

this branch was more similar to the pedicel than to the main branch. However, it differed from the pedicel in diameter which was 2.5 times the pedicel. The collenchyma in the mutants was absent. The parenchyma was palisadic and full of chloroplasts. The vascular tissue was hypertrophied. The continuous bicollateral bundles were similar to that of the pedicel of the flower of the normal plant.

Segregation of 14 heterozygous plants in mutant lines revealed that the mutant phenotype was recessive to normal and a single gene was involved (Table II). The genetics of this mutation was also confirmed from the segregation pattern obtained in the M_3 and subsequent generations. This specific mutation is being maintained in the heterozygous condition.

TABLE II

Breeding behaviour of mutation in lines segregating for mutant character

No. of families	Pheno-type	Ob-served	Ex-pected	χ^2	P value
14	Normal	140	130.5
	Mutant	34	43.5	2.766	<0.05
	Total	174	174		

Heterogeneity χ^2 (d.f. = 13) = 12.720, $P < 0.05$.

The appearance of homozygous recessive mutations in the generation of treatment can be visualised that either (1) the material used in the study was heterozygous for this particular character or (2) both the alleles were affected simultaneously by the mutagenic treatments. The first possibility can be ruled out because the material used in these experiments was selfed and moreover a similar mutant was never isolated in a large control population. The second possibility seems more probable. Similar observations have also been reported by Jain *et al.* (1968) in *Lycopersicon* where some of the recessive mutants were realized in the M_1 and M_2 generations with Hydrazine. Leafy, sterile mutants, in the present study, were not produced by gamma-rays and fast neutron treatments. It is likely that the observed change in the differentiation was due to the specific action of EMS and NMU, both alkylating agents, on the locus in question. It seems that a specific alteration in the developmental pathway of the floral primordium has led to functional lethality.

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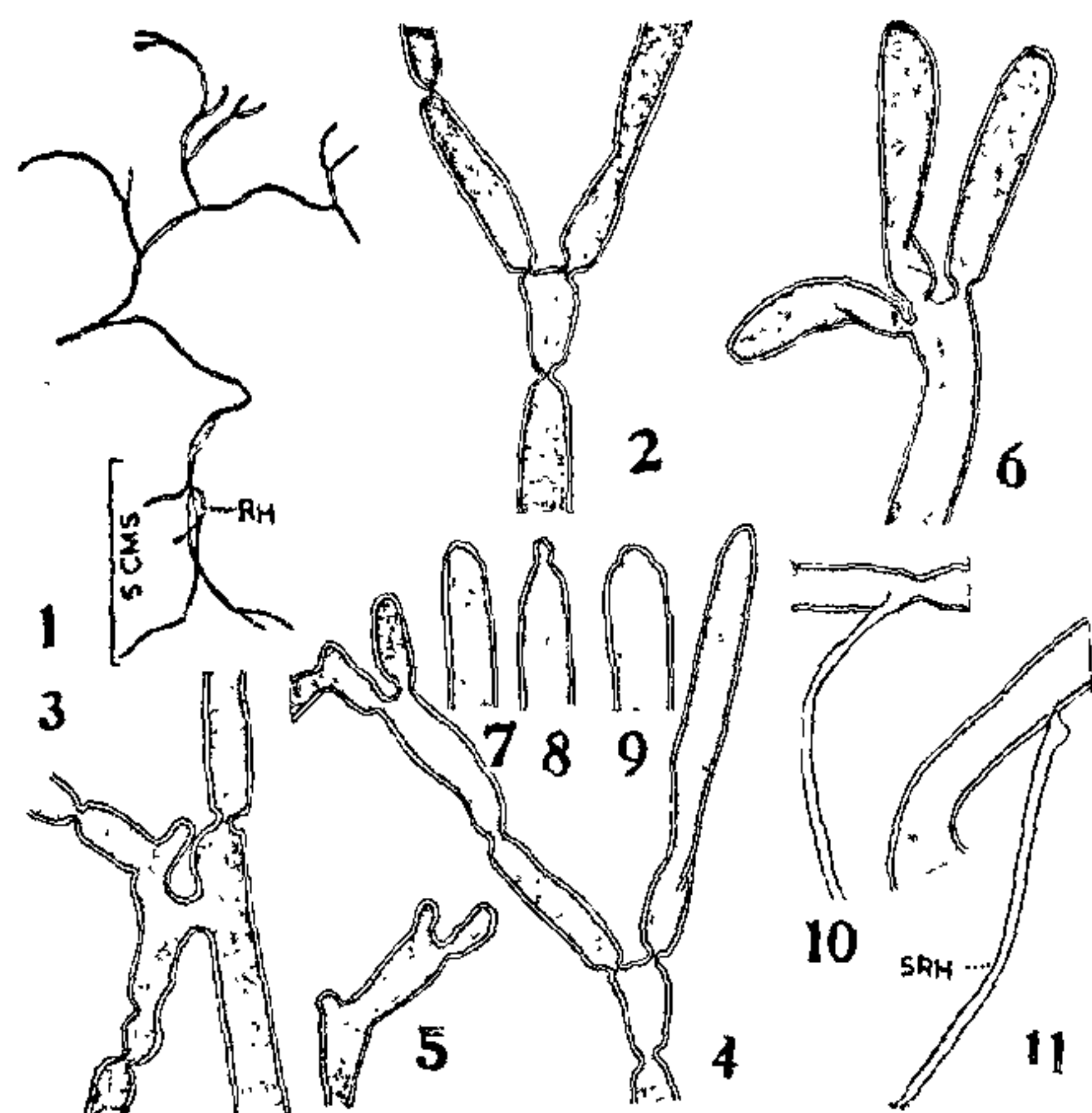
OCCURRENCE OF *DICHOTOMOSIPHON* (A. Br.) ERNST AT AMRUTHUR (MYSORE STATE), SOUTH INDIA

Dichotomosiphon (A. Br.) Ernst is one of the rare *Vaucheriaceae* alga which has been recorded from Burma, France, Switzerland, U.S.A. and North India (Venkataraman, G. S., 1961). In India there are two records and both are from North India. Randhwa (1942) records its occurrence from Rajapur District, Allahabad, and Pinhat District, Agra. The second record is by Sharma and Moghe (1957) who collected the alga from a channel near Indore (M.P.). So far this alga has not been recorded from South India.

The alga described here was collected in a feeder channel of the Markonhalli Reservoir, which feeds the paddy growing area of Amruthur village in Tumkur District, of Mysore State. This village is located at about seventy miles north-west of Bangalore. Here the alga was found growing in dense tufts, in cool running waters, usually free floating, or attached to the sides of the banks of the channel. The alga is grass-green in colour and fairly well branched (Fig. 1). The coenocyte measures about 50 mm long and is profusely branched dichotomously. The characteristic dichotomy of thallus (Fig. 2) and the constrictions below the branches are quite evident. The branching may be occasionally solitary below the constriction (Fig. 3) or in series of two (Fig. 4) or more; or even "H"-shaped (Fig. 3). The branching may be equal (Fig. 2) or unequal (Fig. 5). Occasionally the usual dichotomy may be replaced by a trichotomy (Fig. 6). The thallus as usual coenocytic and measures 80-120 μ across. The coenocyte tip is generally rounded and blunt (Fig. 7) but is sometimes acutely papillate (Fig. 8) or broadly papillate (Fig. 9).

The intercalary rhizoids arise near (Fig. 10) or away from the constriction (Fig. 11). They are usually given out in groups of two or three from a point (Fig. 1). The branches of the rhizoids

are stoloniferous (Figs. 1, 10 and 11) and are slightly brownish in colour and measure 30μ across.



FIGS. 1-11. Fig. 1. Entire coenocyte with two rhizoids (RH) and showing branching. Fig. 2. Coenocyte showing dichotomy. Fig. 3. Coenocyte showing "H"-shaped branching. Note a single branch below the constriction in the lower part of the sketch and unequal dichotomy in the upper left. Fig. 4. Coenocyte showing dichotomy in series; the lower equal and the upper unequal. Fig. 5. A coenocyte tip showing unequal dichotomy. Fig. 6. Coenocyte showing trichotomy. Figs. 7-9. Coenocyte showing tips bluntly rounded, acutely papillate, and broadly papillate apices respectively. Fig. 10. Stoloniferous rhizoids arising from near constriction. Fig. 11. Stoloniferous rhizoids (SRH) arising from an intercalary position on the coenocyte. (Magnification of all figures except Fig. 1 is 100. Fig. 1 only 11.)

Although repeated visits to the same locality were made the alga could not be obtained. Probably the drying up of the feeder channel during

the shutdown of water in the canal may be responsible for it.

When compared with the only known species, i.e., *Dichotomosiphon tuberosus* (A. Br.) Ernst so far recorded from North India and elsewhere the present alga differs in being more profusely branched and larger in size. The rhizoids also do not arise in star-shaped clusters as in *Dichotomosiphon tuberosus* (A. Br.) Ernst. Although the vegetative features and dimensions of the alga described in the note suggest that it might be a new species, different from the type, yet we refrain from giving it a new specific name till the sex-organs are discovered.

Another collection of *Dichotomosiphon* unfortunately sterile and collected in the vicinity of Dehru Dun (U.P.) was handed over to us for investigations. This however agrees with the well-known species *Dichotomosiphon tuberosus* (A. Br.) Ernst and already reported in India by Randhwa (1942) and Sharma and Moghe (1957). But this collection is being mentioned here since it serves to indicate a new locality in North India where the alga could be found. We wish to record our thanks to Shri Kumar for the material.

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SHORT SCIENTIFIC NOTES

Translocation of Radionuclides in Plants*

Studies on absorption and translocation of radioactive nuclides of radiobiological significance, namely, the long-lived naturally occurring nuclides and fission products, in plants are essential for the understanding of mechanisms by which these

nuclides are transferred to plants from soil. After their entry into plants the radionuclides are transferred through the food chain thereby becoming sources of internal radiation to animals and man.

Recent investigations carried out at this and other laboratories have established that, next to potassium-40, radium isotopes are the main naturally occurring radionuclides which enter plants. Further, the maximum limits of *per capita* daily intake of radium-226 and radium-228 recom-

* Summary of paper presented at the Symposium on Mechanisms of Biological Transport held during the 38th Annual Meeting of the Indian Academy of Sciences (See *Curr. Sci.*, January 20, 1973, p. 44).