

DESCRIPTION OF A NEW FROG FROM SIAM.

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WITH A PLATE

AND A NOTE BY THE COLLECTOR.

Rana pileata, sp. n.

Vomerine teeth in two oblique series converging behind, originating on a line with the hinder edge of the choanae. Lower jaw with two fang-like bony prominences in front, in the males. Head, moderate in the females, very large in the males, a little broader than long; in the males, strong swellings are formed on the lower surface of the mandible and on each side of the occiput by the extraordinary development of the masseteric and depressor muscles; snout short, obtuse; canthus rostralis obtuse, loreal region oblique; interorbital region little broader than the upper eyelid in females and half-grown males, twice as broad and very convex in full-grown males; in these the frontoparietals form a swelling as in *Pelobates fuscus* and *Rana plicatella*; behind the interorbital region a large dermal flap in the full-grown males, rounded and completely detached behind; in smaller males this flap less developed and in females and young it is absent or represented by a faint semicircular fold; tympanum distinct, $\frac{3}{4}$ or $\frac{4}{5}$ the diameter of the eye in females, quite as large as the eye in adult males. Fingers moderate or rather short, blunt, first extending a little beyond second; toes moderate, nearly entirely webbed, the tips dilated into small disks; a feeble cutaneous fringe along the outer side of the fifth toe; sub-articular tubercles moderate; inner metatarsal tubercle blunt, elongate, $\frac{1}{3}$ to $\frac{1}{2}$ the length of the inner toe; no outer tubercle; a feeble tarsal fold. The tibio-tarsal articulation reaches the eye; tibia about $\frac{1}{2}$ the length of head and body, a little shorter than the fore limb and nearly as long as the foot. Skin with irregular, flat glandules on the back and small tubercles on the upper eyelid; a strong fold from the eye to the shoulder.

Green, olive, or brown above, young and half-grown often with a strong tinge of red, with darker spots or marblings, or with dark edges to the dorsal glandules; a more or less distinct yellowish angular band, dark-edged behind, between the eyes; lips with dark

vertical bars; as in many species of *Rana*, some specimens have a yellow median stripe, extending from the tip of the snout to the vent; limbs with dark cross-bars. Lower parts white or pale yellow, throat sometimes spotted with brown. Iris golden-green, veined with black and with a black cross.

This species agrees very closely with *R. doriae*, in which the males also show an enlargement of the head and a swelling on the posterior part of the interorbital region, as I have described and figured in Ann. Mus. Genova (2) XIII, 1893. p. 328, pl. VIII. fig. 1, thus foreshadowing the condition in *R. pileata*.

However there is no flap, and this extraordinary development appears to justify the establishment of a new species, although it is not impossible that the future discovery of intermediate specimens may necessitate the degradation of the species to varietal rank, so close is the agreement in other respects. The only characters which can be adduced as distinctive of *Rana pileata*, apart from the flap, are the greater interorbital width in males, and the shorter inner metatarsal tubercle as compared with the inner toe, the measurements of adult male and female *R. doriae*, 57 and 55 mm. long from snout to vent being, 4 mm. for the tubercle, and 6 for the toe.

Measurements of four specimens (in millimetres).

	♂			♀ (1)
From end of snout to vent	72	64	54	52
Length of head	31	27	20	19
Width of head.....	33	30	23	20
Length of snout.....	11	10	8	7
Diameter of eye	8	7	6	5
Width of upper eyelid.....	4	4	4	4
Interorbital width	9	7	5	4.5
From eye to tympanum.....	8	6	3	3
Diameter of tympanum	8	7	5	4
Fore limb.....	40	36	30	29
Hand.....	17	17	15	14
Hind limb.....	107	98	85	82
Tibia	35	32	28	26
Foot	34	31	27	26
Inner toe.....	9	8	7	6.5
Inner metatarsal tubercle.....	3	4	3.5	2.5

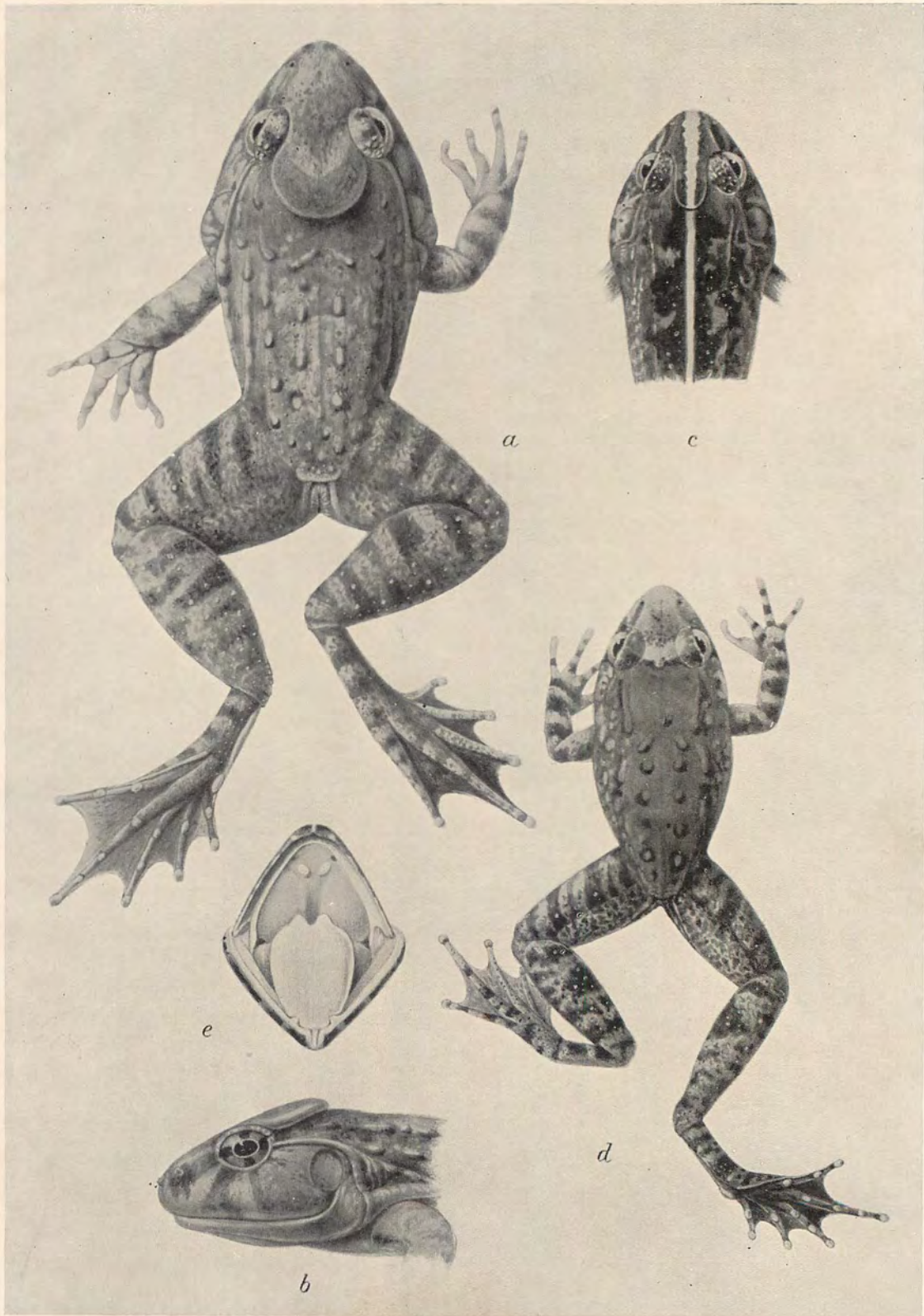
(1) With ripe ova measuring 3 mm. in diameter.

EXPLANATION OF PLATE.

RANA PILEATA.

- a. Full-grown male, upper view.
- b. " " " side view of head.
- c. Half-grown male, upper view of head and anterior part of body.
- d. Female, upper view.
- e. Open mouth.

All figures of the natural size.



Drawn by James Green.

Rana Pileata.

As in *R. doriae*, the males have no vocal sacs, and they show no thickening of the inner finger or nuptial rugosities.

This species is described from a series of specimens from Khao Sebab, Chantabun, S. E. Siam, also one male from the Me Song forest, near Prae, N. Siam, for which I am indebted to Dr. Malcolm Smith. I had previously received from him a small male from Hup Bon, Sriracha, S. E. Siam, which I was inclined to refer to *R. plicatella*, which shows a knob-like prominence behind the interorbital region, likewise broader than the upper eyelid; but no dermal flap is known to be ever developed in that species, which is, besides, distinguished by the presence of 8 to 10 glandular longitudinal folds on the back.

[This frog has a wide distribution in Siam, and so far has been only found on the hills. On Khao Sebab* it was exceedingly common, living on the banks of the numerous small streams with which this hill is supplied. It was found at all elevations, and above 2000 feet, was the only batrachian met with during our short stay there. Hup Bon, some 80 miles to the N. E., is about 600 feet above sea-level, but is not a hill. It is evidently rare there, as I could never obtain any more specimens from that locality. On the hills north of Utradit (Khao Pleung) and also on those north of Prae (Me Song forest) it was again found to be plentiful.

On Khao Sebab at the end of March, many young ones just emerging from the water were met with, and females with ripe ova were also obtained. I brought several adults back with me on that occasion, and they are still thriving (November), living on the usual frog diet. The flap on the head is, presumably, for sexual ornamentation. It is not erectile, and in life is kept closely applied to the head. M.A.S.]

* Khao = hill. Alt. 3000 ft.