

in the gravel beds while in the brown silty sand, unrolled Upper Palaeolithic blades of chalcedony were found associated with the faunal material.

In addition to the fossils reported earlier, this season's excavations yielded fossil remains of *Lepto bos* sp. and *Sus* sp. (figure 2) both being reported from the Ghod Valley for the first time. While the former, which is the biggest fossil find from the area so far, was excavated from within the yellow silt, the later came from the underlying gravelly beds. *Leptobos* is represented by a basicranial part of skull with two horns almost intact. The horns are 72.5 cm in length each while the distance between the two tips is 80 cm. The girth of the horns at the base, centre and the tip respectively is 37.5 cm, 30 cm and 15 cm. The horns are longitudinally striated along the whole length and the section profiles vary from ellipsoid near the base to round near the tip. The horns in general point out-

ward and upward. Our preliminary studies of this particular find point to its being *Leptobos* sp. (wild bull). However the identification of this fossil is subject to modifications. The only other report of *Leptobos* (*Leptobos frazeri*) from Peninsular India is from the Central Narmada Valley<sup>5</sup>. *Sus* sp. is represented by a complete horizontal ramus of the right side. The detailed study of the faunal material is under progress.

While the presence of hippo and *Trionyx* and the lenticular bands of silt and clay in the pebbly gravel indicate the presence of stagnant water pools in the area, the presence of equids, cervids, bovids and elephants point to the tropical, semi-arid savannah type of environment in the valley as a whole interspersed by the presence of rolling plateaux of basalts.

In recent years, the Ghod Valley has turned out to be one of the richest palaeontological sites in the Deccan. The biotic factors prevalent here during the Pleistocene must have attracted the Palaeolithic man to this area. However, unless primary Palaeolithic sites are discovered and excavated in the area, the exact role played by man in exploiting the contemporary fauna will largely remain enigmatic.

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## EFFECT OF DRYING CONDITIONS ON THE SOLASODINE CONTENT OF *SOLANUM VIARUM* BERRIES

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*SOLANUM viarum* Dunal, a potential source of steroid raw material, is cultivated in several parts of India<sup>1</sup>. The berries of this plant contain industrially accepta-

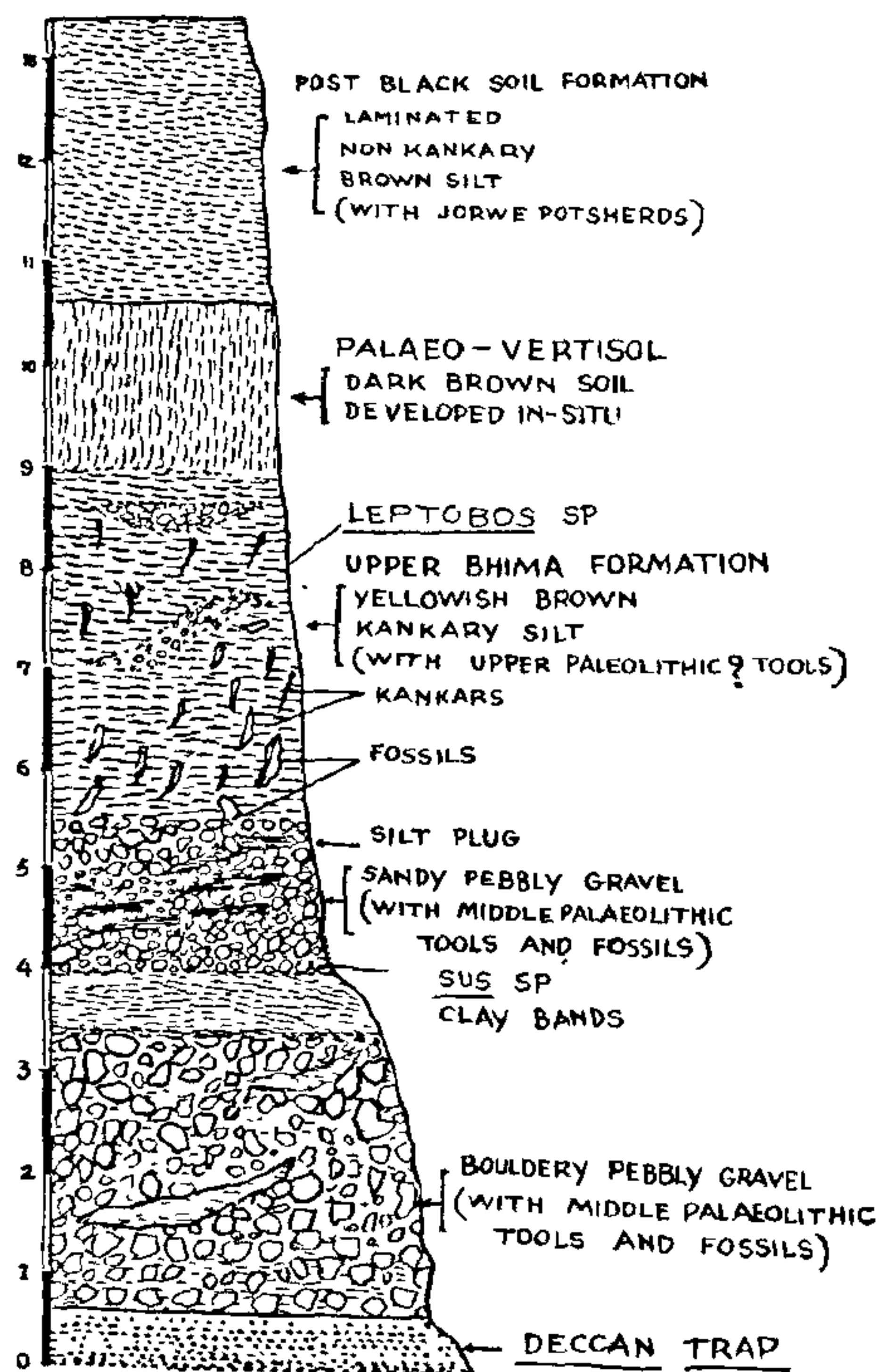


Figure 2. Columnar composite section of the late quaternary sediments around Inamgaon (Maharashtra).

TABLE I

*Solasodine G/100 G dry weight for fresh and samples dried under different conditions*

Drying conditions	Time required for drying in days	Replications										Mean Solasodine $\pm$ S.D.	Percentage Solasodine loss
		1	2	3	4	5	6	7	8	9	10		
Fresh	-	1.31	1.21	0.80	1.22	1.26	1.70	1.01	1.25	0.77	1.32	1.185 $\pm$ 0.26	10.55
80°C	1	1.06	1.05	0.99	1.06	0.88	1.43	1.08	1.18	0.66	1.21	1.060 $\pm$ 0.19	3.71
60°C	3	1.30	1.23	0.97	0.56	0.96	1.49	1.46	0.66	1.47	1.31	1.141 $\pm$ 0.32	15.02
40°C	5	1.21	1.08	0.92	0.78	0.92	1.38	1.00	0.68	0.88	1.22	1.007 $\pm$ 0.21	18.82
sunshine	6	0.92	1.20	0.74	0.65	1.02	1.26	0.67	1.17	0.81	1.18	0.962 $\pm$ 0.22	29.11
open shade	8	0.61	0.92	0.62	0.45	0.71	1.32	0.54	1.08	0.81	1.34	0.840 $\pm$ 0.30	

S.D., Standard deviation

The variance analysis of the above data after arcsin transformation indicated significant F values for replications and drying conditions at 1 percent level.



ble amount of the alkaloid solasodine, which is used as a starting material for the partial synthesis of contraceptive agents, corticosteroids and sex hormones.

The maximum yield of the berries was obtained when the crop was raised during monsoon<sup>2</sup> and the maximum alkaloid content was found in the pale yellow stage of the berry<sup>3-5</sup>. Thus the berries of monsoon crop harvested at appropriate stage of maturity are to be dried and stored for regular supply to the industry. Presently, most of the industries rely upon dried berries for their steroid raw material. Since the conditions of drying the plant material are known to affect the solasodine content<sup>6,7</sup>, it is necessary to evaluate the effect of various drying conditions on the solasodine content of the berries.

The berries of uniform size at the pale yellow stage of maturity were harvested from a pot grown plant. One berry was analysed fresh and rest were quartered and dried separately under different conditions viz., 80°C, 60°C, 40°C, sunshine (37–22°C) and open shade (34–22°C). After drying to constant weight, individual berry was powdered and solasodine content was estimated following the method used earlier<sup>8</sup>. The experiment was repeated in ten replicates, selecting the berries from separate plant for each replication.

The solasodine content in the fresh berries and after drying under different conditions are presented in table. It is evident from the data that average solasodine content of fresh berries was maximum, which is significantly reduced on drying. The maximum losses in extractable solasodine were noted in shade and sundried samples. The extent of this decrease appears to be related with the time required for drying under a particular condition. The pericarp of the berry is much fleshy and takes longer time for complete drying under low temperature conditions. Large number of fungi have been found to be associated with the seed material of this plant<sup>9</sup>. The longer drying time seems to be congenial for fungal growth and subsequent degradation of the alkaloid.

The present experiment indicates profound effect of drying conditions on the alkaloid content of the berries. This aspect has been overlooked in the available reports on *S. viarm* Dunal. Wide variation in the solasodine content, ranging between 0.32 to 5.4% on dry weight basis, have been reported so far. These differences could be partially due to variation in the drying condition used prior to estimation. It is therefore suggested to standardize the drying condition for proper assessment of the solasodine content. Drying at 60°C may be recommended for industrial and estimation purposes as minimum loss occurs under this condition.

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## FUNGAL SPORES FROM THE HOLOCENE SEDIMENTS OF TRIPURA, INDIA

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LITTLE is known about the palaeomycology of Tripura, except for two brief unpublished reports<sup>1,2</sup>. Only two published papers exist from India on the quaternary fungal elements<sup>3,4</sup>. However, considerable literature is available on the fossil fungi from other geological periods elsewhere from India.<sup>5</sup>

Peat samples were collected from the Holocene sequence of the Khowai and Sonai valleys, West Tripura District (figure 1) as part of the programme to unfold the Quaternary history of the Intermontane river valleys of Tripura. The peat deposits occur as thin lenses (1–2 m) within a feebly oxidised to unoxidised sand-silt-clay sequence of fluvial origin. C<sup>14</sup> dating of the samples by the Birbal Sahni Institute of Palaeobotany, Lucknow has given the age of