

**FIELD RECOVERY OF CHELONUS BLACKBURNI
CAMERON (HYMENOPTERA: BRACONIDAE)
FROM THE COTTON SPOTTED BOLLWORM
EARIAS VITTELLA (FABRICIUS)**

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AMONGST the spotted bollworms, *Earias vittella* (Fabricius) (= *fabia* stoll) is a serious pest of both cotton and bhendi [*Abelmoschus esculentus* (Linnaeus) Moench] in the Karnataka State. Since a species of *Chelonus* has been reported to parasitise the cotton bollworms *E. vittella* and *Earias insulana* Boisduval in India², preliminary tests were conducted to find out the efficacy of an egg-larval parasite, *Chelonus blackburni* Cameron in parasitizing *E. vittella* under field condition. A nucleus culture of this species (originally procured from the U.S.A.) was obtained from the Commonwealth Institute of Biological Control, Indian Station, Bangalore and multiplied in the laboratory at the Department of Entomology, College of Agriculture, Dharwar. In the preliminary experiments conducted under laboratory conditions the parasite was observed to readily accept the eggs of *E. vittella*. The adults reared from this host were found quite normal. Further, its efficacy under field conditions was also tested by releasing the freshly emerged adult parasites in small areas of cotton and bhendi which were affected by the spotted bollworm. Parasite releases were made in batches and a total of 4784 adults were released from 27-9-1976 to 24-2-1977. After the lapse of 10 days of each release, young larvae of *E. vittella* were collected at random from released plots and were reared individually till they pupated. Out of 350 larvae of spotted bollworm collected from the field, 4 adults of *C. blackburni* emerged in the laboratory, and parasitisation of *E. vittella* in cotton and bhendi was found to be 1.2% and 1.0% respectively.

C. blackburni is an egg-larval parasite of the cotton pink bollworm *Pectinophora gossypiella* (Saunders) in Hawaii⁵ and has been successfully introduced against *P. gossypiella* in the U.S.A.^{1,3} and in the West Indies⁴. Thompson⁶ lists this species as a parasite of *E. insulana* in Egypt which seems to be erroneous. Except this there is no report of *C. blackburni* parasitizing the spotted bollworms. It is interesting to note from the present studies that the parasite has accepted *E. vittella* as its host under laboratory and field conditions and recovery of the parasite from the field, though small in numbers, is recorded. Further studies on the parasite are in progress.

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**ON THE MORPHOLOGY OF Y AND OTHER
CHROMOSOMES IN THE INDIAN FLYING
FOX, PTEROPUS GIGANTEUS GIGANTEUS**

THE Indian bat commonly called flying fox, *Pteropus giganteus giganteus*, Brunnich, a member of family Pteropidae of order Chiroptera, has already been cytologically investigated^{1,2}. Though the diploid number was reported earlier by Manna *et al.*¹ its karyotype was constructed only later². Present study represents further investigation of somatic chromosomes of this species to highlight the morphological differences between autosomes and the sex chromosomes, specially the Y.

The chromosome preparation was done from bone marrow tissues following Colchicine-hypotonic-squash technique³ with iron-alum haematoxylin staining. The chromosome number was determined from 185 metaphase nuclei, obtained from both male and female specimens. The diploid number was confirmed to be 38. Fig. 1 (A and B) represents karyograms of male and female chromosome complements showing serial alignments of 18 pairs of autosomes numbered in decreasing order of size and the sex chromosomes at the end; among these 18 pairs of autosomes arranged according to the position of the centromere, 10 pairs of metacentrics (nos. 1, 2, 3, 4, 6, 7, 10, 12, 14, 15), 4 pairs of submetacentrics (nos. 5, 8, 13, 17) and 4 pairs of subtelocentrics (nos. 9, 11, 16, 18) are observed. The X chromosome is subtelocentric, but the Y chromosome is a minute metacentric (Fig. 1A, at the arrow).

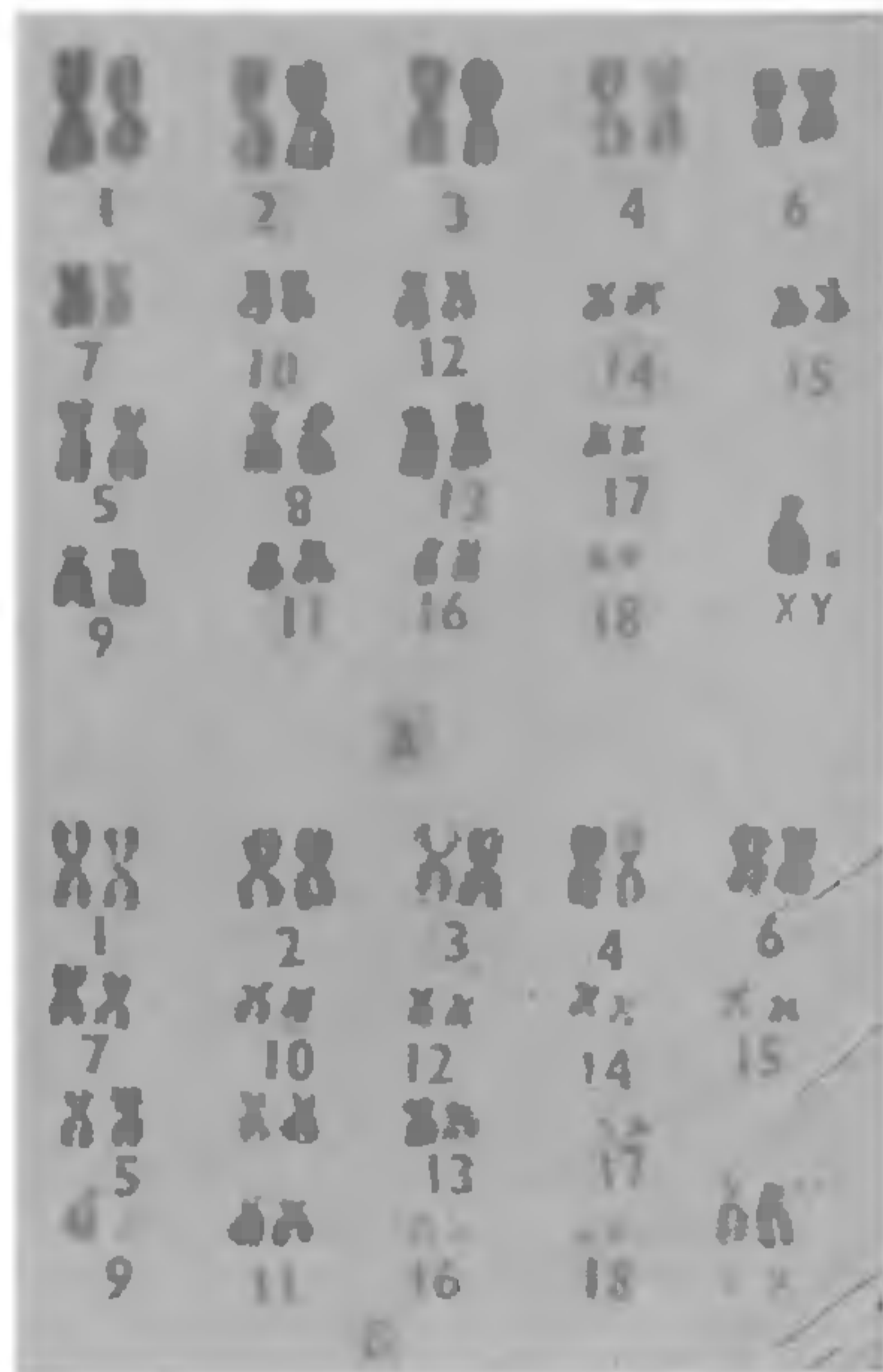


FIG. 1. Karyograms of *P. g. giganteus*. A represents male and B, a female complement. Arrow indicates position of centromere in Y chromosome, $\times 1,200$.

The karyotype analysis of Ray Chaudhuri *et al*² in the same species reported 11 pairs of metacentrics, 4 pairs of submetacentrics and 3 pairs of subtelocentrics with subtelocentric X and acrocentric Y. In the present study the author has found that the last pair of the autosomes is subtelocentric contrary to the submetacentric pair reported by Ray Chaudhuri *et al*². The structure of the sex chromosomes, specially the Y, is different in appearance; Y is minute dot-like acrocentric in their figure and not very clear. Present study shows distinct gap locating middle position of centromere and proving it to be metacentric. X-chromosome is subtelocentric in both the studies.

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ICRO, UNESCO COURSE ON 'ANIMAL VIRUS AND TISSUE CULTURE'

Training course on recent techniques in Cell Research, on Animal Virus and Tissue Culture will be held from January 2-20, 1978, at the Microbiology and Cell Biology Laboratory, Indian Institute of Science, Bangalore.

Participants will carry out fundamental experiments in modern quantitative methods. Lectures, demonstrations, seminars and group discussions will be held with the co-operation of a number of leading specialists.

The number of participants is limited to sixteen. Only post-graduate students in the fields

of physics, chemistry and biology (including biochemistry and microbiology), will be accepted. Their living expenses for the duration of the course will be offered by the Indian agencies. A limited number of fellowships, which will cover travel expenses, will be offered by ICRO/UNESCO. Accepted participants will be notified by November 20, 1977.

For details please contact Prof. T. Ramakrishnan, Microbiology and Cell Biology Laboratory, Indian Institute of Science, Bangalore 560012. Deadline for applications October 31, 1977.