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SHORT SCIENTIFIC NOTES

Karyotype and Sex-Mechanism in Four Species of Tenebrionid Beetles

The present report provides cytological information about four species of beetles (Table I). Two of them constitute an addition to our knowledge about the family Tenebrionidae, which has been known cytologically by forty-four species¹⁻⁸.

TABLE I
Karyotype and sex-mechanism in four species* of the family Tenebrionidae

Species	Sex	Karyotype	Sex-mechanism
Family: TENEBRIONIDAE			
1. <i>Alphitobius diaperinus</i>	♂	2n = 19 (17 metacentrics + 2 submetacentrics)	XO
2. <i>Tribolium castaneum</i>	♂	2n = 20 (9 metacentrics + 11 acrocentrics)	XY _p
3. <i>Rhytinota</i> sp.	♂	2n = 20 (15 metacentrics + 2 submetacentrics + 3 acrocentrics)	XY _p
4. <i>Opatroides vicinus</i>	♂	2n = 21 (19 metacentrics + 2 acrocentrics)	XY ₁ Y ₂

* The different species have been identified by Forest Research Institute, Dehradun.

Opatroides vicinus had been worked out earlier by Dutt¹ and he reported its diploid number as 20 (4 metacentrics + 16 acrocentrics) with XY_p type of sex-mechanism. During the present studies on the same species from Chandigarh, however, a diploid number of 21 chromosomes (19 metacentrics + 2 acrocentrics) with a multiple sex-mechanism, i.e., XY₁Y₂ has been observed. This numerical difference with regard to the autosomes or sex chromosomes at the specific level seems to be the result of certain ecological conditions for the two different populations of this species.

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Blood Pressure Preparations in Albino and Field Rats in the Assay of Acetylcholine

Previous workers have shown that rat blood pressure is a suitable method for the estimation of low concentrations of acetylcholine in test samples^{1,2}. In routine course of investigations on the release of acetylcholine in biological fluids from animals both in sleep and wakeful states³, and also on human placental release of acetylcholine both in incubation and on perfusion⁴, albino rat (witser strain—410 preparations) as well as field rat (*Millardia mettada*—540 preparations) blood pressure preparations⁵ indicated the following differences in preparation, maintenance and response to acetylcholine (Table I).

The preparation in field rats is of help in routine and prolonged estimations of 3 point and 4 point assay and in large number of acetylcholine test samples whereas the albino rat preparation is suitable for measuring minute concentrations of acetylcholine as it can be maintained only for a short duration. The house rat (*Rattus rattus*—50 preparations) preparations also yield results similar to field rats when mounted for measuring acetylcholine.