

treated with each dose. Each set of experiments was replicated thrice. The treated nymphs were reared further in pair in 250 c.c vol. cages.

The experimental data are presented in Table I and Fig. 1.

TABLE I
Effect of ZR-515 on the last instar nymphs of
Dysdercus cingulatus Fabr.

Sl. No.	Concentration of Altosid (per cent)	Percentage of nymphs moulted into normal adult	Percentage mortality	Percentage with malformed characters
1.	0.25	30	50	20
2.	0.5	10	60	30
3.	Control (Acetone)	90	10	—

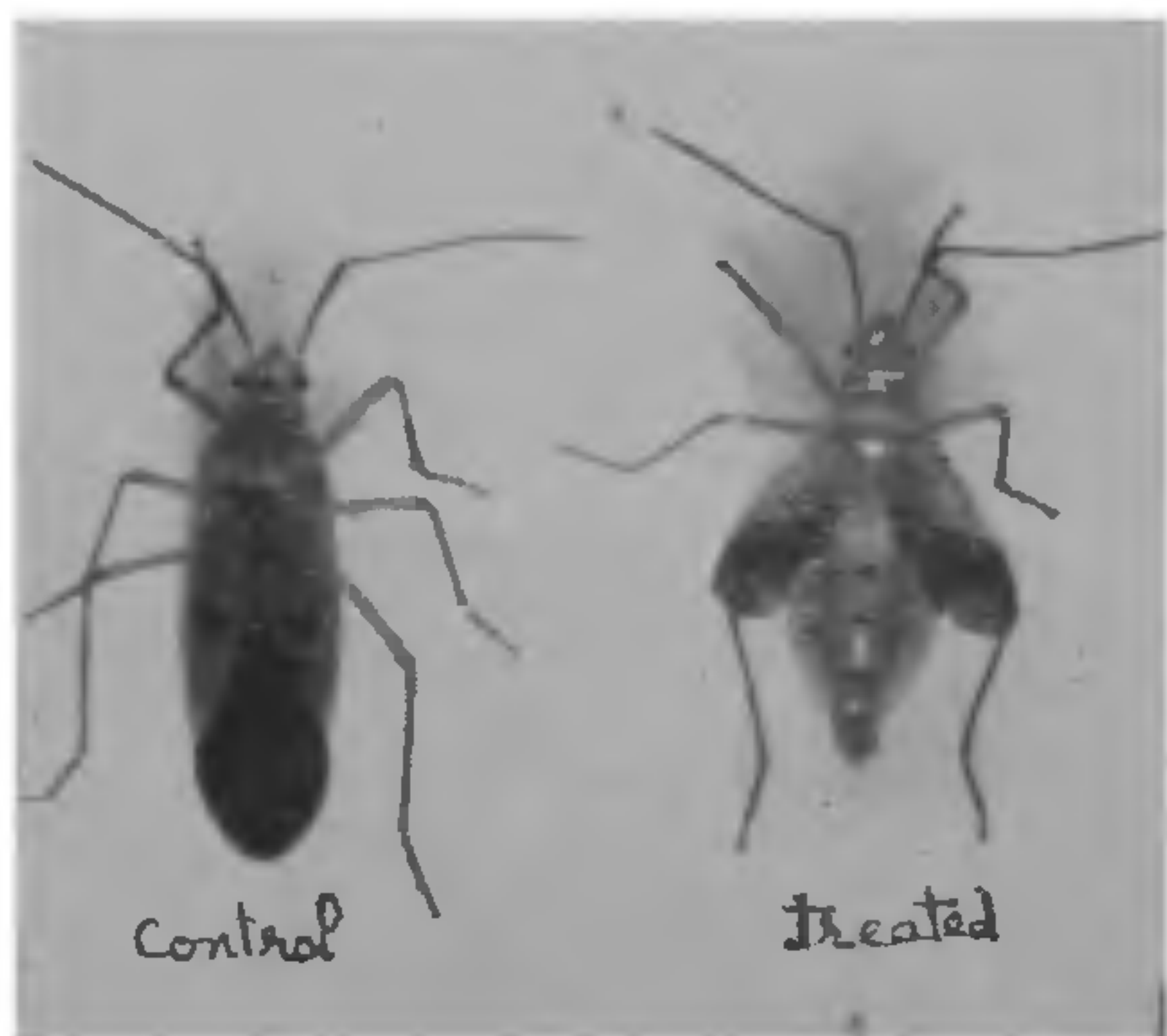


FIG. 1

Results and Discussion

Application of synthetic JHA to the last instar prevented their moulting into adult and the percentage decreased with the increase in concentration of Altosid. The same trend of result was reported by Hongertner and Masner² against the larvae of German cockroach. There was a significant increase in mortality in the present studies. The mortality was 50% and 60% when treated with 0.25% and 0.5% concentrations, respectively, with only 10% in control. Skuhavy⁵ reported the mortality (87-98%) of larch cane borer moth with a juvenoid.

In the present experiment, nymphs moulted into normal adult was 30% and 10% when treated with 0.25% and 0.5% concentrations respectively. The findings are supported by Outram³ who observed

that the emergence was effected at higher doses of a synthetic juvenile hormone in *Prodena litura*.

Application of synthetic JHA also showed prolonged nymphal stage and formation of malformed adults (Fig. 1). This kind of malformation was also reported by Abdallah¹, Retnakaran⁴, Varjas and Sehnal⁶ against the last instar caterpillar of *Adoxophyes orana*, *Choristoneura fumiferana* and *Hyphantria cunea* when treated with a juvenile hormone analogue.

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OCCURRENCE OF MUCOUS SECRETING SEGMENT IN THE NEPHRON OF *DANIO RERIO* (HAM)

THE nephron of freshwater teleosts is generally divided into several compartments such as (1) glomerulus, (2) neck, (3) proximal segment, (4) intermediate segment, (5) distal segment and (6) collecting tubule. All these segments hold different histological pattern. In freshwater teleosts the proximal segment is further subdivided into two subsegments namely proximal one and proximal two.

In *D. rerio*, which is a freshwater representative with very active swimming habit, there occurs a peculiar mucous secreting segment. Here, the first portion of the proximal segment resembles closely with other teleostean species but the second portion of this segment is markedly different in having a hyaline zone in between basally situated nucleus and mucous like brush border surrounding the lumen. In this case, the cells of the second portion of proximal segment increase considerably in height and thickness from its preceding segment and accumulate heavy secreting granules. This feature is particularly observed in the breeding season of these fish.

Existence of such mucous secreting segment was observed by previous investigators¹⁻³ in sexually mature sticklebacks *Gasterosteus aculeatus*, which is used to glue together algal filaments in construction of nests.

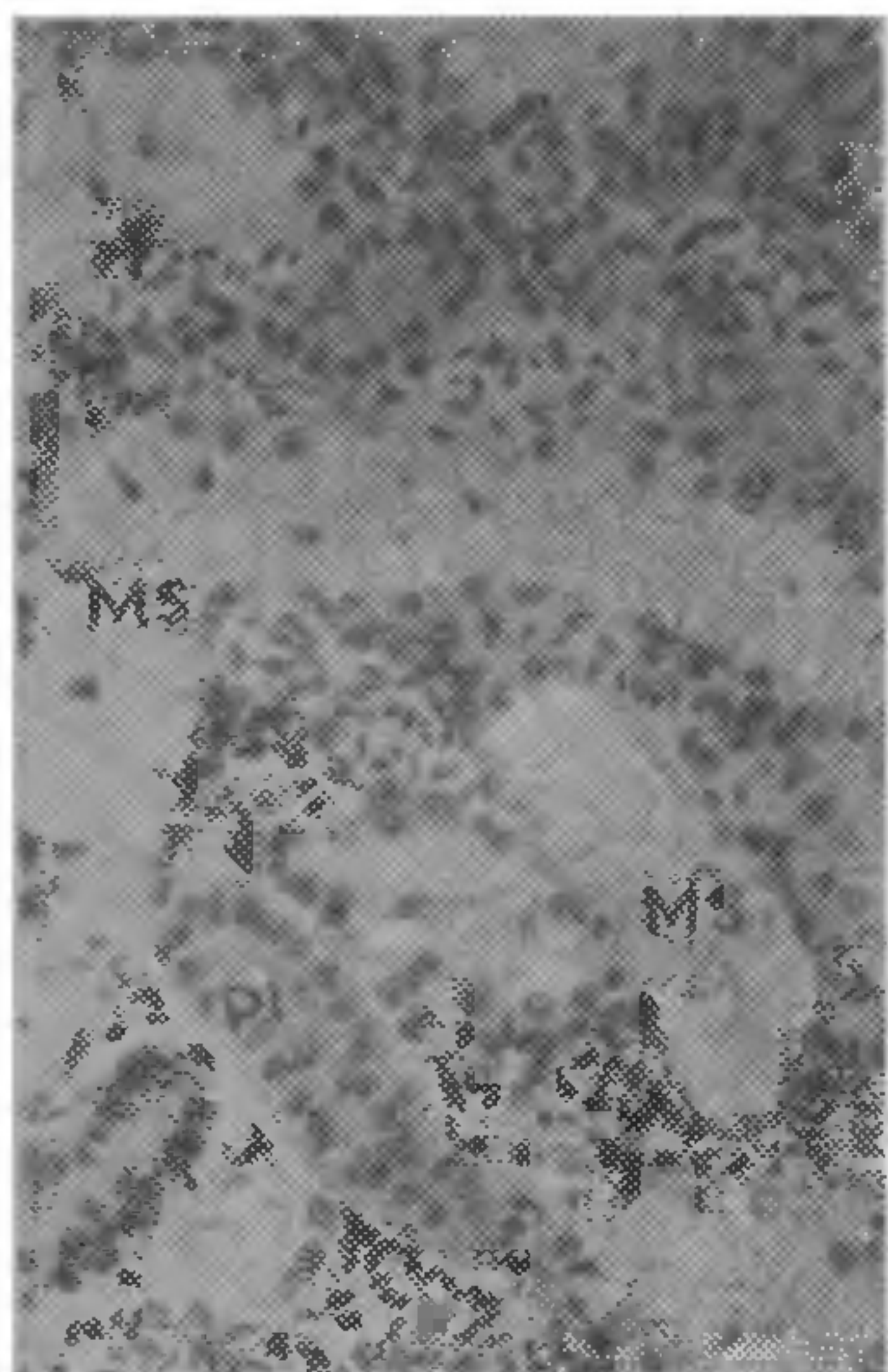


FIG. 1. Photomicrograph of the kidney of *D. rerio* showing mucous secreting segment.

Abbreviations used. MS = Mucous secreting segment, PI = Proximal one segment.

In female sticklebacks which do not take part in nest building this peculiar mucous secreting segment is absent. It is interesting to note that during the present investigation on *D. rerio* such segment was encountered in both male and female specimens. Further, in *D. rerio* no nest building habit was observed.

Such specialised segment of nephron is also present in reptiles, where the so-called sexual segment of the adult kidney produces a copious secretion which serves as a vehicle for the sperm⁴. But this possibility does not exist in the present case as there is no connection between the sperm and urinary duct throughout their respective course. Hence, the present authors are of the opinion that it is difficult to attribute any definite functional significance to the mucous secreting segment of *D. rerio*, though its role in protecting the portion from any type of cellular injury by secreting excess mucous cannot be ignored.

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Further particulars for item No. 1 can be obtained from Dr. J. R. Gibson, Conference Secretary, Department of Electrical Engineering and Electronics, University of Liverpool, P. O. Box 147, Brownlow Hill, Liverpool L69 3BX, U.K. and for item Nos. 2, 3 and 4 from The Meetings Officer, The Institute of Physics, 47 Belgrave Square, London SW1X 8QX, U.K.