

## A NEW LIZARD OF THE GENUS *EMOIA* (SCINCIDAE) FROM THE FIJI ISLANDS

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*Abstract.*—A new species of *Emoia* from the Fiji Islands is described, with notes on its ecological niche relative to other species of the genus occurring in that group of islands.

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Recent fieldwork in the Fiji Islands by several zoologists (the junior authors, B. Goldman, W. Beckon) has provided examples of a previously undescribed, relatively small *Emoia*, comparable in size to *E. cyanura* and *E. caeruleocauda*, which also occur in this island group along with several other skinks (Brown, 1956; Pernetta & Watling, in press). The Fiji collections in the British Museum (Natural History) provide three additional specimens of this heretofore undescribed species. The earliest specimen, accessioned in 1855, and one other were identified as *E. samoensis*. These were presumably regarded as juveniles, since the condition of the sex organs had not been examined. The third, accessioned in 1938, was labeled *Emoia* n. sp. in H. W. Parker's handwriting. We take pleasure in naming this species for Dr. Parker.

### *Emoia parkeri*, new species Figs. 1-3

*Holotype.*—California Academy of Sciences registry number 146960, mature female, collected at Naleboleba, Sigatoka Valley, Viti Levu Island, Fijis, by D. Watling, 16 March 1978.

*Paratypes.*—FIJI ISLANDS: Ovalou Island: BMNH 55.8.2.11; Taveuni Island: AM 71706, BMNH 1938.8.2.11; Viti Levu Island: AM 71707-08, CAS 146961-64; Kadavu Island: USP 4111-12, CAS 146965-66; specific island not recorded: BMNH 63.5.11.16, AMNH 117700. See acknowledgements for abbreviations.

*Diagnosis.*—A small *Emoia*, approximately 50 mm in snout-vent length for available mature specimens. This species differs from the two other small species of *Emoia* (*caeruleocauda* and *cyanura*) known from the Fijis and the Central Pacific Region in: (1) the distinct interparietal (Figs. 1 and 2); (2) the larger prefrontals which are usually in contact, separating the frontal from the frontonasal; (3) color pattern (Fig. 3); and (4) from *E. cyanura* in the less thinned and smaller number of subdigital lamellae. Other species of *Emoia* (*E. nigra*, and the *E. samoensis-concolor* complex)

Table 1.—Scale counts, measurements, and other characters for *E. parkeri* and related or sympatric species. Number of specimens in parentheses.

	Snout-vent length at maturity (mm)	Number of midbody scale rows	Number of scale rows between parietals & base of tail	Number of 4th toe lamellae	Interparietals	Prefrontals
<i>Emoia speiseri</i>	62.5–76.9 (9)	30–32	57–64	38–44	Small to moderate in size	Usually in contact
<i>Emoia parkeri</i>	48.5–53.8 (13)	28–32	52–59	34–43	Moderate in size	Usually in contact
<i>Emoia caeruleocauda</i>	41–48 (15)	28–32	54–59	38–44	Fused with frontoparietals	Not in contact
<i>Emoia cyanura</i>	41–61 (30)	26–29	54–63	58–85	Fused with frontoparietals	Not in contact
<i>Emoia nigra</i>	75–114 (50)	35–30	60–66	33–38	Small in size	Usually not in contact
<i>Emoia samoensis</i>	62–108 (9)	30–33	58–67	45–62	Small to moderate in size	
<i>Emoia murphyi</i>	62 (1)	30	56–58	79–81	Small or fused with frontoparietals	

known from the Fijis are readily distinguished from *E. parkeri* by their larger size and color pattern. *Emoia parkeri* is probably most closely related to *E. speiseri* (New Hebrides) from which it differs primarily in its much smaller size, distinct color pattern, and generally lower number of scale rows between the parietals and the base of the tail (Table 1).

*Description.*—An *Emoia* of relatively small size, snout-vent length of 4 mature males 48.5–51.5 mm, of 8 mature females 49.0–53.8 mm; snout long, tapering, round-pointed, rather strongly depressed, its length 40–45% of head length and 68–80% of head breadth; head breadth 54–62% of head length and 14–17% of snout-vent length; eye moderate, its diameter 51–63% of snout length, 37–45% of head breadth and 21–25% of head length; rostral broader than high, nearly truncate dorsally and in broad contact with frontonasal; supranasals small, widely separated; anterior loreal much longer than high, almost as long and about the same shape as posterior loreal (Fig. 1b); prefrontals in contact for 17 specimens and narrowly separated for five; frontal in contact with first two supraoculars, about the same length as the fused frontoparietals (fused for all but one specimen); four large supraoculars; interparietal small (Fig. 1a), about 1/3 length of frontoparietals; parietals large, in contact posteriorly; one pair of nuchals; 7 or 8 upper labials, 6th beneath the center of the eye; 6 or 7 lower labials; dorsal scales smooth or

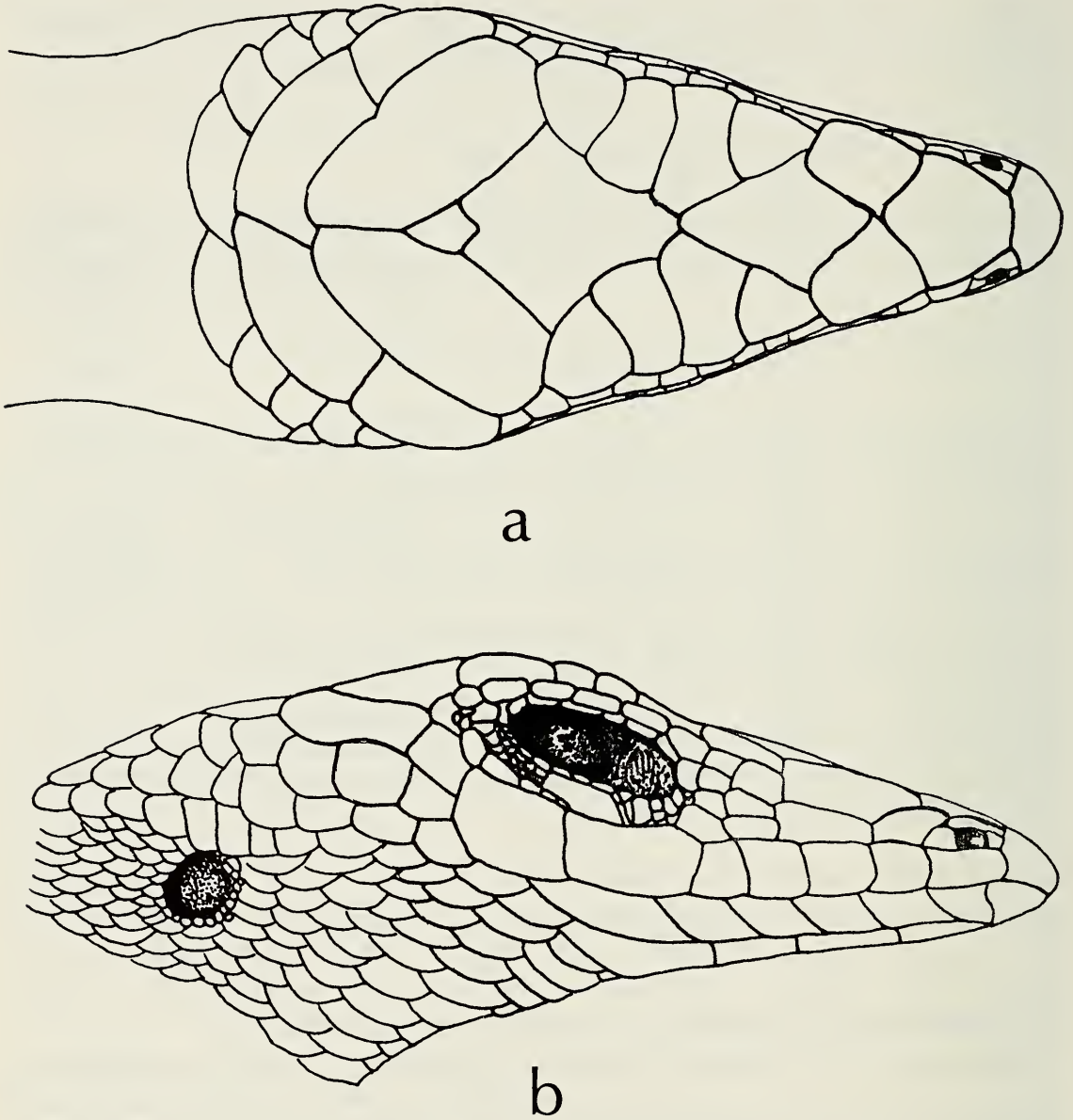


Fig. 1.—*Emoia parkeri* (paratype, USP 4111): a, Dorsal view of head; b, Lateral view of head.

very faintly keeled, relatively uniform in size and slightly larger than laterals, midbody scale rows 28–32 for 20 specimens; 52–59 transverse rows along the vertebral line between parietals and base of tail; preanals slightly enlarged; limbs well developed; length of extended hind limb 93–102% of axilla-groin distance and 45–52% of snout-vent length; 34–43 smooth lamellae beneath the 4th toe; rank of toes from the longest to the shortest is 4, 3, 5, 2, 1.

*Measurements of holotype (mm).*—Snout-vent length 51.7; tail length 81;



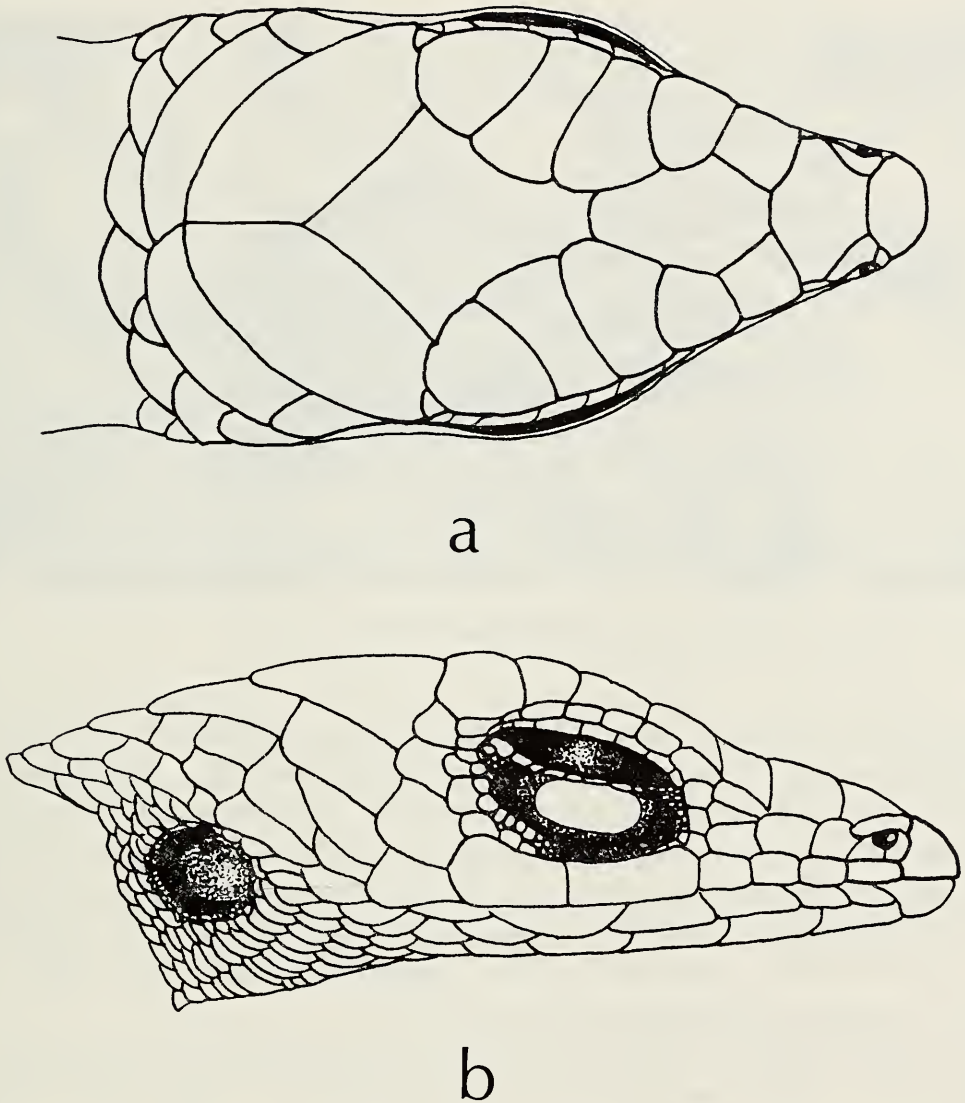


Fig. 2.—*Emoia caeruleocauda*: a, Dorsal view of head; b, Lateral view of head.

axilla-groin distance 25.5; length of hind limb 22.5; head length 12.4; head breadth 7.4; snout length 5.25; diameter of eye 3.0; diameter of ear 1.4.

*Color*.—The most striking feature in life is the gold-bronze head and upper lip which accentuates the black eye-stripe. The bronze of the head and neck merges into an olive-torquoise color which forms the basic color of the trunk. Below the eye the labial, subocular and loreal scutes are the same bronze color as the forehead and together accentuate the prominent black eye-stripe. This stripe extends along the body, becoming gradually less conspicuous until it is indistinguishable from the basic greenish-bronze color of the body around the hind limbs. Above this stripe on each side of the body there is, on some individuals, another stripe of black markings which runs



Fig. 3.—Photograph to show pigment pattern of *Emoia parkeri*.

from the fore limbs to the hind limbs. In other individuals this cannot be distinguished and is just a collection of black markings. On all specimens there is a clear line of basic greenish-bronze coloring along the spine. The basal half of the tail is more nearly turquoise-green, very conspicuously so in young specimens. The limbs are all bronze-olive on the dorsal surface, strongly speckled with dark and pale scutes. The tail is also speckled, but has a less granular appearance than the body or the limbs. The ventral surface is a pale yellow-green (Fig. 3a).

In preservative, the bright colors fade, becoming dull in formalin or alcohol. The mid-dorsal band (two half scales, or usually two scales in breadth) is greenish-blue, more or less uniform, bordered laterally by a broad blackish band (brownish in the faded, older specimens) which is disrupted or broken by numerous bluish scales or by clusters of light scales. There is also a dark band on the upper lateral surface, more or less uniform on the head and neck but also spotted by bluish-white scales on the body, the light mid-dorsal band merging into the bluish or tan color of the tail. The dorsal surface of the head is greenish-bronze; the venter is bluish-gray to light tan.

*Eggs and hatchlings.*—A single clutch of two eggs was collected by Watling from an earth-filled fissure between two trunks of a rain tree (*Samanea saman*) just above ground level. One egg hatched as it was collected. The other, which measured  $13.0 \times 9.0$  mm, hatched two days later. Hatchling measurements: snout-vent length, 24 mm; tail 34 mm; hind limb, 12 mm.

*Ecological note.*—*Emoia parkeri* occupies the rainforest, being found in lowland forest near the coast to montane forest above 500 m. It has also



been found in secondary forest in the intermediate zone vegetation of Viti Levu, and in trees from the dry western side of this island. On Viti Levu Island this species was observed primarily on lower tree trunks, up to about 7 m on some of the larger ones. It has not been observed on the boughs, branches or in the foliage. It is especially fond of large trees with epiphytes or creepers, or tree species with buttressed roots or deep fissures. When seen on the ground on this island the animal appeared to be moving from one tree to another. On Taveuni Island, *E. parkeri* was observed foraging on the ground alongside *E. cyanura* and *E. caeruleocauda*.

*Range.*—Known at this time from four islands: Vitu Lavu, Ovalou, Taveuni, and Kadavu in the Fijis.

*Discussion.*—Unlike the other small species of *Emoia* in the Fijis, *E. parkeri* is difficult to catch by hand since it darts rapidly up the nearest tree when approached. Such behavior might explain why it has not formed a larger proportion of earlier collections from the Fiji Islands.

Also, unlike *E. cyanura*, *E. parkeri* is apparently confined to inland forest habitats. It appears not to occur on several small islands close to Suva which were extensively collected by the junior authors. While both *E. cyanura* and *E. caeruleocauda* are also found in forest habitats, they seem to be more abundant in open areas such as forest margins, glades, and native gardens, where they forage on the ground as noted above. Of the three species, *E. cyanura* is the most abundant and occupies the widest range of habitat types, being found from coastal associations up to the montane forest. *Emoia caeruleocauda*, the least common of the three species, appears to be confined to the lowland forest.

There also appears to be a marked ecological separation between *E. parkeri* and the green tree skink (*E. concolor*–*samoensis* complex). The latter, although much larger, is nearly always found high up in trees, on the limbs or in the foliage, although it often comes down the main trunk. On the basis of a couple of observations of each, the green tree skink sleeps up in the trees while the bronze-headed skink sleeps in fissures near the base.

Other ground-active skinks collected during the course of more extensive investigations on Fijian terrestrial vertebrates (Pernetta & Watling, in press) were *Lipinia noctua*, *Cryptoblepharus* sp., and *Emoia nigra*, all of which occur in coastal areas. The large *E. nigra* may be locally abundant, particularly in some coconut plantations. When it is present, the smaller ground-active *Emoia* species are invariably absent.

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