sexuality are associated with white rots and positive oxidase reactions, while species with bipolar type of sexuality cause brown rots and give negative oxidase reactions. Information so far obtained from the members of the Polyporaceae generally supports this view of Nobles with a few exceptions[2, 3]. The present paper gives the result of investigation on the sexuality and oxidase tests of *Hexagonia apiaria* (Pers) Fr., a fungus which is reported to cause white rot[4].

Twenty-five monosporous cultures were isolated from the spores of a sporophore of *H. apiaria* collected from Bankura, West Bengal, India, where it was found growing on a dead wood of *Shorea robusta* Gaertn. Each of these cultures showed good growth; they were checked carefully for clamp connections. The absence of clamp connection was taken as confirmation of their monokaryotic nature. Finally 20 monokaryotic cultures were paired among themselves in all possible combinations by placing the inocula 25–30 mm apart on 2.5 % malt agar slants. The culture tubes containing paired inocula were then incubated at room temperature (26 ± 2°C) for about a fortnight and the hyphae from the line of contact between the paired mycelia were examined under the microscope for the presence of clamp connections. The presence of clamp connections indicated the compatible mating of the paired mycelia and the absence of clamp connections indicated incompatible mating.

Analysis of the results shows that the basidiospores of *H. apiaria* fall into four mating groups on the basis of their compatibility. This indicates that the species is tetrapolar with allelomorphs for heterothallism at two loci. The distribution of mating types among the basidiospores studied is given below following the method of Nobles *et al*[5], where the conventional symbols A_1 A_2 B_1 B_2 have been used to designate the alleles governing the interfertility:

A_1B_1: 1, 5, 6, 12, 15, 20, 22
A_2B_2: 4, 9, 13, 14, 16, 25
A_1B_2: 3, 17, 18, 23
A_2B_1: 8, 10, 19.

Oxidase tests were carried out by growing the polysporous mycelia of the fungus for 7 days at room temperature (26 ± 2°C) on 2.5% malt agar media containing 0.5 % gallic acid and tannic acid in separate petridishes following the method of Davidson *et al*[6]. The appearance of dark coloured zones in the media presented positive proof of the production of extracellular oxidase enzymes by the test fungus.

From these results, it may be concluded that the hypothesis of Nobles[1] also finds support in *Hexagonia apiaria* (Pers) Fr.

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CYTOMIXIS AND CHROMOSOME ELIMINATION IN GROUNDNUT

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EVOLUTIONARY significance of cytomixis and chromosome elimination is well documented among plant species[1]. These phenomena indicate genetic or chromosomal imbalance of the organisms and lead to stabilization of chromosome numbers after being exposed to natural selection. Alternatively, such phenomena may result from gene mutations as observed in maize[2], pearl millet[3], rice[4] etc. Groundnut, *Arachis hypogaea*, is an allotetraploid with its genomes derived probably from species like *A. cardenasii* and *A. batizocoi*[5]. Genomes of these species pair among themselves and occasionally show intergenomic chromosome pairing. A triploid obtained from interspecific cross between tetraploid *A. hypogaea* cv Co-1 and a diploid species *A. chacoense*, both belonging to section *Arachis*, was multiplied by stem cuttings. A detailed cytological analysis was made of this triploid hybrid. Root tip mitosis was normal with 30 chromosomes. Last premeiotic mitotic divisions were also normal but fushion of two or more PMCs was observed during preleptotene stage. It was followed by transfer of chromatin between PMCs throughout all meiotic stages. Transfer of chromatin was partial to complete, providing a wide spectrum of chromosome numbers in the affected PMCs. Absence of cytomixis in root tips and the tapetal mitoses suggests that the expression is confined to meiosis only. In this particular case, the

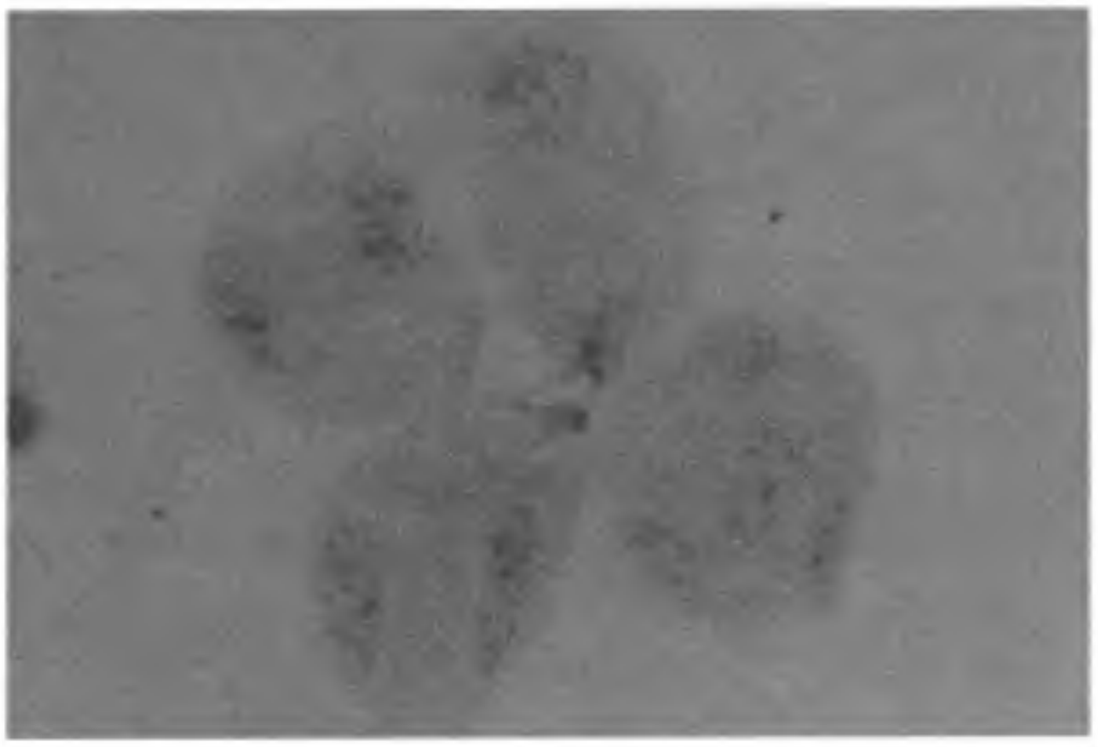

Figure 1. Inter connected PMCs at telophase I and II showing cytomixis and chromatin elimination.

most probable reason for the observed anomalies might be either gene mutation or chromosomal or genetic imbalance due to genomic dissimilarity between *A. hypogaea* and *A. chacoense* involved in the interspecific hybridization (figure 1).

Though chromosome elimination was observed in a few allohexaploids of groundnut[6], the reasons for it were not fully known. As observed in this case, cytomixis seems to be one of the reasons for such chromosomal stabilization in the interspecific hybrids of the genus *Arachis*. Both cytomixis and chromosome elimination indicate immense selection pressure exerted by nature on the hybrid genotype. Pollen stainability of the plants showing these anomalies ranged from 24.7 to 52.7%. These interspecific triploids did give a few viable seeds thereby indicating that cytomixis and chromosome elimination observed in this case have some evolutionary significance. As cytomixis is known to produce hypo-aneuploids and lead to reduction in basic chromosome number in *Lilium* species[7], it would be interesting to test this assumption by determining the chromosome numbers of the progenies of these triploids.

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A CHROMOSOMAL RANGE IN THE INTERSPECIFIC HYBRIDS AND THE HYBRID DERIVATIVES OF *COIX* L (POACEAE)

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WHEN two species varying in chromosome number hybridize, the hybrids usually carry an odd number of chromosomes in their constitution. If such interspecific hydrids happen to be semi-fertile, they provide in the subsequent generations a great variability, at times even showing up entirely new phenotypes through random and novel recombinations. Such variability in the interspecific hybrid derivatives has been reported earlier[1–3]. Chromosomal screening of one such open-pollinated population of hybrid progeny is reported in this communication.

Three species of *Coix* L of the tribe Maydeae of family Poaceae are reported to grow wild all over India[4]. Spontaneous interspecific hybrids with $2n = 14$, $2n = 15$ and $2n = 16$ chromosomes were isolated when aneuploids of *C. gigantea* ($2n = 18$–24)[5] and *C. aquatica* ($2n = 10$) were grown in close association[6]. In the following year, these semisterile hybrids were planted along with their parents and allowed to open-pollinate. The progeny was raised and the young male racemes from individual plants were fixed in acetic-alcohol (1 : 3). Anthers were squashed in aceto-carmine (1%) and the chromosome numbers were tabulated in a total of 256 plants.

Since the two parents, *C. gigantea* ($2n = 20$) and *C. aquatica* ($2n = 10$) differed in chromosome number, the interspecific hybrids carried 15 chromosomes in their somatic complement, the 10 and 5 chromosomes being contributed by the *gigantea* and the *aquatica* parents, respectively. Further variability in the hydrid constitution was due to aneuploidy in the *C. gigantea* parent that produced male and female gametes with variable number of chromosomes[7, 8], especially $n = 9$ $(n-1)$ and $n = 11$ $(n+1)$ in large quantities. Also,