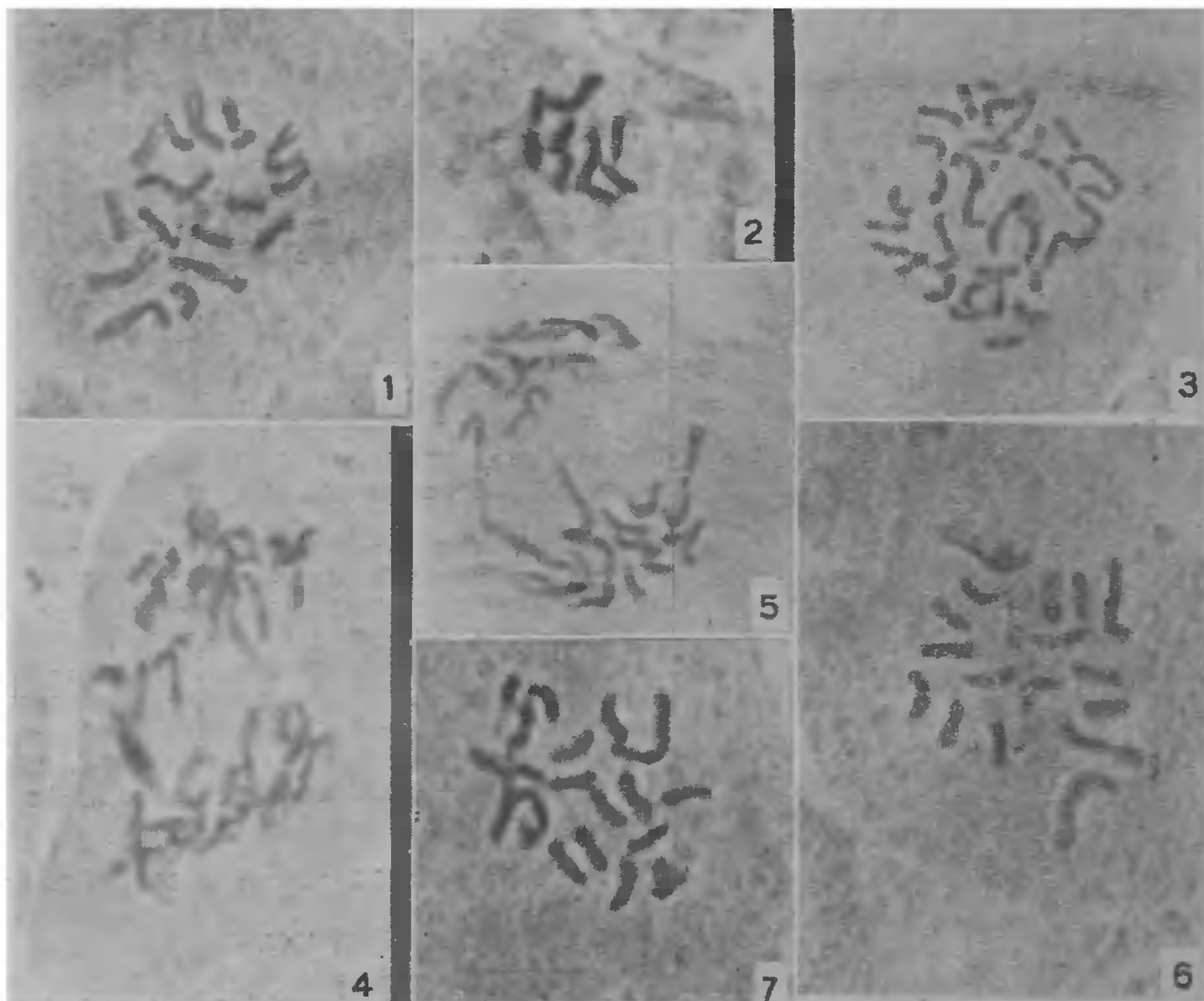


ON THE OCCURRENCE OF
CHROMOSOMAL VARIABILITY IN
THE SOMATIC CELLS OF
ELEPHANTOPUS SCABER LINN.

The normal diploid complement of chromosomes in *Elephantopus scaber* Linn. has been found to be 18 (Fig. 1) and this, as far as the authors are aware, has been recorded for the first time. The normal root-tips were fixed in 1:3 acetic alcohol for 10 minutes and after a wash in distilled water, were treated with con. HCl for 1-2 minutes. They were washed again with distilled water, treated with 4% iron alum for 15 minutes, washed in distilled water and stained in aceto-orcein for 45 minutes. They were finally mounted in 45% acetic acid. The root-tip of *E. scaber* Linn. contains rare

containing 9 chromosomes and a tetraploid cell with 36 chromosomes (Fig. 3) have been sighted in the same root-tip. It is a general belief¹ that the frequency of occurrence of cells with viable haploid chromosome complement is much smaller than that of gene mutations. The occurrence of haploid cells in the diploid root-tips, which has been attributed to somatic reduction,² has been previously described in other plants and has been considered¹⁻⁶ to be a very rare phenomenon in diploids, though fairly common in polyploids.⁷⁻¹¹ This phenomenon of somatic reduction appears to be an enigma, even as the occurrence of aneuploid variations in chromosome number like 19 and 20 (Figs. 6 and 7) in the same root-tip of *E. scaber* Linn.



FIGS. 1-7

instances of haploid and tetrasomatic chromosome complements besides other variations in chromosome numbers. A haploid cell (Fig. 2)

The occurrence of tetrasomatic chromosome complement in the 'normal diploid root-tip suggests the inhibition of formation of spindle.

The slight aneuploid variations from the normal chromosome number are to be attributed largely to the mitotic abnormalities, occurring rather frequently in this plant. For instance, the commonest mitotic irregularities seen here are (1) the occurrence of chromosome lag-gards and (2) promiscuous distribution of chromosomes (Figs. 4 and 5).

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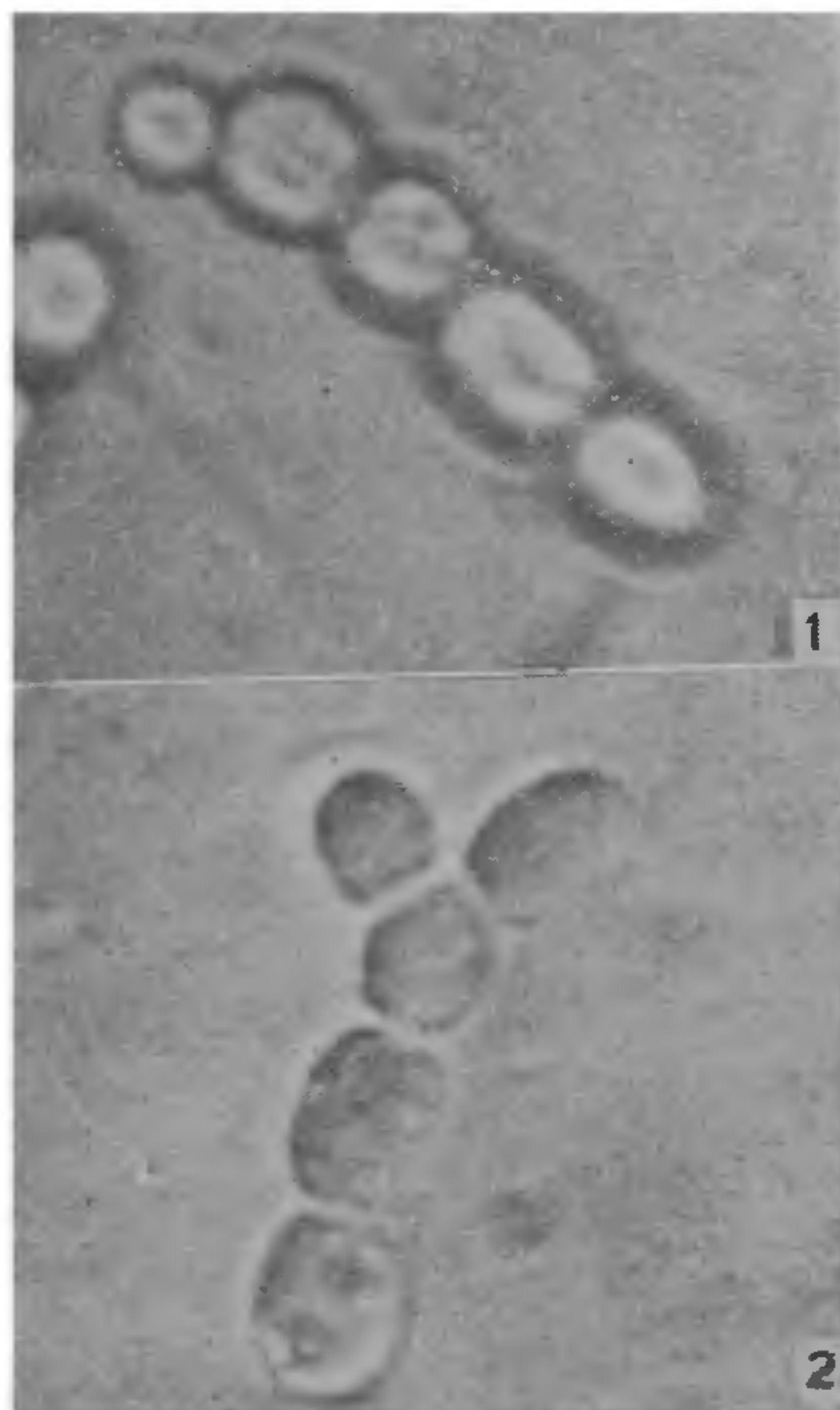
SOME OBSERVATIONS ON *ANABAENA NAVICULOIDES* FRITSCH

THE present blue-green alga was isolated from a paddy field soil of the Ghazipur District of Uttar Pradesh, India. An interesting observation was made when a little inoculum of the alga from a four-month old culture (grown in De's¹ medium, pH 7.00; temperature $28 \pm 2^\circ \text{C}$.; light intensity 100 lux near the cultures) was transferred to a freshly prepared De's medium under identical cultural conditions. After a week, some new and unrecorded observations were made.

In certain young filaments, the terminal cell cuts off a small cell at the tip, in other cases, a cut-off small cell is seen disposed slightly to one side (Fig. 1) and in a few cases, the cut-off cell was observed attached on one side and the sub-terminal cell divides to form a new cell at the tip (Fig. 2). This gives an appearance of a true branch although an arrested one. Further growth of this stage could not be observed in spite of intensive search and close examination of the material.

Cutting off of terminal cell has been observed

in other blue-green algae including *Scytonema-topsis woronichii* Kiss,² *S. ghazipuresis* Pandey and Mitra³ and others. The significance of such a formation is not clear. Recently,



FIGS. 1-2. *Anabaena naviculoides* Fritsch. Fig. 1. The filament shows a small cut-off cell at the tip slightly disposed to one side, $\times 2,200$. Fig. 2. The filament shows the occurrence of a small true branch-like structure in which the cut-off cell is disposed to one side and the sub-terminal cell has divided to form another apical cell, $\times 2,800$.

Singh⁴ recorded the occurrence of true branches in a form of *Nostoc commune* Vanch. With the meagre evidence on record, the author feels hesitant to call this apical cutting as a 'true branch' but the phenomenon is very fascinating to merit further investigation to ascertain the real causes for this morphological behaviour.

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