

## SEM STUDY OF ANCIENT WOOD REMAINS FROM KASHMIR

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SOME charred plant remains were recovered from a post-Harappan site at Simthou, 50 km south of Srinagar, Kashmir. Amongst these remains, charred wood pieces were studied by using a scanning electron microscope (SEM).

The methods of Buth and Chowdhury<sup>1</sup> were followed for clearing the material. Next the well preserved pieces were individually held between two fingers and snapped. The surface thus exposed indicated the features which could guide in further snapping in such a way as to obtain transverse and longitudinal surface views. Thin "sections" were mounted on aluminium stubs and examined immediately in SEM. Being carbonized wood no interference was encountered and neither carbon paint nor gold coating was applied.

The wood is non-porous with distinct growth rings. Vertical canals are mostly confined to the central part of the ring. Vertical parenchyma is absent (Fig. 1). Ray tracheids are neither interspersed nor dentate. The pits on the radial walls are large bordered in single rows. The pits between the horizontal and vertical tracheids are minute with a small orifice; and those between horizontal ray parenchyma and vertical tracheid are fenestriform mostly two, in each cross field (Fig. 2).

The above set of anatomical characters lead us to five genera namely: *Pinus*, *Picea*, *Larix*, *Cedrus* and *Pseudotsuga*. *Pseudotsuga*, a native of north America, can be excluded as well as *Picea*, *Larix* and *Cedrus* which possess resin canals with thick walled epithelial cells and bear cupressoid, taxodioid or piceoid type of pits<sup>2</sup>. The present material, therefore, comes under the genus *Pinus*.

A comparison of the anatomical features of Indian species of *Pinus*<sup>2-4</sup> further indicates that the unknown wood belongs to *P. wallichiana*, the blue pine or "Kail" which is the only natural pine represented in the Kashmir valley<sup>5</sup>. Blue pine wood is used for packing cases, constructional work and carving but it no longer occurs in the vicinity of the site. The present day stands are about 50 km away separated by several barren hillocks towards east. Even though no artifact, either finished or unfinished, made of pine wood has been recovered from this site, it is plausible

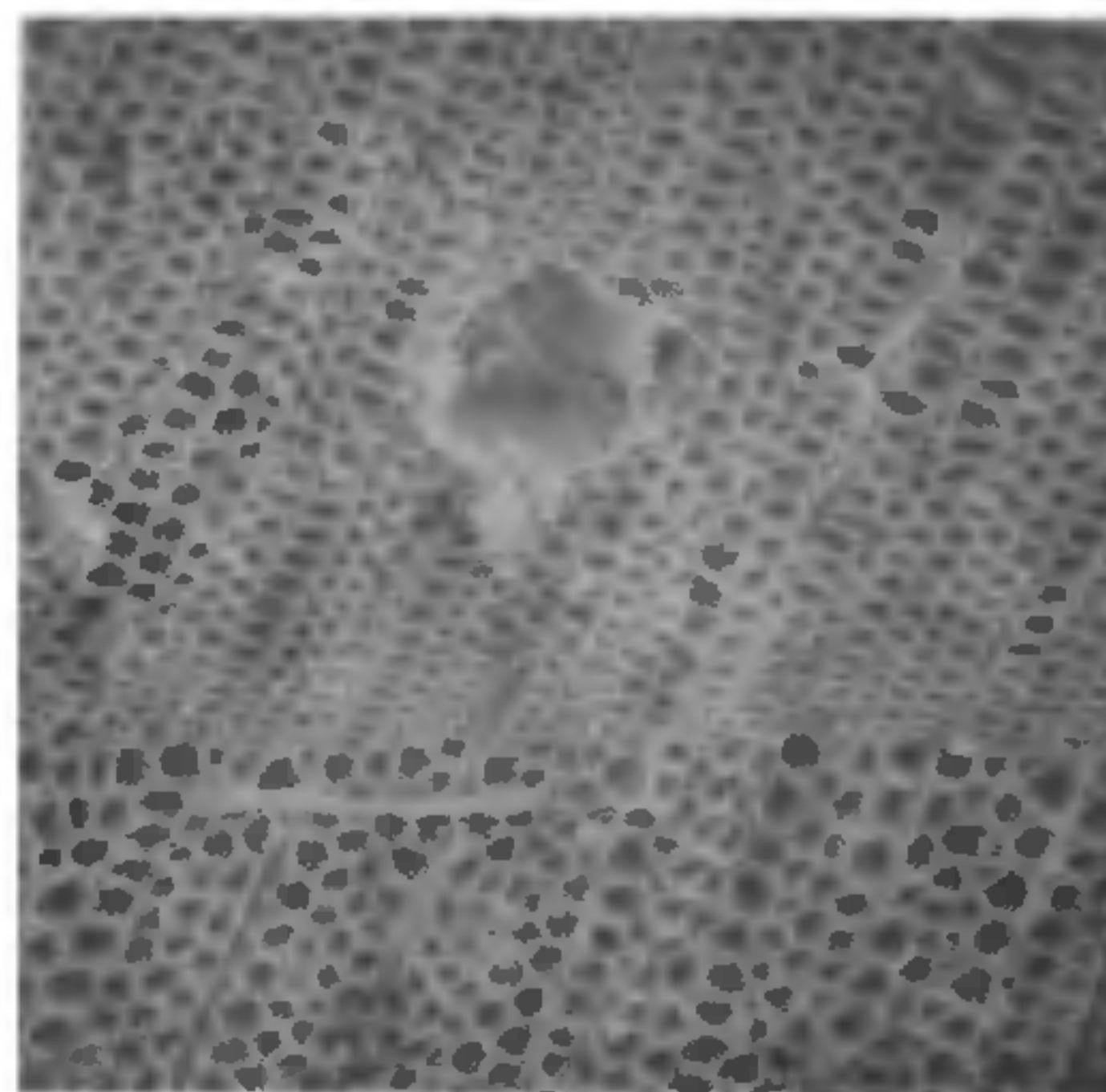


FIG. 1

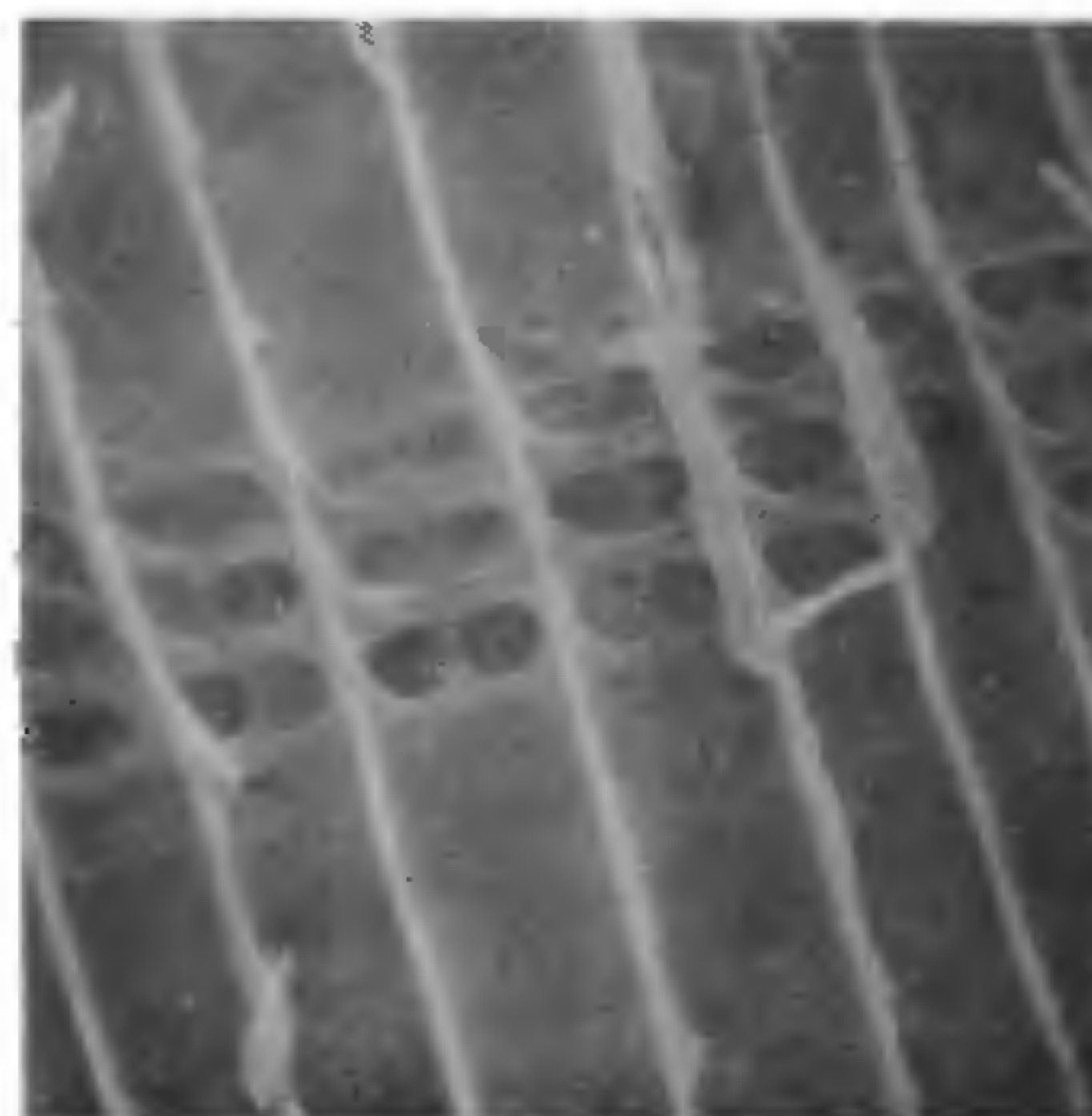


FIG. 2

that such a use could have been made at that early stage of economy for house posts.

We are grateful to Dr. D. P. Agarwal of PRL, Ahmedabad, for SEM facilities.

March 30, 1981.

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