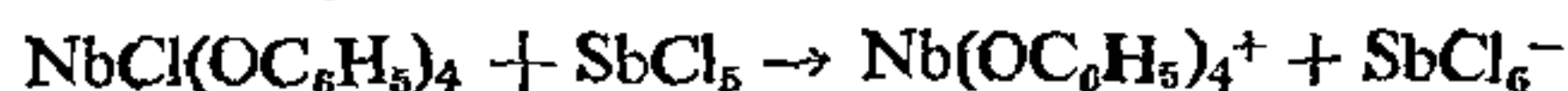


Information on the structure of these compounds has been obtained from their infrared spectra. Very sharp bands around 620 and 338 cm^{-1} are characteristic of ν (Sb-Cl) stretching modes in octahedral environment¹¹. The band at 348 cm^{-1} present in tetraphenoxy niobium(V) chloride due to terminal ν (Nb-Cl) has been found to be completely missing which suggest that chlorine of the phenoxy derivative has been transferred to antimony making octahedral environment around it. Besides this, a lowering of about 8-10 cm^{-1} has been observed in (M-O) stretching modes of the phenoxy derivative on complexation with antimony(V) chloride. Apart from these important bands, the other bands present at 1596, 1498, 1472, 1384, 1182, 1167, 884, 825, 688 cm^{-1} assigned to ν (C=C), ν (=CH), ν (C-C) ring present in phenol¹² shift to lower spectral regions suggesting the presence of positive charge on the metal surrounded by phenoxy groups. These observations suggest chlorine abstraction from tetraphenoxy niobium(V) and tantalum(V) chloride by antimony(V) chloride, thus stabilizing the cations $\text{M}(\text{OC}_6\text{H}_5)_4^+$ by large symmetrical anion SbCl_6^- which is in agreement with earlier observations⁸. A possible reaction may be suggested as:



One of us (UKB) is thankful to Himachal Pradesh University, for the award of a junior research fellowship.

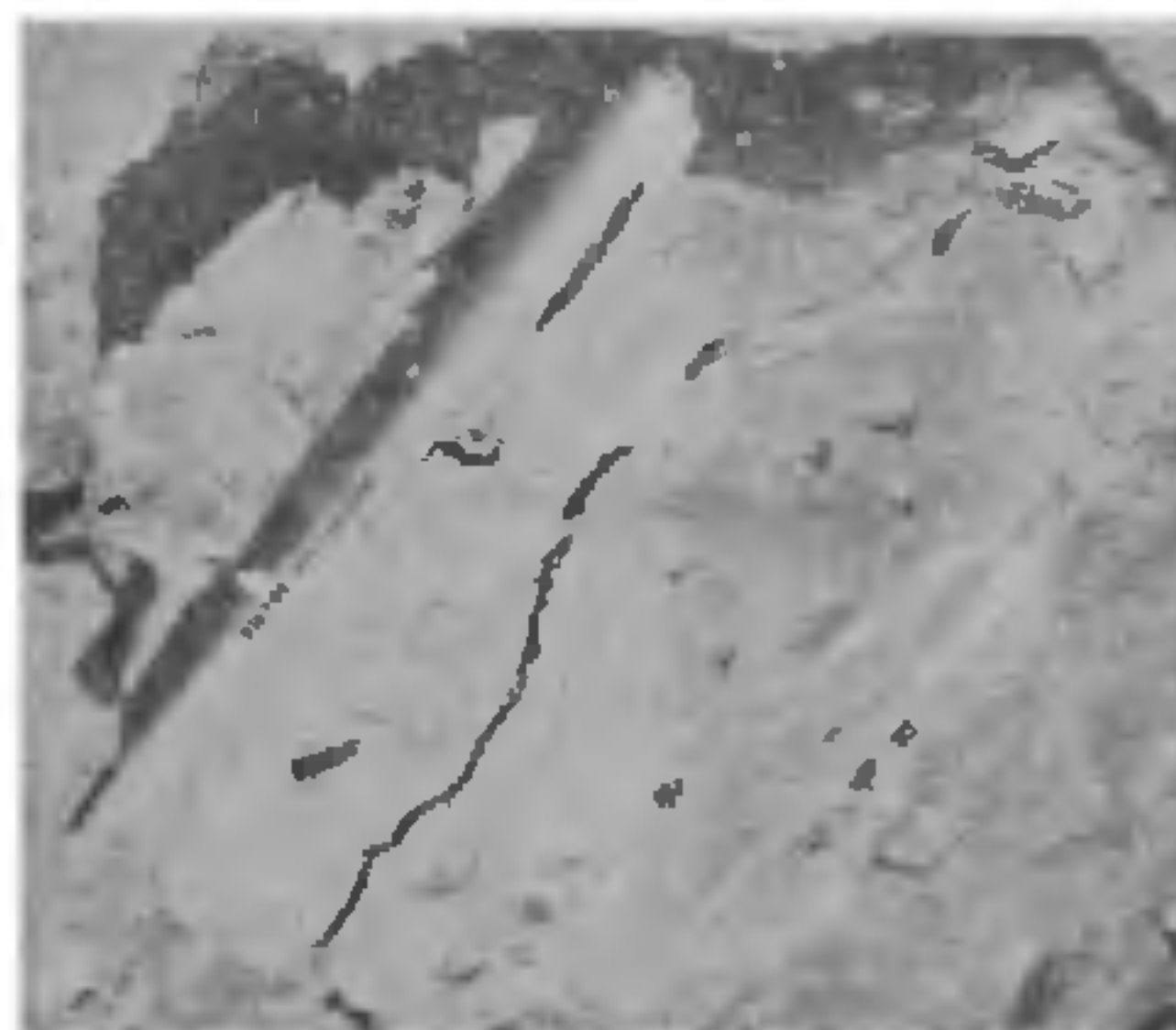
Chemistry Department,
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A REPORT ON THE OCCURRENCE OF GYROCHORTE AND OTHER BILOBED TRACE FOSSILS FROM THE JAISALMER FORMATION, RAJASTHAN

A WELL PRESERVED ichnifaunal horizon is being reported from Bada Bagh near Jaisalmer in Rajasthan. The horizon contains *Gyrochorte* and other bilobed traces which belong to the Bada Bagh member of Jaisalmer Formation (Callovo-Oxfordian).¹ These fossils are found in yellow, fine grained sandstones which form the uppermost unit of the member, and are 50 ft. thick. This unit also contains small brachiopods, echinoids, corals, and bryozoans.



Gyrochorte



Bilobed trace fossil

The ichnogenus *Gyrochorte* Heer, 1865 is a bilobed crawling trace occurring as positive epirelief over the rock surface. The lobes are biserially arranged with a median furrow. These are 1 to 2 mm high, 4 to 5 mm wide, unbranched, and are freely wound cutting across each other. The surface of each lobe is marked by a transverse furrow which meets the median furrow at about 35° angle. These transverse furrows are almost 3 mm apart and appear alternating on each lobe. Hallam² has discussed in detail about its possible mode of origin, direction of movement of animal concerned, and its palaeoecological significance. The other bilobed traces are smooth with a median furrow and are much more abundant than *Gyrochorte*. These traces are 3 to 6 mm wide, 1 mm high, are freely winding and cutting

across each other. Such bilobed traces are variously described as snail trails³ and *Aulichnites*⁴.

Gyrochorte indicates a shallow marginal marine environment and has been reported from the Jurassic sediments in England and other parts of Europe². The lithology and the fossil assemblage of the Bada Bagh member indicates a shallow marine environment, which is further supported by the presence *Gyrochorte*.

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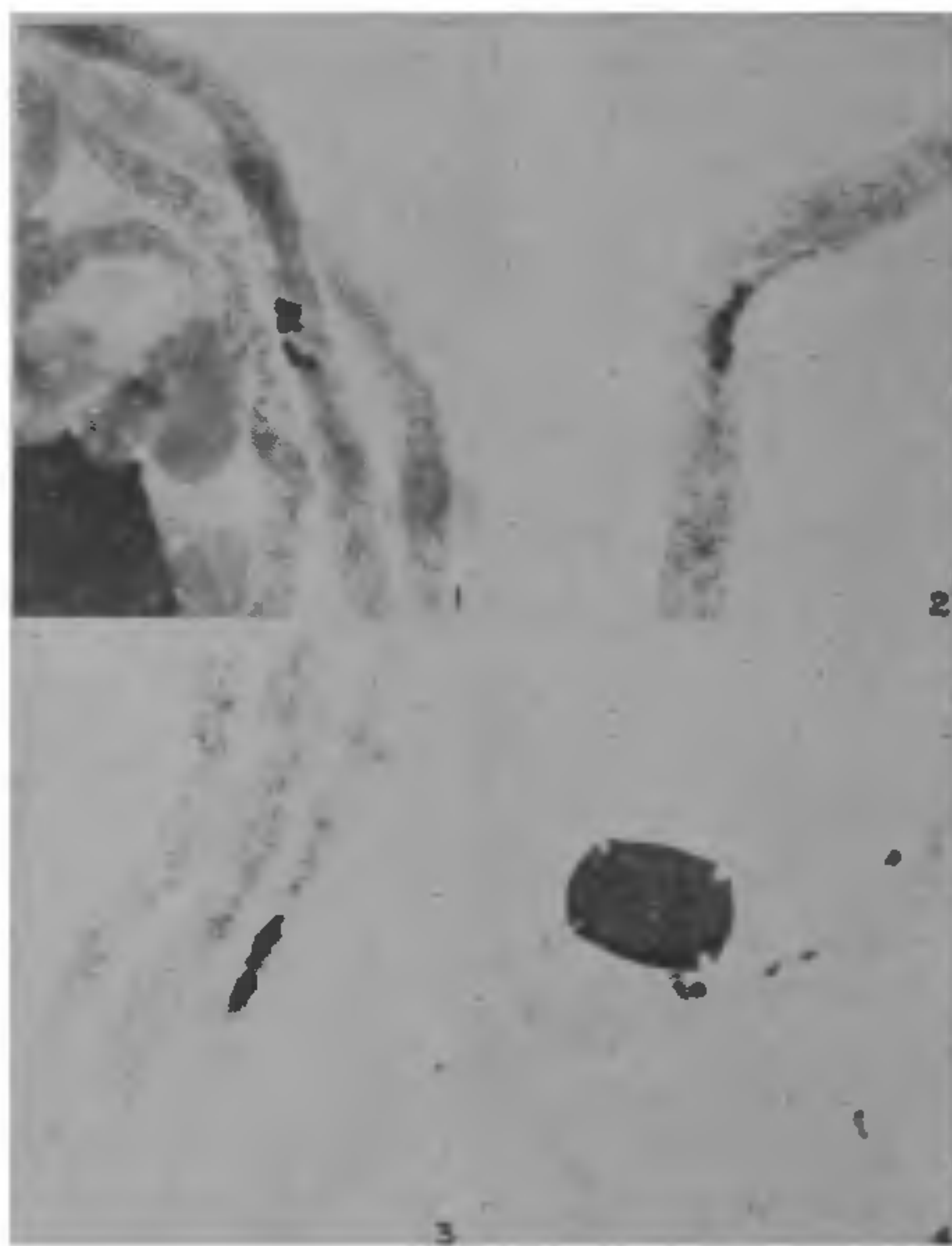
A SIMPLE TECHNIQUE FOR STUDYING CYTOLOGY OF MALE GAMETOPHYTE IN ANGIOSPERMS

A FEW techniques for studying the cytology of male gametogenesis in angiosperms are due to Eigsti¹, Maheshwari and Wulff³ and Dena and Datta². However, these methods are very laborious and time consuming especially in cases where the cytological aspects of the male gametophyte are to be surveyed for a large number of species in a limited time. More than that, in these conventional methods the pollen tubes are likely to drop off from the slide or coverslip through successive processes in the treatment. The present technique is simple and quick and has been employed in 35 species of *Impatiens* L. (Balsaminaceae).

Procedure

The pollen from the freshly-opened flowers is dusted upon a drop of distilled water on a clean slide kept in a petridish covered with wet blotters. The pollen germinates in a specific time for a given species. A drop of clear aceto-orcein stain (3%) is added to the culture drop. A cover slip is then placed over the culture drop and gently warmed over a spirit flame. To enable proper spreading of pollen tubes, a slight pressure is applied with thumb which also removes excess of stain. The coverslip is sealed with paraffin wax. The stage is ready for viewing and photographing. The slide can be made permanent after 3-4 days by passing through acetic acid and *n*-butyl alcohol series and mounted in canada balsam. With this technique, both the vegetative and generative nuclei take intense stain and the details and divisions of the generative cell and the destiny of the vegetative nucleus could easily be followed. The chromosomes of the generative nucleus, in particular, take a deep

stain giving a good contrast (Figs. 1-4). This technique, simple and quick, is developed for studying the cytology of male gametogenesis in flowering plants with pollen germinating readily in water.



FIGS. 1-4. MALE GAMETOPHYTES IN *Impatiens balsamina* (vercaud) ($\times 2,600$).

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TETRAZOLIUM REDUCTION IN A HETEROCYSTOUS BLUE-GREEN ALGA

SEVERAL filamentous blue-green algae are known to possess the heterocysts both intercalary and terminal dispersed along the filaments. Despite extensive studies, the problem of the functions of heterocysts