

The Original Home of *Achyranthes aspera* L.

In a recent paper, Joshi¹ has described some variations in the behaviour of the two medullary bundles in the stem of *Achyranthes aspera* and has tried to trace the original home of the plant from the variations he observed. The latter part of the paper appeared interesting to me and I thought of putting his amazing suggestions to a test.

Twenty plants were thoroughly examined from top to base. They provided 208 internodes, each of which was cut at three places—top, middle and base. Most of the sections were examined under the microscope.

Out of the internodes examined, only 12 showed a single amphixylic bundle in the lower half, while in the upper half the two bundles were quite free. In one internode the upper half showed a single amphixylic medullary bundle, while the lower half showed two free normal bundles. In yet another internode there was a single amphixylic bundle running throughout its length.

Apart from these 14 internodes, all the rest, out of a total of 208, showed two free medullary bundles throughout their length.

Now, geographically Agra is situated between Benares and Lahore. Therefore, if Joshi's hypothesis is correct, the majority of the internodes in the Agra plants should show a fused condition of medullary bundles, which is not actually the case as the above figures show.

I may point out one probable source of error in his observations. That he did not use the microscope as frequently as is needed is amply clear from the fact that he examined most of the material "on the spot" after "cutting it with a safety-razor blade". I have observed that in a large number of cases, the medullary bundles approach each other so closely as to appear to have fused. But a section under the microscope reveals that they are free.

I have also observed the following exceptional conditions not mentioned by Joshi:

(i) Out of the two medullary bundles, one is normal while the other is amphixylic.

(ii) A single normal medullary bundle takes the place of the usual two.

¹ Joshi, A. C., "Variations in the medullary bundles of *Achyranthes aspera* L. and the original hom. of the species." *New Phyt.*, 1934, **33**, 53-57.

In the end I would humbly submit that the facts in nature are usually not so easy to explain, and a hasty conclusion makes the confusion worse confounded. To build the whole edifice on a lean foundation is more than desirable.

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A Fossil Dicotyledonous Wood from Assam.

In December 1933, Mr. C. S. Purkayastha of the Assam Forest Service sent to the Forest Research Institute, Dehra Dun, two pieces of fossil wood for identification. These he had collected from Dhansiri Reserve in Nowgong Forest Division, near Nailalung Railway Station, about 20 miles from Lunding Junction (A. B. Railway). On superficial examination both specimens were found to be secondary wood of dicotyledonous tree but entirely different from one another. The object of this note is to put on record the identification of specimen No. 2.

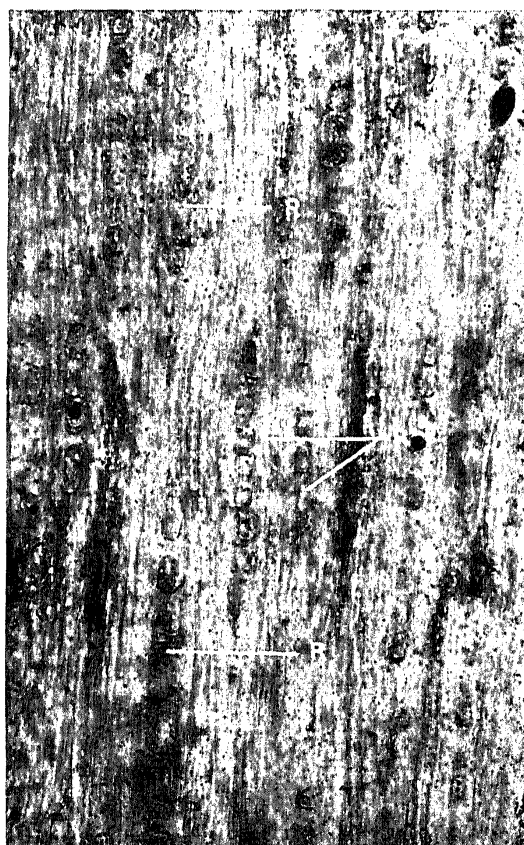


Fig. 1. × 150

Tangential section showing uniseriate rays (R.)

The specimen is not very large. It is somewhat circular in cross section, the diameter being 5 inches and the length

8 inches. From the look of the specimen it seems to be a portion of a fairly big trunk. Its preservation is very bad and uneven. On the longitudinal surfaces black stripes are observed indicating disintegration of the woody tissues in some places.

A good many sections (cross, tangential and radial) were cut and mounted in the usual manner. Although these sections were far from perfect, yet it was possible to find in them the minute anatomical structure essential for the identification of the wood. Moreover, macerated material

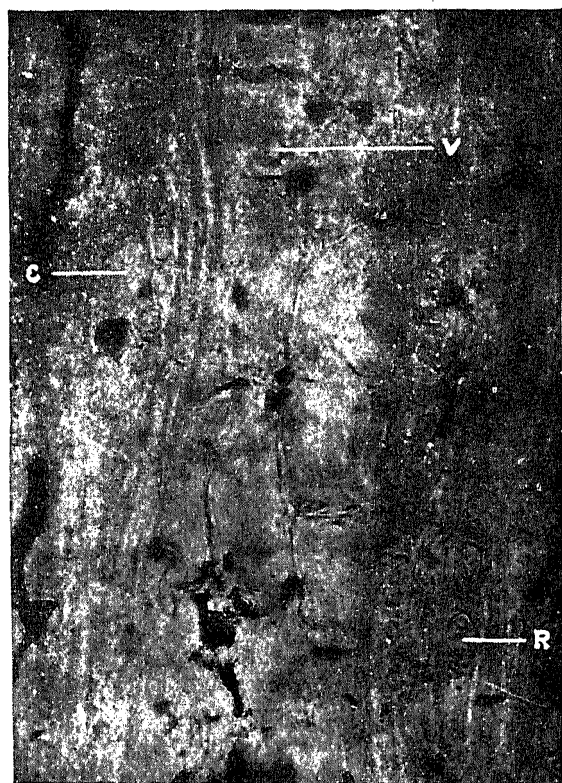


Fig. 2. x 230

Tangential section showing triseriate ray with resin canal (C.) in the middle, vessel (V.) with tyloses and uniseriate rays (R.)

of the wood was obtained in a sufficiently good state of preservation to enable a study of the pits on the walls of the vessels, fibres and parenchyma cells. The anatomical structure of the fossil wood may be summarised as follows:—

It is a diffuse-porous wood with mostly medium-sized vessels, which are heavily tylosed and filled with brownish deposits. Parenchyma cells are vasicentric and in narrow metatracheal bands, which may run to a considerable distance across the rays, or may end abruptly after running a short distance. The rays are of two types: (i) uniseriate, (ii) 3-4 seriate. The latter type is fusiform and contains horizontal resin

canals which are rather small in size. In these features as well as in the pits, the fossil wood shows great similarity to the woods of *Gluta* species of the Anacardiaceæ. The name *Glutoxylon assamica* is, therefore, proposed. Details of the geological formation in which the fossil wood was found and a description of the minute anatomical structure of the wood itself will be published elsewhere.

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Abnormal Flowers of *Cassia fistula* Linn.

AN examination of a large number of flowers of *Cassia fistula*, with a view to collecting some data regarding the occurrence of polyphyly¹ in the gynoecium of the flowers of the species, which was noted some time last year, revealed the existence of the following types of abnormalities.

1. *Median floral proliferation*.²—In cases recorded by Masters (vegetable teratology), the prolonged axes have been terminated by a flower bud. In this case, the axis has grown into an inflorescence, bearing a number of buds in a racemose manner.

2. *Axillary floral proliferation*.—A normal flower occurs in the axil of one of the anterior sepals. Associated with this is the suppression of two of the ten stamens.

3. Besides proliferation, polyphyly of the various floral whorls was also met with. Polyphyly of the gynoecium (in a few cases upto seven carpels) was most frequently seen. In only one case was there a multiplication of all the floral whorls. In others, the polyphyly of any particular series (calyx, corolla, androecium, etc.) was unaccompanied by any proportionate multiplication of the rest of the floral parts.

Figures, and a more detailed account of the abnormalities will be published elsewhere.

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¹ *Polyphyly*. Members of any particular whorl are increased in number.

² *Proliferation* is the production of buds either in the centre of the flower or axillary to some of the floral leaves.