the source of enzyme. Protein content of this supernatant was determined[8] using Unicam SP-500 spectrophotometer.

Polyacrylamide gel electrophoresis was carried out to study the pattern of LDH isoenzyme[9]. 7·5% gels were used and each was loaded with 100 μg of the enzyme source protein in 10% sucrose. The electrophoresis was then carried out at room temperature in tris-glycine buffer (0·1 M, pH 8·75) using 4 mA of the current per gel for 4 hours. After the run, gels were removed and LDH was specifically stained for localization[10]. The stained gels were photographed in transmitted light.

Figure 1 shows the pattern of LDH isoenzymes in testis, heart, skeletal muscle and spleen. In all these four tissues five isoenzymes are seen; M_4 near the origin and H_4 as the fastest moving band on the gels. The hybrids M_3H_1, M_2H_2, and M_1H_3 occupy the intermediate positions between the extremes. Two different patterns are visible, one shown by the testis and heart and the other by skeletal muscle and spleen.

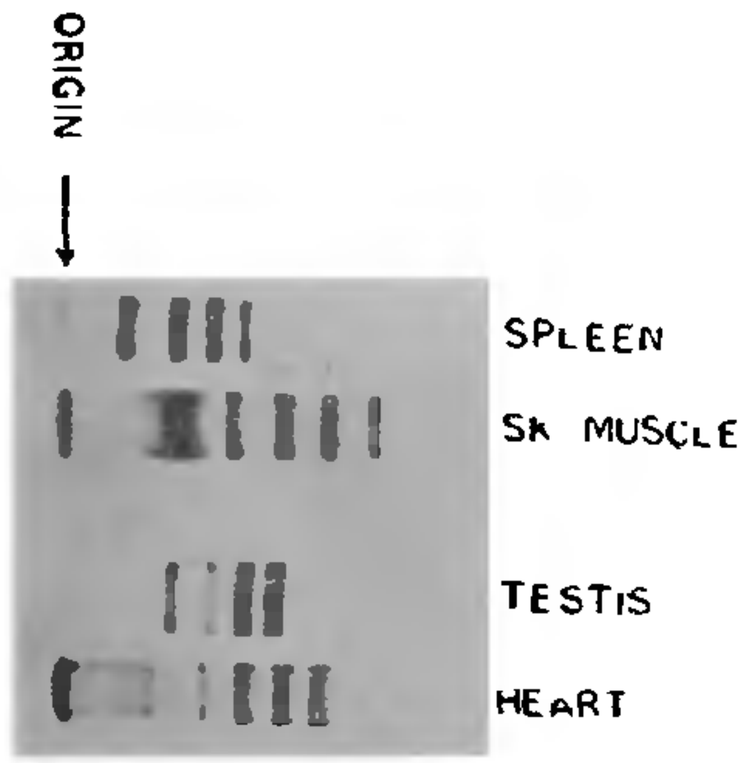

FIG. 1. Lactate dehydrogenase isoenzyme pattern in different tissues of *Funambulus pennanti*. Different bands are localized on the polyacrylamide gels according to the method described in the text.

In testis and heart, the preponderance of H_4 isoenzyme may be one of the adaptations of the enzyme to aerobic nature of the tissue. However, tissue specificity is seen in the difference in electrophoretic mobility of the enzyme in these two tissues. The other pattern of skeletal muscle and spleen shows M_4 to be the dominant isoenzyme. It is notable that the preponderance of M_4 is indicative of anaerobic tissues. Here also a difference in electrophoretic movement of the enzyme bands are apparent. Further, in spleen H_4 and M_4 are relatively lower in concentration as compared to skeletal muscle. The observed pattern of five isoenzymes bears resemblance to that of the rat tissues indicating the presence of two genetic loci in contrast to that of the lens and spermatocytes of fish and birds respectively.

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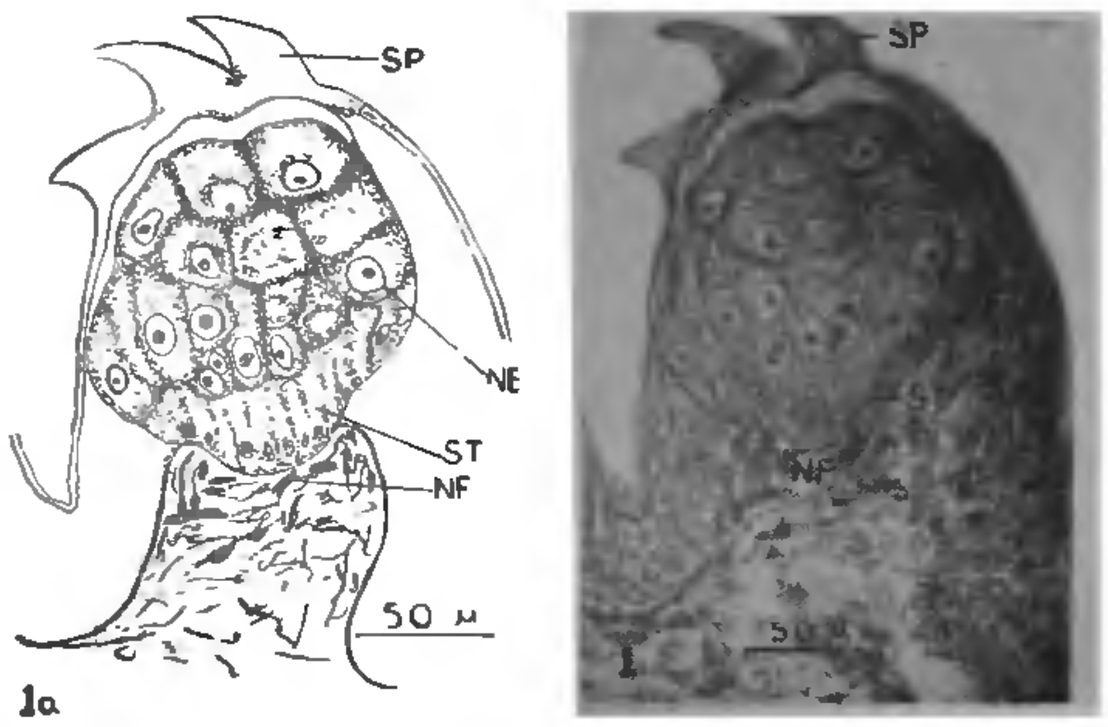
A NEW SENSE ORGAN IN THE POSTERIOR LABIAL FOLD OF A TORRENTIAL FISH, *DISCOGNATHUS* (*GARRA*) *MODESTUS* (DAY)

THE presence of a unique sense organ, not hitherto reported in fishes, was observed in the epidermal region of the posterior labial fold of *Discognathus* (*Garra*) *modestus* (Day) (Cypriniformes, Cyprinidae). The sense organ was located in the blunt knob-like projections of the epidermis. The sense organ is spherical in shape and is about 48 μ–72 μ in diameter. The two sides are demarcated by common epidermal cells, whereas the front is guarded by curved cuticular spines. The basal portion is supplied with nerve endings from the dermis situated just below it. The sense organ does not open to the exterior by any pore. At least two types of cells are distinct in it—the proximally situated large neuroepithelial cells and below these, the slender sustentacular cells (Figs. 1 and 1*a*).

The neuroepithelial cells represent the main mass of the sense organ forming a somewhat spherical body. These well-marked cells (length—14 μ–21 μ; breadth—10 μ–17 μ) with prominent nuclei are bigger than the other cells of the epidermis. The sustentacular cells are slender and elongated. They are of varying lengths and breadths. Their nuclei are located in the basal portions of the cells.

Though the sense organ, under reference, resembles a gustoreceptor by its location, nature of nerve

supply and presence of neuroepithelial and sustentacular cells; yet it differs morphologically as well as histologically from the latter. Absence of opening to the exterior and structural differences of neuroepithelial and sustentacular cells of this sense organ from their counterparts in gustoreceptor speak of its difference from the gustoreceptor.



1a

The authors are of the opinion that the new sense organ may perhaps help the fish in detecting suitable substratum for firm anchoring at a definite spot against the swift currents of the torrential streams.

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MALE REPRODUCTIVE CYCLES OF *HEMIDACTYLUS FLAVIVIRIDIS* (RUPPELL) AND *UROMASTIX HARDWICKII* (GRAY)

The investigation reports the monthly variations in the weights and the histology of the testis and also the epididymal histology during the annual male reproductive cycles of two common house lizards, *Hemidactylus flaviviridis* (Ruppell) and the spiny tailed lizard, *Uromastix hardwickii* (Gray) inhabiting the semi-arid temperate climate. While *Hemidactylus* were collected locally, *Uromastix* were obtained from sandy tracts around Jaipur. In either case only freshly caputured healthy adult specimens were taken. Thus *Hemidactylus* weighing 5 to 9 g and measuring from snout to tail 10·3 to 14·8 cm, *Uromastix* weighing 68 to 101 g and measuring from snout to tail 21·5 to 32·5 cm were included in this study. Monthly collections of the two species were made round the year. At sacrifice, the testes and the epididymis were dissected and cleaned of all adherent tissues. Tissues were weighed and then fixed in Bouin's fluid, embedded in paraffin, sectioned at 6 μ and stained with Ehrlich's haematoxylin and 90% eosin.

Figure 1 presents the results obtained. For uniformity, histologic section of only that portion of the epididymis was used for the measurement of diameter of the tubules which was adjacent and attached midway to the length of the testes.

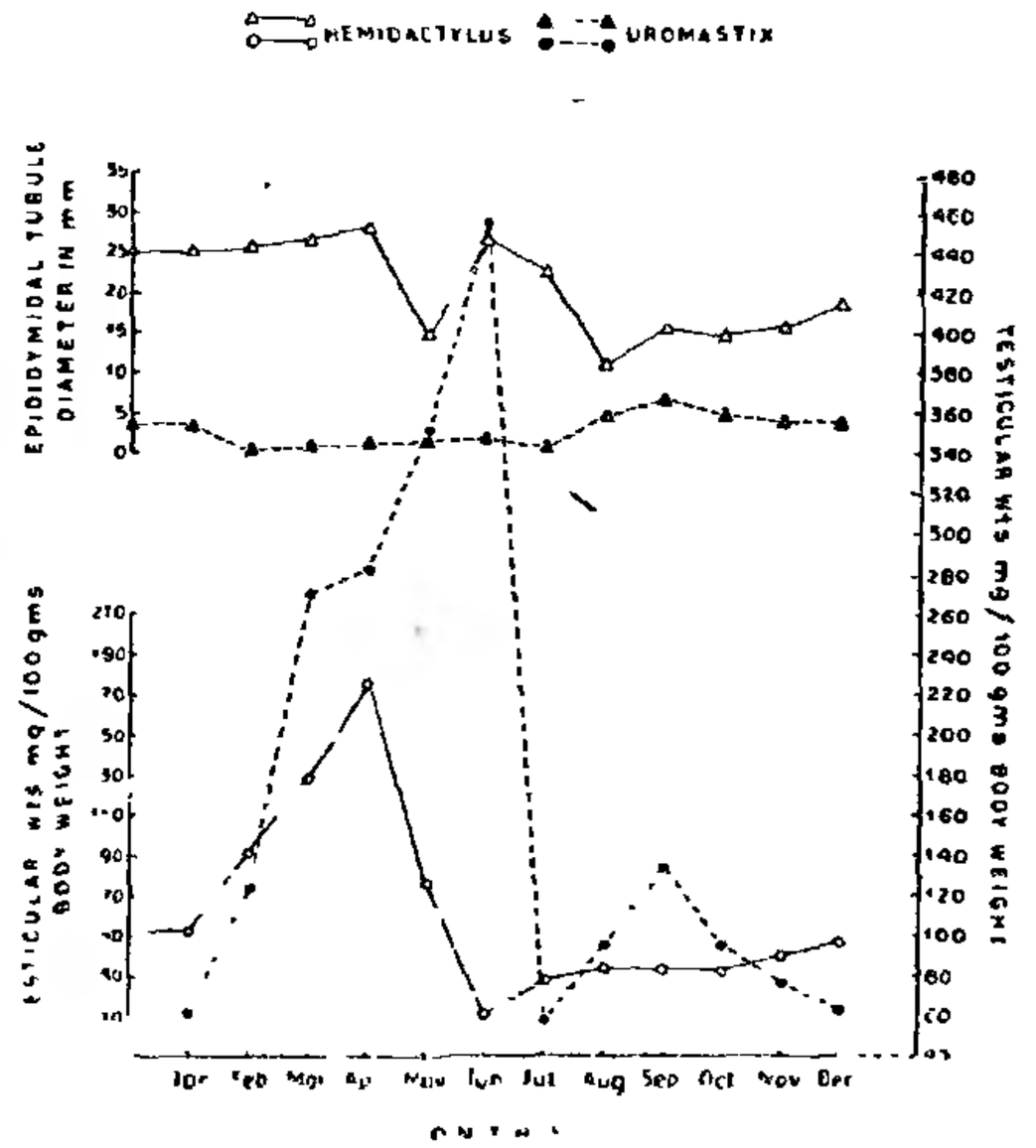

FIG. 1

In *Hemidactylus*, the testes are sexually quiescent and exhibit minimum weight in June and July. The testicular weight begins to increase from August and reaches a maximum in April. The peak in the testicular weight is followed by a decline which becomes statistically significant in June ($P < 0{\cdot}01$). A new spermatogenetic wave starts in July.

In *Uromastix*, the testes are sexually quiescent from October to January and exhibit minimum weight in January. The testicular weight begins to increase from July to September and starts decreasing from October till January. The increase in the testicular weight starts rapidly from February onwards reaching a maximum in June. The peak in the testicular weight is followed by a sudden statistically highly significant ($P < 0{\cdot}001$) decline in July. The decrease in testicular weight continues upto January when a new wave of spermatogenetic cycle starts.

In both the lizards the testicular histology compliments the seasonal changes in the weights of the testes. In *Hemidactylus*, in January, spermatogenic activity is initiated as a slow and gradual process with a sudden spurt during the month of April when the entire lumen becomes occupied mainly by spermatozoa. The interstitial cells appear as rounded or oval-shaped in appearance with distinct nuclei. By June July, the animals become sexually inactive and the testis contains only spermatogonia although the interstitium