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NEW REPTILES FROM FORMOSA AND HAINAN.

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The present paper is based on material in collections made by the author on the Island of Formosa in 1932 and 1934, and on the Island of Hainan, south of the southern tip of China, in 1935. Herein are described two species, a lizard from Formosa and a snake from Hainan, which are thought to be new to science. The Formosan lizard is a member of the agamid genus *Japalura*, which genus is distributed from India to Botel-Tobago Island and the Loochoo Islands, east of Formosa, as well as occurring in Sumatra and Borneo. The other novelty is a colubrine snake of the genus *Pseudoxenodon* and is the second species of this preëminently Chinese genus to be recorded from Hainan. The type specimens are deposited in the collection of the California Academy of Sciences in San Francisco, and the paratypes are in the Museum of Vertebrate Zoölogy of the University of California in Berkeley, and in the author's collection, which is at present housed in the Museum of Vertebrate Zoölogy. The writer is indebted to Dr. J. Grinnell, Dr. J. M. Linsdale and Mr. J. R. Slevin for advice in the course of the present study.

***Japalura brevipes*, new species.**

Diagnosis.—Dorsal head scales large, irregularly rugose; dorsal crest feeble, composed of smaller, and less carinate, scales than those of a parallel row on either side of it; snout broad; hind legs short; color pale bluish green, with broad transverse dorsal bands and lateral spots of brown or black; lips and throat pale.

Type.—Adult female; No. 71998 Calif. Acad. Sci.; Bukai, near Horisha, central Formosa, alt. 1,200 meters, June 15, 1934. Three paratypes: two adult females (one in Mus. Vert. Zoöl.) and a juvenile, with the same

data; a juvenile specimen from Sakahen, eastern Formosa, alt. 1,100 meters, July 13, 1934. All the specimens were collected by the author on shrubbery in the canyon-side jungles.

Description (from the series).—Head somewhat oval, its sides gradually rounded; canthus rostralis sinuous; snout broad and blunt at apex; rostral low, hardly higher in middle than near each side, edged above by five or seven small scales; nasal fairly large, barely touching first supralabial, containing the small round nostril in its swollen center; dorsal head scales mostly large, irregularly rugose, fairly smooth, or briefly peaked in the middle and radially carinate; scales on occipital, frontal and either side of middle of parietal regions, largest; a thick spine behind supraciliary ridge, a longer one at each side of back of head, behind anterior end of nuchal crest; several less prominent tubercles on temporal and tympanic regions; tympanum hidden; supra- and infra-labials 8 or 9; scales of underside of head very weakly keeled anteriorly, a lateral row of fairly smooth, enlarged scales, extending posteriorly from mental at an angle with infralabials; some enlarged spinous scales below posterior corner of mouth and on side of throat. Nuchal crest feeble, composed of 6 or 7 laterally compressed spinous scales; dorsal crest poorly developed, composed of small and feebly carinate scales, which on posterior half of body are hardly larger than smallest scales of back; a parallel row of alternately enlarged, carinate scales on each side of dorsal crest, extending whole length of body, enlarged scales composing them mostly larger and more strongly carinate than those of dorsal crest; back crossed by four irregular transverse rows of isolated enlarged scales; sides with some irregular longitudinal or suboblique rows of enlarged scales; remainder of dorsal scales small and very weakly carinate; scales of ventral surface subacute and quite strongly carinate. Hind limb stretched forward generally not reaching to hind angle of mouth; toes short, fourth barely longer than third, second and fifth reaching to about same point.

Head light brown to black above, crossed by two or three incomplete transverse bands of pale green; supraciliaries marked with five black lines radiating from eye; an irregular black stripe extending from nasal to above tympanic region; ventral surface and sides of head and body largely pale greenish blue to white; dorsal surface of body crossed by five large, oblong or oval, transverse brown or black areas, fourth broadest; sides of neck and body with some irregular spots; hind legs and tail banded above with reddish brown or black.

Dimensions of type.—Snout to vent, 71 mm.; vent to tip of tail, 140; snout to center of eye, 12; width of head at supraciliaries, 11.5; fore limb, 31; hind limb, 47.

Comparisons.—This species differs from *J. splendida* Barbour and Dunn, of West China, in having the throat scales smaller and less strongly carinate, the enlarged scales of sides less acute, the hind legs shorter, the dorsum lacking the pair of longitudinal yellow stripes, the head-bars wider and less distinct, and the sides of the body with areas of dark scales surrounded by pale surface, instead of being dark, and spotted with individual light scales. *J. brevipes* differs from *J. swinhonis* Guenther, of Formosa, in

having much shorter legs, a blunter snout, the dorsal head scales larger and not strongly keeled medially, the dorsal crest much less developed and in lacking the straight dorso-lateral white stripe and the dark markings on lips and throat. It also differs from *J. yunnanensis* Anderson in lacking the black line from the eye to the corner of the mouth, and in having the nuchal and dorsal crests much less developed.

Remarks.—In the author's collection are three additional specimens, one an adult female, measuring 78 mm. from snout to vent and containing five elongate-oval eggs 15–16 mm. long, from Jujiro, near Arisan, south-central Formosa, alt. 1,475 meters, June 8, 1932; the other two being sub-mature females from Sakahen, Formosa, alt. 1,100 meters, July 13, 1934. These specimens differ from the type and paratypes in having the dorsal crest of much larger, and more strongly carinated, scales; the dorsal head scales smoother, green-centered and edged with black; an even, instead of an odd, number of scales touching the rostral; the infralabials smooth, instead of feebly carinate; the supraoculars green, lacking dark lines radiating from the eye; and the dorsal transverse markings vague, and not edged with light along the side. The coloration of the three specimens is almost entirely green or bluish green, with some of the scales partly black or edged with black. However, the coloration in *Japalura* is quite variable. As an example, a living adult specimen of *J. polygonata* (Hallowell) brought to the writer at Nago, Okinawa, Loochoo Islands, was pure black, but when taken from the cyanide jar a short time later was pure green, and after being placed in alcohol it was largely yellowish-green with the typical black markings, the green by now having faded considerably. Though the above three specimens differ rather strikingly in some respects from *brevipes*, the writer hesitates to ascribe subspecific standing, or otherwise separate them, without further material, although the former appeared to be of terrestrial, rather than arboreal, habits.

The specimen said to have been collected by Tada at "Taipa" (Taihoku), Formosa (Tokyo Sci. Coll. Mus. no. 22), which was first referred to *Japalura swinhonis* by Stejneger (Journ. Sci. Coll. Tokyo. 12, Pt. 2 : 218 (1898)), and later discussed by him in his "Herpetology of Japan" (U. S. Nat. Mus. Bull. 58 : 185 (1907)), will doubtlessly prove to be a specimen of *brevipes*. It is unfortunate that the exact locality is unknown, as the label was probably wrong, but it may have come from the mountains not far south of Taihoku. It will be seen that all my material came from above elevations of 1100 meters. *J. swinhonis* is abundant on the western flanks of the mountains from the northern, to the southern tip of the island, but I have never taken it above an altitude of about 750 meters. The stomachs of *J. brevipes* contained remains of beetles, myriapods and spiders. The type and adult paratypes contained partly developed ova.

***Pseudoxenodon popei*, new species.**

Diagnosis.—A *Pseudoxenodon* of predominantly reddish color, marked along dorsum with bars of red and black; caudal stripes wanting. Differs from *Ps. karlschmidti* in having supralabials almost entirely yellow, some of anterior ventral black, prefrontals shorter, and ventrals much fewer.

Type.—Adult female; No. 71997; Calif. Acad. Sci.; Loi Mother Mountain, alt. 1,450 meters, central part of Hainan Island, China (lat. 19° N., long. 109° 40' E.); July 26, 1935; collected by the author.

Description of type.—Rostral broader than deep, barely visible from above; internasals broader than long, two-thirds as long, and one-half as broad, as prefrontals; prefrontals nearly twice as broad as long, extending down on sides to level of center of eye; frontal as long as its distance from snout, four-fifths as broad as long, nearly twice as broad anteriorly as posteriorly, its sides slightly convex; supraoculars one-third longer than, and three-fourths as broad as, frontal; parietals one-half again as long as, and one-third again as broad as, frontal, more than twice as broad in front as behind. Loreal fused with postnasal on both sides; preoculars 1-1, each twice as high as wide; eye twice as deep as its distance from mouth and nearly four-fifths as long as its distance from snout; postoculars 3-3, the uppermost larger than the two lower ones, which are subequal; anterior temporals 2-2, lower one twice as large as upper; posterior temporals 3-2. Supralabials 8-8, fourth and fifth entering eye, sixth largest on one side and seventh largest on other; mental small, only slightly broader than long, infralabials 10-9, fifth on left side minute, first four in contact with anterior chin shields on each side; anterior chin shields parallel sided, shorter and broader than posterior shields, which latter are separated basally and strongly divergent. Scales strongly oblique, arranged in 19 rows from a short distance behind head to just in front of middle, 17 at middle and 15 in front of vent; all scale rows except first keeled at midbody. Ventrals 135; anal divided; subcaudals 53; total length 590 mm.; tail 115 mm., or .194 of total length.

Color brown above, reddish at sides, more extensively so anteriorly; dorsum crossed by about 33 small oblong red bars, 8 of which are on tail, each about five scales broad, one or two scale-lengths long, and edged at either side with a square black spot; tail lacking stripes; head dull brown above, a narrow pale stripe curving anteriorly from each side of neck, terminating indefinitely, and nearly converging with its fellow behind parietals; labials yellow, only upper part of hind margin of fourth and fifth narrowly dark; rostral and loreal entirely, and preocular largely, yellow; underside of head entirely yellowish-white; sides of neck red. Underside pale, anterior third with about 20 largely black ventrals, arranged in groups of one to three; ventrals after first several with dark mottling at lateral edges; posteriorly, ventrals finely dotted with grayish-black at sides, more densely so, and over their entire surface, near vent; subcaudals largely mottled with gray, except for their pale margins, some of them narrowly edged with white externally.

Comparisons.—This species, though agreeing with *Ps. karlschmidti* Pope in its dorsal head pattern, is probably more closely allied with *Ps. bambusicola* Vogt, from which, however, it differs in having the top of the head almost entirely dark, the hind margins of the supralabials largely yellow, the dorsal bars much fewer, some of the anterior ventrals entirely black, and the ventrals fewer in the female. The ventrals are fewer than in females of any other Chinese species in the genus; furthermore, the snout

is shorter in relation to the length of the eye, the labials are less marked with black, and the posterior chin shields are longer in proportion to the anterior, and more divergent, than in most of the other species. The black bands on the anterior portion of the underside are not persistent, as tested when the scales are removed.

Remarks.—The type was collected in a deep forest where the undergrowth was sparse, near the summit of Loi Mother Mountain (Loi Mai Lia or Lai Mo Leng), the third highest mountain on Hainan Island. The snake, when prevented from escaping, flattened itself, opened its mouth as if to strike, and vibrated the tip of its tail.



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