

A New Genus and Species of Moist Closed Canopy Forest Skinks from the Philippines*

JOHN W. FERNER,^{1,2} RAFE M. BROWN,^{2,3} AND ALLEN E. GREER⁴

¹Department of Biology, Thomas More College, Crestview Hills, Kentucky 41017, USA; E-mail: fernerj@thomasmore.edu

²Cincinnati Museum of Natural History, 1720 Gilbert Ave., Cincinnati, Ohio 45202, USA;

³Department of Zoology, Miami University, Oxford, Ohio 45056, USA, and

⁴The Australian Museum, 6–8 College St., Sydney, New South Wales, 2000, Australia

ABSTRACT.—*Parvosцинus* is described as a new genus of small skinks inhabiting the litter in closed canopy forests on two islands in the central-western part of the Philippine Islands archipelago. The genus consists of two species, one of which, *Parvosцинus sisoni* sp. nov., is described here from seven specimens from the Mt. Madia-as region of the Visayan island of Panay.

Until recently, the higher elevations of the west coast of the island of Panay, in the central, or Visayan, region of the Philippine Archipelago, have been unexplored by scientists (Gonzales and Kennedy, 1990). A joint expedition of the National Museum of the Philippines (PNM) and the Cincinnati Museum of Natural History (CMNH) visited Mt. Madia-as on the border of Antique and Aklan Provinces, Panay from 4 April 1992 through 1 May 1992. Among the specimens collected were six individuals of a cryptozoic skink that appear to be an undescribed species. A seventh specimen was collected in the same area on 29 November 1992 by Arvin C. Diesmos of the University of the Philippines at Los Banos (UPLB). This new species is closely related to *Lygosoma* (*Sphenomorphus*) *palawanensis* Brown and Alcala, 1961, known from only three specimens (California Academy of Sciences-Stanford University Register no. 23122—holotype, and CAS-SU 23124 and CAS 91205 paratypes) from Palawan Island in the Philippines. Together the two species appear to constitute a lineage of skinks worthy of generic rank.

Parvosцинus New Genus

The new genus is a member of the *Sphenomorphus* Group of lygosomine skinks (Greer, 1979). It may be distinguished from all other taxa in this group by the following combination of derived characters. The polarity of the character states is inferred relative to *Eumeces*, the generally primitive scincid genus, and to the southeast Asian species of *Mabuya*, the most generally primitive lygosomines.

Diagnosis.—Supranasals absent; prefrontals, when present, moderately to widely separated;

supraciliaries nine; upper half of lower eyelid formed by single row of deep scales; subocular row complete; supralabials six, fourth subocular; external ear opening absent.

Body scales smooth, in 26 or fewer longitudinal rows at midbody. Supradigital scales in single row; phalangeal formula of manus 2.3.4.4.3; subdigital lamellae of fourth toe ≤ 12 . Left oviduct absent; brood size = 1. Abdominal fat bodies absent. Size small (maximum SVL ≤ 34 mm).

Lacrimal absent; postorbital absent; supratemporal fenestra a small slit; post-temporal fenestrae obliterated by close apposition between parietal and supraoccipitals; quadratal conch absent; vomers fused; pterygoid teeth absent; palatal rami of pterygoids medially expanded with posteromedial recurved process.

Skull osteology was observed only in *Parvosцинus sisoni* new species (PNM 2309). Radiographs showing clearly the details of the postcranial skeleton were available for both *P. palawanensis* (CAS-SU 23122; CAS 91205) and *P. sisoni* (CNHM 3797-98; PNM 2308).

Type Species.—*Parvosцинus sisoni* new species (below), by present designation.

Species.—*P. palawanensis* (Brown and Alcala, 1961; Fig. 4); *P. sisoni* new species (Figs. 1, 3).

Distribution.—Philippines (Fig. 2). Altitudinal range: 100–1125 m.

Habitat.—In leaf litter and beneath surface cover in moist closed-canopy forest.

Reproduction.—The holotype of *Parvosцинus palawanensis* (CAS-SU 23122) is a gravid female with a single large ovarian follicle or oviducal "egg" on the right side. The new species *P. sisoni* also has a brood size of one (below). A brood size of one is usual in skink taxa with only a single oviduct (Greer, 1977, 1989; Greer and Mys, 1987). Unfortunately, an inference as to the mode of reproduction in the genus is not pos-

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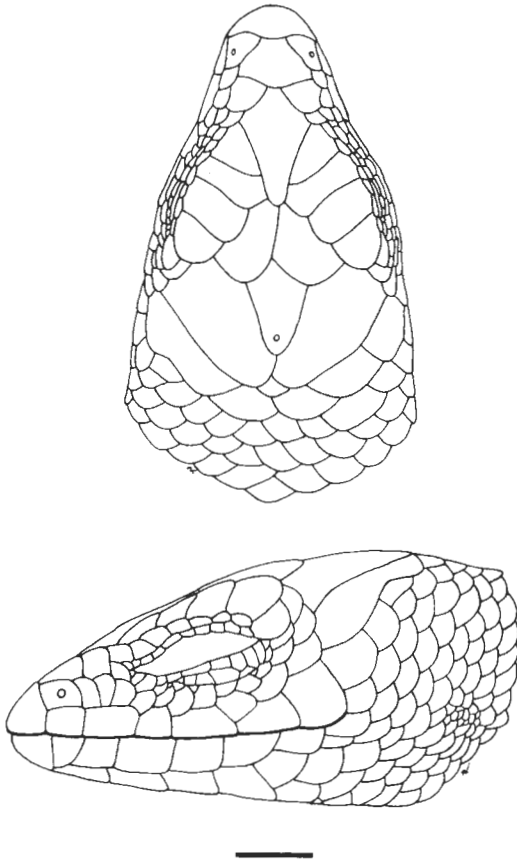


FIG. 1. The head of a paratype of *Parvosцинus sisoni* (CMNH 3797, female) in dorsal and lateral view. Drawing: P. Koshland. Scale bar equals 1 mm.

sible on the basis of the existing gravid specimens.

Key to the Species of *Parvosцинus*

- 1. Prefrontals present; loreals two; infralabials six *P. sisoni* new species.
- Prefrontals absent; loreals one; infralabials five *P. palawanensis*.

Comparison with Similar Taxa.—To facilitate the identification of the new species, it may be noted that the only other species of Philippine lygosomine skinks besides *Parvosцинus* that lack and external ear opening are five species of *Lipinia* (*L. infralineolata*, *L. quadrivittata*, *L. subvittata* and *L. relictata*) and "*Lygosoma*" (*Sphenomorphus luzonense* Boulenger 1894 (Brown and Alcala, 1980)). *Parvosцинus* can be distinguished from these five species by the presence of distinct instead of fused frontoparietals.

Intrageneric Relationships.—*Parvosцинus palawanensis* appears to be the more highly derived

of the two species of *Parvosцинus*. For example, it has lost the prefrontal scales, the posterior loreal, an infralabial, and a phalange in the fifth toe of the pes. In no character analysed, does *P. sisoni* show a more derived state than its close relative.

Etymology.—From the Latin "*parvus*"—dwarf and "*scincus*"—lizard, in reference to the very small size of the species.

Parvosцинus sisoni new species

Figs. 1, 3

Holotype.—Philippines National Museum 2308, adult female. Type locality (Fig. 2) 1020 m elevation, Mt. Madia-as, Barangay Alojipan, Municipality of Culasi, Antique Province, Panay, Philippines; 11°23'31" N, 122°09'11" E; collected by Rafe M. Brown on 6 April 1992. Field Number PNM/Cincinatti Museum of Natural History 424.

Paratypes.—PNM 2309, field number PNM/CMNH 426, male, same data as holotype except at 1000 m; California Academy of Science (CAS) 193110, previously PNM 2310, field number PNM/CMNH 485, immature individual, same as holotype except 900 m, 7 April 1992; CMNH 3797, field number PNM/CMNH 449, female, same as holotype except 1030 m; CMNH 3798, field number PNM/CMNH 526, male, same as holotype except 1050 m, 8 April 1992; CMNH 3799, field number PNM/CMNH 551, immature individual, same as holotype except 1125 m, 9 April 1992. Arvin C. Diesmos (ACD) field number 02, immature, same as holotype except 1100 m, 29 November 1992; specimen deposited in the collection of the Wildlife Laboratory at the University of the Philippines at Los Banos (UPLB).

The seventh specimen of the new species was collected in the same location on Mt. Madia-as by Arvin Diesmos of the University of the Philippines at Los Banos (UPLB) later in 1992. The identification of this specimen was confirmed by one of us (RMB), but was subsequently unavailable for counts and measurements.

All but two specimens were fixed in 10% buffered formalin and notes were taken on location and habitat. Specimens PNM 2308 and 2309 were preserved in 45% alcohol (90 proof rum) until formalin supplies reached the camp the following day. Specimens were transferred to 70% ethanol after being transported to CMNH about two months later. Measurements were made on the preserved specimens in alcohol following Brown and Alcala (1980) and Brown et al., (1995). Sex and features of soft anatomy were examined by dissection. Skeletal features were examined by dissection and by analysis of radiographs (CMNH 3797-98; PNM 2308).

Diagnosis.—Differs from the only other spe-

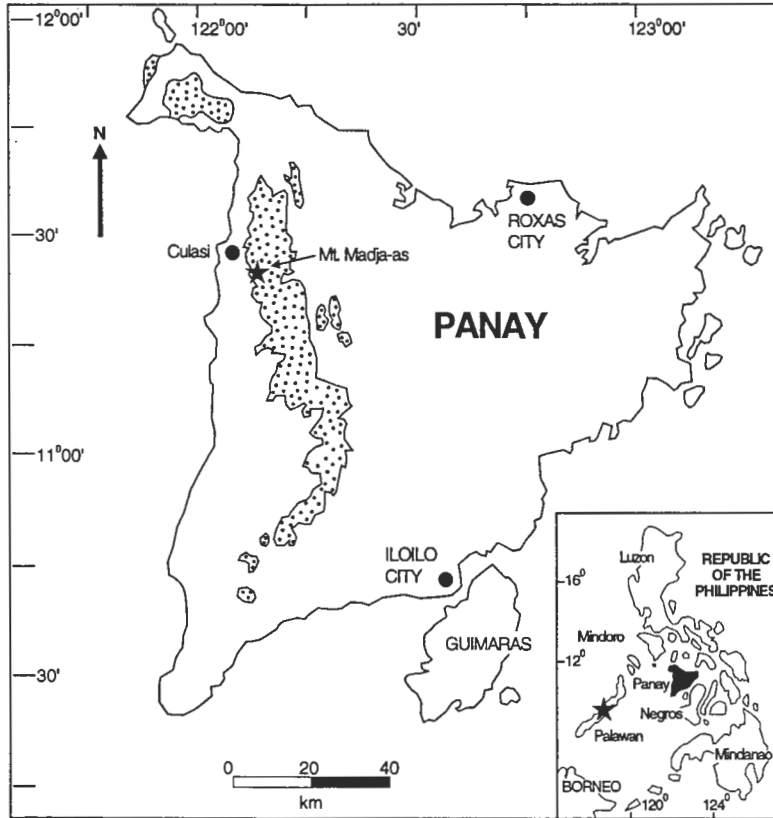


FIG. 2. Map of Panay showing the holotype locality (star) within remaining closed canopy forest (stippled area) and the *Parvoscincus palawanensis* type locality (star) on Palawan in the insert map.

cies of *Parvoscincus* in having: prefrontals present (vs. absent); loreals two (vs. one, although the second may be quite reduced ventrally); and infralabials six (vs. five), and four phalanges in the fifth toe of the pes (vs. three).

Description.—In general form, a small (maximum SVL ≤ 34 mm, Table 1), slender, dark brown skink with bluntly conical snout, and limbs that would not meet if appressed along trunk.

Rostral projects strongly onto dorsal surface of snout, due to apparent depression of head; supranasals absent; nasals well separated; frontonasal wider than long; prefrontals present, moderately separated; frontal longer than wide; supraoculars four, first two on each side contacting frontal; frontoparietals and interparietal distinct, their combined midline length longer than frontal; parietal eye evident through clear area in posterior lobe of interparietal; parietals meeting behind interparietal; a small medial nuchal scale nestled between parietals; medial nuchal scales bordering parietals same size as adjacent body scales or in an enlarged pair.

Nostril in center of anteriorly rising rhomboid

nasal; loreals two, but posterior loreal varying from being in contact ventrally with supralabial row to being squeezed off supralabial row to various degrees by contact between anterior loreal and lower preocular; preoculars two; pre-subocular single; supraciliaries 9–10, first contacting frontal and last largest and projecting deeply behind last supraocular; subocular scale row complete, interdigitating ventrally with supralabials; lower eyelid scaly, scales of upper edge of eyelid deep and extending ventrally across upper half of eyelid; pre-temporals two; primary temporal single; secondary temporals two, upper twice as large as and overlapping lower which itself is slightly larger than primary temporal; supralabials six, fourth subocular; postsupralabials two; external ear region covered by scales, its location indicated by a shallow dimple.

Mental wider than long; postmental single; enlarged chin scales in three pairs, first pair in contact, second pair separated by one scale row and third pair separated by three scale rows; infralabials six, first two on each side contacted by postmental.

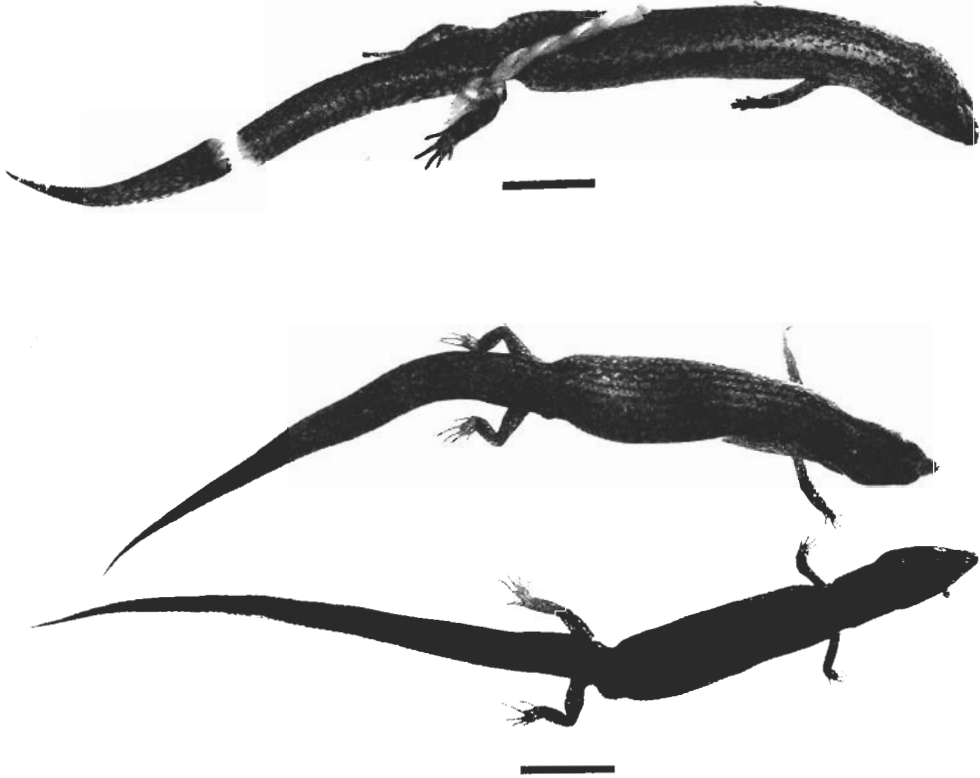


FIG. 3. The holotype of *Parvoscincus palawanensis* (Brown and Alcala, 1961; CAS-SU 23122) (top) and two paratypes of *Parvoscincus sisoni* (middle: CMNH 3797; bottom: CMNH 3798. Photo: C. Bento. Scale bar equals 5 mm.

Body scales smooth, in 24–26 longitudinal rows at midbody; paravertebrals slightly wider than scales in adjacent rows, numbering 62–68; medial pair of preanal scales enlarged, inner preanals overlapping outer; supradigital scales in single row; subdigital lamellae on fourth toe

of pes, 11–12, and with a slight postaxial groove, i.e., slightly obtusely keeled.

Color in Preservative.—Dorsum, sides, and limbs generally chocolate brown underlain by a suffusion of small paler brown spots, well defined on head but diffuse on rest of body and on limbs; dorsum and flanks with narrow dark brown stripes running through the centers of each longitudinal scale row, most strongly defined dorsally and becoming more diffuse ventrally. Venter of chin, throat, anterior chest, and extreme posterior part of body with chocolate brown blotching; venter of midbody pale with a few scattered brown blotches encroaching from dark lower flanks; venter of tail uniform brown; tongue dark. Colors in life unrecorded.

Presacral vertebrae 26 ($N = 3$); postsacral vertebrae indeterminate, but one specimen with nearly complete tail has 35; phalangeal formula of manus and pes 2.3.4.4.3/2.3.4.5.4; sternal/mesosternal ribs $\frac{1}{2}$ ($N = 2$).

Details of Holotype.—Sex female (gravid); SVL 33.6 mm; tail length 41.6 mm; scale rows around

TABLE 1. Morphometrics of the seven specimens of *Parvoscincus sisoni*.

	Range	Mean	SD	N
SVL (mm)	20.0–33.6	26.3	4.7	7
Midbody scale rows	24–26	25.6	0.60	7
Paravertebral scale rows	62–68	63.4	1.5	7
Subdigital lamellae	11–12	11.6	0.49	14
Tail length (% of SVL)	107–124	117.0	7.93	4
Hind limb length (% of SVL)	26–32	27.9	1.56	7

midbody 26, around neck just anterior to forelimbs 26, and around base of tail 16; paravertebrals 63; infralabials $\frac{7}{6}$; supralabials $\frac{6}{6}$; mental wider than long (1.2×0.8 mm); loreals two, posterior smaller of the two and in contact with second supralabial; forelimb, 6.0 mm; hindlimb, 8.8 mm; trunk length from axilla to groin, 18.6 mm; snout length, 1.9 mm; greatest head width, 4.0 mm; head length from snout to ear depression, 6.3 mm; scale rows between adpressed limbs, 11; rank of adpressed toes 4, 3, 5, 2, 1; rostral wider than long (1.1×0.8 mm); frontonasal wider than long (1.1×0.7 mm); frontal longer than wide (1.6×0.8 mm), tapering to a point caudally; interparietal relatively large and longer than wide (1.5×1.0 mm); parietals longer than wide (1.9×1.1 and 1.8×1.1 mm), largest pair of nuchals most dorsolateral with a smaller medial pair separated by three small undifferentiated nuchals located behind the suture between the parietals.

Subdigital lamellae (Roman numerals = digits, Arabic numerals = left/right counts): forefoot I $\frac{3}{5}$, II $\frac{6}{6}$, III $\frac{7}{7}$, IV $\frac{7}{7}$, V $\frac{5}{5}$; hindfoot I $\frac{3}{4}$, II $\frac{6}{6}$, III $\frac{6}{6}$, IV $\frac{11}{11}$, V $\frac{7}{6}$; hindlimb 26 percent of SVL and 47 percent of the axilla-groin length; ratio of head width to SVL = 0.13; ratio of head width to head length = 0.63.

Etymology.—The species is named for Mr. Rogelio Sison of the Philippine National Museum. Mr. Sison has been actively surveying vertebrates on Panay for a number of years and has been responsible for documenting 14 new island records of amphibians and reptiles in the past 10 years. Without his logistical support and encouragement, we would not have found this new species of skink.

Habitat.—All specimens of this species were collected between 900 and 1125 m in the transition zone between mixed dipterocarp (submontane) and upper montane (mossy) forest. Dominant species included *Lithocarpus* spp., *Ficus* spp., *Freycinetia* sp. and *Palmae* (Arecaceae) spp. This type of vegetation zone, a two story forest, has been termed Mid Mountain Forest (Whitmore, 1984; Dickinson et al., 1991). The habitat had fairly steep, rocky valleys with a forest canopy of 8 to 10 m. Emergent trees reached 18 m with a dbh of 40 cm, but most had a dbh less than 20 m. The forest was very mossy with many epiphytes on the larger trees. Gingers and many types of ferns were common.

All specimens of the new species were captured during the day from beneath loose soil and leaves on the ground in the forest. Six specimens were taken by hand in the leaf litter of the forest floor and the seventh was found in a pitfall trap (as described in Brown et al., 1995).

Reproduction.—The holotype contains a single "egg" measuring 2.4×4.4 mm. Unfortunately

it is not possible to make an inference as to the mode of reproduction of the species from this specimen. The egg appears to have just entered the oviduct and lacks a definitive shell. The collection date, 6 April, is the mid-dry season.

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