CA-DOSE RESPONSE IN THE PRODUCTION OF INTERMEDIATES OF *CHRYSOCORIS STOLLII* WOLFF (HEMIPTERA: PENTATOMIDAE)

FROM a comparative study of the different types of morphological expressions caused by changing the titre of juvenile hormone in the insect body it is possible to assume the feasibility of adopting applications of hormonal analogues upon the insects for various economic purposes, *e.g.*, control of insect pests, production of intermediates for fish, frog and bird food, etc. The prospects of hormonal analogues, juvenoids in particular, for various economic purposes are now well understood[1,2].

The present investigation was performed by implanting fully active corpus allatum upon the ultimate and penultimate instars of *Chrysocoris stollii* collected randomly from natural population during July–August, 1977. The donors were female adults which have just started sexual activities. Two sets of experiments were arranged :

Experiment 1—Recepient ultimate instar, each loaded with 1, 2 or 3 implants.

Experiment 2—Recepient penultimate instar, each loaded with 1, 2 or 3 implants.

Suitable controls were performed with tissues of aorta for each of those experiments. The nature of dependence between the dose (number of implants) and expressions (occurrence of intermediates) was examined by χ^2 test.

Intermediates of different categories were obtained in both sets of experiments (Table I). Percentage occurrence of intermediates was highest in experiment 2 with two implants, and this was lowest in experiment 1 with one implant. From the statistical analysis it is found that $\chi_0^2 > \chi^2 \cdot 01$; 2 for experiment 1. Hence the null hypothesis that the expressions are independent of doses is rejected at both 1% and 5% levels of significance. In other words, it may be concluded that the expressions are dependant on the dosage. For experiment 2; $\chi_0^2 < \chi^2 \cdot 05$; 2 and $\chi_0^2 < x^2 \cdot 01$; 2. Hence the above mentioned null hypothesis is accepted. In other words, it may be concluded that the expressions are independent of dosage.

TABLE I

Occurrence of intermediates due to implantation of corpus allatum in Chrysocoris stollii

	Total No of insects received implants	Intermediates %	Other forms %	Observed χ^2 value d.f. = 2
Expt. 1	1 implant	40	37·5	62·5 (A & NA)	
	2 implants	32	81·3	18·7 (A)	16·6
	3 implants	18	77·8	22·2 (A)	
	Control	35	Nil	100·0 (NA)	
Expt. 2	1 implant	52	73·1	26·9 (A)	
	2 implants	50	88·0	12·0 (A)	3·4
	3 implants	20	75·0	25·0 (A)	
	Control	20	Nil	100·0 (NA)	

A = Adultoid, NA = Normal Adult.

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Department of Zoology,
Kalyani University,
Kalyani 741235,
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SANJIB CHAKRAVORTY.
TARAK NATH SAMUI.

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