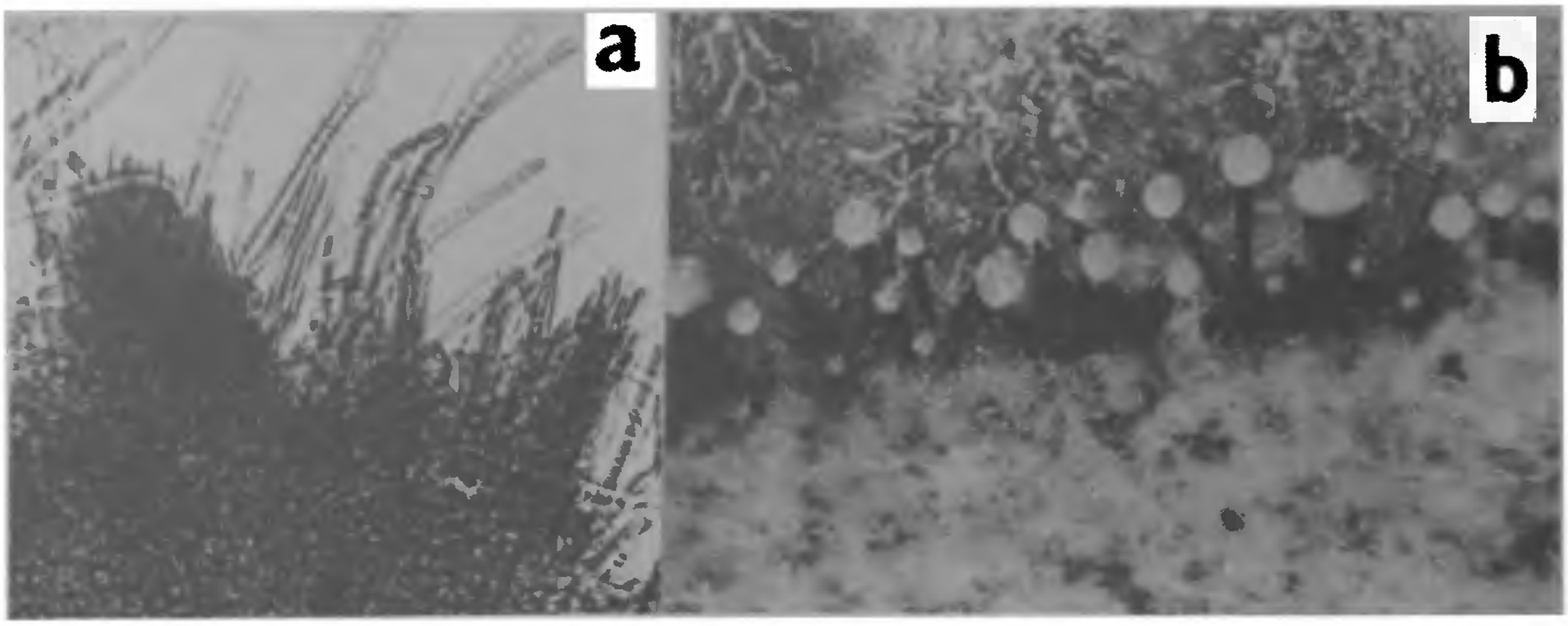

Figure 1. *Chalara* state of *Ceratocystis fimbriata*. **a.** Aggregation of hyphae in preparation for formation of coremia (5 hr after transfer to Czapek medium) (×250). **b.** Ring of coremia along margin of cellophane disc (×10).

coremia. If the transfer is made to a second plate of PDA, coremia are not formed. If the nitrate is replaced by ammonium salts in CDA, more profuse production of coremia occurs but these are loose and feathery and not compact as on nitrate. This shows that the second medium influences the formation of coremia. If a centrally inoculated cellophane disc on PDA is transferred to CDA before the growth has reached the margin of the disc, coremia are not formed suggesting that the disturbance of the growing region of the fungus at the edge of the cellophane also has a role in induction of coremia. Coremia fail to form at temperatures higher than 24–25°C.

11 April 1986; Revised 10 July 1986

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CYTOMIXIS DURING MICROSPOROGENESIS IN C_{13} COLCHITETRAPLOID POPULATION OF *MELILOTUS ALBA* DESR

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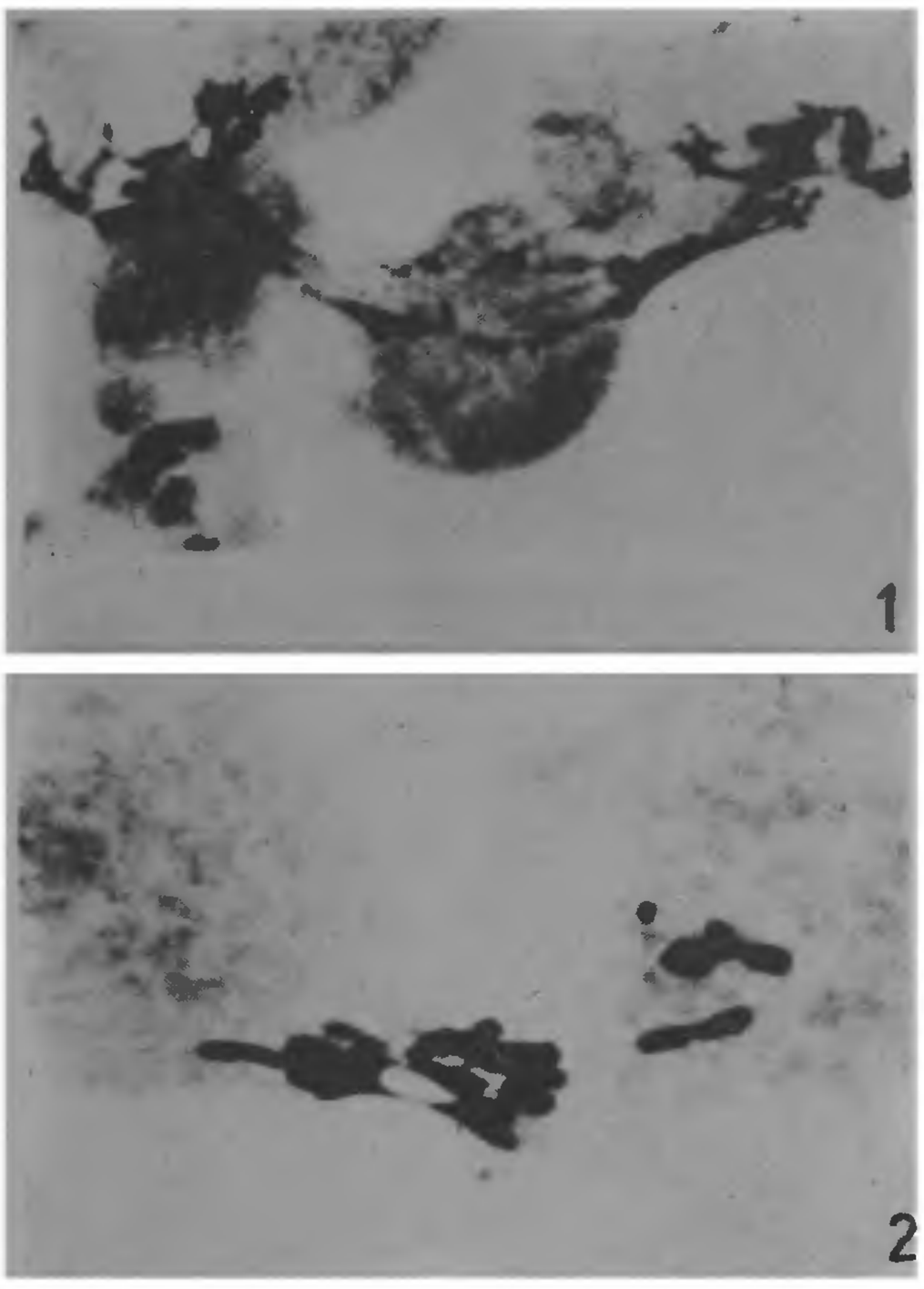
As a part of the *Melilotus alba* (sweet clover) breeding programme colchitetraploids were raised by 0.2% aqueous colchicine treatment. Intensive selection has been carried out during subsequent generations. Based on the observation of C_{13} plants, the phenomenon of cytomixis is being reported for the first time in this species.

Cytomixis was observed in 6.7% plants and the mean percentage of cytomictic PMCs in cytomictic plants was 13.6. It was observed at various meiotic stages but frequently at prophase I and metaphase I (figures 1 and 2). At prophase a continuous flow of chromatin was frequently observed through a series of cells (figure 1).

Gates[1] defined cytomixis as the migration of chromatin from one cell to another. It was observed in hybrids, apomicts and chemically treated plants[2–4] besides its reports from normal plants[5, 6]. Despite its occurrence from a large number of genera its cytological causes and significance are still unexplained. Several interpretations like change and disturbances in hydrostatistical state sporogenous tissue[7], disturbances in the nucleocytoplasmic relationships[8] or unknown physiological disturb-



Figures 1 and 2. **1.** PMCs involved in cytomixis showing continuous flow of chromatin from one PMC to another; **2.** PMCs involved in cytomixis at metaphase I showing some of the chromosomes are not involved in this phenomenon.

ances have been advanced[9]. Recently most of the workers opine that it is genetically controlled[5, 6]. Occurrence of cytomixis in highly evolved and meiotically stabilized C_{13} plants further strengthened the argument that it may be associated with certain genetic factors which does not have serious effect on the viability of gametes. Production of aneuploid or hyperploid gametes due to partial or complete chromatin migration may play a significant role in the evolution and variation of certain taxon.

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DEVELOPMENT AND HISTOCHEMISTRY OF SPINE IN *CENTROCERAS CLAVULATUM* (C. AGARDH) MONTAGNE

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CENTROCERAS CLAVULATUM (Ceramiaceae, Ceramiales, Rhodophyta) exhibits simplicity both in vegetative and reproductive organs. The alga is bushy, dull, purple red and about 1–3 cm in height. The filiform thallus attenuates at the apex and repeatedly branches to form fairly regular dichotomy with incurved tips (figure 1). The spines are present only in the nodes and abundant at the tips[1, 2]. The spines are generally two-celled but rarely three-celled and are uniseriate with pointed tip. Rhizoids emerge from nodes.

The algae collected during December 1984 and January 1985 were fixed in 10% aqueous acrolein and dehydrated, infiltrated and embedded in glycol methacrylate[3]. Sections (2 μ) were cut using glass knives and stained for developmental and histochemical studies[3–8].

The spine initial bulges as a very small protuberance (figure 2) and gradually enlarges. A thick mucilaginous layer overlays the initial. A small PAS positive protuberance emerges from the mature spine initial (figure 3) that enlarges in size (figure 4). The initial cell of the spine divides transversely to produce two unequal cells. This terminal cell enlarges gradually; the tip of this cell becomes very pointed. Occasionally the mature spine even becomes a 3-celled structure and the cells are connected by pit connections (figure 6).

In *C. clavulatum* (present work) the spine wall is PAS positive and during development the wall shows different staining intensity with PAS reaction. During early stages of development the spine wall and tip (figure 3) are strongly PAS-positive. In the