Research Note

BRIEF NOTES ON THE CYTOLOGY OF NEOTROPICAL COLEOPTERA. 1. Colaspis tricolor *Perty (Chrysomelidae: Eumolpinae: Colaspini)*[1, 2]

One male and several females of *Colaspis tricolor* were collected in February 21, 1968, in Itatiaia, Brazil. Abdomens were cut open ventrally, and the beetles were fixed *in toto* for overnight in 1:3 acetic alcohol, then stored for 6 years in 70 percent ethanol at ±0°C. Squash preparations were colored with Dyer's[3] stain and studied under phase contrast optics.

The females provided no chromosomal information. The male contained a whole history of meiosis and spermiohistogenesis. Gonia, however, were not present. Prophasic stages do not reveal any conspicuous heteropycnosis in the chromosomes. Chiasma frequency could not be determined, but does not rise much above 1.0 per bivalent, although 1 to 2 bibrachially bichiasmate bivalents (rings) may occur. Association is to 14 II + *neoXY*, the latter bivalent being one of the largest, and distinctly heteromorph (figs. 1 and 2). Consequently, M II plates with *X* (fig. 3) can easily be distinguished from those with *Y* (fig. 4). According to M II, 4 pairs are metacentric and the rest are acrocentrics; many have their centric regions undercondensed (figs. 3 and 4).

The karyotype nearest to this systematically is 10 II + *Xy*: in *Maecolaspis freyi freyi* Bech.[4] At present, it is impossible to relate these two. Another Colaspine, *Deuteronoda suturalis* Lefevre, has a small, slightly heterochromatinized *neoXY*, but only seven autosomal pairs.[4] The latter are too small to be interpreted simply as fusion derivatives of *tricolor*-type chromosomes. Probably there operates, in Colaspini, an evolutionary trend of *neoXY*-formation, and of autosomal fusions and fissions followed by other rearrangements, as found in several other beetle groups.[5]

C. tricolor has such extrachromosomal primitive characteristics as unfused testis follicles (2 + 2) and the highest known sperm cell count per bundle in Coleoptera: spz/b = 512 (cf. Virkki[6, 7]). Thus the above-men-

[1] Manuscript submitted to Editorial Board November 29, 1974.

[2] Contribution to NSF Grant GB-4522.

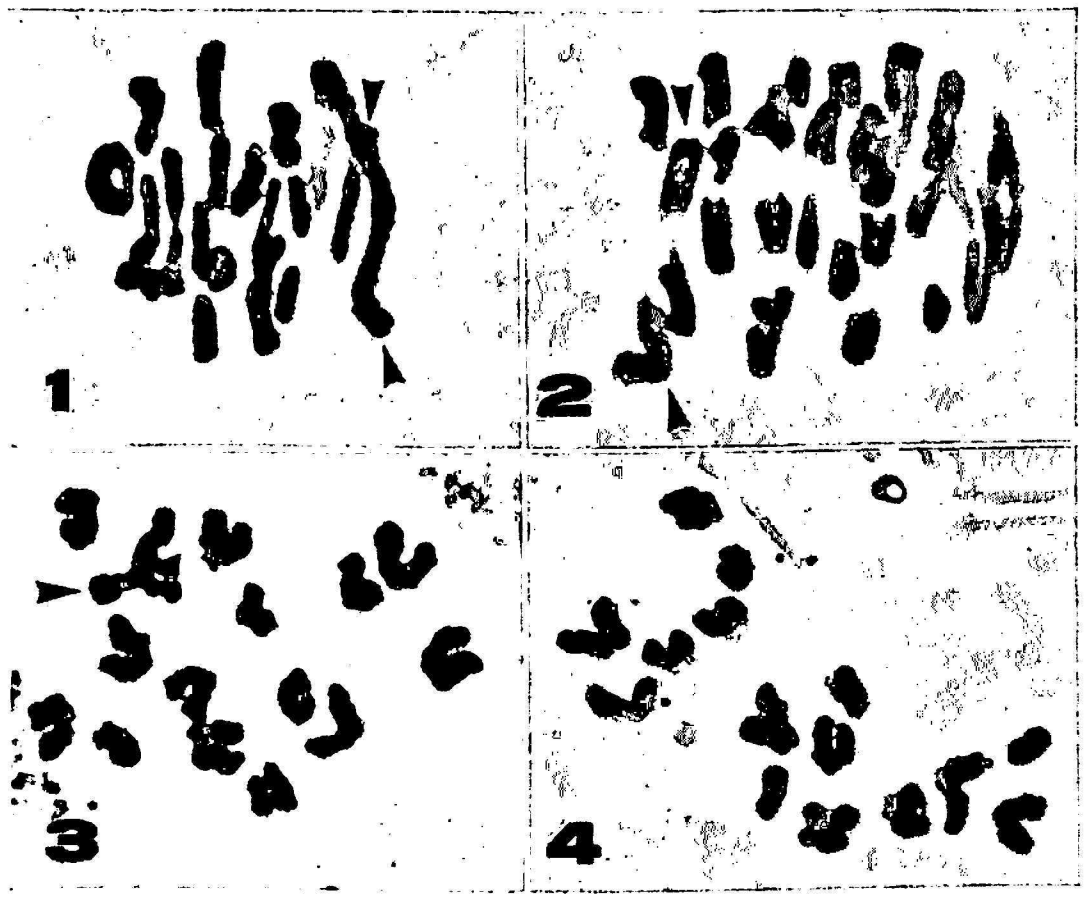
[3] Dyer, A. F., The use of lacto-propionic orcein in rapid squash methods for chromosome preparations, Stain Technol. 38: 85–90, 1963.

[4] Virkki, N., On the cytology of some neotropical Chrysomelids (Coleoptera), Ann. Acad. Sci. Fenn. A IV 75: 1–25, 1964.

[5] Smith, S. G., and Virkki, N., Coleoptera, in: B. John ed., Animal Cytogenetics, Borntraeger, Berlin (in preparation).

[6] Virkki, N., Sperm bundles and phylogenesis, Z. Zellf. 101: 13–27, 1969.

[7] Virkki, N., Evolution of sperm cell number per bundle in insects, An. Esc. Nac. Ci. Biol. México 20: 23–34, 1973.



FIGS. 1 to 4.—*Colaspis tricolor*. Meiotic divisions. NeoXY between arrowheads in 1 and 2, neo$X$ pointed by arrowhead in 3. 1365 ×; 1 and 2. M I and A I, respectively; 3 and 4. Both M II plates.

tioned karyotypic trend could be of early origin, but not equally shared by all intra-Colaspini lineages.

The male specimen was identified by Dr. Gerhard Scherer, Zoologische Sammlung des Bayerischen Staates, Munich, Germany.

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