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CHROMOSOMES AND PHYLOGENY OF COLEOPTERA
II. *MELOIDAE*

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ABSTRACT

Karyotype analysis of two congeneric species of *Meloidae* namely *Mylabris himalayica* and *M. pustulata* has been carried out. Both are found to have the diploid number 2n=22. Chromosomes of six species all belonging to the subfamily *Meloinae*, have been compared using quantitative methods such as relative percentage lengths of the chromosomes (L^R%) and tentative conclusions have been drawn regarding chromosomal affinities between species.

INTRODUCTION

Present report is in continuation of the series on the Chromosomes and Phylogeny of Coleoptera I. Chrysomelidae, and deals with the description of chromosomes in 2 species.

In all 23 species are known chromosomally in Meloidae. The diploid number varies from 20-24. The morphometric data such as relative percentage lengths of the chromosomes (LR%) of only six species could be utilized in the present cytotaxonomical analysis (Table I).

MATERIALS AND METHODS

Two species namely *Mylabris himalayica* Saha and *M. pustulata* Thunberg constituted the materials for the present chromosome analysis. The techniques of squash preparations, staining and microphotography are essentially those described earlier (Dua and Kacker, 1981).

OBSERVATIONS

Mylabris himalayica Saha

The testes from two males studied provided only a few spermatogonial metaphases, the most frequently encountered stage in the tissue being the first meiotic metaphases (MI). The presence of 22 elements in spermatogonial cells and 10 autosomal bivalents plus Xyp type of sex chromosomes at MI indicate the diploid chromosome number to be 22.

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TABLE I. List of the species employed in the cytological analysis.

Species	Diploid Number 2n	Reference
Epicauta cineria	20	Stevens, 1909
Psalydolytta sp. nr. *rouxi*	20	Kacker, 1971
Cyaneolytta sp.	20	Kacker, 1971
Meloe sp.	20	Asana *et al*, 1942
Mylabris pustulata	22	Asana *et al*, 1942
Mylabris thunbergi	22	Agarwal, 1962.

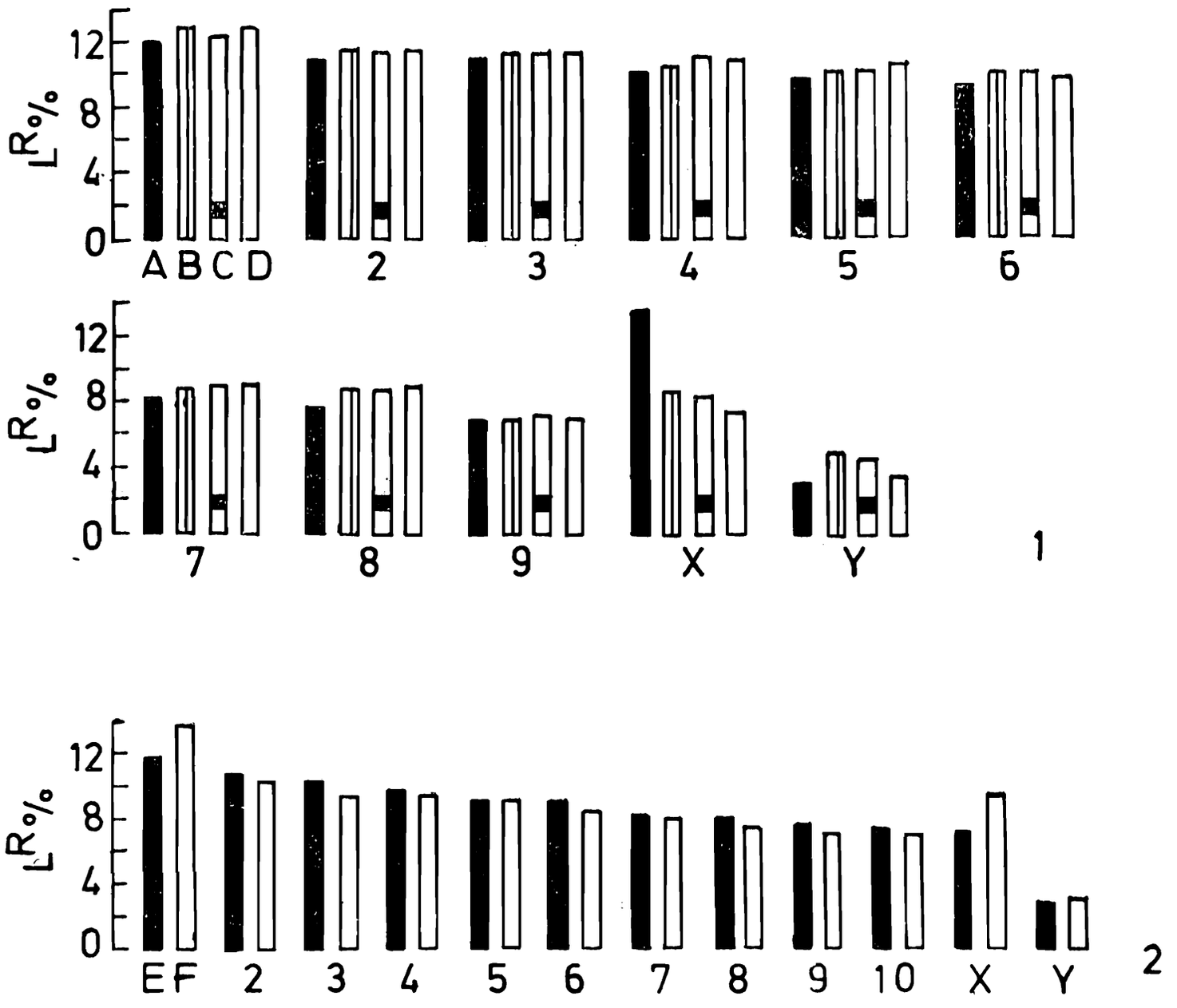

Fig. 1. Idiogram of A- *Epicauta cineria*, B- *Psalydolytta* sp. nr. *rouxi*, C- *Cyaneolytta* sp. and D- *Meloe* sp.

Fig. 2. Idiogram of E- *Mylabris pustulata* and F- *M. thunbergi*.

L^R%- Relative percentage length.

Mylabris pustulata Thunberg

The chromosome studies were carried out in two male individuals. Meiosis, was already over in the testicular follicles which, however, contained a large number of metaphase I and a few Anaphase I stages. Spermatogonial metaphases were absent, the diploid chromosome number was ascertained from 100 clearly countable metaphase I cells. The presence of 10 autosomal and one sex bivalents in all the metaphase I stages, indicate the diploid number is 22.

DISCUSSION

Relative percentage lengths of the chromosomes of six species, all belonging to the subfamily Meloinae, could be utilized in the present study. Chromosomally, these six species fall in to two distinct groups, four species—*Epicauta cineria* (A), *Psalydolytta* sp. nr. *rouxi* (B), *Cyaneolytta* sp. (C), and Meloe sp. (D) have $2n=20$, and belong to the first group, while two species *Mylabris pustulata* (E) and *Mylabris thunbergi* (F) having $2n=22$ are included in the second group. In the four species A, B, C and D all the autosomes show uniform relative size with no significant difference, the only marked difference being in the size of X chromosome. It assumes a larger size in A, whereas the remaining three species have almost equal sized X chromosomes. (Fig. 1). The Y chromosome is always dot like. Taxonomically species A and B are placed in the tribe Epicautini while C and D in the tribes Lyttini and Meloini respectively but chromosomally, B, C and D seem to be more close to each other than A.

In the second category two congeneric species *Mylabris pustulata* (E) and *M. thunbergi* (F) do not show any significant size difference in their chromosomes. The only variation noted is in pair 1 and X chromosome which are slightly larger in species F than the corresponding ones in E (Fig. 2).

Considering the available data on the relative percentage length of chromosomes in Meloidae, it becomes obvious that karyotypic evolution in this family has been very conservative. The changes in the diploid count in this family may be due to centric fission or fusion.

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