to intra-clonal plant improvement, which utilizes the chromosomal variation associated with clonally propagated plants through *in vitro* procedures.

The findings of haploid and a series of polyploid and aneuploid numbers in 30 month old subcultured cells of *Digitalis lanata* would be interesting since it can give rise to new genotypes in the species with varying digoxin contents. Thus, further work in this direction is in progress on selective isolation of the cell lines, which can be propagated to produce genetically upgraded plants containing the higher digoxin.

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DIPTEROCARPOXYLON BOLPURENSE SP. NOV., A FOSSIL WOOD OF DIPTEROCARPACEAE FROM THE TERTIARY OF WEST BENGAL, INDIA

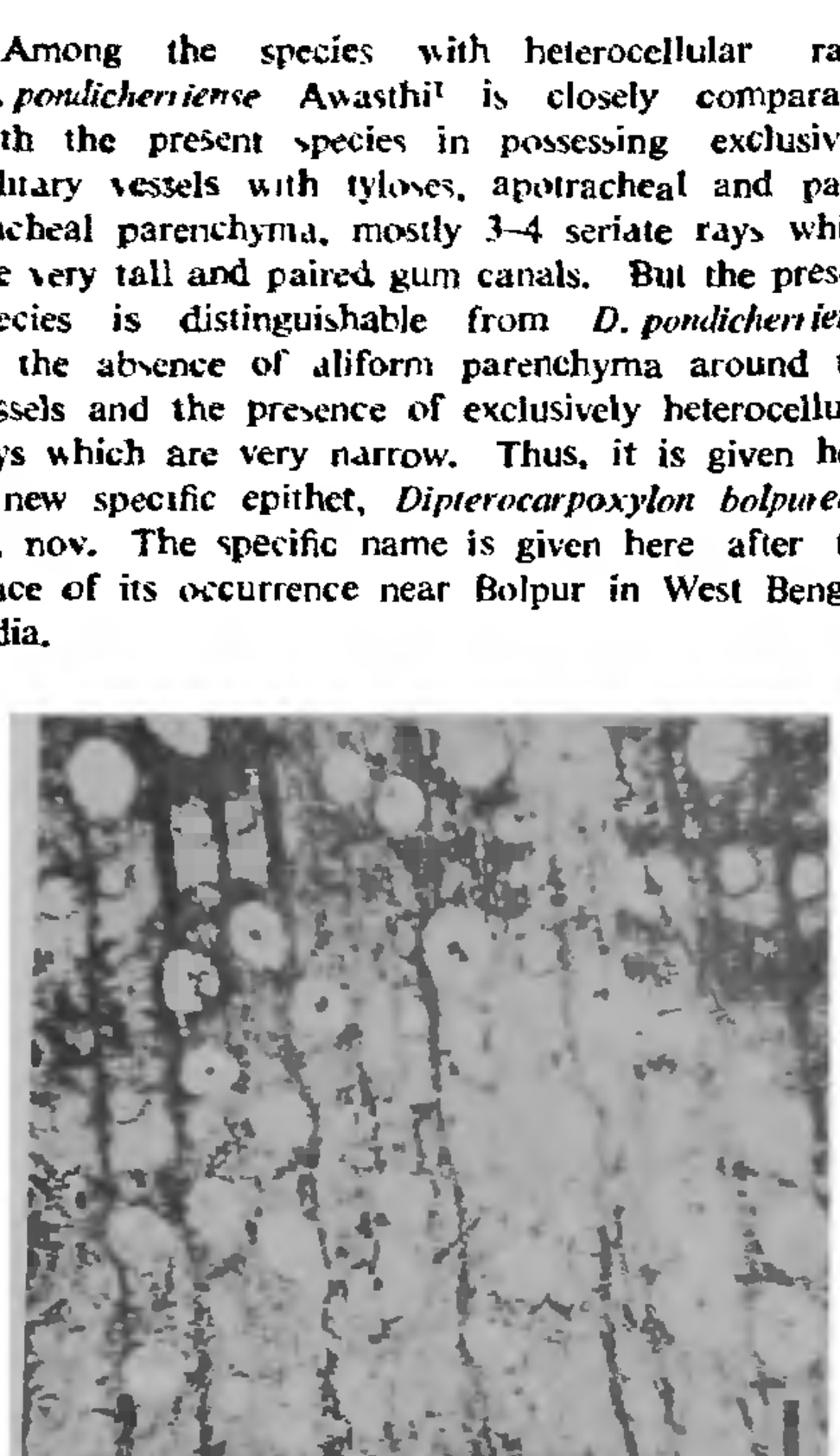
In the present note, a fossil wood resembling the modern genus *Dipterocarpus* Gaertn. f. is described from the Tertiary beds of Santiniketan in the Birbhum District, West Bengal. This is the first record of the occurrence of *Dipterocarpus*-type of wood from the Tertiary of West Bengal. The fossil wood is represented by a small piece of mature secondary xylem measuring 8 cm in length and 5 cm in diameter. The preservation is very good. It shows the following characters :

Wood is diffuse-porous (Fig. 1). *Growth rings* are absent. *Vessels* are medium to large in size, exclusively solitary (Fig. 1); t.d. 86–230 μ, r.d. 143–329 μ; vessels are oval to elliptical in cross-section; vessel-members are short, 300–800 μ in length with truncate ends or abruptly tailed ends; perforation plates are simple; intervessel pits are vestured, alternate with linear to lenticular orifices (Fig. 3); tyloses are present.

Parenchyma are paratracheal and apotracheal; apotracheal parenchyma are associated with gum canals (Fig. 1). *Trachcids* are intermingled with paratracheal parenchyma forming a narrow sheath around the vessels. *Xylem rays* are 3–4 seriate (Fig. 2); 15–52 cells in height and 499 to 1498 μ in length; rays are heterocellular, consisting of procumbent cells and 1–3 marginal rows of upright cells at one or both the ends; sheath cells are occasionally present. *Fibres* are angular, thick-walled, 14 μ–28 μ in diameter, aligned in radial rows between the two consecutive *xylem rays*; non-septate, pits are small, bordered with circular or slit-like aperture (Fig. 4). *Gum canals* are frequently present, vertical, diffuse, mostly in pairs as well as in short tangential rows of 2–4, small, circular in shape, 99 μ–132 μ in diameter (Fig. 1).

The presence of normal vertical gum canals, vasicentric tracheids and vestured intervessel pits in the present fossil wood indicates its affinities with the extant genus *Dipterocarpus* of the family Dipterocarpaceae Bl. It is, therefore, assigned to the form genus *Dipterocarpoxylon* Holden emend. Den Berger, 1927. So far, seventeen species of *Dipterocarpoxylon* have been described from India and abroad (Awasthi[1], Prakash[13]). Among these, unlike the present species, the xylem rays are homocellular in *Dipterocarpoxylon krauseli* Edwards[6], *D. resiniferum* Schweitzer[16], *D. javanicum* Schweitzer[15], and *D. gracile*[15]. Therefore, these species are not considered here for further comparisons with the species described here. The rest of the thirteen species have heterocellular xylem rays (Awasthi[1], Eyde[7], Ghosh[8], Ghosh and Ghosh[9], Kräusel[10-11], Prakash[12-13], Rawat[14], and Schweitzer[15]),

Among the species with heterocellular rays, *D. pondicherriense* Awasthi[1] is closely comparable with the present species in possessing exclusively solitary vessels with tyloses, apotracheal and paratracheal parenchyma, mostly 3–4 seriate rays which are very tall and paired gum canals. But the present species is distinguishable from *D. pondicherriense* in the absence of aliform parenchyma around the vessels and the presence of exclusively heterocellular rays which are very narrow. Thus, it is given here a new specific epithet, *Dipterocarpoxylon bolpurense* sp. nov. The specific name is given here after the place of its occurrence near Bolpur in West Bengal, India.



FIGS. 1–4. *Dipterocarpoxylon bolpurense* sp. nov. Fig. 1. Cross-section showing the distribution of vessels and gum canals, × 30. Fig. 2. T.L.S. showing the xylem rays, × 50. Fig. 3. Intervessel pits, × 500. Fig. 4. Fibre showing pits, × 800.

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A SIMPLE PROPIONO-ORCEIN SQUASH TECHNIQUE FOR THE KARYOMORPHOLOGICAL STUDIES IN RICE (*ORYZA SATIVA* L.)

STUDY of chromosome morphology by pretreating the root-tips with different chemicals, *viz.*, Aesculine[8], Oxyquinoline[5,7] and Paradichlorobenzene[4] has been previously carried out. Pretreating chemicals have definitely some unique role in the karyotype study of higher and lower plants. Sharma and Mukhopadhyay[6] studied the karyomorphology of some cultivated and wild varieties of rice by pretreating the root-tips with aesculine. Mukherjee and Mukherji[1] studied the karyotype of certain high yielding varieties of rice following the method of Sharma and Mukhopadhyay[6] with slight modifications. The present paper deals with the karyotypic study of rice without any pretreating chemicals.

The materials for the present investigation include six varieities of rice, *viz.*, (1) Dular, (2) NC 1626