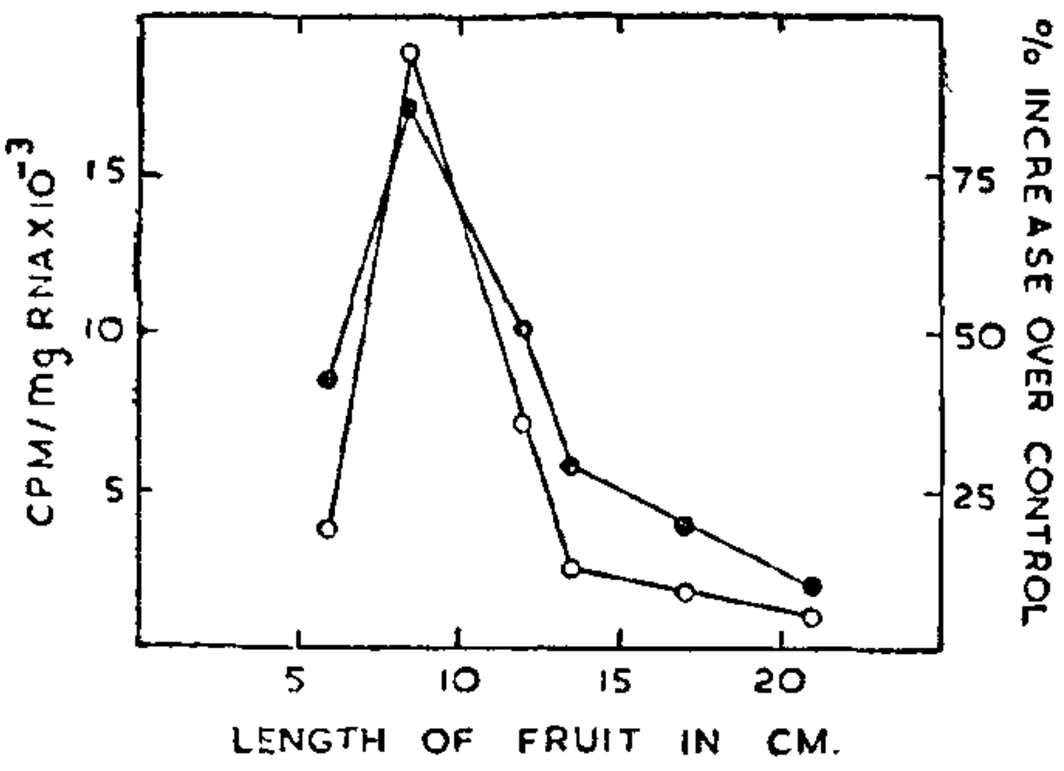

FIG. 2

senescence, as has been suggested by numerous studies[13–19] then the process of senescence started soon after the peak in RNA synthesis was attained although there was no external expression of senescence symptoms. Application of hormonal substances has been reported to delay the senescence of many plants[20] and the decline in auxin and gibberellin levels would also suggest that the onset of senescence might have taken place long before senescence symptoms became visible. However, growth proceeded in spite of declining hormone levels and the RNA synthesis, indicating that in the later stages of fruit growth hormone effects on growth and senescence are uncoupled. Sitton *et al.*[21] have observed that cytokinin content of root exudates of sunflower plants increase initially but declines sharply after flowering, which is accompanied by senescence. Unfortunately, changes in RNA levels of such plants were not recorded.

It would be interesting to know whether similar situations as have been recorded in the present investigation, also operate in other senescent tissues like leaves, internodes, floral parts, etc., in each of which senescence is associated with decreased RNA synthesis[19, 22]. Correlative studies concerning ethylene and abscisic acid levels and their RNA synthesis during ontogeny may provide further useful information for constructing an integrated picture concerning the hormonal control of growth and senescence in plants.

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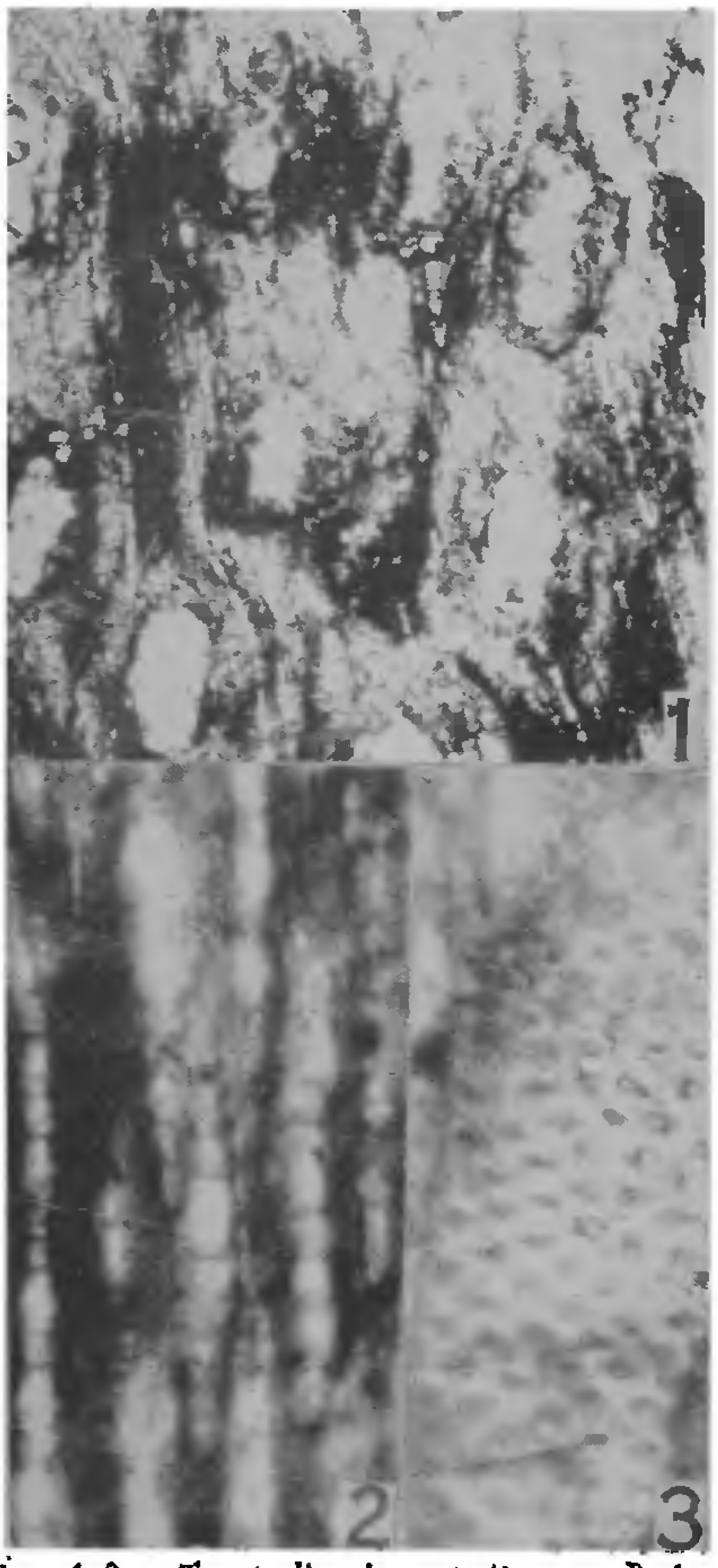
FOSSIL WOOD OF *TERMINALIA* FROM THE TERTIARY OF WEST BENGAL

IN the present note a fossil wood resembling the modern genus *Terminalia* L. is described from the Silabati River bed near Garbeta, Midnapu Disrtrict, West Bengal. This is the first record of the occurrence of *Terminalia* type of wood from the Tertiary of Midnapur District, West Bengal. The fossil wood is represented by a small piece of decorticated secondary xylem and shows the following characters : *Wood* diffuse porous (Fig. 1). Growth *rings* indistinct. *Vessels* large to medium, solitary as well as radial multiples of 2–3, t.d. 65–230 μ, r.d. 153–765 μ; tylosed, thick walled,

2–6 *per sq. mm*; vessel *members short to medium* sized, 160–560 μ in length; perforation simple with truncate ends; *intervessel* pits vestured (Fig. 3). *Parenchyma* vasicentric to usually aliform, sometimes confluent, *xylem rays* fine; uniseriate, closely spaced (Fig. 2); 2–25 cells high and 76–525 μ in length; homocellular; enlarged crystalliferous cells commonly present. *Fibres* non-*libriform*, often septate.



FIGS. 1–3. *Terminalioxylon tertiarum* Prakash. Fig. 1. Cross-section of the fossil wood showing the vessel and parenchyma, × 30. Fig. 2. Tangential longitudinal section showing xylem rays, × 100. Fig. 3. Vestured intervessel pits, × 500.

The fossil wood is identical to already known species *Terminalioxylon tertiarum* Prakash, described from Namsang River Bed, Nafa[1], Buri Dehing River bed, Assam[2] and Hailakandi, Assam[3].

Specimen No. P_{10}, Department of Botany, University of Burdwan, Burdwan, West Bengal, India.

Locality : Silabati River bed, two miles north of Gerbeta Town, Midnapur District, West Bengal.

Age : *Miocene.*

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PRODUCTION OF CELL WALL DEGRADING ENZYMES BY TWO SEED-BORNE FUNGI

SEED-BORNE *fungi make the seeds unconsumable,* unviable and cause diseases at seedling and adult stages[1]. Though there have been a number of studies dealing with changes in food reserves[2–6] under the influence of fungi, only a few reports exist to elucidate the role of hydrolytic enzymes that facilitate the infection of the seed and hydrolysis of its complex reserve *food*[7,13]. Hence, enzymatic potentialities of two seed-borne fungi was assayed and their role in the deterioration of mung seeds is discussed.

Monosporic cultures of *Phoma exigua* Desm. and *Graphium penicillioides* Corda. isolated from decaying seeds of *Phaseolus aureus* Roxb. and *Cyamopsis tetragonaloba* Taub. *respectively maintained on PDA were* employed in the present study. The fungi were grown in 25 ml of Asthana and Hawker's medium 'A' (pH 5·5) suspended in 100 ml Ehrlenmeyer conical flasks and incubated at 27 ± 2° C. At the end of each incubation, cultures were harvested and the filtrate was used as an enzyme sample after centrifugation at × 1,800 g and dialysis. Different enzymes, *viz.*, cellulolytic[8], pectinolytic[9–10], α-amylase[11] and proteolytic[12] were assayed employing standard methods and the results obtained are presented in Table *I*.

It is evident from Table I that the present fungi were poor cellulolytic. This is contrary to the observations of Prasad[13] who reported substantial amounts of cellulases by the *Coriander* seed-borne fungi. Both the fungi were capable of elaborating pectinolytic enzymes which differed in the degree as well as time of its production. The fungi under study were incapable of secreting these enzymes by 4th day. Increasing trend of enzyme activity continued till the end of incubation. Pectin was degraded both hydrolytically and transeliminatively. Transeliminase activity was, however, witnessed only in the latter part of the incu-