

FROGS AND SNAKES FROM THE ISLAND OF MOROTAI (MOLUCCAS)

by

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Van Kampen (1924, p. 284) mentions only two species of frogs from Morotai Island; the identification of one of these was considered to be doubtful. Of snakes De Jong (1928, p. 149) records five species from this island. The study of a small collection of frogs and snakes from Morotai, presented to the Leiden Museum in 1862 by H. A. Bernstein, and of two frogs collected by Prof. H. J. Lam in 1926, allows of some additions to be made to previous lists. The species not mentioned by either Van Kampen or De Jong are indicated by an asterisk.

*** *Hyla infrafrenata* Gthr.**

4 specimens, Morotai, leg. H. A. Bernstein, 1862, reg. no. 1833.

*** *Hyla rueppelli* Bttgr.**

2 ♂♂, between Bilowoh and Goegoeti, Morotai, VI. 1926, leg. Prof. H. J. Lam.

These two specimens show some differences from *Hyla rueppelli*, such as this species has been described from Halmaheira by Boettger (1895, p. 137; 1900, p. 373, pl. XVI figs. 12-12c). The tympanum is relatively larger; its diameter equals about half that of the eye. The groups of vomerine teeth are not circular as shown in Boettger's fig. 12c, but they are more oblong. They are placed between the choanae and not at the level of the posterior border of the choanae. In one specimen the vomerine teeth have only very weakly developed. The snout is slightly longer than the diameter of the orbit.

The sides of both males show a network of brownish lines surrounding whitish spots; these whitish spots are most distinct on the anterior half of the sides.

Both males have a nuptial callosity on the outer surface of the first finger.

Length of head and body 34 and 29 mm respectively.

***Rana papua* Less.**

Rana papua, Van Kampen, 1923, pp. 201, 284.

1 specimen, Morotai, leg. H. A. Bernstein, 1862, reg. no. 1805.

Tympanum about $\frac{3}{4}$ the diameter of the orbit; its distance from the orbit about $\frac{1}{3}$ its own diameter. Length of head and body 63 mm.

* ***Platymantis corrugatus* (A. Dum.)**

1 specimen, Morotai, leg. H. A. Bernstein, 1862, reg. no. 8685.

***Oreophryne frontifasciata* (Horst)**

Callula frontifasciata Horst, 1883, p. 243 (part.).

Oreophryne senckenbergiana, Van Kampen, 1923, p. 115 (part.), p. 284.

Oreophryne moluccensis, Parker, 1934, p. 165 (part.).

1 specimen, lectotype, Morotai, leg. H. A. Bernstein, 1862, reg. no. 1807.

1 specimen, paratype, Morotai, leg. H. A. Bernstein, 1862, reg. no. 3686.

Horst described *Callula frontifasciata* from Salawatti, Morotai and Halmaheira. Van Kampen (1923, p. 115 note) mentioned that the types were lost. Indeed I have been unable to find the specimens from Salawatti and Halmaheira, but checking the frogs from Morotai, I found a jar labelled "*Hyla*, Morotai, Bernstein, 1862". This jar bears an old label on which the word *Callula* is still distinct, and on which the name *frontifasciata* can still be deciphered with some difficulty. Doubtless the two frogs in this jar are two of the cotypes of *Callula frontifasciata* Horst. These two specimens have been re-examined by me, and they show some differences from *Oreophryne senckenbergiana* Bttgr. = *Oreophryne moluccensis* (Ptrs. & Doria) with which Van Kampen (1923, p. 115) and Parker (1934, p. 165) hesitatingly identified *Callula frontifasciata*. I am indebted to Mr. H. W. Parker, British Museum (Natural History), London, for his opinion on these specimens. It appears best to select one of the two Morotai specimens as lectotype, and to consider *Oreophryne frontifasciata* (Horst) as a distinct species.

The pectoral girdle is of the same type as in *Oreophryne variabilis* (Blgr.) (Parker, 1934, fig. 56). The procoracoid reaches the scapula with a narrow bar of cartilage. Claviculae are present.

Two continuous dermal ridges in front of the pharynx. Snout obtuse,

slightly prominent, as long as the diameter of the eye. Canthus rostralis rounded; loreal region oblique. Interorbital space broader than the upper eyelid. Tympanum rather indistinct; its diameter about half that of the eye. Fingers short, with large discs; that of the third finger as large or slightly larger than the tympanum. First finger shorter than the second, which is about equal to the fourth. Toes webbed; the web leaves the terminal two phalanges of the second and fifth toes, and the terminal three phalanges of the fourth toe free. Discs of toes smaller than those of the fingers. Fifth toe slightly longer than the third. Subarticular tubercles indistinct. An ill-defined, elongate inner, but no outer metatarsal tubercle. The tibio-tarsal articulation of the adpressed hindlimb reaches the tympanum or to between the tympanum and the eye. Smooth above; a curved supratympanic fold; belly and lower surface of thighs granular.

Both specimens are greyish brown. The front region of the head perhaps slightly paler than the posterior half. The white crossbar between the eyes, from which the species derived its name, is only very faintly visible. In the specimen selected as paratype, the lumbar region shows on both sides a whitish marmoration around a dark centre, i.e., a rather indistinct lumbar ocellus. In the lectotype only a faint trace of this ocellus can be found. It may be due to the long time of preservation that the markings are so very indistinct. Lower surface greyish brown.

Length of head and body: 23 and 22 mm respectively.

From *Oreophryne moluccensis* (Ptrs. & Doria), *O. frontifasciata* differs in the second and fourth fingers being subequal, in the fifth toe being slightly longer than the third, and in the shorter snout. As far as the relative length of the toes is concerned, *O. frontifasciata* comes close to *Oreophryne biroi* (Méh.). From the latter it differs in the continuous ridge in front of the pharynx, in the larger tympanum, in the smaller discs on the toes, and in the procarocoid reaching the scapula.

* *Dendrelaphis caudolineatus modestus* Blgr.

Dendrophis caudolineatus modestus, Meise & Hennig, 1932, p. 279, maps 2, 3.
2 specimens, Morotai, leg. H. A. Bernstein, 1862, reg. no. 864.

Both specimens have the scales in 13 rows on the neck and at mid-body, in 11 rows in front of the vent; anal divided. Supralabials 9, the 4th and 5th entering the orbit; temporals 2 + 2 + 2. The diameter of the eye is equal to its distance from the centre of the nostril. One specimen has 19 maxillary teeth, the posterior smallest. The stomach of one of these specimens contained an *Emoia weneri* (Vogt).

Ventrals 188, 189; subcaudals 122/122 + 1, 120/120 + 1.

Although not mentioned in the text, the occurrence on Morotai is indicated by Meise & Hennig (1932) in maps 2 and 3.

Stegonotus batjanensis (Gthr.)

Stegonotus batjanensis, De Rooij, 1917, pp. 116, 311; De Jong, 1928, p. 149.

2 ♂♂, Morotai, leg. H. A. Bernstein, 1862, reg. no. 326.

1 ♂, 1 ♀, Morotai, leg. H. A. Bernstein, 1862, reg. no. 327.

From one specimen the maxillary has been extracted; it bears 15 teeth. The anterior teeth are smallest, gradually increasing in size towards the 8th and 9th tooth, which are largest; they are followed by four teeth (10th-13th) that are slightly smaller. The 14th tooth is larger again, but not as large as the 8th and 9th tooth; the 15th tooth is slightly smaller than the 14th.

All specimens have 8 upper labials, of which the 3rd to 5th enter the orbit; 1 preocular, 2 postoculars; temporals 1 + 2. In one specimen the 5th, 6th and 7th labials of the left side have fused with the lower postocular and the anterior temporal, forming together one large irregular shield (healed wound?). In the female each of the parietals has apparently fused with the scale behind it, and thus their posterior borders end in a protracted point. The frontal is about as long as its distance from the rostral; it is about as broad as long, or very slightly longer than broad. The prefrontals are 1.5-1.7 times as long as the internasals.

Behind the head the scales are placed in 19 rows; at the level of the 7th to 9th ventral a reduction to 17 rows takes place, and more posteriorly to 15 rows. The reduction comes about by the fusion of scale rows, but the specimens are often asymmetrical, as is shown by the formulae showing the reductions (recount system). The upper row of figures refers to the right side, the lower row to the left side of the specimens.

$$\text{Reg. no. 326, } \sigma, 19 \begin{array}{c} 8 \\ \left[\begin{array}{cc} 4 + 5 \\ \dots \\ 3 + 4 \end{array} \right] \\ 9 \end{array} \quad 17 \begin{array}{c} 161 \\ \left[\begin{array}{cc} 4 + 5 \\ \dots \\ 4 + 5 \end{array} \right] \\ 160 \end{array} \quad 15 \quad , \text{ subcaudals } 90/90 + 1 \quad 224$$

$$\sigma, 19 \begin{array}{c} 9 \\ \left[\begin{array}{cc} 3 + 4 \\ \dots \\ 3 + 4 \end{array} \right] \\ 9 \end{array} \quad 17 \begin{array}{c} 157 \\ \left[\begin{array}{cc} 4 + 5 \\ \dots \\ 4 + 5 \end{array} \right] \\ 157 \end{array} \quad 15 \quad , \text{ subcaudals } 89/89 + 1 \quad 224$$

Reg. no. 327, ♂, 19	$\begin{array}{c} 9 \\ \left[\begin{array}{c} 4 + 5 \\ \cdot \cdot \cdot \\ 3 + 4 \end{array} \right] \\ 9 \end{array}$	17	$\begin{array}{c} 168 \\ \left[\begin{array}{c} 4 + 5 \\ \cdot \cdot \cdot \\ 4 + 5 \end{array} \right] \\ 165 \end{array}$	15	, subcaudals 87/87 + 1
			223		
			223		
	$\begin{array}{c} 7 \\ \left[\begin{array}{c} 3 + 4 \\ \cdot \cdot \cdot \\ 4 + 5 \end{array} \right] \\ 7 \end{array}$	19	17	$\begin{array}{c} 136 \\ \left[\begin{array}{c} 4 + 5 \\ \cdot \cdot \cdot \\ 4 + 5 \end{array} \right] \\ 137 \end{array}$, subcaudals 83/83 + 1
				207	
				207	

In the female the 28th and 29th ventral have fused in the median line.

From two males the hemipenis has been extracted. It reaches to the 12th or 14th subcaudal. The lower half is covered with longitudinal plicae; the next one fourth is covered with longitudinal plicae that bear papillae, each of these with a spine; the distal one fourth is calyculate. The sulcus spermaticus shows a very indistinct indication of bifurcation at the very top. Besides the walls that border the sulcus spermaticus, the penis shows two other ridges, one on each side. One of these is present over the proximal half, the other reaches further distally and fuses with the wall of the sulcus.

Not represented in this collection are the following species of snakes mentioned by De Jong (1928, p. 149): *Typhlops flaviventer* Ptrs., *Enygrus carinatus* (Schn.), *Brachyorrhos albus* (L.), *Dipsadomorphus irregularis* (Merr.) (= *Boiga irregularis* (Merr.)).

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