

A chromosomal investigation of three species of *Papilio* (Papilionidae : Lepidoptera)

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Chromosome studies in three species of butterflies (*Papilio polytes*, *Papilio demoleus*, *Papilio glaucus* revealed 60 as diploid chromosome number.

Key words : Chromosome, Diploid chromosome number

INTRODUCTION

Although intense investigations on chromosome cytology of Lepidoptera have been carried out in different parts of the world, work in India is almost negligible (Rishi, 1973; Nayak, 1975). The present communication deals with karyological study of somatic chromosomes from male and female and meiotic stages from male of three species of butterflies belonging to family Papilionidae.

MATERIALS AND METHODS

Larvae of three species of Sphingid moths were collected from their respective host plants and were reared in cages. The fifth instar larvae and early pupae were found suitable for chromosomal investigation. Brain ganglia from male and female and testes from male were dissected out and fixed in Carnoy's fixative. Slides were prepared following the technique of Rishi *et al.* (1997) and stained in Giemsa stain. Slides were examined under binocular research microscope, good stages were photographed.

RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized below :

Papilio polytes :

The diploid number (2n) at somatic metaphase, both male and female consisted of 60 small, dot-like chromosomes (Fig.1 and 2). In both size and morphology, the chromosomes were almost identical. The meiotic prophase in zygotene and pachytene showed elongated chromosomes, but their number was not countable at this stage. The pachytene bivalents showed lengthwise pairing of homologous chromosomes but exact position of



Fig. 1 : Somatic metaphase *Papilio polytes*-male

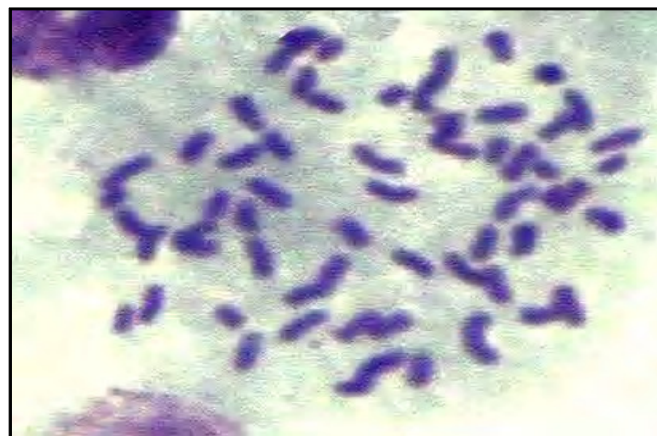


Fig. 2 : Somatic metaphase *Papilio polytes*-female

chiasmata was not clear. The chromosomes appeared more and more condensed as they passed through diplotene to metaphase I. The diakinetid bivalents showed chiasma bearing shapes like cross, rod, ring, thereby suggesting positive occurrence of chiasmata. The metaphase I