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Notes on Toads of the Genus *Pelophryne*

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In a review of the Philippine Amphibia (Inger, 1954), *Nectophryne lighti* Taylor was placed in the synonymy of *Pelophryne brevipes* (Peters). The type and only specimen of *lighti*, a juvenile (15 mm.) from Agusan Province, Mindanao, had been destroyed in Manila during World War II. A comparison of the original descriptions indicated that the two forms differed only in coloration.

In May, 1956, a field party under the leadership of Dioscoro S. Rabor, from Silliman University, Dumaguete City, Negros Oriental, collected eight specimens of *Pelophryne* (CNHM 81588-95), from Mount Malindang, Zamboanga, Mindanao. As this uniform series agrees with the description of *lighti* in coloration and differs from the sample of *brevipes* at hand in several other characters, these toads are referred to *Pelophryne lighti* (Taylor), here recognized as a distinct species. They differ from Taylor's description (1920, p. 338) only in having small, conical tubercles on the top of the head and in having coarsely granular ventral surfaces. In the type both areas were said to be smooth. Snout-vent length ranges from 16.3 to 18.5 mm. in seven of the toads; in the eighth it is only 12.6 mm.

The new series shows that *lighti* differs from *brevipes* in coloration much more than the original descriptions indicate. The latter has a light gray or brown dorsum with an hourglass figure beginning between the eyes, a dark lateral band, and a light venter marked with dark blotches. *Pelophryne lighti* is brown above and somewhat darker laterally and ventrally; the only markings are small light spots on the venter and obscure dark crossbars on the limbs.

In *brevipes* the tympanum is obscured by skin and is less than half the eye diameter. In *lighti* the tympanum is clearly exposed and one-half to three-fourths the eye diameter. The tips of the outer toes of *lighti* are bluntly rounded, whereas those of *brevipes* are dis-

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tinctly dilated into truncate disks (Inger, 1954, fig. 40) resembling the finger tips of both species.

Since larvae of *Pelophryne* have never been recorded, a small series collected in Davao Province, Mindanao, is described here. Five larvae (CNHM 50953) were found at 3,000 feet on Mount McKinley by Chicago Natural History Museum's Philippine Zoological Expedition, whose field notes read as follows: "Tadpoles originally from deeply shaded broken bottle; reared." One tadpole was preserved in a limb bud stage and the others were allowed to develop until the fore limbs erupted. Snout-vent length in the last four has the range of 4.6-4.8 mm. As the hand and foot have the characteristic form of *Pelophryne* and the back has the distinctive hourglass figure, this series can be safely associated with *brevipes*, adults of which were collected in the same area. A description of the young tadpole (fig. 72) follows:

Body ovoid, 4.2 mm. long, 2.4 mm. wide; eye dorsolateral, its own diameter away from tip of snout; oral disk subterminal, circular, diameter 0.8 mm., slightly larger than diameter of eye; lips feebly crenulate; one row of labial teeth anterior to mouth, teeth widely separated, only ten in number; no posterior labial teeth; beaks weak, serrated, whitish except for brown margins; no visible spiracle; gut feebly coiled; anal tube median, without visible opening; hind limb bud corresponding to stage V of *Rana pipiens* (Taylor and Kollros, 1946); length of limb bud twice its diameter, slightly bent; tail 6.3 mm., leaf-like, margins subparallel, tip broad; ventral fin slightly deeper than upper; both fins deeper than tail muscle.

Reduction of the labial teeth is probably not a reflection of an early stage of development, for the maximum number of tooth rows is usually found in larvae of early limb bud stages (Gosner and Black, 1954; Inger, 1956).

The feeble coiling of the gut in a larva of limb bud stage suggests that the tadpole subsists entirely on yolk. Complete larval dependence on yolk is accompanied by a similarly coiled gut in *Kalophrynus pleurostigma* (Inger, op. cit.). The degenerate mouth parts of the *Pelophryne* tadpole are consistent with the suggested diet. So is the large size of *Pelophryne* ova.

Enlarged ova in a *Pelophryne albotaeniata* (22.8 mm.) vary from 1.5 to 2.5 mm., and in a second *albotaeniata* (19.2 mm.) from 2.1 to 2.5 mm. In one *P. lighti* (17.9 mm.) egg size varies from 2.0 to 2.5 mm., and in a *P. misera* (18.7 mm.) measures about 2 mm. These are proportionately enormous ova; even large species of *Bufo*

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no. 39

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rarely have ova greater than 2.0 mm. (Wright and Wright, 1949, p. 137; Inger, 1954, p. 241). *Ansonia*, another Malaysian bufonid, has eggs averaging close to 2 mm. (Noble, 1927; Inger, op. cit.),

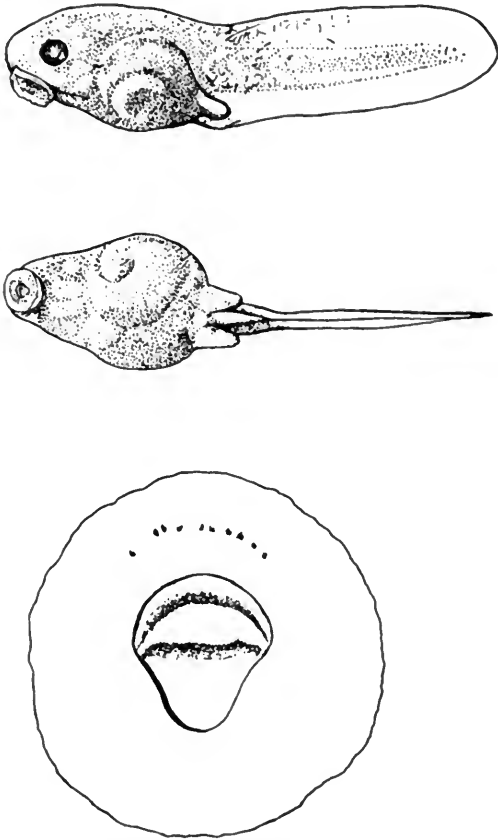


FIG. 72. Tadpole of *Pelophryne brevipes* (total length 10.5 mm.). Top, lateral view; center, ventral view; bottom, oral disk.

but they are relatively smaller because snout-vent length of female *Ansonia* is almost always over 25 mm.

Clutch size in *Pelophryne* is correspondingly specialized. The number of enlarged ova in one ovary of each of the females listed above are, respectively, 6, 5, 4, 5. The five *brevipes* larvae noted above probably represent most of one clutch. As in the case of relative egg size, *Pelophryne* departs farther from *Bufo* than *Ansonia*, which has approximately 75-85 ova per ovary (Inger, op. cit.).

Clutch size in *Bufo*, of course, may reach astronomical numbers (Smith, 1947).

The basic specialization of *Pelophryne* is toward increasing terrestriality (as compared to other bufonids). *Pelophryne brevipes* and *P. albotaeniata* have been found only on forest floor or on low vegetation (Inger, op. cit.). Rabor's series of *lighti* were also found on the forest floor. Oviposition seems to take place in such small rain-filled depressions that, even in breeding, *Pelophryne* apparently avoids the more characteristic aquatic situations.

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