ON THE OCCURRENCE OF METACENTRICS IN A SOUTH INDIAN GRASSHOPPER

N. V. ASWATHANARAYANA, S. K. ASHWATH AND K. R. MANJUNATHA

Department of Zoology, University of Mysore
Manasa Gangotri, Mysore 570 006, India

THE cytology of Indian Acrididae has been studied extensively in the last few decades. The chromosomes in this family are all acrocentric and metacentrics have not been reported in populations of short-horned grasshoppers from India. This note reports the presence of metacentrics in a population of *Gastrimargus africanus orientalis* Sjost (Acrididae : Oedipodinae). It also describes the pattern of distribution of constitutive heterochromatin.

Specimens of *G. africanus orientalis* (24 males and 13 females) were collected from the Manasa Gangotri Campus, Mysore. Individuals were injected with 0·025% colchicine and two hours later the gut caecae were removed and treated with 0·56% KCl for 15 minutes prior to fixation in 1 : 3 acetic/methanol. Air dried preparations were made and the C-bands were induced (Sumner)[1].

All individuals showed a somatic count of 23 (22AA + XO) and 24 (22AA + XX) in males and in females respectively. The autosomal complement can be grouped into 3 long (1–3), 6 medium (4–9) and 2 short (10–11) pairs. All the chromosomes are telocentric, except the 7th and 9th pairs (Figs. 1 and 2). The 9th pair is regularly metacentric. In a few individuals (5 ♀ and 3 ♂) the metacentric pair was associated with the heteromorphic 7th pair having

FIG. 1. Metaphase spread of female *G. africanus orientalis* with one pair of metacentrics (arrows).

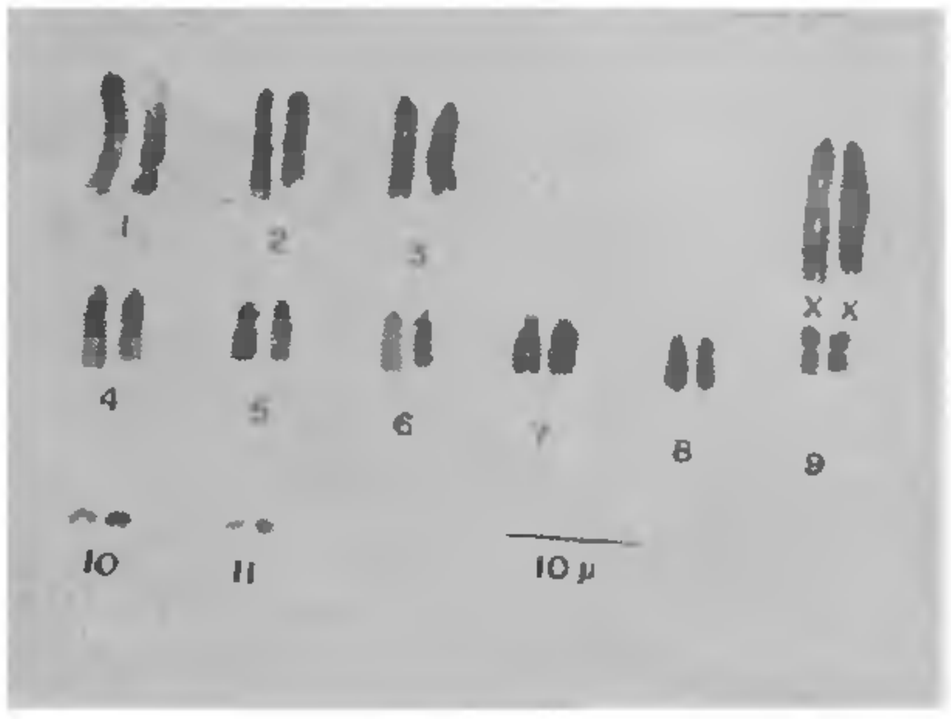

FIG. 2. Female karyotype of *G. africanus orientalis*. Heteromorphic nature of 7th pair is seen.

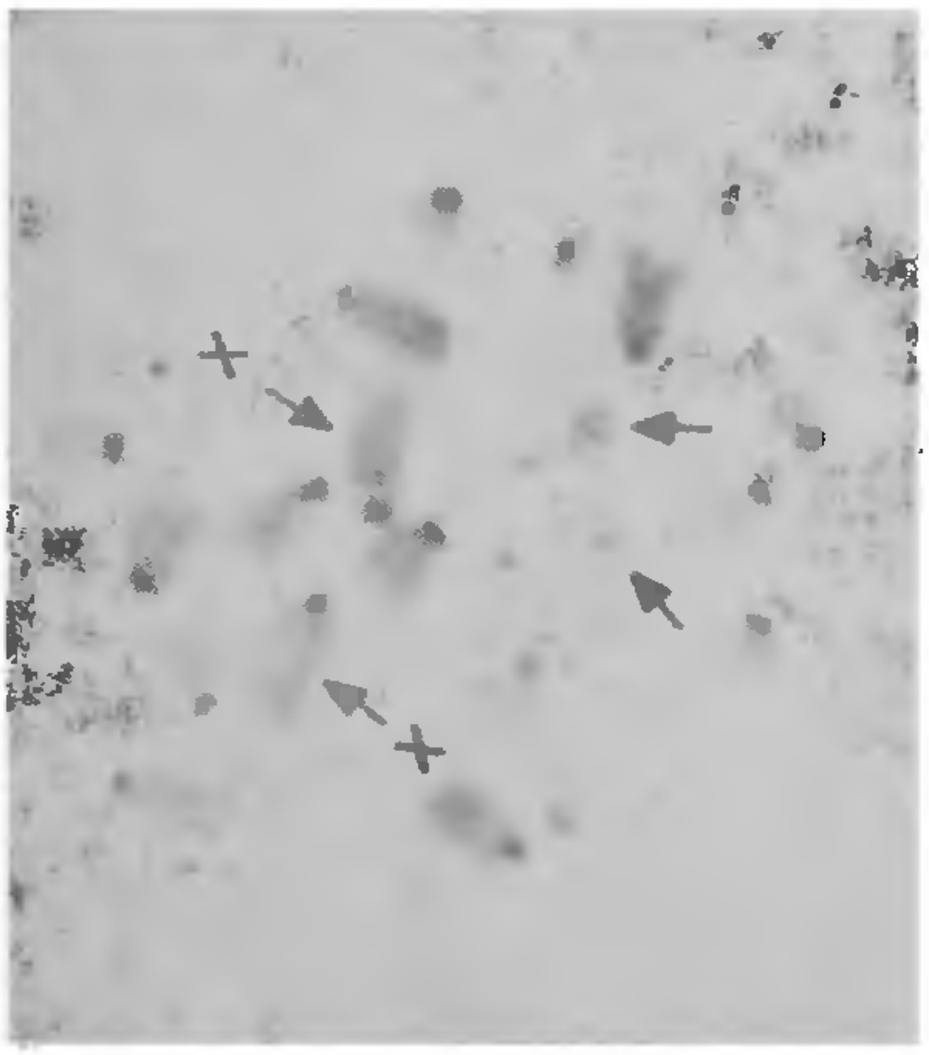

FIG. 3. C-banded mitotic metaphase of female *G. africanus orientalis*.

sub-telocentric/telocentric members. The C-banding studies reveal the presence of constitutive heterochromatin in the procentric regions of all the chromosomes (Fig. 3).

Rajasekarasetty's[2] earlier studies also did not mention the occurrence of metacentrics in this species.

Since most species of Acrididae have all acrocentric chromosomes, the variation encountered in the present study indicates the possibility of pericentric inversions.

The authors express their grateful thanks to Prof. N. B. Krishnamurthy, Professor and Head, Department of Zoology, Manasa Gangotri, Mysore 6, for encouragement and facilities. S. K. A. and K. R. M. acknowledge with gratitude the UGC, New Delhi, for the award of the Junior Research Fellowship. They also thank the authorities of the Zoological