segments in this line were large enough to allow chiasmata formation in all the pairing segments which, in turn, was manifested in multiple configuration. In 40-4 multiples were realized in 70% cells, out of which 58% cells exhibited ring multivalents and 12% had chain configuration. Rest of the 30% cells exhibited regular bivalent formation. The absence of ring multivalents in 45-8 indicated that a small chromosomal segment was involved in interchange. The absence of rings and predominance of chain multiples could be due to small pairing segments where chiasma formation does not take place between all pairing segments (table 1). Furthermore, existence of smaller pairing segments results in larger interstitial segments, resulting in the formation of interstitial chiasmata (figure 5). This aspect is being confirmed by karyotypic analysis which is likely to throw some more light on actual point of interchange.

As is evident from the above discussion, the chromosome pairs involved in the three interchange stocks are different. Now it will be possible to synthesize translocation heterozygotes involving more than two pairs of chromosomes by intermating these stocks and screening the partially fertile plants in the resulting progenies. Larger chromosome rings have been built in *Campanula persicifolia* by crossing different interchange stocks and reselecting plants with larger rings for further crossing[2]. An interchange stock in annual chrysanthemum in which 12 out of 18 chromosomes of the complement were involved was synthesized following a programme of recurrent irradiation and planned hybridization[3]. Recurrent irradiation and hybridization has also been used to synthesize interchange stocks of pearl millet which involves all the 14 chromosomes of the complement[4]. Thus raising interchange stocks with different breakage points and involving different chromosomes, could eventually be used in allopolyploidisation programme and/or genetical studies in *sesbania aegyptiaca*.

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POLYGAMY IN A CARTON NEST BUILDING TERMITE, *MICROCEROTERMES CHAMPIONI* (ISOPTERA; TERMITIDAE; AMITERMITINAE)

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DURING the course of study on population structure of a carton nest building termite *viz Microcerotermes championi* (Snyder), an interesting phenomenon of polygamy was observed.

The observations were made in a tropical sal forest situated at an altitude of 329 m above sea level in the foothills of Kumaun Himalaya, at a place called Chorgalia in Nainital district. The density of carton nest on this site was 44 nests/ha. A total of 17 nests were sacrificed for the study of population during November 1981 to October 1982. In one of these nests studied in October 1982, we came across a royal chamber having one king and six queens (figure 1).

Normal nests (with one king and one queen) did not differ from this particular nest (with one king and six queens) in volume and weight (table 1). The diameter of the royal chamber was similar in both cases. However, against an average of 111.5 mg body weight of a normal queen, the six queens in the polygamous nest had 24, 23, 25, 25, 27 and 24 mg weight per queen. The length of the polygamous queens was also smaller as compared to the normal queen (table 1).

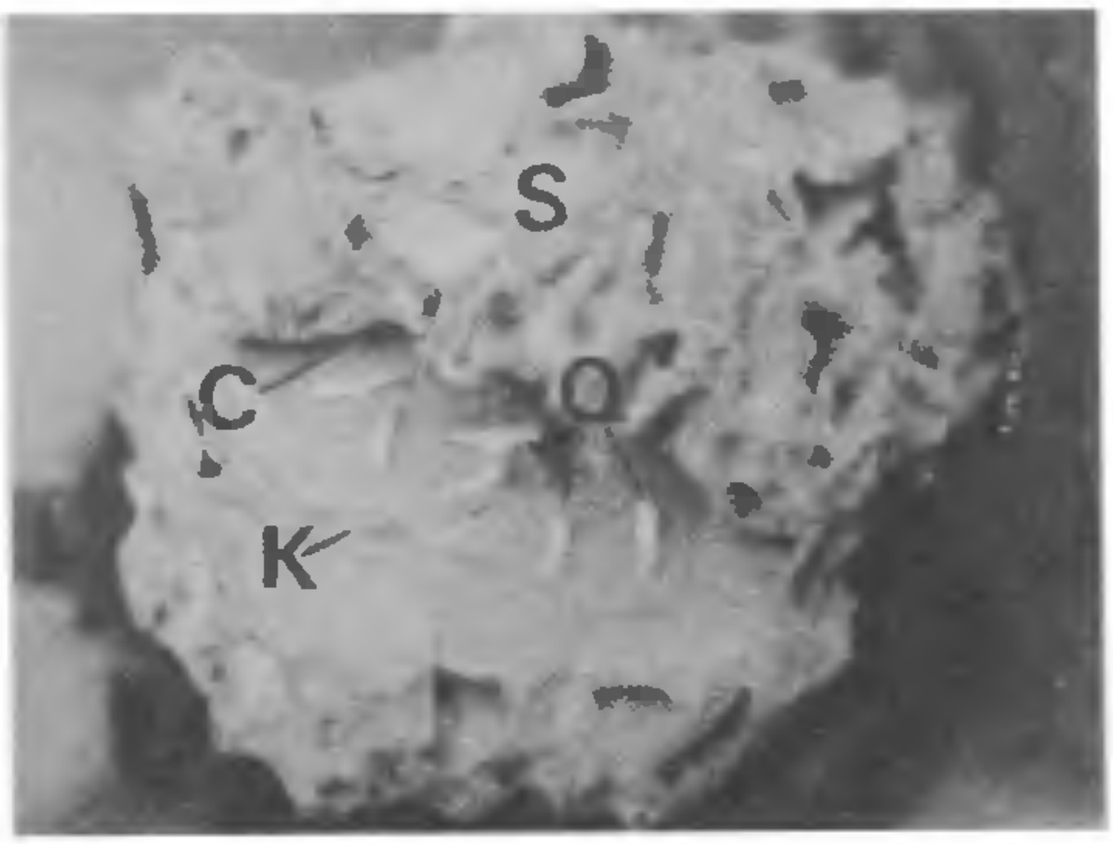

Figure 1. Royal chamber of *Microcerotermes championi* showing one king and six queens. (C) cavity of royal chamber, (K) king, (Q) queens, (S) surface of royal chamber.

Table 1 *Nest size, length and weight of queen*

	Normal nest	Nest with polygamy
Nest volume (cm^3)	6405.9 ± 825.3	6292
Nest weight (kg)	3.07 ± 0.28	3.315
Diameter of royal chamber (cm)	4.42 ± 0.05	4.5
Weight of queen (mg)	111.5 ± 62.35	24.6 ± 10.66
Length of queen (cm)	2.1 ± 0.04	0.9 ± 0.04

More than one pair of reproductives in certain species of termites have been reported as unusual cases[1–5]. This phenomenon was unknown in the present termite, *M. championi* and this seems to be the first record of polygamy in this species.

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PRODUCTION OF MOSQUITO GENE BANK

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THE concept and the development of recombinant DNA technology has made it possible to introduce segments of prokaryotic or eukaryotic genes into bacteria[1–5], yeast[6,7] and cultured mammalian cells[8–10]. Gene banks have been constructed using the shot-gun approach. Eukaryotic systems for which gene banks have been constructed include among others the yeast chromosome[11], Drosophila embryo DNA[12], goose europygial gland DNA[13], random sequences from normal chicken DNA[14], human X chromosome[15,16] and chromosomal DNA of *Drosophila melanogaster*[17].

In a given organism, genes may be turned 'on' or 'off' in response to specific stimuli or may be modulated as a part of a developmental programme, several approaches are now available to study the mechanism of the gene activation during development[8,9]. Anopheline mosquitoes are vectors for malarial parasites and viruses[18]. In our laboratory it is shown[19] that the pesticide, Sumithion, induces a specific puff in the salivary gland polytene chromosome of *Anopheles stephensi* and we are interested in studying the structure and regulation of pesticide responding locus. With this in view, we set out to construct a gene bank of *A. stephensi* using the 'shot-gun' approach.

From the pathogen-free inbred strain of *A. stephensi* (National Institute of Virology, Pune) larvae were reared in enamel trays under controlled temperature and humidity till the fourth instar. Salivary glands were taken out and stored at −70°C.

Nuclei were isolated by homogenizing glands (in Tris-HCl, pH 7.4 10 mM, KCl 60 mM, NaCl 15 mM, sucrose 340 mM, EDTA 2 mM, Spermine 0.15 mM, Sepermidine 0.05 mM, PMSF 0.2 mM, DTT 5 mM and Triton X-100, 0.01 %) lysed in SDS-proteinase K (1 % and 20 μg/ml respectively) (37°C, 6 hr) and DNA extracted by chloroform-isomyl alcohol (24 : 1)[20] and precipitated in ethanol. Purified DNA was treated with N-cetyl-N, N, N-trimethyl ammonium bromide to remove carbohydrates[21] and digested to limit with the restriction endonuclease Bam H1 (Tris-HCl, pH 7.4, 10 mM, $MgCl_2$ 10 mM, NaCl 60 mM, BSA 200 μg/ml and DTT 1 mM). Figure 1 shows the electrophoretic mobility of the uncleaved and Bam H1 cleaved DNA from the salivary glands of *A. Stephensi* in a 0.8 % neutral agarose gel[22]. The total mixture of the Bam H1 fragments was used for cloning into *E. coli* HB101 using plasmid pBR 322 as the vector.

The relaxed replicating plasmid[23] pBR 322 was grown in *E. coli* HB 101 and amplified in the presence of chloramphenicol[24]. The plasmid DNA was extracted