



Three additional lizard (Squamata: Sauria) records for Mizoram, India

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Few herpetofaunal inventories have been conducted in Mizoram. Pawar & Birand (2001) documented 22 species of lizards from Dampa Tiger Reserve, Ngengpui Wildlife Sanctuary and Palak Lake, in the state. Ramanujam & Harit (2002) recorded eight species of lizards from Mizoram. Recently, the State Fauna Series by Zoological Survey of India, by Mathew (2007) enumerated 22 species of lizards from Mizoram. The species reported by earlier workers represented only five families, Agamidae, Gekkonidae, Lacertidae, Scincidae and Varanidae (Table 1). We collected three additional species - *Calotes maria*, *Calotes mystaceus* and *Ophisaurus gracilis* which were not recorded previously from Mizoram (Image 1). *Ophisaurus gracilis* (Family Anguinae) represents a new family for the state.

For each specimen, selected morphometric measurements were made to the nearest 0.01 mm with dial calipers (Mitutoyo™ series No. 505-671). Morphometric and meristic characters (Table 2) largely follow those of Zug et al. (2006). The specimens were preserved in 8% buffered formalin and catalogued as voucher specimens in the museum of Zoology Department, Mizoram University.

1. *Calotes maria* Gray, 1845 (Image 2)

Family: Agamidae

The individual was sighted and collected at 1250hr on 27 March 2008, in the outskirts of Selam Village at a geographical location of 23°48'21.9"N & 93°17'42.3"E, 1,583m, inside the

area of Lengtung Wildlife Sanctuary (80km²), Champhai District, about 150km to the northeast of Aizawl. While surveying the floral diversity of Lengtung Wildlife Sanctuary, the specimen was found on the roadside resting on the branch of *Glochidion khasicum* (Euphorbiaceae), at a height of 2m from the ground. Photograph of this individual at the microhabitat is presented (Image 2). The forest type is sub-tropical semi-evergreen, corresponding to the sub-tropical hill forest (Champion & Seth 1968) of Mizoram. The floral community of the collection site is dominated by the herb *Ageratum adenophorum* and patches of *Maesa indica*, and *Eurya cerasifolia* are also found. Trees of *Quercus leucotrichophora*, *Lithocarpus dealbata*, *Schima wallichii*, *Lyonia ovalifolia* and *Vaccinium sprengelii* also occur.

The specimen was kept in captivity alive for four days for behavioural studies. In the absence of sunlight, ventral side and flanks became light brown with the green colour persisting on the dorsum. In sunlight the whole body colour restored to bright green. In captivity, the individual preferred crickets though offered house-flies, moths and grasshoppers. The specimen was euthanized, preserved and catalogued as MZU/ZOO/R-034 in the Museum of the Zoology Department, Mizoram University.

This record extends the range by ca. 240km, southeast from the Khasi Hills in Meghalaya, with the possibility of occurrence in the contiguous hill ranges.

2. *Calotes mystaceus* Duméril & Bibron, 1837 (Image 3)

Family: Agamidae

An individual *Calotes mystaceus* was observed perching on the branch of *Pinus kesiya*, about 3m above the ground at the secondary forest area of Zotlang (23°28'23.5"N & 93°19'59.2"E, 1,500m), Champhai Town, Champhai District on 26 May 2008 around 1600hr. It was collected and kept for observation in captivity for two weeks in the departmental terrarium. The lizard remained greyish-brown colour inside the shaded terrarium, the head and anterior portion of the trunk turned to bright blue colour within five minutes after exposure to the sun. The animal was later preserved and catalogued as MZU/ZOO/R-038. Three more specimens, MZU/ZOO/R-039, MZU/ZOO/R-040 and MZU/ZOO/R-041 were collected from the same area during the month of February in 2009. Other agamids found in sympatry are *Calotes jerdoni* and *Calotes versicolor*.

3. *Ophisaurus gracilis* Gray, 1845 (Image 4)

Family: Anguinae

While surveying the herpetofauna of Aizawl City, around 0730hr on 19 May 2008, a limbless lizard (MZU/ZOO/R-035) was seen basking in the sun inside the mixed plantation area of *Brassica campestris*, *Acacia pennata*, *Trevesia palmata* and *Curcuma longa* at Mualpui (23°43.081'N & 92°43.668'E; 802m), Aizawl where the atmospheric air temperature and relative humidity were 25°C and 74%, respectively. We were informed that another specimen was killed the previous day by the local people the remains were salvaged from the leaf litter 10m away from the spot of occurrence of the first sample. It was preserved and catalogued as MZU/ZOO/R-036. On 22 May 2008 another specimen (MZU/ZOO/R-037) was collected from the same locality. All of them were identified as *Ophisaurus gracilis*. The dorsal and ventral scale rows for each specimen were 16 and 10, respectively. The specimen MZU/ZOO/R-035

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Image 1. Map of Mizoram showing the collection sites of *Calotes maria*, *Calotes mystaceus* and *Ophisaurus gracilis*



Image 2. *Calotes maria*



Image 3. *Calotes mystaceus*

Table 1. Lizards species of Mizoram recorded by earlier workers

Lizards	Pawar & Birand (2001)	Harit & Ramanujam (2002)	Mathew (2007)
Agamidae			
1. <i>Calotes cf. alticristatus</i>	+	-	-
2. <i>C. emma</i>	+	-	+
3. <i>C. jerdoni</i>	+	-	+
4. <i>C. versicolor</i>	+	+	+
5. <i>Draco maculatus</i>	+	-	+
6. <i>Draco sp. (cf. blanfordi-norvilli?)</i>	+	-	-
7. <i>Japalura planidorsata</i>	+	-	-
8. <i>J. variegata</i>	-	-	+
9. <i>Ptyctolaemus gularis</i>	+	-	+
Gekkonidae			
10. <i>Cosymbotus platyurus</i>	+	+	+
11. <i>Cyrtodactylus khasiensis</i>	+	-	+
12. <i>Gekko gekko</i>	+	+	+
13. <i>Hemidactylus brooki</i>	-	+	+
14. <i>H. flaviviridis</i>	-	+	-
15. <i>H. frenatus</i>	+	-	+
16. <i>H. garnoti</i>	+	-	+
17. <i>Ptychozoon lionotum</i>	+	-	-
18. <i>P. horsfieldi</i>	-	-	+
Lacertidae			
19. <i>Takydromus sexlineatus</i>	+	-	+
Scincidae			
20. <i>Shenomorpha maculatus</i>	+	-	+
21. <i>S. courcyanum</i>	+	-	-
22. <i>S. indicum</i>	+	-	+
23. <i>Lygosoma punctata</i>	-	+	+
24. <i>Mabuya carinata</i>	-	+	+
25. <i>M. multifasciata</i>	+	-	+
26. <i>M. macularia macularia</i>	+	-	+
27. <i>Mabuya. sp.</i>	+	-	-
28. <i>Tropidophorus assamensis</i>	-	-	+
Varanidae			
29. <i>Varanus bengalensis</i>	+	+	+
30. <i>V. salvator</i>	+	-	-

+ = recorded; - = not recorded



Image 4. *Ophisaurus gracilis*

was kept in captivity for 64 days (19 May to 22 July 2008) to study behaviour and feeding habits. The saurian fauna of this area include *Calotes versicolor*, *Cosymbotus platyurus*, *Eutropis macularia*, *Eutropis multifasciata*, *Gekko gekko*, *Hemidactylus frenatus*, *Hemidactylus garnoti*, *Ptyctolaemus gularis* and *Sphenomorphus maculatus*.

Discussion

These records are of interest for extending their distribution southwards in northeastern India. It is noteworthy that none of these species are common lizards. Local sources informed that *Calotes mystaceus* is common in Champhai Town area, while *Ophisaurus gracilis* was seen occasionally and *Calotes maria* was rare.

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Table 2. Mensural (in mm) and meristic measurements of three new lizards for Mizoram

Species	Museum No.	SVL	TL	HL	HW	SNL	IOD	MSR
1. <i>Calotes maria</i>	MZU/ZOO/R-034	80.70	287.63	19.50	15.64	10.85	9.45	53-55
2. <i>Ophisaurus gracilis</i>	MZU/ZOO/R-035	183.61	242.25	18.53	12.94	6.50	6.80	26
3. <i>O. gracilis</i>	MZU/ZOO/R-036	206.0	103.14	19.68	15.24	7.50	7.82	26
4. <i>O. gracilis</i>	MZU/ZOO/R-037	183.57	117.25	18.56	14.08	7.0	7.30	26
5. <i>Calotes mystaceus</i>	MZU/ZOO/R-038	119.82	215.0	25.54	24.62	14.12	15.12	53-54
6. <i>C. mystaceus</i>	MZU/ZOO/R-039	97.86	176.23	22.12	19.86	12.85	13.54	50-52
7. <i>C. mystaceus</i>	MZU/ZOO/R-040	101.24	86*	21.62	19.0	12.50	12.64	51-54
8. <i>C. mystaceus</i>	MZU/ZOO/R-041	138.60	199.53	29.38	25.44	13.80	14.18	49-53

SVL – Snout-vent length; TL – Tail length; HL – Head length; HW – Head width; SNL – Snout length; IOD – Interorbital distance; MSR – Midbody scale rows; * - Tail broken around mid-portion

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