OCCURRENCE OF A LAURACEOUS WOOD IN THE SIWALIK SEDIMENTS, INDIA

A large number of angiospermous fossil woods belonging to several families of dicotyledons and a palm have been reported from different localities of the Siwalik in Uttar Pradesh and Himachal Pradesh, India (Awasthi, 1982, Prasad, 1988) but none of them belongs to the family Lauraceae. Howevr, From India so far 5 lauraceous woods assigned to the genus *Laurinoxylon* Felix have been described, viz., *Laurinoxylon tertiarum* Prakash & Tripathi, (1974) from the Tipam Series near Hailakandi, Assam, *L. namsangensis* and *L. deomaliensis* Lakhanpal *et al.* (1981) from the Namsang beds near Deomali Arunachal Pradesh, *L. varkalaensis* Awasthi & Ahuja (1982) from the Varkala beds and recently a fossil wood cf. *L. namsangensis* Lakhanpal *et al.* (1981) has also been described by Bande & Srivastava (1988) from the Tertiary of West Bengal.

During last few years a number of petrified woods were studied from the Lower Siwalik sediments of Kalagarh, Uttar Pradesh. Among them a wood belonging to family Lauraceae has been identified and is being reported here for the first time.

Family—Lauraceae

Genus—*LAURINOXYLON* Felix, 1883

Laurinoxylon siwalicus sp. nov.

Pl. 1, figs. 1-5

Wood diffuse porous. *Growth rings* indistinct. *Vessels* small to large, t.d. 90-215 μm r.d. 130-300 μm, rarely solitary, mostly in radial multiples of 2-5; 20-30 per sq mm, round to oval in shape, tyloses present (Pl. 1, figs. 1,2); vessel members 150-550 μm long with usually truncate ends; perforations simple; intervessel pit-pairs bordered, large, 8-12 μm in diameter, alternate, circular to oval in shape with lenticular apertures (Pl. 1, fig. 5). *Parenchyma* not easily recognizable, scanty paratracheal, few cells associated with vessels, not forming complete sheath (Pl. 1, figs. 1,2), moderately thick walled, 20-35 μm in diameter. *Xylem rays* 1-4 (mostly 3) seriate, 260-750 μm and 8-12 cells in height (Pl. 1, fig. 3); ray tissue heterogeneous; rays homo-to heterocellular; heterocellular, rays consisting of usually single marginal row of upright cells at one or both the ends and procumbent cells in the median portion; upright cells 20-30 μm in tangential height and 15-35 μm in radial length; procumbent cells 14-24 μm in tangential height and 22-90 μm in radial length (Pl. 1, fig. 4). *Fibres* aligned in radial rows, polygonal in shape, 20-30 μm in diameter, moderately thick-walled, septate. *Oil cells* round to oval in shape, 45-95 μm in diameter, abundant, scattered among fibres and also occur at one or both the ends of xylem rays (Pl. 1, figs. 1, 2, 3).

Discussion—Presence of oil cells scattered among fibres and also in xylem rays and other important anatomical features indicate the affinities of the present fossil wood with the family lauraceae. Since the woods of family Lauraceae are homogeneous in structure it is difficult to differentiate its various genera and species on the basis of wood antomy. The present Siwalik wood is, therefore, placed under the genus *Laurinoxylon* Felix instituted to include fossil woods of Lauraceae. Further, this fossil wood has been compared with all the five species of *Laurinoxylon* known from India and found that it differs from them in having 1-4 (mostly 3) seriate xylem rays as compared to 1-3 (mostly 2) seriate. Therefore it is described as a new species, *Laurinoxylon siwalicus*.

The family Lauraceae comprises about 32 genera and 2,000-2,500 species of tree and shrubs and is widely distributed throughout the warmer part of the world but most abundant in tropical and subtropical regions, a few genera extending into Malayan Archipelago and in the tropical South America (Purkayastha, 1985; Pearson & Brown, 1932).

Acknowledgement : The author is thankful to Department of Science and Technology, Government of India, New Delhi, for providing necessary funds to carry out this

work.

Holotype—Specimen no. BSIP 36470.

Locality—Sukha Sot, Kalagarh, Uttar Pradesh

Horizon—Lower Siwalik

References

Awasthi, N. (1982). Tertiary plant megafossils from the Himalaya-a review. *Palaeobotanist*, **30** (3): 254-267.

Awasthi, N. & Ahuja, M. (1982). Investigations of some carbonised woods from the Neogene of Varkala in Kerala Coast. *Geophytology*, **12** (2): 245-259.

Bande, M. B. & Srivastava, G. P. (1988). Fossil woods of Guttiferae (Kayea) and Lauraceae from the Tertiary of West Bengal. *Geophytology*, **18** (2): 217-218.

Felix, J. (1833). Untersuchunmen Uber fossil holzer *viz. dt. geol ges.*, **85:** 59-91.

Lakhanpal, R.N., Prakash, U. & Awasthi, N. (1981). Some more dicotyledenous woods from the Tertiary of Deomali, Arunachal Pradesh, India. *Palaeobotanist*, **27** (3) : 232-252.

Pearson, R. S. & Brown, H. P. (1932). Commercial timbers of India. **1** & **2,** Govt. Press, Calcutta.

Prakash, U. & Tripathi, P. P. (1974). Fossil woods from the Tertiary of Assam. *Palaeobotanist*, **21** (3): 305-316.

Prasad, M. (1988). Some more fossil woods from the Lower Siwalik sediments of Kalagarh, Uttar Pradesh, India. *Geophytology*, **18** (2) : 135-146.

Purkaystha, S. K. (1985). *Indian Woods*-**5,** Dehradun.

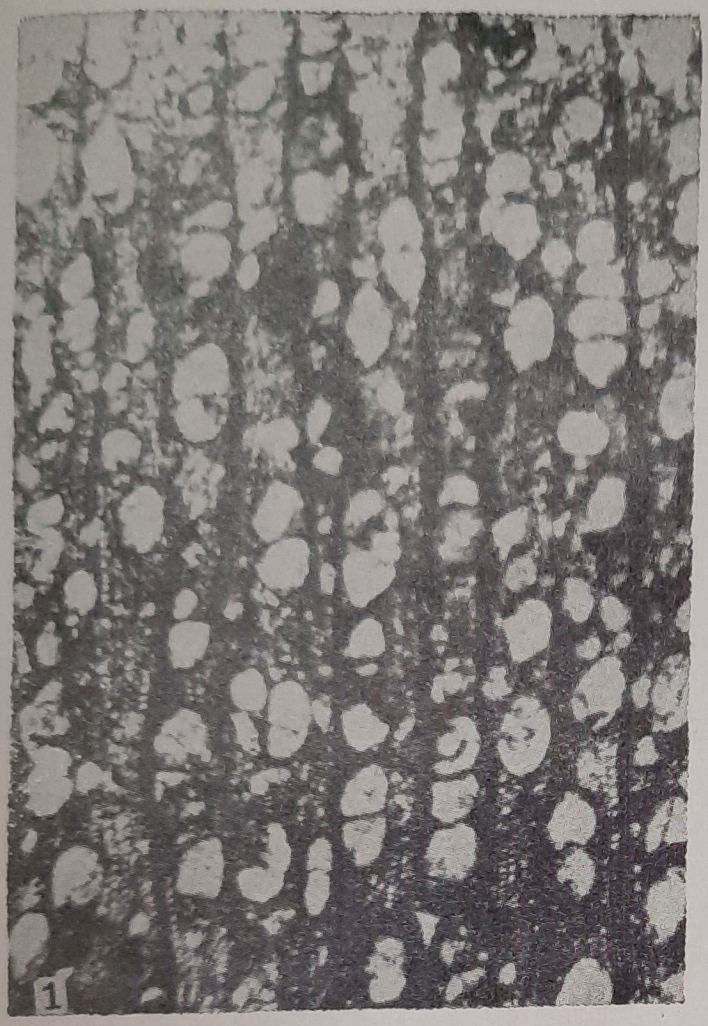
Explanation of Plate

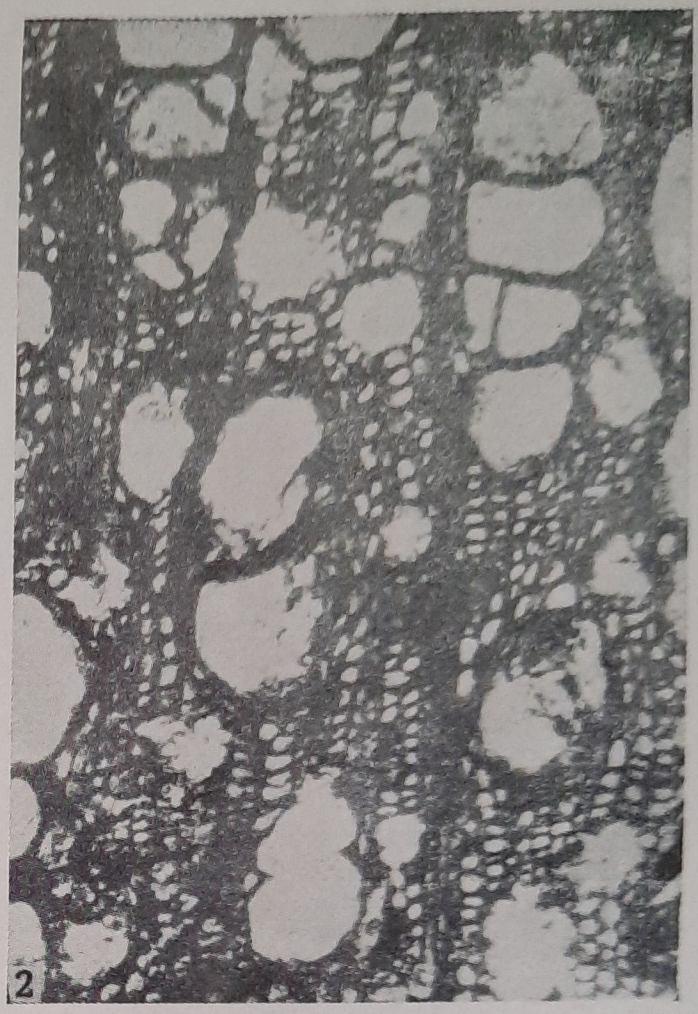
Plate 1

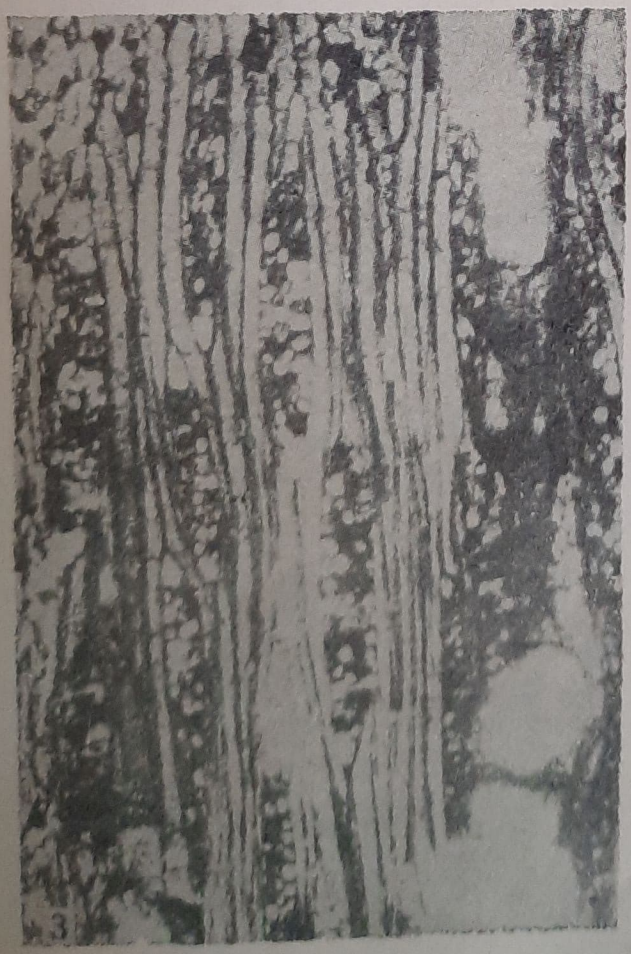
1. Cross section showing the distribution of vessels, parenchyma and oil cells, ×30, slide no. BSIP 36470/I.
2. Magnified cross section showing scanty paratracheal parenchyma and nature of fibres and oil cells. ×80, slide no. BSIP 36470/I.
3. Tangential longitudinal section showing xylem rays and oil cells on the margin of the rays. ×80, slide no.. BSIP 36470/II.
4. Radial longitudinal section showing heterocellular xylem rays. ×80, slide no. BSIP 36470/III.
5. Intervessel pit-pairs. ×450, slide no. BSIP 36470/II.

MAHESH PRASAD

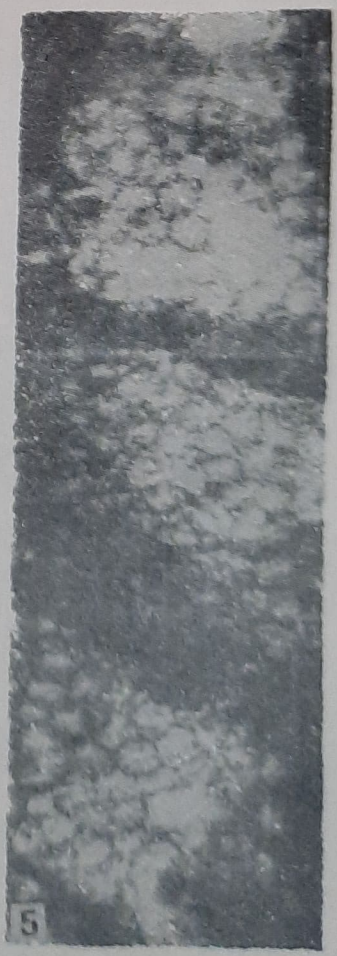
Birbal Sahni Institute of Palaeobotany, 53 University Road, Lucknow 226 007, India


1


2


3


4


5