings the number of species of *Huia* from five to seven.


**MATERIALS AND METHODS**

Specimens were caught in the field by hand, preserved in 10% buffered formalin, and later transferred to 70% ethanol. Tissue samples were taken from some individuals by preserving pieces of liver in 95% ethanol before the specimen was fixed in formalin. Specimens were deposited and comparative material was examined in the Field Museum of Natural History (FMNH) and the Thailand Natural History Museum (THNHM). Comparative material was also examined in the holdings of The Natural History Museum, London (BMNH); Museum of Natural Science, Louisiana State University (LSUMZ); and Texas Natural History Collections, Texas Memorial Museum, University of Texas (TNHC).

Measurements largely follow those of Bain et al. (2003) and were made with dial calipers to the nearest 0.1 mm. Abbreviations used are: SVL = snout-vent length; HDL = head length from tip of snout to the commissure of the jaws; HDW = head width at the commissure of the jaws; SNT = snout length from tip of snout to the anterior corner of the eye; EYE = diameter of the exposed portion of the eyeball; IOD = interorbital distance; TMP = horizontal diameter of tympanum; TEY = tympanum-eye dis-
Fig. 1. The adult female holotype (BMNH 1947.2.4.2) of *Huia masonii* (Boulenger, 1884) in preservative. (A) Dorsolateral view. (B) Palmar view of hand. (C) Plantar view of foot.

Figures 1A–C, Table 1

**Huia masonii** (Boulenger, 1884)

*Huia masonii* Boulenger (1884):397, holotype BMNH 1947.2.4.2, adult female, from “near Batavia” (= Jakarta), Java, Indonesia (Fig. 2)

Boulenger’s (1884) description of the species was based on a single female, BMNH 1947.2.4.2, designated as the holotype by monotypy. We supplement Boulenger’s description, as follows: Habitus moderately slender; head narrow, slightly longer than wide; snout obtusely pointed, projecting beyond lower jaw, round in profile, not depressed; nostril lateral, slightly closer to tip of snout than eye; canthus distinct, con-
TABLE 1. Measurements (mm) of *Huia masonii* (Boulenger, 1884) and *Huia absita*, New Species. Abbreviations are defined in the text.

<table>
<thead>
<tr>
<th>Huia masonii Adult female holotype BMNH 1947.2.4.2</th>
<th>Huia masonii Adult males TNHC 059912-4, LSUMZ 81923-7</th>
<th>Huia absita Adult female holotype FMNH 258107</th>
<th>Huia absita Adult male paratypes FMNH 258109, 258153, THNM 06217</th>
<th>Huia absita Imm. female paratype FMNH 258611</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Range; Mean ± S.D.</strong></td>
<td><strong>Range; Mean ± S.D.</strong></td>
<td><strong>Range; Median</strong></td>
<td><strong>Range; Median</strong></td>
<td><strong>Range; Median</strong></td>
</tr>
<tr>
<td>(N = 10)</td>
<td>(N = 3)</td>
<td>(N = 10)</td>
<td>(N = 3)</td>
<td>(N = 3)</td>
</tr>
<tr>
<td>SVL</td>
<td>HDL</td>
<td>SNT</td>
<td>HDW</td>
<td>SNT:HDL</td>
</tr>
<tr>
<td>65.7</td>
<td>23.8</td>
<td>22.3</td>
<td>11.1</td>
<td>5.5</td>
</tr>
<tr>
<td>67.9</td>
<td>21.6</td>
<td>21.9</td>
<td>9.2</td>
<td>7.6</td>
</tr>
<tr>
<td>32.1 ± 2.5</td>
<td>12.1 ± 1.0</td>
<td>10.7 ± 1.1</td>
<td>5.5 ± 0.4</td>
<td>4.5 ± 0.5</td>
</tr>
<tr>
<td>HDL:HDW</td>
<td>SNT:VHW</td>
<td>TMP</td>
<td>TEY</td>
<td>TIB</td>
</tr>
<tr>
<td>1.07</td>
<td>0.47</td>
<td>4.2</td>
<td>3.0</td>
<td>48.8</td>
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<tr>
<td>1.07–1.21; 1.12</td>
<td>0.42–0.48; 0.46</td>
<td>3.1–4.0; 3.5 ± 0.3</td>
<td>0.5–1.1; 0.7 ± 0.2</td>
<td>22.0–27.8; 24.1 ± 1.8</td>
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<tr>
<td>0.99</td>
<td>2.4</td>
<td>2.5</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>0.98–1.05; 1.00</td>
<td>0.9–1.7; 1.2 ± 0.4</td>
<td>1.0–1.7; 1.3 ± 0.4</td>
<td>1.0–1.7; 1.2 ± 0.3</td>
<td></td>
</tr>
<tr>
<td>TMP:EYE</td>
<td>TPL</td>
<td>TIB:SVL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50</td>
<td>2.0</td>
<td>0.7–1.2; 0.9 ± 0.2</td>
<td>0.7–1.2; 0.9 ± 0.2</td>
<td>0.73–0.77; 0.75</td>
</tr>
<tr>
<td>0.47</td>
<td>2.5</td>
<td>2.4</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>0.60–0.89; 0.82</td>
<td>0.9–1.4; 1.2 ± 0.3</td>
<td>0.60–0.68; 0.64</td>
<td>0.60–0.68; 0.64</td>
<td></td>
</tr>
</tbody>
</table>

stricted behind nostrils; lores concave and oblique; snout length greater than eye diameter; interorbital distance about equal to width of upper eyelid (interorbital distance greater than width of upper eyelid according to Boulenger [1884]); pineal body visible; tympanum distinct, depressed relative to skin of temporal region, about half the eye diameter; vomerine teeth in two oblique ridges, about equal in distance from each other as from choanae.

Tips of all four fingers expanded, about 1.25 times the width of phalanges, all with circummarginal grooves, width of finger III disc 40% the diameter of tympanum; relative finger lengths II < I = IV < III; one subarticular tubercle on fingers I and II, two subarticular tubercles on fingers III and IV; no supernumerary tubercles proximal to subarticular tubercles; palmar tubercle at base of fingers I, III, and IV.

Tips of toes expanded, width of toe IV disc equal to width of finger III disc; toe III shorter than toe V; toes I, II, III, and V fully webbed to base of discs; toe IV fully webbed to distal subarticular tubercle with narrow extension to base of disc; an oval inner metatarsal tubercle; no outer metatarsal tubercle.

Skin on dorsum shagreened (skin smooth according to Boulenger, 1884); glandular dorsolateral fold; skin fold posterior to tympanum projecting obliquely from dorsolateral fold to shoulder; two large rictal glands; small round tubercles on lores, temporal region, and posterior to tympanum; larger tubercles on sides, few scattered on rear of back; posterior surface of thighs granular; skin on venter smooth; convoluted oviduct with developing ova.

Coloration mostly lost. On left side of head, dark marking below canthus, in temporal region, and posterior to tympanum; dark spotting on lips and flank; dark flecking on throat and chest. Eggs developing, uniformly brown, without pigmented hemisphere.

Remarks.—Yang’s (1991) description of female *H. javana* agrees with the female holotype of *H. masonii* in all characters but two: Yang stated that the first and second finger of *H. javana* were equal, and that a small outer metatarsal tubercle was present in *H. javana*. The holotype of *H. masonii* has the first finger slightly, but evidently, longer than the second finger, and it lacks an outer metatarsal tubercle; both character states were reported in Boulenger’s (1884) original description, and are not artifacts of the present condition of the specimen. Despite the two discrepancies between Yang’s description and the holotype of *H. masonii*, we agree with Iskandar (1998) that *H. javana* should be treated as a junior synonym of *H. masonii*. Likewise, the brief description and illustrations of *H. ma-
species by Iskandar (1998) are referable to this species, except that Iskandar reported females with SVL only up to 50 mm, considerably smaller than the holotype (65.7 mm).

Adult males from Java have a vocal sac opening at the rear of mouth; gular pouches; no humeral glands; nuptial pad covering the medial and dorsal surface of the first finger from its base to near the level of the distal edge of the subarticular tubercle; SVL 44.4–57.5% SVL of adult female; and a relatively larger tympanum than females (Table 1).

**Huia absita, new species**

*Figure 3A–C, Table 1*

**Holotype.**—FMNH 258107 (field tag HKV 63531), adult gravid female, Laos, Xe Kong Province, Kaleum District, Xe Sap National Biodiversity Conservation Area, 8 m from a small tributary of the Houay Alung Stream, on a 3 cm diameter tree branch 1 m above the ground, 16°00′32″N, 106°55′31″E, 920–1000 m elevation, B. L. Stuart, 2030 h, 30 June 1999.

**Paratypes.**—FMNH 258109 (field tag HKV 63619), FMNH 258133 (field tag HKV 63620), adult males; FMNH 258611 (field tag HKV 63622) immature female, Laos, Xe Kong Province, Kaleum District, Xe Sap National Biodiversity Conservation Area, near 16°04′10″N 106°58′45″E, 1200–1300 m elevation, B. L. Stuart, 9 July 1999. THNHM 00217 (field tag TC 3223), adult male, Laos, Saravane Province, Samov District, near Ban Bee Hi Village, Xe Sap National Biodiversity Conservation Area, 16°08′46″N 106°56′50″E, 1220 m elevation, T. Chan-ard, 25 February 1999.

**Diagnosis.**—A medium-sized ranid frog having finger I longer than finger II; a supernumerary tubercle proximal to the subarticular tubercle on fingers II, III, and IV; an outer metatarsal tubercle; toe III equal in length to toe V; toe IV fully webbed only to the distal subarticular tubercle with a narrow extension to the base of the disc; the tympanum depressed relative to skin of temporal region; a weak glandular dorsolateral fold; males with gular pouches; and upper parts mostly beige with black streak below canthus from tip of snout to eye, obliquely from eye to commissure of jaws, and from eye along supratympanic fold to posterior rim of tympanum, then obliquely to shoulder.

**Description of holotype.**—Habitus moderately slender; head narrow, equal in length and width; snout obtusely pointed, projecting beyond lower jaw, round in profile, not depressed; nostril lateral, slightly closer to tip of snout than eye; canthus distinct, constricted behind nostrils; lores concave and oblique; snout length greater than eye diameter; interorbital distance about equal to width of upper eyelid; pineal body visible; tympanum distinct, depressed relative to skin of temporal region, about half the eye diameter; vomerine teeth in two oblique ridges, about equal in distance from each other as from choanae.

Tips of all four fingers expanded, about 1.5 to 2 times the width of phalanges, all with circummarginal grooves, width of finger III disc two-thirds the diameter of tympanum; relative finger lengths II < I = IV < III; one subarticular tubercle on fingers I and II, two subarticular tubercles on fingers III and IV; smaller supernumerary tubercle proximal to subarticular tubercle on fingers II, III, and IV; palmar tubercle at base of fingers I, III, and IV.

Tips of toes expanded, width of toe IV disc equal to width of finger III disc; toe III equal in length to toe V; toes I, II, III, and V fully webbed to base of disc; toe IV fully webbed to distal
Fig. 3. The adult female holotype (FMNH 258107) of *Huia absita* n. sp. (A) Dorsolateral view in life. (B) Palmar view of hand in preservative. (C) Plantar view of foot in preservative.

Subarticular tubercle with narrow extension to base of disc; an oval inner and small, round, outer metatarsal tubercle.

Skin on dorsum shagreened; weak glandular dorsolateral fold; skin fold posterior to tympanum projecting obliquely from dorsolateral fold to shoulder; two large rictal glands; small round tubercles on lores, temporal region, and poste-
rior to tympanum; larger tubercles on sides; posterior surface of thighs granular; skin on venter smooth.

Color of holotype in life.—Upper parts beige with light green flecking; pinkish wash on upper sides, forelimbs, and lips; black spotting on dorsal surface of snout tip, lips, upper eyelid, forelimb, dorsolateral fold, and flank; black streak below edge of canthus from tip of snout to eye; black streak obliquely from eye to commisure of jaws; black streak from eye along supratympanic fold to posterior rim of tympanum, then obliquely to shoulder; limbs with brown crossbars; venter and underside of limbs cream-yellow; with dark spot near insertion of forelimb with body; iris coppery; with dark red blotch anterior and posterior to pupil.

Color of holotype in preservative.—Light green flecking and pinkish wash lost in preservative. Eggs creamy-yellow with brown pigmented hemisphere.

Variation.—Males with gular pouches, vocal sac opening at rear of mouth; males without humeral gland; nuptial pad in males covering the medial and dorsal surface of the first finger from its base to the level of the distal edge of the subarticular tubercle; SVL of adult males 50.7–59.8% SVL of adult female; tympanum of males relatively larger than tympanum of adult female (Table 1); interorbital distance wider than width of upper eyelid in the immature female; width of finger III disc only one-fourth to one-half the diameter of tympanum in males and immature female; dorsum of paratypes darker brown in preservative than holotype.

Comparisons.—Huia absita very closely resembles H. masonii, but differs by having an outer metatarsal tubercle (lacking in H. masonii), having toe III equal in length to toe V (toe III shorter than toe V in H. masonii), and having a supernumerary tubercle proximal to the subarticular tubercle on fingers II, III, and IV (lacking in H. masonii). Huia absita differs from H. cavitympanum by lacking the tympanum deeply recessed in a cavity on the side of the head (present in H. cavitympanum) and having toe IV fully webbed only to the distal subarticular tubercle with a narrow extension to the base of the disc (toe IV webbed to base of disc in H. nasica), lacking ventral spinules in males (male H. nasica with whitish spinules scattered ventrally near to the groin and in a small, ventrolateral cluster near to the insertion of the forearm), and lacking white asperities on the rear of back (present in H. nasica). Huia absita differs from H. sumatrana by having toe IV fully webbed only to the distal subarticular tubercle with a narrow extension to the base of the disc (toe IV webbed to base of disc in H. sumatrana) and having a supernumerary tubercle proximal to the subarticular tubercle on fingers II, III, and IV (lacking in H. sumatrana).

Distribution and ecology.—Huia absita is currently known only from Xe Sap National Biodiversity Conservation Area in Xe Kong and Saravane Provinces, southern Laos (Fig. 2). All five known specimens were collected at night from 1938–2105 h in wet hilly evergreen forest between 920–1300 m elevation. Three specimens were collected on vegetation near small, rocky, flowing streams, and two were collected in the forest away from any permanent body of water. More specifically, the adult female holotype was collected on a 5 cm diameter tree branch 1 m above the ground, 8 m from a small tributary, and one adult male (FMNH 258133) was taken on a leaf of an herbaceous plant 40 cm above the ground, 2 m from a 1 m wide stream. One adult male (FMNH 258109) was collected 1 m above the ground, and the immature female (FMNH 258611) was taken 0.75 m above the ground, both perched on stems of herbaceous plants in the forest away from any water.

Etymology.—The specific epithet absita is taken from absitus (Latin), meaning remote or distant, in reference to both the remoteness of the type locality and to the large geographic distance of this Lao species from its probable sister taxon, H. masonii, in Java.

Huia melasma, new species

Figure 4A–C, Table 2

Huia nasica (part) Yang (1991):31
Huia nasica Chan-ard (2003):112–113

Paratypes.—FMNH 215971 (field tag DLD 1032-4), adult male, data as for holotype. THNHM 00218 (field tag TC 4449), adult male, Thailand, Prachuap Kirikhan Province, Hua Hin District, Kaeng Krachan National Park, Pa-la-u Waterfall, near 12°32'16"N, 99°27'41"E, Y. Chuaynkerern, 16 December 2002.

Diagnosis.—A medium-sized ranid frog having males with SVL 53.5–55.1; finger I equal in length to finger II; an outer metatarsal tubercle; toe III shorter than toe V; toe IV fully webbed to base of disc; no visible pineal body; a weak dorsolateral fold; males with gular pouches; and a black spot on the side of the snout anterior to nostril, separated from the black canthal streak extending from nostril to eye.

Description of holotype.—Habitus moderately slender; head narrow, slightly longer than wide;
TABLE 2. MEASUREMENTS (MM) OF *Huia melasma*, NEW SPECIES. Abbreviations are defined in the text.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Adult male holotype and paratypes FMNH 215970-1, THNHM 00218</th>
<th>Range; Median (N = 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVL</td>
<td>53.5–55.1; 54.5 ± 0.9</td>
<td>54.5; 0.9</td>
</tr>
<tr>
<td>HDL</td>
<td>19.2–22.0; 20.3 ± 1.5</td>
<td>20.3; 1.5</td>
</tr>
<tr>
<td>HDW</td>
<td>17.5–19.5; 18.5 ± 1.0</td>
<td>18.5; 1.0</td>
</tr>
<tr>
<td>SNT</td>
<td>10.5–10.9; 10.6 ± 0.2</td>
<td>10.6; 0.2</td>
</tr>
<tr>
<td>EYE</td>
<td>6.6–7.2; 6.9 ± 0.3</td>
<td>6.9; 0.3</td>
</tr>
<tr>
<td>IOD</td>
<td>4.2–4.8; 4.5 ± 0.3</td>
<td>4.5; 0.3</td>
</tr>
<tr>
<td>TMP</td>
<td>4.5–5.4; 5.1 ± 0.5</td>
<td>5.1; 0.5</td>
</tr>
<tr>
<td>TEY</td>
<td>1.1–1.7; 1.4 ± 0.3</td>
<td>1.4; 0.3</td>
</tr>
<tr>
<td>TIB</td>
<td>38.1–40.8; 39.6 ± 1.4</td>
<td>39.6; 1.4</td>
</tr>
<tr>
<td>FPL</td>
<td>1.9–2.3; 2.1 ± 0.2</td>
<td>2.1; 0.2</td>
</tr>
<tr>
<td>FPW</td>
<td>1.4–1.8; 1.6 ± 0.2</td>
<td>1.6; 0.2</td>
</tr>
<tr>
<td>TPL</td>
<td>2.0–2.5; 2.3 ± 0.3</td>
<td>2.3; 0.3</td>
</tr>
<tr>
<td>TPW</td>
<td>1.5–2.0; 1.8 ± 0.3</td>
<td>1.8; 0.3</td>
</tr>
</tbody>
</table>

Variation.---The paratypes have more extensive black spotting than the holotype, specifically on the upper surface of arm, side, anterior surface of thigh, and rear of tibia. In both paratypes, the black streak below dorsolateral fold beginning at rear of eye is broken but extends to groin. FMNH 215971 has one black spot above anus and one on rear of back near to groin. THNHM 00218 lacks nuptial pads and whitish asperities on upper parts, and is illustrated in life by Chan-ard (2003: 113 as *H. nasica*). A specimen photographed on Doi Chiang Dao Mountain (Fig. 5) had a SVL of 69 mm; this is considerably larger than the known male specimens, and was probably female.

Comparisons.---*Huia melasma* most closely resembles *H. nasica*, but differs by lacking a depressed snout in profile (present in *H. nasica*), lacking ventral spinules (male *H. nasica* with whitish spinules scattered ventrally near to the groin and in a small, ventrolateral cluster near to the insertion of the forearm), having shagreened skin on dorsum (smooth skin on dorsum in *H. nasica*).
Fig. 5. A specimen of *Huia melasma* n. sp. in life collected at 600 m elevation along Huai Mae Ka Stream on Doi Chiang Dao Mountain, Doi Chiang Dao Wildlife Sanctuary, Chiang Mai Province, northern Thailand on 16 May 1997. Collected and photographed by Peter Paul van Dijk.

*sica*), lacking a visible pineal body (present in *H. nasica*, contrary to Yang [1991] who included the two FMNH types of *H. melasma* in his redecription of *H. nasica*, according to Inger et al. [1999]), and having a black spot on the side of the snout anterior to nostril and black canthal streak from nostril to eye (black canthal streak continuous from tip of snout to eye in *H. nasica*). *Huia melasma* differs from *H. absita* by having toe IV fully webbed to base of disc (toe IV fully webbed to distal subarticular tubercle with narrow extension to base of disc in *absita*), having toe III shorter than toe V (toe III equal in length to toe V in *absita*), and lacking a visible pineal body (present in *H. absita*). *Huia melasma* differs from *H. cavitympanum* by lacking the tympanum deeply recessed in a cavity on the side of the head (present in *H. cavitympanum*) and having smooth sides (large rounded tubercles on sides of *H. cavitympanum*). *Huia melasma* differs from *H. masonii* by having an outer metatarsal tubercle (lacking in *H. masonii*), having toe IV fully webbed to base of disc (toe IV fully webbed to distal subarticular tubercle with narrow extension to base of disc in *H. masonii*), and lacking a visible pineal body (present in *H. masonii*). *Huia melasma* differs from *H. modiglianii* by having an outer metatarsal tubercle (lacking in *H. modiglianii*) and having toe IV fully webbed to base of disc (toe IV fully webbed to distal subarticular tubercle in *H. modiglianii*). *Huia melasma* differs from *H. sumatrana* by having males with SVL 53.5–55.1 (holotype adult male of *H. sumatrana* with SVL 30.5, and reported by Yang [1991] to have males with SVL 29–31) and lacking a visible pineal body (present in *H. sumatrana*).

**Distribution and ecology.**—*Huia melasma* is currently known from Kanchanaburi, Prachuap Kirikhan, and Chiang Mai Provinces in western and northern Thailand. The holotype was collected from a “low lying rocky stream,” paratype THNHM 00218 was collected along a stream at the base of a large waterfall in evergreen forest at 200–250 m elevation, and a specimen photographed on Doi Chiang Dao Mountain (Fig. 5) was captured along a stream in evergreen forest at approximately 600 m elevation.

**Etymology.**—The specific epithet is taken from *melasma* (Greek), meaning black spot, in ref-
ence to the black spot on the side of the snout anterior to the nostril.

**DISCUSSION**

In the definition of *Huia* provided by Yang (1991), only the character of having the first metacarpal bone 1/2–2/3 times the length of the second distinguishes adult *Huia* from *Meristogenys* Yang, 1991, a genus endemic to Borneo (Yang also stated that the width of the crossbar on the T-shaped terminal phalanx differs in adult *Huia* and *Meristogenys*, but this is not apparent in the illustrations). Rather, these genera are more easily distinguished by characters of the tadpoles (Yang, 1991), which are presently unknown in *H. absita* and *H. melasma*. We did not dissect the metacarpal bones in either type series owing to the paucity of specimens, but we assign *H. absita* and *H. melasma* to the genus *Huia* owing to the morphological similarity of the adults with those of other species recognized as *Huia*.

*Huia masonii* is endemic to the Indonesian island of Java (Iskandar, 1998), and *H. absita* is currently known only from Xe Sap National Biodiversity Conservation Area in southern Laos. These two morphologically similar species are probably sister taxa, but their type localities are approximately 2,500 km straight-line distance apart. Two parallel, disjunct distributions are known in other taxa. The bird genus *Crocius* contains two species, one in the mountains of western Java (MacKinnon and Phillipps, 1993) and one on the Da Lat Plateau of southern Vietnam (Robson, 2000). The striped rabbit genus *Nesolagus* contains one species in the mountains of the Indonesian island of Sumatra and one in the Annamite Mountains of Laos and Vietnam, and these have been shown to be sister taxa (Surridge et al., 1999). During periods of lowered sea levels in the Pleistocene, the Sundar Shelf became land-positive, forming a continuous land connection between Java and mainland Southeast Asia, including Laos (Voris, 2000). However, *H. masonii* is always found near swift, clear, rocky streams (Iskandar, 1998) that are associated with strong topographic relief, and the specimens of *H. absita* were found in high elevation, hilly evergreen forest, sometimes near swift, clear, rocky streams. Such habitat preferences imply that these frogs would probably be poor dispersers across the relatively flat lowlands of the Sundar Shelf (Inger and Voris, 2001). We suggest that *H. masonii* in Indonesia and *H. absita* in Laos represent relictual, divergent populations of a formerly widespread taxon, an explanation also proposed for the rabbits (Surridge et al., 1999).

**MATERIAL EXAMINED**


*H. sumatrana* (2). Sumatra, Indonesia: FMNH 209922, holotype, male; FMNH 209912, para-type, female.

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