

DEFENSIVE USE OF PAROTOID SECRETION BY BUFO MARINUS.—Near Hebbreville, Texas, September 14, 1946, the writer tossed a female *Bufo marinus* of some 90 mm. body length into a pond. The female began swimming toward a small island about 50 feet away in the center of the pond. As the toad neared the island it was seized just behind the insertion of the left forelimb by a turtle, probably *Kinosternon*, of approximately 5 inches carapace length. The toad responded by inflating its lungs so that it floated high in the water. A struggle followed in which the turtle endeavored to pull the toad under the water, while the toad made an effort to swim away. With the turtle hanging on, the toad swam in circles and made no progress. After several minutes the turtle succeeded in pulling the toad under the water. In a short time, however, the toad reappeared at the surface, and, although in considerable difficulty because of the left lung protruding through the wound made by the turtle, proceeded without further molestation to the shore of the pond. The turtle was seen swimming in the opposite direction. Examination of the toad showed the left parotoid gland thickly covered with white secretion. The right gland showed no secretion. While the evidence is not conclusive that the parotoid secretion was responsible for release of the toad by the turtle, it seems likely that this was the case.

Chen and Chen (1933, Jour. of Pharmacol. and Exp. Therapeutics 47(3): 281-293) found no instance of the parotoid secretion of *Bufo marinus* being "squirted" out when these toads were handled. However, a recent experience of the writer indicates that the secretion may be forcibly ejected. While engaged in laboratory experiments, a male *Bufo alvarius* was placed on the back of a male *B. marinus*. The male *B. alvarius* vigorously clasped the *B. marinus* just back of the parotoid glands; the parotoid glands were not touched. The male *B. marinus* immediately ejected secretion from the left parotoid gland, the secretion striking the investigator in the mouth some 15 inches away and producing a bitter taste. There was no question as to the act of ejection as the investigator was looking directly at the toad at the time. However, to check on the matter, the same male *B. marinus* was subsequently picked up by hand and seen to eject a droplet of secretion some 4 or 5 inches into the air.—A. F. BLAIR, The American Museum of Natural History, New York, New York.

PARTIAL HERMAPHRODITISM IN THE COMMON INDIAN FROG, RANA TIGRINA.—Varying degrees of hermaphroditism are quite common in frogs, or even uniformly developed in large populations, and have also been recorded in the Indian frog by Bhattacharya and Das (1920, Jour. and Proc. Asiatic Soc. Bengal, New Series, 16, no. 7: 293-296) and Bhaduri (1919, Jour. and Proc. Asiatic Soc. Bengal, 24, no. 4: 484-499). I found an additional specimen in the summer of 1945, and noted certain obvious differences from the previously recorded cases. It was the only specimen exhibiting sexual anomaly in more than 2000 examined during class dissections over a period of three years.

This specimen had persistent oviducts but no traces of ovaries. The testes were apparently functional (histological sections were not made) on both sides, but exhibited slight asymmetry—the left being better developed. The measurements were: right testis, 7.5 mm. long and 1.0 mm. wide; left testis, 8.2 mm. by 1.5 mm. Otherwise the gonads and accessory sexual organs were similar for both sides as follows: testes, yellowish in color, but not as dark as in normal males; vasa efferentia, well developed; ureters, not prominently enlarged to form seminal vesicles (Bhattacharya and Das, *op. cit.*, noted well formed seminal vesicles); oviducts, well developed, very much convoluted (greatest diameter, 0.5 mm.) and terminating posteriorly without cloacal connection; uteri, not distinct.

This individual had normal color and externally resembled other adult male frogs of the season. It measured 100 mm. in snout to vent length. It had male nuptial thumb pads and well developed vocal sacs.—DHANRA SWARUP KATSHITA, Department of Zoology, University of Michigan, Ann Arbor, Michigan.