

Hab. in foliis vivis *Celastris paniculata* Willd. 1 g. S. Singh, 391 typum, in herb IMI sub numero 200119 conservatum.

Colonies predominantly hypophyllous, circular to oval (2-6 mm in diam.), often effuse, brown to dark brown; mycelium of hyphae immersed, hyaline, septate, smooth; stroma well developed, dark brown, subglobose to angular, 20-50 μ wide; conidiophores loosely aggregated in groups, subhyaline to pale brown, cylindrical, erect, often flexuous, septate, smooth, unbranched, blowing out in somewhat swollen apex, geniculate, with conidial denticles, 100-250 \times 3.5-8.5 μ ; conidiogenous cells integrated, terminal, often monoblastic and percurrent in young conidiophores, later polyblastic, sympodial, denticulate, with short and broad denticles, with no conidial scars; conidia solitary, simple, acropleurogenous, obclavate, base conico-truncate, apex slightly acute to obtuse, brown to olivaceous brown, rugulose, 2-9 transversely septate, slightly constricted at septa, 30-120 \times 3.0-10 μ often germinating whilst still attached to the conidiophores.

On living leaves of *Celastrus paniculata* Willd. (Celastraceae) February, 1976, leg. S. Singh, 391 type, IMI 200119.

TABLE I

Dimensions of P. celastris and P. terminaliae

	<i>P. celastris</i>	<i>P. terminaliae</i>
Conidio- phores	100-250 \times 3.5-8.5 μ Percurrent	upto 100 \times 5-10 μ absent
Conidia	30-120 \times 3.0-10 μ rugulose, germinating tube	50-115 \times 7-9 μ absent

P. celastris is compared with *Pseudocercospora terminaliae* (Syd.) Ellis⁶, which also possesses percurrent conidiophores and rugulose and germinating conidia (Table I). The present form being unassignable to all the known species, warrants its description as a new species.

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INHERITANCE OF PIGMENTATION IN *OCIMUM BASILICUM* LINN.

IN an inter-varietal hybridization programme in *Ocimum basilicum* Linn. (Labiatae) initiated at this Institute, the exotic 'French basil' variety which is reputed as a source of high grade sweet basil oil of commerce¹ was crossed with a local variety 'Kama Kasturi' for transfer of genes conferring resistance to foliar diseases and superiority in growth vigour of the latter. Among the morphological characters distinguishing these two varieties, the differences in pigmentation of aerial parts is conspicuous. The present report deals with the genetics of pigmentation in these two varieties. There seems to be no earlier report on the inheritance of pigmentation in this species.

In Kama Kasturi, besides seedling stem and petiole, aerial parts of adult plants, namely, stem, petiole, inflorescence axis, bracteole and flower are pigmented. Pigmentation is absent at seedling and adult stages in French basil which has green stem and white flowers. The French basil was used as female parent in crosses, to enable easy detection of hybrid seedlings using pigmentation as marker character. The F₁ hybrids resembled the male parent in pigmentation and growth vigour.

A total of 2288 F₂ seedlings belonging to ten F₁ plants were scored for pigmentation along with parents. The frequency of green and pigmented F₂ seedlings of individual F₁ plants gave a good fit for a dihybrid ratio of 1:15. The X² values varied from 0.0176 (P = 0.80-0.90) to 2.1930 (P = 0.10-0.20). The parents were found to be true breeding.

Pigmentation in adult plants was scored in 440 F₂, 253 French basil and 71 Kama Kasturi plants. Pigmentation was observed only in adult plants of Kama Kasturi and those of F₂ raised from pigmented seedlings. The intensity of pigmentation was found to vary among F₂ plants but such variations could not be categorically assigned to distinct classes.

Based on the present study, pigmentation is ascribed to action of two genes provisionally designated as R₁ and R₂ exhibiting cumulative action. The female parent (French basil) is assigned r₁r₁r₂r₂ genotype and the male parent (Kama Kasturi) R₁R₁R₂R₂.

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A NEW SPECIES OF *CALOPHYLLUM* FROM THE MIOCENE BEDS OF BIRBHUM DISTRICT, WEST BENGAL, INDIA

IN the Miocene beds of Birbhum District in West Bengal, there occur a large variety of petrified woods. So far, only a few fossil dicotyledonous woods have been described from this locality by some authors^{2-6, 11}. The fossil wood dealt with in the present paper was collected by the authors in December 1976 from an area of Srineketan forest, half mile north of Santineketan (23° 42' N, 87° 42' E) near Bolpur, Birbhum District. Thin ground sections of this petrified wood were prepared and its anatomical details studied in comparison with the modern woods. The preservation of the fossil wood is fairly good. It shows the following characters.

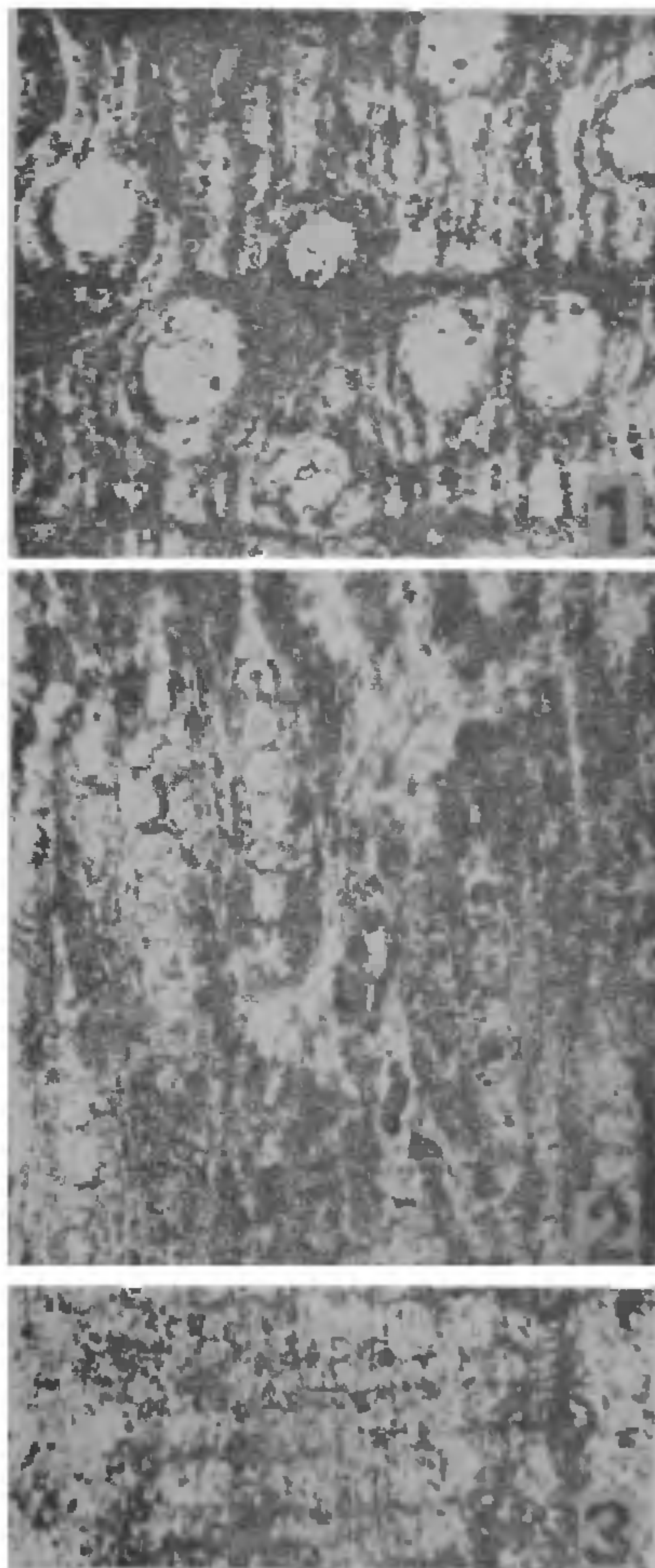
Wood diffuse porous (Fig. 1). *Growth rings* absent. *Vessels* large, almost exclusively solitary, arranged in oblique radial lines; circular to oval in cross-section; t.d. 120-480 μ , r. d. 240-600 μ , vessel members short to medium with truncate ends; *perforation plates* simple; tyloses abundant. *Tracheids* paratracheal, forming 1-3 (mostly 2-3) cells wide sheath around the vessels. *Parenchyma* apotracheal in concentric tangential bands of 2-6 (mostly 2-4) cells wide; bands continuous and also broken into short bands, slightly wavy, ending abruptly, interrupted by xylem rays (Fig. 1). *Xylem rays* very fine, mostly uniseriate, sometimes biseriate (Fig. 2); closely spaced, 15-45 μ broad; 3-18 cells in height and 92-459 μ in length; ray tissue heterocellular, composed of both procumbent and upright cells (Fig. 3). *Fibres* oval to polygonal in cross-section, thin walled, non-septate.

Holotype—No. 230 of the palaeobotanical collection, Dept. of Botany, Burdwan University.

Locality—Srineketan forest near Santineketan (23° 42' N, 87° 42' E) Birbhum District, West Bengal.

Age—Miocene.

In possessing vasicentric tracheids; apotracheal parenchyma bands, obliquely arranged solitary tylosed vessels, uniseriate or rarely biseriate rays and non-septate fibres, the fossil wood described here resembles the modern genus *Calophyllum* especially with *C. tomentosa* Wight and *C. inophyllum* L. of the family



FIGS. 1-3. *Calophylloxylon bengalense* sp. nov. Fig. 1. Cross-section showing distribution of vessels and parenchyma bands, $\times 50$. Fig. 2. Tangential longitudinal section showing xylem rays, $\times 100$. Fig. 3. Radial longitudinal section showing heterocellular rays, $\times 100$.

Guttiferae^{1, 6, 9} group B. It also shows resemblance in gross features with the genera *Kaya* and *Mesua* of the same family. But the genus *Kaya* can be distinguished from the fossil wood in having wider rays (2-3 cells) and the genus *Mesua* also differs from the fossil wood in having very thick walled fibres and much more closely placed parenchyma bands.