

Short Note

A New Record of the Viviparous Skink, *Mabuya multifasciata* (Kuhl, 1820) (Squamata: Reptilia), from Taiwan

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Hidetoshi Ota, Hsueh-Wen Chang, Kou-Chiang Liu and Tsutomu Hikida (1994) A new record of the viviparous skink, *Mabuya multifasciata*, (Kuhl, 1820) (Squamata; Reptilia), from Taiwan. *Zoological Studies* 33(1): 86-89. Three specimens of a lygosomine lizard, *Mabuya multifasciata*, were recently captured at Meinong (美濃) and Chengqing Hu (澄清湖) in Kaohsiung County, Taiwan; several additional individuals were also observed at Meinong. The species has been known to exist in South and Southeast Asia, but this is the first Taiwan record. Because both collection sites are near an international port, it is likely that the specimens represent an established population that recently entered Taiwan by means of artificial transportation.

Key words: Scincidae, Distribution.

The lygosomine genus *Mabuya* Fitzinger 1826 is a large and widely-distributed skink group which consists of approximately eighty species in the tropical and subtropical regions of Asia, Africa, and Latin America (Matsui 1992). Taiwan is located at the northern extreme of the generic range; previously, two species – *M. longicaudata* and *M. multicarinata borealis* – had been recorded on the island (Ota 1991). During a recent survey we identified three specimens from southwestern Taiwan as *M. multifasciata* on a morphological features basis. This species is known to occur widely throughout South and Southeast Asia, including Yunnan and Hainan Island (Brown and Alcalá 1980, de Rooij 1915, Pope 1935, Smith 1935, Taylor 1963), but it has never been recorded on Taiwan.

Mabuya multifasciata (Kuhl, 1820)

Fig. 1

Materials: Kyoto University, Department of Zoology (KUZ) 21157, one adult male captured at Chengqing Hu (澄清湖), Kaohsiung County (Fig. 2a), on 4 April 1992; two uncatalogued specimens deposited in the Department of Biology, National Sun Yat-Sen University (SYUB). One adult male and one female captured at Meinong (美濃), Kaohsiung County (Fig. 2b), on 8 February 1992.

Diagnosis: Dorsal head scales with smooth or slightly rugose surface; postnasal present; dorsal body scales tricarinate; 30-34 rows of scales at midbody; snout-vent length in adult normally greater than 90 mm; no distinct dark stripe in postocular region.

Description (KUZ 21157): Head scales smooth or slightly

rugose on surface. Rostral one and one-half times as broad as high, narrowly touching frontonasal; supranasals very slightly separated from each other, touching postnasal and anterior loreal. Frontonasal nearly one and one-half times as broad as long; prefrontals in broad contact with each other; frontal as long as its distance from tip of snout. Four supraoculars, second largest, touching prefrontal; frontoparietals paired, broadly touching each other; interparietal divided into anterior and posterior elements, the posterior smaller but not enclosed by parietals; one pair of enlarged nuchals (Fig. 3). Nostril slightly posterior to center of nasal; posterior loreal larger than anterior one; anterior loreal touching first and second supralabials, posterior loreal touching second and third supralabials. Four small preoculars; two presuboculars, anterior one touching third and fourth supralabials, posterior one touching fourth and fifth supralabials. Six supraciliaries; second greatly elongated; four postsuboculars; three anterior and three posterior temporals; seven supralabials, fifth elongated and below eye; six infralabials. Mental border on mouth nearly one and one-half times as broad as rostral border; postmental complete, twice as broad as long. First pair of chinshields broadly in contact, second pair separated from each other by one scale, third pair elongated, labial like, separated from each other by five scales. Lower eyelid with two longitudinal rows of enlarged semi-opaque scales; scales forming lower row twice as broad as those of upper row; numerous smaller scales surrounding both rows. Ear-opening large, with three auricular lobules on anterior border.

Dorsal scales on body and tail distinctly tricarinate; tricarination gradually lessens toward lateral scales, ventral

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Fig. 1. Male (above) and female (below) *Mabuya multifasciata* captured at Meinong, Kaohsiung County.

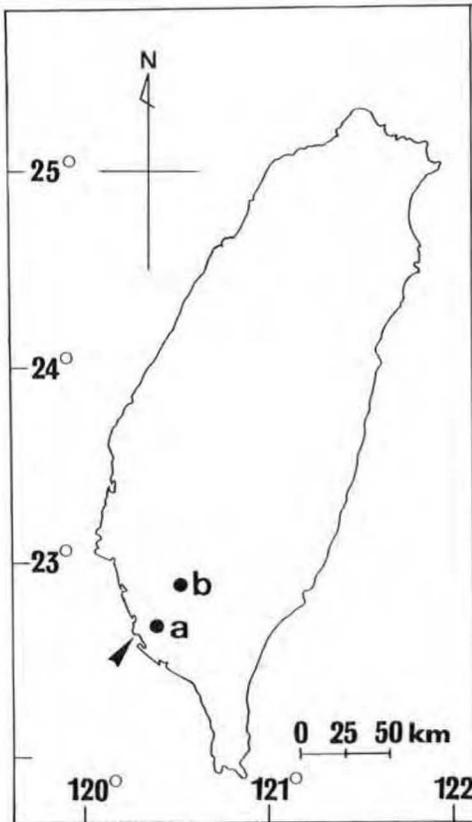


Fig. 2. Map of Taiwan showing locations of Chengqing Hu (a) and Meinong (b), where *Mabuya multifasciata* specimens were collected. Arrow indicates location of Kaohsiung international trading port.

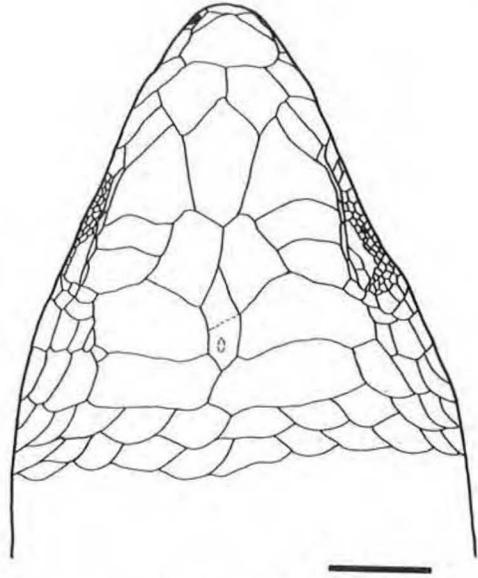


Fig. 3. Dorsal view of the head of *Mabuya multifasciata* captured at Chengqing Hu (KUZ 21157). Bar equals 5mm.

scales smooth. Scale rows around neck 28, around middle of body 32; 42 middorsal scales between parietals and a point just above vent; subcaudal scales not greatly enlarged.

Limbs well-developed, forelimb reaching nearly two-thirds the distance between axilla and groin; hindlimb nearly three-fourths the distance between groin and axilla when bent forward. Twelve scales under fourth finger, seven scales under first toe; 17 scales under fourth toe. Scales on limbs smaller than those on body; slightly more tricarinate dorsally, smooth ventrally.

Color: In live specimens, ground color of dorsal and lateral surfaces of head, body, and limbs pale brownish gray; very indistinct dark lines bordering longitudinal scale rows on body dorsum; longitudinal light orange streak from above base of forelimb extending backward to midpoint between axilla and groin; ventral surfaces pale gray. After fixing in formalin and preservation in ethanol, dorsal ground color faded to gray and orange streak disappeared.

Variation: Measurements and scale counts of the three specimens treated here are compared in Table 1. The female specimen showed much more distinct longitudinal dark lines on the dorsal surface, as well as numerous white spots on the lateral surface of its neck and body. In addition, this female specimen showed a reddish area on the lateral surface of its neck. The light orange shoulder streak was lacking in the female specimen.

Ecological notes: KUZ 21157 was found basking on a haystack in an open environment during daytime. Two other scincid species (*M. longicaudata* and *Eumeces elegans*) were found to occur sympatrically. The SYUB specimens were found in a bushy area along the lake bank. One captured female gave birth to four offsprings on 8 May 1992. Neonate snout-vent and tail lengths were 33.1-33.5 and 52.0 mm, respectively.

Remarks: In our specimens, the number of scales under the fourth finger (12) is much smaller than that described for Thailand specimens (17) by Taylor (1963); however, this value varied between 11-14 in specimens from the Philippines (N=2) and Indonesia (N=7). The other characteristics of the Taiwan

Table 1. Measurements (in mm) and scale counts of three *Mabuya multifasciata* specimens collected in Taiwan¹

Characters	KUZ 21157	SYUB-male	SYUB-female
Snout-vent length	107.5	109.1	116.5
Snout-eye length	9.6	9.8	8.3
Snout-ear length	21.6	21.2	21.1
Snout-forelimb length	41.7	40.5	42.1
Axilla to groin length	56.6	58.9	69.6
Forelimb length	34.0	32.3	32.5
Hindlimb length	47.6	48.0	44.9
Scale rows around midbody	32	33	33
Middorsal scales	42	43	44
Scales under fourth finger	12	12	13
Scales under fourth toe	17	17	17

¹See text for acronyms.

specimens are in agreement with or within the range of corresponding characteristics of comparative specimens, as well as those described in previous literature (Brown and Alcalá 1980, Pope 1935, Smith 1935, Taylor 1963).

In addition to the three specimens described here, two of the authors (Chang and Liu) observed more than fifty *M. multifasciata* individuals at Meinong following the first discovery on 8 February 1992. Therefore, it appears that the species has already established a breeding colony in this region. Despite many previous surveys in the Kaohsiung region (including surveys at Chengqing Hu and Meinong by ourselves and other researchers) no *M. multifasciata* individuals had ever been previously observed. This suggests that this species is non-native to Taiwan, and that the present population has arisen from a recent entry, presumably via artificial transportation. This has also been suggested for other populations of this species outside Taiwan (see Brown and Alcalá (1970) concerning several Philippine populations). The proximity of our collection sites to the Kaohsiung international port (Fig. 2) circumstantially supports this assumption.

Key to species of the genus *Mabuya* in Taiwan

- Dorsal head scales with distinctly rugose surface; postnasal normally absent; each scale on dorsum of body normally bearing five well-developed keels; snout-vent length in adult less than 85 mm *M. multicaudata borealis*
Dorsal head scales smooth or only slightly rugose; postnasal present; less than five keels on each dorsal body scale; snout-vent length in adult normally greater than 90 mm 2
- Distinct broad dark stripe on lateral side of head and body; each scale on dorsum of body normally bearing two slightly-developed keels; 26-30 rows of scales around midbody *M. longicaudata*

Distinct dark lateral stripe lacking at least in postocular region; each scale on dorsum of body normally bearing three moderately-developed keels; 30-34 rows of scales around midbody *M. multifasciata*

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References

- Brown WC, AC Alcalá. 1970. The zoogeography of the herpetofauna of the Philippine Islands, a fringing archipelago. Proc. Calif. Acad. Sci. 4th Ser. **38**: 105-130.
- Brown WC, AC Alcalá. 1980. Philippine lizards of the family Scincidae. Dumaguete City: Silliman University Press.
- de Rooij N. 1915. The reptiles of the Indo-Australia Archipelago. I. Lacertilia, Chelonia, Emydosauria. Leiden: EJ Brill.
- Matsui M. 1992. Vertebrates IIb2, Reptilia II. Systematic Zoology, Vol. 9. Tokyo: Nakayama-Shoten. (in Japanese)
- Ota H. 1991. Systematics and biogeography of terrestrial reptiles of Taiwan. In Proceedings of the First International Symposium on Wildlife Conservation, ROC, eds. YS Lin, KH Chang. Taipei: Council of Agriculture, pp. 47-112.
- Pope CH. 1935. The reptiles of China: Turtles, crocodylians, snakes, lizards. Nat. Hist. Central Asia, 10. New York: American Museum of Natural History.
- Smith MA. 1935. The Fauna of British India, including Ceylon and Burma. Reptilia and Amphibia. II-Sauria. London: Taylor and Francis.
- Taylor EH. 1963. The lizards of Thailand. Univ. Kansas Sci. Bull. **46**: 687-1077.

臺灣新記錄種蜥蜴(石龍子)，多紋南蜥*Mabuya multifasciata* (Kuhl, 1820)

太田英利 張學文 劉國強 疋田努

我們最近在高雄縣美濃及澄清湖，採集到三隻多紋南蜥*Mabuya multifasciata* (Kuhl, 1820)的標本，同時在美濃發現多隻。這種蜥蜴分布於南亞及東南亞，在台灣是新記錄種；因為採集地近於國際港口—高雄市，這些蜥蜴可能由人工傳播來台，並已建立穩定的族群。

關鍵詞：石龍子科，分佈。