

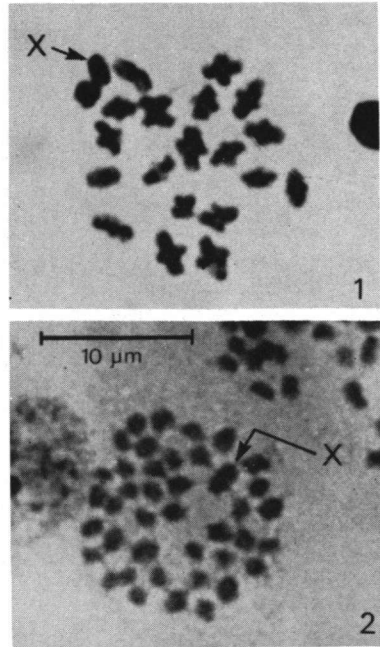
AN EXCEPTIONALLY HIGH CHROMOSOME NUMBER IN *ORTHEMIS NODIPLAGA* KARSCH (ANISOPTERA: LIBELLULIDAE)

The highest male haploid chromosome number so far recorded in the Odonata is 19, occurring in *Argia apicalis* and *A. tibialis* (B. KIAUTA & M.A.J.E. KIAUTA, 1980, *Odonatologica* 9: 35-36). No species with haploid chromosome number higher than  $n=14$  ( $\delta$ ) has been reported in Anisoptera, though in *Diplacodes bipunctata* B. KIAUTA (1969, *Genetica* 40: 158-180) reported 12 bivalents, an X chromosome and 2 additional elements in 40% of the metaphase-I cells studied. About the latter, however, "it is not clear whether or not they have a bivalent structure". Most of the  $n=14$  species are referable to Aeshnidae, and only a few to Libellulidae (cf. B. KIAUTA, 1972, *Odonatologica* 2: 73-102; — 1979, *Odonatologica* 8: 267-283; A.M. DE SOUZA BUENO, 1982, *Estudos cromossômicos na orden Odonata*, M. Sc. thesis, Univ. Estat. Paulista, Rio Claro; S.K. SANGAL & B.K. TYAGI, 1982, *Notul. odonatol.* 1: 154-155; A. STEINEN, 1982, *Notul. odonatol.* 1: 167-168).

Chromosome studies were carried out in 3  $\delta$  of *Orthemis nodiplaga* (2  $\delta$ , Parque Pereyra Iraola, Provincia de Buenos Aires, Argentina; 1  $\delta$ , Palermo, Ciudad de Buenos Aires, Argentina). Staining and squashing were performed in 2% propionic haematoxylin with 1% ferric citrate as mordant. All the specimens were identified by Dr A. Rodrigues Capitulo and are kept in the Institute de Limnologia, Facultad de Ciencias Naturales y Museo, La Plata, Argentina, under the Collection Inventory Nos 1090, 1091 and 1092.

*O. nodiplaga* is  $2n=41$  ( $\delta$ ) and  $n=20+X$  ( $\delta$ ); these being the highest chromosome numbers recorded so far in the order.

At diakinesis the bivalents decrease slightly in size, have a single interstitial or subterminal chiasma and there is no *m*-bivalent. The X chromosome is not easily recognizable at diakinesis and metaphase I, but in the cells where it was identified with certainty, its size was slightly larger than half that of the larger bivalent (Fig. 1). In all spermatogonial metaphases there is a single element longer that



Figs 1-2. Karsch: (1) Male diakinesis; — (2) Spermatogonial metaphase.

the rest (Fig. 2). Based on the previous observations, it can be assumed that the longer chromosome in mitotic metaphase is the X.

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