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## PREHISTORIC RESEARCH IN KERALA

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RESEARCH on prehistoric evidences in Kerala has brought to light for the first time several Lower Palaeolithic and Mesolithic sites in various parts of Kerala which lies in the south-west coast of India. The Lower Palaeolithic industry is devoid of Acheulian elements, consists of massive chopper-scaper-flake assemblages while the mesolithic industry is represented by small tools such as scrapers, points, blades, borers, burins, lunates, knives, discoids and choppers. Evidences are found to occur as surface finds, in stratified contexts and also inside the rock-shelters. The locally available quartz raw material was exclusively utilized for tool fabrication in both the industries.

Recently one of the rock-shelters at Tenmalai in Quilon District of Kerala has been excavated and Mesolithic implements and wood charcoal stratified in primary context was found in a deposit of 35 cm thickness. The wood charcoal from the depths 30, 35 and 20–35 cm from trench T1, T2 and T3 have been dated by  $C^{14}$  in the Birbal Sahni Institute of Palaeobotany, Lucknow, India to  $5120 \pm 120$ ,  $5210 \pm 110$  and  $4420 \pm 110$  Y.B.P. respectively. These are not only the first absolute dates for any stone age cultures in Kerala or in South India but also the first dates for any Indian coastal mesolithic industry.

The above dates clearly show that it was a Mesolithic culture which had existed in the monsoonal tropical evergreen forests of Kerala in the Late Holocene period. Tenmalai rock-shelter also has an incised motif on its exterior surface and possibly it might be contemporary with the dated mesolithic culture. It is to be noted that the Mesolithic culture. It is to be noted that the mesolithic industries in Kerala are non-geometric, implements of non-microlithic nature and similar characteristics have been noticed all over South India, especially along the coasts.

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## PEROXIDASE ISOENZYMES—A DEVICE OF GENIC DIFFERENCES IN FOUR FORMS OF *DATURA METEL* LINN

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THE important role that peroxidases play in plant oxidation processes has been worked out by several investigators<sup>1,2</sup>. These enzymes require both electron-donor and electron-acceptor properties and show different activities with different electron donors. Isoperoxidases in organs of two species of *Datura* have been examined<sup>3</sup>.

The four forms of *D. metel* exhibit distinct morphological characters and breed true<sup>4</sup>. The peroxidases were studied in the leaves at different ontogenetic stages. Samples were collected from individual plants at particular ontogenetic stages in order to obtain reproducible zymograms for making comparisons among four forms, e.g the fourth leaf (AL 4) below from the shoot apex was collected when the youngest leaf (AL 1) was 2 cm long. The second (AL 2) and third (AL 3) leaves were similarly collected to ensure that the leaves are at the same ontogenetic stages. For qualitative studies only the fourth leaf was taken. Samples were homogenized in prechilled distilled water and centrifuged at 6000 g at 2°C. The supernatant was precipitated with acetone (10:1) at -10°C. The precipitate was dried and kept at 4°C. This powder was redissolved in a known volume of chilled phosphate buffer (pH 6.4, 0.02 M)<sup>5</sup>. Polyacrylamide gel electrophoretic