The primary spermatocyte in the mantid *Humbertiella indica* is strikingly characterized by the expulsion of the X chromosome from the developing spindle into the peripheral cytoplasm. So extreme is its separation from the body of the spindle that the enveloping mantle of mitochondria which invests the latter at metaphase actually comes to lie between the X chromosome and the spindle. By what mechanism is a particular chromosome thus ejected from the nucleus? How will a chromosomal fiber function in spatial isolation from the body of the spindle? Although, in less exaggerated form, similar behavior has been observed in many XO organisms, the present case merits consideration because by virtue of their very exaggeration certain causal factors in the differential behavior of the X chromosome are here open to observation.

**Material.**

The material comprises serially sectioned testes from 8 males of the mantid *Humbertiella indica* Saussure, prepared by Professor J. J. ASANA, then of Gujarat College, Ahmedabad, India, in 1933, to whose generosity I am greatly indebted. Fixation was in a modified FLEM-ING’s fluid which in several instances gave exceptional preservation of the mitochondria. HEIDENHAIN’s hematoxylin was used exclusively in staining, with excellent results on spindle fibers and a differential destaining of mitochondria and chromosomes.

**Chromosome complement.**

The chromosomes of *Humbertiella indica* have been described by OGUMA (1946). The diploid number in the male is 39. Of these the un-
paired X, with nearly median kinetochore, is of enormous size relative to the autosomes. The latter comprise 19 pairs of short chromosomes, closely graded in size, and all with median or submedian kinetochore. In somatic, spermatogonial and secondary spermatocyte metaphases the X chromosome assumes a peripheral position in the plate.

**General aspects of meiosis.**

Early meiotic prophase is of a type common among mantids (Hughes-Schrader, 1943 b). Chromosome ends are polarized in a bouquet configuration at leptotene. This persists, with decreasing intensity, until superseded in late pachytene or diplotene by a bipolar configuration as the two centrioles move apart to opposite points on the nuclear membrane, each accompanied by a variable number of chromosome ends (fig. 1). As the bivalents condense into short compact bodies the specific involvement of chromosome ends is no longer apparent. Polarization is thereafter evident only as a loose and variable grouping of the chromosomes in the region of the two centers (fig. 2) (compare Paratenodera, Hughes-Schrader, 1943 b). The X chromosome, heterochromatic throughout meiotic prophase, undergoes conflexion, and its