Palæolithic Sites in the Nellore District

DURING our residence at Nellore from 1935 to 1939 my wife and I, sometimes accompanied by two daughters, made a systematic examination of the area within easy walking distance of our house. This is the mission property on the trunk road to Madras near mile-stone 106. It lies upon the low ridge of laterite which for many miles roughly parallels the coast. We found evidences of iron age urn burials exposed in pits from which road metal is being removed. But from the surface of the ground in our own compound and the adjacent areas numerous palæolithic implements were gathered. A good many more were found on the bottom of old gravel pits while a number of interesting specimens were found *in situ* in the sides of pits dug in the laterite.

The most prolific area, however, was found just west of the laterite formation in a broad valley where bed rock of quartz and feldspar formation is thinly covered by a clay and gravel layer over which lies the sandy surface soil. In this valley we have gathered and listed many hundreds of interesting specimens. These were found most abundantly where a shallow stream bed and its branches have broken the surface of the plain bringing to light the gravel which is elsewhere buried.

This site was a centre of manufacture. A great quantity of chips, flakes, cores, and unfinished or spoiled tools are found. The raw material used by the ancient artisans was quartzite in the form of waterworn pebbles. Quartz was also used less frequently, some excellent implements having been made of this material. It is of interest that the specimens found seem to cover the whole range of palæolithic development from the crudest forms to the most skilfully made implements. The source of implements is twofold and may yield an explanation of this confusion.

One source to which implements are to be traced is the gravel layer mentioned above which is covered by surface soil, as indicated in the stream bank, to a depth of some two feet. We found a number of specimens *in situ* in this layer. These specimens show only slight patination. The second source from which specimens were gathered is the surface of the ground away from the areas broken by the stream and its tributary gullies. Certain generalizations may be made as to the specimens from these two sources. On the surface of the ground were found a few finely made specimens of the highest type of palæolithic craftsmanship represented in the entire collection. These included a fine handaxe and an equally interesting broad bladed cleaver. No implements of crude workmanship were found on the surface. A number of chips or flakes were found. All of these surface specimens have a uniform deep brown stain darker in tone on one side than the other. They also show a superficial disintegration, but no evidence of rolling. It may be assumed that they have lain a long time exposed to sun and weather.

The specimens found *in situ* in the gravel layer show but little of lateritisation or disintegration, having on the contrary a fresher appearance. These comparatively fresh looking specimens are, however, of cruder types. Within the area eroded by the stream the types are mixed as might be expected. But consistent with the above observation the best made implements show the darkest stain. It may be surmised that those having the dark stain came from the surface of the plain and the fresher looking ones from the gravel layer. It does not seem unreasonable to suppose the latter to be older but better protected, hence less deeply stained. The former being made last, became less deeply buried, if buried at all, and have been long exposed by the general erosion of the plain. The older, more deeply buried implements have been exposed only by recent stream action.

We have gathered specimens from 51 other sites in the Nellore District located along the trunk road from Madras and the road from Nellore westwards to Kalavaya, south of the Pennar River. This whole collection, superficially surveyed, compares in a general way with the group of implements found near

Nellore. Four sites near Udayagiri, sixty miles northwest of Nellore, yielded a distinctly different sort of implements. These are definitely more primitive in workmanship and are more weathered. Further study may confirm the theory that a cultural migration eastward can be traced, possibly following a retreating coastline.

At our invitation the collection has been inspected by Dr. F. H. Gravely, Superintendent of the Government Museum, Madras, and by Dr. A. Aiyappan, Curator of Ethnology. They have also gone with us to some of the sites. All specimens have been marked and listed. At the time of writing this preliminary report Dr. Aiyappan is preparing a complete catalogue using our lists and memoranda as to sites.

FRANK P. MANLEY.

Baptist Mission, Ramapatnam,
Nellore District,
February 3, 1940.

The Constitution of Rottlerin

A REDETERMINATION of the rotatory power of rottlerin methyl ether in this Laboratory has not supported the result[1] reported previously. The sample now examined showed no rotation in chloroform solution.

We have extracted Kamala with ether in the cold and the solution on chromatographic adsorption on alumina gave a zone amongst others from which *iso*rottlerin has been isolated. Therefore, there is no justification for the contention of Robertson *et al*[2] that *iso*rottlerin is formed during extraction of rottlerin by the action of hot toluene. Its presence in the natural product falsifies such a view.

J. N. RAY.

University Chemical Laboratories,
Lahore,
January 28, 1940.

[1] Ray, Narang and Roy, *Curr. Sci.*, 1939, 8, 558.
[2] *J.C.S.*, 1939, 1582.

Ascu Wood Preservative and the Forest Research Institute, Dehra Dun

I HAVE read with great interest your editorial on "Ascu Wood Preservative" published in the latest number of your valuable journal. You have very rightly pointed out that "It is not merely the future of a particular process that is involved now; it is the future of a pioneer industry still in its nascent stage". As Travancore has been a pioneer in the scientific utilisation of timber especially for major engineering structures and as Travancore has five Ascu-treating plants in operation, I was specially interested in your editorial.

The Forest Research Institute, Dehra Dun, in *Forest Research and Indian Industry*, published under the authority of the Government of India stated that "It is scarcely necessary to emphasise that the invention of Ascu (wood preservative) has now made it possible for indigenous timbers to compete with steel, iron and concrete for structural purposes so that a new industry of considerable importance is coming into being. This will not only increase the revenue of the Forest Department from sources which gave a poor income before, but will lead to the employment, directly and indirectly, of thousands of educated men, artisans and manual workers and will reduce imports of foreign materials".

I understand, it was on the recommendation of the Forest Research Institute, Dehra Dun, that all the Electrical Inspectors to Provincial Governments removed the ban on the use of wood poles for overhead electrical transmission and distribution provided the poles were treated with Ascu or any other approved wood preservative. It was on the advice of the Forest Research Institute, Dehra Dun, that the Governments of the U.P., Punjab, Mysore, Madras and Travancore either installed or called for tenders for wood poles "treated with Ascu or any other approved wood preservative" to the tune of 30,000 poles involving the investment of many lakhs of rupees. All the above Governments did not surely do this for the sake of experiment, and will have little confidence in