

ON THE CHROMOSOMES OF A CRICKET, *LIOGRYLLUS BIMACULATUS*

ACCORDING to Japanese workers the X-chromosome in crickets is metacentric. The two exceptions are *Cyrtoxiphus ritsemæ* and *Homæogryllus japonicus* (Ohmachi 1,2). The present work reports on the X-chromosome and the diploid number of chromosomes in an Indian cricket from Ballygunge in Calcutta.

Testes and ovaries of the material were fixed in Flemming's without acetic acid and also in Belling's modification of Navaschin's mixture. The gonads after sectioning were stained in both iodine crystal violet and Feulgen's stain. The chromosome number was found to be $2n=23$ in the male and $2n=24$ in the female. The complement in the male is composed of (1) an unpaired, metacentric X-chromosome, (2) a pair of V-shaped chromosome and (3) 10 pairs of rod-shaped ones of various sizes (Fig. 1).



FIG. 1. Spermatogonial metaphase of *Liogryllus bimaculatus* $\times 2270$.

FIG. 2. Metaphase plate from the follicle cell of ovary $\times 2625$.

FIG. 3. Side view of first meiotic metaphase showing the "X" lying off the plate. $\times 1750$.

The sex chromosome was found to be the biggest in the complement with two arms unequal. It showed almost always an irregular outline and never became fully nucleinated like the autosomes even at late spermatogonial metaphase stages. The female complement differed from that of the male in having a pair of metacentric X-chromosomes (Fig. 2). The sex chromosomes of the female set were studied from the follicle cells of the ovary and they did not show any heteropycnotic behaviour. The X-chromosome in the prophase of meiosis in the male resembled sometimes a bent rod, split along its length and highly nucleinated, and at other times a compressed mass situated at the periphery of the nuclear membrane. In the first meiotic metaphase this chromosome formed an accessory plate in most cases (Fig. 3), and

also showed negative heteropycnosis. Lagging of the sex chromosome was noted in some nuclei. The second division metaphase plates contained either 11 or 12 chromosomes showing that the first meiotic division of the male is reductional for the sex chromosome.

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NECROSIS IN TOMATO

(*LYCOPERSICON ESCULENTUM* MILL.)

TOMATO PLANTS (*Sutton's Early Market Variety*), when inoculated with leaf extract of potato plants showing severe crinkling and mottling, repeatedly produced veinal necrosis and necrotic spots. The disease was reproduced easily by sap inoculation to healthy tomato plants (Fig. 1).

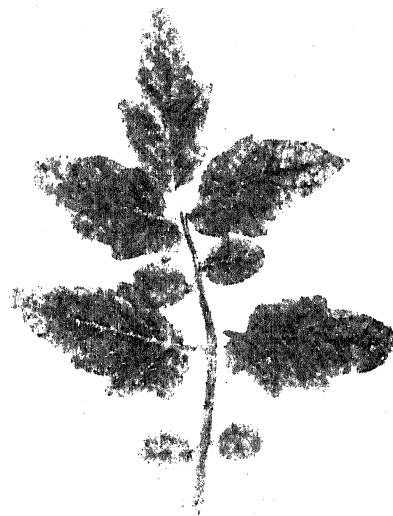


FIG. 1

The inoculation tests were mostly conducted during February-March at Delhi in the insect proof house. The first symptom of the disease in the form of curling of leaves