

RECENT ARCHÆOLOGICAL RESEARCH IN TRANSCAUCASIA

PROF. B. A. KUFTIN has been carrying on important excavations in Transcaucasia (1936-39): he made a preliminary report to the Leningrad Institute for the History of Material Culture (*Kratkie Soobshcheniya*, 8, 1-35, figs. 1-18; 1940) and the definite statement of his results has now been produced by the Georgian Academy of Sciences.

In the latter part of the last century, Russian, and some European, museums were flooded with objects from Koban, Samthavro, Kumbulta, Faskau, Rutkha and other sites in the main chain of the Caucasus. They were very handsomely published by the Countess Uvarov and others (for example, *Mat. po Arkheologii Kavkaza*, 8), being obviously of great interest, but being the result of predatory excavations carried out upon very steeply sloping sites had no stratification recorded: things from 1500 B.C. to A.D. 500 were all jumbled up together. Prof. Kuftin excavated a series of sites farther south yielding analogous objects and throwing light on these older finds; for example, things which had been regarded as perhaps decadent and belonging to the last centuries B.C. now turn out to be primitive and can be safely put at 1500 B.C. His sites range from epipalæolithic with the obsidian tools long known in Caucasia, to Hellenistic, Roman and Sassanian times. He has also introduced some order into the different styles of painted pottery, correlating them with those in Elam, Mesopotamia and the regions north of it. He points out that the brilliance of the Van kingdom has concentrated attention on that period within its area, and that we know very little of what went before it.

Without a large number of illustrations it is impossible to convey an intelligible idea of these results. It may be said, however, that Prof. Kuftin has correlated the Cyclopean forts of southern Transcaucasia (c. 2000 B.C.) with painted pottery in form and decoration startlingly like Hallstatt forms of a thousand years later.

More surprising are Prof. Kuftin's results obtained on the River Tsalka (lat. 41° 60', long. 44°), tributary of the Khram, which is being dammed to get electric power. The U.S.S.R. is very good at seeing that such inundations are not made until the area has been examined for archaeological remains. First he found barrows with the Hallstatt-like pottery, black glaze over pink; then two other types with light slip, one with shiny black rectilinear ornament, birds, chevrons and swastikas, the other with a cream slip adorned with spirals, volutes and rosettes. The burials were some on the original surface of the ground, others in great pits up to 14 m. long approached by a sloping way. Besides the pots with light slip, these yielded most remarkable metal work; for example, a gold cup adorned with filigree and jewels and set on a pierced base (looking almost like Byzantine work), a silver bucket with hunting scenes in repoussé gold, silver pins with filigree and gems, a silver blade, a necklace with very big beads, an agate pendant set in gold, also grey-blue beads which should help in determining affinities. Another grave had a socketed silver spearhead, not a common thing, and so making one think of the Borodino find, as the gold cups recall Vl'ki Trn, which likewise seems to belong to a painted pottery culture.

Many of these things resemble those from Ur and Uruk (2500-3000 B.C.) but the technical advance in

gold work would seem to point to c. 1500 B.C., and the figure-work has some resemblance to Hittite sculpture at Yasilikaya, still untouched by Assyrian influence. There is certainly an element independent of Sumer and not unlike predynastic Egyptian, for example, the Gebel-el-Arak knife-handle. As there are no horses and no iron, we must not bring things down too late. The funeral car found in one tomb is still of the four-wheel type. Whatever the affinities of this new culture turn out to be, it is interesting to set another stone in the arch of painted pottery extending from Baluchistan by Iran and Asia Minor to Transylvania, and if we were bold, we might hope that we have the Hurri or kindred tribes before they moved south.

ELLIS H. MINNS.

PLANKTON OF IRISH LOUGHS*

W. H. Pearsall and Edna M. Lind have made some interesting preliminary researches into the analyses of the ecological relationships of the phytoplankton in numerous small Irish loughs. Twenty-six loughs were studied, ranging from one to seven kilometres in length. These are divided into (1) calcareous loughs (with *Chara* species abundant), subdivided into those with mainly soil drainage, and those with much peat drainage, and (2) the less calcareous loughs, subdivided into those with oxidized peat drainage, unoxidized peat drainage, the larger stream-fed loughs, and a few left unclassified. This classification agrees well with the algal distribution.

The plankton floras of the different loughs tend to fall into consistently different categories, of which at least four can be distinguished: those of the calcareous loughs with mainly soil drainage, those of the calcareous loughs with much peat drainage, those of less calcareous loughs with oxidized peat drainage, and the large stream-fed loughs. These four represent distinct plankton communities of algae and as such they could be used in comparison with other plankton communities. The lists as a whole can be analysed to show the habitat range of individual algae, which should be useful as indicators of water conditions.

The species are classified into three groups: *A*, those mainly characteristic of or most abundant in peaty conditions; *B*, those apparently indifferent to the presence or absence of peaty matter; *C*, those mainly characteristic of, or most abundant in, less peaty conditions. Among the indifferent species occurring in peaty conditions the cosmopolitan dinoflagellate *Ceratium hirundinella* is conspicuous. Diatoms, on the other hand, are less prominent in the peaty loughs but are numerous in the calcareous loughs. It is shown that the bulk of the calcareous peaty species are distinctive in that they can grow almost equally well in bogs, and the non-pelagic character of these may mean that they are dependent on the presence of an adjacent peaty substratum. The truly planktonic species more characteristic of the less peaty water may have some feature of structure, life-history or metabolism which enables them to maintain a mainly pelagic existence in the large lakes.

The authors regard it as probable that the primary factor in distribution may be the nature of the dissolved solids carried into the lake from its drainage

* The Distribution of Phytoplankton in some North-west Irish Loughs. *Proc. Roy. Irish Acad.*, 48, Sect. B, No. 1; March, 1942.