the soil myxomycetes. Several plasmodia, different from those, which normally appeared on incubation of decaying leaves alone, were isolated when the decaying leaves were incubated along with about one gram of garden soil per moist chamber.

The use of decaying plant parts as the baiting material is advantageous because they will provide a substrate for bacterial decomposition as well as sufficient bacterial population to feed the soil myxomycetes. On the other hand, they lack food materials sufficient to feed the saprophytic fungi commonly present in soil. and on the plant surfaces.

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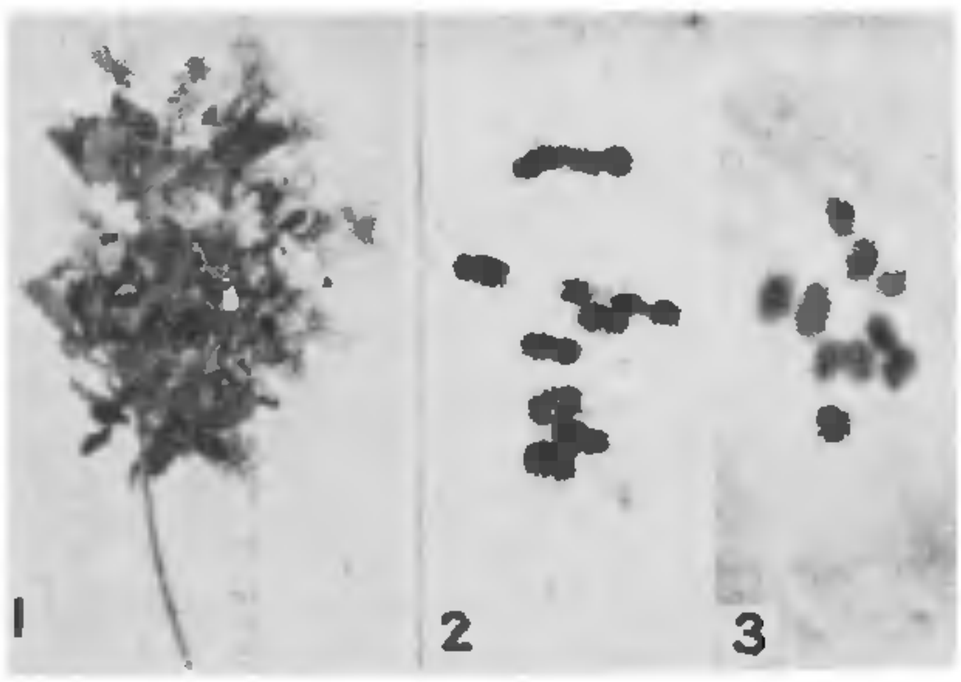
DOUBLE TRISOMIC IN *TRIGONELLA CORNICULATA*

THE triploid in 'Kasuri methi' (*Trigonella corniculata* L.) reported by Singh and Saini[1] produced a double trisomic besides primary trisomic and a tertiary trisomic[2]. The double trisomic was late in germination and flowering. It continued to flower even one month after all other trisomics and control plants had matured. There was no difference in the size of this plant from the diploid. Its leaves differed from those of the controls in shape and texture. The inflorescence of the double trisomic had leafy structures interspersed between the flowers. The rachis of the inflorescence continued growth and produced many branches to form a "compound inflorescence" (Fig. 1). A similar though less branched inflorescence was produced by a primary trisomic. Probably one of the extra chromosomes of the double trisomic was the same as that of the primary trisomic.

Inflorescences were fixed in acetic-alcohol (1 : 2) containing ferric chloride. Meiosis was studied from temporary squashes in acetocarmine. At metaphase I, this plant showed $2n + 1 + 1 = 18$ chromosomes. Out of 90 pollen mother cells studied $1_{III} + 7_{II} + 1_{I}$ was the most frequent configuration in 52·22% cells. The other two configurations. $2_{III} + 6_{II} + 2_{II}$ (Fig. 2) and 8_{I} (Fig. 3) were observed in 30·00% and 17·78% cells respectively. Such a decreasing order in the frequencies of these three configurations was also observed in double trisomics of rice[3] and pearl millet[4]. Chiasma frequency in the double trisomic was 14·1 ± 1·5 compared to 14·3 ± 0·65 of the diploid. Anaphase I distribution was studied in 39 cells with countable chromosomes. Equal distribution of 9–9 was observed in 69·23% whereas 8–10. 8–2–8 and 8–1–7 distribution were seen in 23·08%, 5·13% and 2·56% cells respectively. Pollen fertility was 88·72% compared to 94·72% of the diploid. The double trisomic produced less seeds in spite of good pollen fertility.



FIGS. 1–3. Fig. 1. "Compound inflorescence" of the double trisomic. Fig. 2. Metaphase I with $2_{III} + 6_{II}$ (× 1,000). Fig. 3. Metaphase I with $8_{II} + 2_{I}$ (× 1,000).

From the present studies it seems that *T. corniculata* could not tolerate the addition of more than two different chromosomes to the diploid complement. Absence of a tetrasomic in the progeny of triploids is suggestive of intolerance of four sets of a chromosome. Intolerance of the tetrasomic condition for a single chromosome is in keeping with the observations on the autotetraploids of this species. Singh and Roy[5] found the autotetraploids to be morphologically inferior to the diploids. Moreover, no autotetraploid was found in the C_2 generation produced by the cytologically confirmed C_1 generation. *T. corniculata* is a diploid species and therefore, is sensitive to numerical disturbance of chromosomes and tolerates only limited aneuploidy. Genic unbalance caused by trisomy seems to be responsible for low seed set in the double trisomic.

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SHORT SCIENTIFIC NOTES

Karyotype and Sex-Mechanism in Four Species of Tenebrionid Beetles

The present report provides cytological information about four species of beetles (Table I). Two of them constitute an addition to our knowledge about the family Tenebrionidae, which has been known cytologically by forty-four species[1–8].

TABLE I

Karyotype and sex-mechanism in four species of the family Tenebrionidae*

Species	Sex	Karyotype	Sex-mechanism
Family: TENEBRIONIDAE			
1. *Alphitobius diaperinus*	♂	$2n = 19$ (17 metacentrics + 2 submetacentrics)	XO
2. *Tribolium castaneum*	♂	$2n = 20$ (9 metacentrics + 11 acrocentrics)	XY_p
3. *Rhytinota* sp.	♂	$2n = 20$ (15 metacentrics + 2 submetacentrics + 3 acrocentrics)	XY_p
4. *Opatroides vicinus*	♂	$2n = 21$ (19 metacentrics + 2 acrocentrics)	XY_1Y_2

* The different species have been identified by Forest Research Institute, Dehradun.

Opatroides vicinus had been worked out earlier by Dutt[1] and he reported its diploid number as 20 (4 metacentrics + 16 acrocentrics) with XY_p type of sex-mechanism. During the present studies on the same species from Chandigarh, however, a diploid number of 21 chromosomes (19 metacentrics + 2 acrocentrics) with a multiple sex-mechanism, *i.e.*, XY_1Y_2 has been observed. This numerical difference with regard to the autosomes or sex chromosomes at the specific level seems to be the result of certain ecological conditions for the two different populations of this species.

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Blood Pressure Preparations in Albino and Field Rats in the Assay of Acetylcholine

Previous workers have shown that rat blood pressure is a suitable method for the estimation of low concentrations of acetylcholine in test samples[1,2]. In routine course of investigations on the release of acetylcholine in biological fluids from animals both in sleep and wakeful states[3], and also on human placental release of acetylcholine both in incubation and on perfusion[4], albino rat (witser strain—410 preparations) as well as field rat (*Millardia mettada*—540 preparations) blood pressure preparations[5] indicated the following differences in preparation, maintenance and response to acetylcholine (Table I).

The preparation in field rats is of help in routine and prolonged estimations of 3 point and 4 point assay and in large number of acetylcholine test samples whereas the albino rat preparation is suitable for measuring minute concentrations of acetylcholine as it can be maintained only for a short duration. The house rat (*Rattus rattus*—50 preparations) preparations also yield results similar to field rats when mounted for measuring acetylcholine.