supernatant was inoculated on *Ageratum conyzoides* L., *Amaranthus viridis* L., *Ammi majus* L., *Catharanthus roseus* L. (G. Don)., *Chenopodium amaranticolor* Coste and Reyn., *Cucumis sativus* L., *Datura metel* L., *D. stramonium* L. *Nicotiana glutinosa* L., *N. tabacum* L. var. *Samsun*., *N. tabacum* L. var. White Burley, *Vigna sinensis* L., and *Zinnia elegans* Jacq. Back inoculations from all plants were invariably made on *C. amaranticolor*.

Out of 13 plants tested only 5 plants showed symptoms which are as follows :

Ammi majus : Yellow spots developing 10 days after inoculation later on became bright yellow mosaic on dark green background of the leaves. At acute stages all the leaves turned yellow leaving only a few green areas.

Chenopodium amaranticolor : Chlorotic lesions appeared 7 days after inoculation.

Nicotiana tabacum var. White Burley : Symptoms developed 5 days after inoculation in the form of mild, light and dark green mosaic. Infected plants, however, fully recovered after 10 days. Virus could be recovered from such plants when back inoculations were carried out on *C. amaranticolor*.

Zinnia elegans : Mosaic of light and dark green colour developed on new emerging leaves after 5 days of virus inoculation. Symptoms although apparent became mild afterwards. Virus could be recovered from leaves showing very mild symptoms.

Datura stramonim : Symptoms developed as vein yellowing of leaves after 5–6 days of virus inoculation which disappeared completely after 15 days. The virus, however, could not be recovered from infected plants.

Ageratum conyzoides, *Amaranthus viridis*, *Catharanthus roseus*, *Cucumis sativus*, *Datura metel*, *Nicotiana glutinosa*, *Nicotiana tabacum* var. *Samsun* and *Vigna sinensis* neither developed any symptom after one month of virus inoculation nor the virus could be recovered from them.

The virus disease recorded herein on *Ammi majus* appears to be the first record of any virus naturally infecting *Ammi majus* plants. Further characterization of virus through study of bio-physical properties, serology and electron microscopy is in progress.

Authors are grateful to Prof. T. S. Sadasivan for suggesting the problem.

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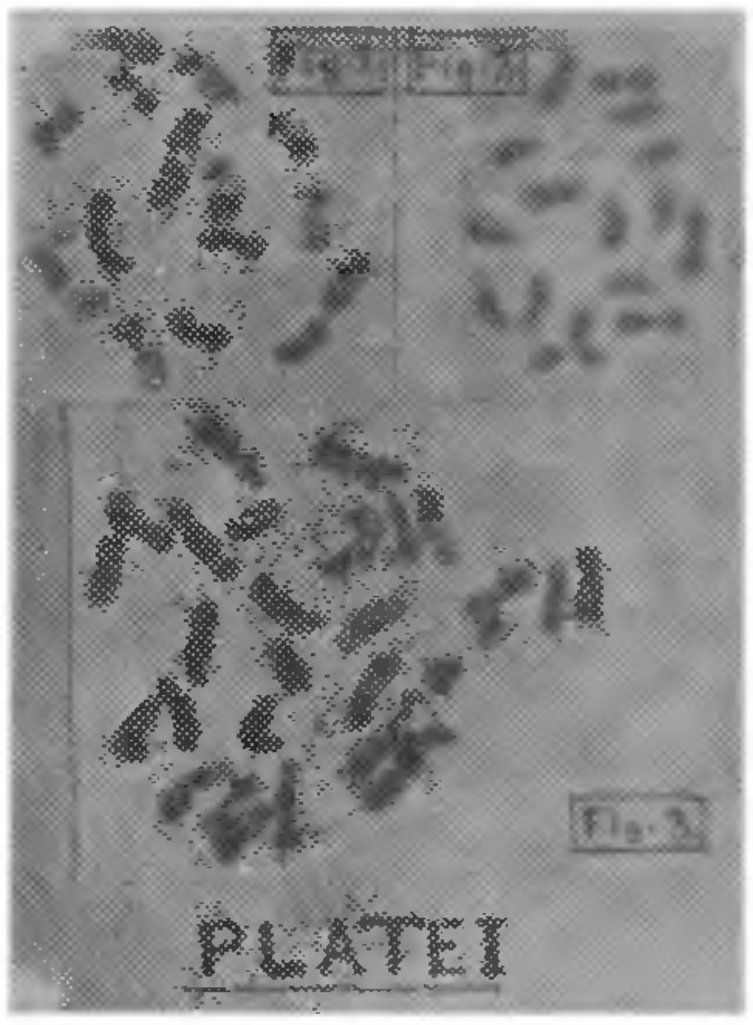
FIRST REPORTS OF CHROMOSOME NUMBERS OF A FEW SPECIES OF PAPILIONACEAE

In the present paper, chromosome numbers of three plant species: *Vicia biensis* Linn., *Crotalaria pumila* Ort., and *Terannus labialis* (L.f.) Spreng., all belonging to the family Papilionaceae, have been reported for the first time[1–3]. *Crotalaria pumila* is the only species in which $2n = 32$ was reported earlier by Atchison but the rest three reports are entirely new.

In *Vicia biensis*, the somatic chromosome number was found to be fourteen ($2n = 14$) (Plate I, Fig. 1.) There are six pairs of submedian and one pair of median chromosomes, which vary from 2·33 to 6·00 μm in length. Three pairs of submdian chromosomes have also secondary constrictions. Meiotic studies supported the somatic chromosome count—*i.e.*, metaphase I plates showed regular seven bivalents ($n = 7$) among which the ring ones were in greater frequency. In *Crotalaria pumila*, the somatic chronosome number was found to be sixteen ($2n = 16$) (Plate I, Fig. 2). There are seven pairs of median and one pair of submedian chromosomes which vary from 1·33 to 2·33 μ in length. The somatic chromosome count was corroborated by meiotic studies, *i.e.*, metaphase I plate showed eight regular bivalents ($n = 8$), among which the ring ones were in greater frequency. The diploid number 32 in this species reported earlier by Atchison from U.S.A. is probably a distinct cytotype. In *Terannus labialis* the somatic chromosome number was found to be twentyeight ($2n = 28$) (Plate I, Fig. 3). There are thirteen pairs of submedian and one pair of subterminal chromosomes, which range in length between 1·33 and 3·66μ. A pair of chromosomes was found to have been



FIGS. 1–3

satellited and three pairs of chromosomes had secondary constrictions. Meiotic data fully corroborated the mitotic ones, *i.e.*, at metaphase I fourteen bivalents ($n = 14$) were seen among which the rod ones had higher frequency.

The above taxa are polybasic: *Vicia biensis*, *Crotalaria pumila* and *Teramnus labialis* show basic chromosome numbers $x = 7$, $x = 8$ and $x = 14$ respectively. Chromosomes of *Crotalaria pumila* are almost symmetrical but those of the other two species are asymmetrical, particularly chromosomes of *Teramnus labialis* which are highly asymmetrical. In Papilionaceae, lower basic chromosome number is dominant. But *Teramnus labialis*, investigated hitherto, has a high basic chromosome number ($x = 14$), which is uncommon in Papilionaceae, but common in Caesalpinaceae and Mimosaceae[1-3]. Voucher specimens are maintained in the Herbarium of the Department of Botany, Patna University, Patna.

So, *Teramnus labialis* is very interesting and deserves a thorough investigation, because it may help in establishing 'inter se' relationships, among the three families, *viz.*, Papilionaceae, Caesalpinaceae and Mimosaceae.

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FRUIT ROT DISEASE OF *CANAVALIA ENSIFORMIS* DC.—A NEW RECORD

An undescribed fruit rot disease of Sword Bean (*Canavalia ensiformis* DC.) was observed by the authors and the causal organism was identified as *Trichothecium roseum* (Pers.). The culture has been deposited at CMI, Mew, England, under the accession No. INI-226615.

The disease was marked as dark brown to black spots on the fruit, which later on got covered by light pink velvety mass of fungal hyphae. The decay was confined to the skin of the fruit in the early phase of infection which entered the deeper zone as well with the advancement of the disease. Pathogenicity test was performed and found positive. Perusal of the literature revealed that it has not been reported on Sword Bean.

The authors are thankful to the Director, CMI, Kew, England, for confirming the identity of the pathogen and to Professor K. S. Bilgrami for his kind encouragement and laboratory facilities.

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NEW RECORDS OF PARASITES AND PREDATORS OF *NEPHOPTERYX EUGRAPHELLA* RAGONOT IN INDIA

Nephopteryx eugraphella Ragonot (Lep., Pyralidae) is the most serious insect pest of sapota (*Achras zapota* Linn.) in India. The larva joins the leaves with silken threads and feeds on the leaf-tissue, remaining hidden between the leaves or within the loose tunnel made up of excretal pellets. Unidentified hymenopterous larval-pupal parasites have been mentioned by Cherian and Ananthanarayanan[1], and Gupta and Gangrade[2]. Spiders feeding on the larvae have been observed by Sandhu *et al.*[3]. Considering the importance of natural control an effort was made during 1976 to study the insect parasites and predators of *N. eugraphella*.

Three larval-pupal parasites, *viz.*, *Eurytoma* sp. (Hym., Eurytomidae), *Xanthopimpla* sp. (Hym., Ichneumonidae) and *Cadurcia* sp. (Dip., Tachnidae) were identified from field-collected samples. During peak infestation parasitism was up to 35%. *Eurytoma* sp. was dominant over *Xanthopimpla* sp. and *Cadurcia* sp. Larvae and adults of two beetles namely *Calleida splendidula* (Fabr.) and *Parena, nigrolineata* (Chd.) (Col., Carabidae) were the only insect predators observed. These parasites and predators appeared to be density-dependant and unable to keep the host populations in check. All these are first records from India.

Thanks are due to the Director, Commonwealth Institute of Entomology London for identifying the insects.

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