they were specially typical of the Mousterian culture, but for reasons connected with the localities of the finds, stratigraphy, and patination. Also included in the group were two forms not occurring in Europe, namely, "crescents" and a heavy drawing-tool, for which the name "tortoise-point" was proposed. Forms transitional to Capsian, or Capsian, were notched flakes, end-scrapers, hollow end-scrapers, nose end-scrapers, end-borers, and asymmetric end-borers. From the morphological point of view the river-drift types were unmistakable, while the Mousterian types, so far as the borers, scrapers, and points were concerned, could be paralleled precisely from European forms, while the non-European forms could either be derived from well-known types or were produced by an identical process. A certain number of implements could not readily be referred to Chellean, Acheulean, or Mousterian technique, and, although they might be classed in Europe as Aurignacian of a coarse type, Prof. Seligman was inclined to regard them as highly developed Mousterian modified by Capsian influence from the north.

The great majority of the implements from the Thebaid present a more or less lustrous surface of various shades of reddish-brown. Specimens of different shades of dull white occur, but only in wadies and "wash-outs." This marked difference in coloration was undoubtedly due to the fact that the white specimens had only comparatively recently been weathered out of the gravels forming the banks of the wadies.

In reference to the stratigraphical evidence for the age of these implements, Prof. Seligman gave a detailed account of the geological character of the area in which they were found. Implements of a highly developed Mousterian type, without the characteristic brown patina of the palæoliths which have been exposed to weathering, have been found *in situ* in undisturbed gravels of Pleistocene age.

An interesting discussion followed the reading of the paper, in which several points of importance were touched upon. Mr. Reginald Smith argued that while patination was an indication of great age, absence of patination did not indicate the reverse; the oldest types of French cave implements showed no patination. He also asked if Prof. Seligman had been able to correlate relative antiquity of type and shade of patination. In reference to the geological data, he was of the opinion that further evidence was required to establish the Mousterian character of some of the implements, especially in the case of those not collected by Prof. Seligman himself. Mr. M. Burkett briefly reviewed recent French work on this subject, and cited the results of a correlation of type and patina which had recently been made by the Abbé Breuil in a series from Tebessa (Southern Algeria). Mr. H. Peake pointed out that the Mousterian industry appeared to have developed further in Africa than in Europe, where its development had been interrupted by the Aurignacian type, and he suggested that this might be due to more favourable climatic conditions on the former continent. It had been stated that no Solutrian culture was found in Africa, but in this case it was difficult to account for the resemblance between certain Saharian and the Solutrian implements. Prof. Fleure said that Prof. Seligman's evidence pointed to a continuous development from Mousterian to Capsian; geographical conditions suggested that at this period there was a great difference between the climates of Africa and Europe.

Tides in Small Seas.

TWO important papers on the tides in small seas have recently been published by the Vienna Akademie der Wissenschaften. The first, in Bd. 96 of the *Denkschriften*, is the latest of a series of researches by R. Sterneck, jun., on the tides of the Adriatic; the second, in Bd. 129 of the *Sitzungsberichte*, is the sixth part of A. Defant's researches on tides in "Mittel- und Randmeeren, in Buchten und Kanalen," and concerns the tides of the Irish Sea. Both investigations are applications of hydrodynamical principles, assuming from observation just sufficient to give or replace the "boundary conditions" where the sea communicates with the larger body of water. Both treatments depend on the elongated nature of the sea in question and utilise charts of soundings after the manner initiated by Chrystal for the longitudinal seiches of lakes. Defant makes separate applications to the Bristol Channel, Liverpool Bay, and Solway Firth. In each case the assumed type of motion may be regarded as a longitudinal oscillation sustained by the tides outside, together with a transverse gradient maintained by the longitudinal current in virtue of the earth's rotation.

Sterneck considers separately the four chief semi-diurnal and the three chief diurnal harmonic constituents; Defant considers mainly the semi-diurnal spring tides. In each case the agreement with observation is remarkable. That for the Irish Sea is not so close as that for the Adriatic, but this is to be expected when the deviations from a canal of slowly varying section and the ratio of tidal range to water-depth are taken into account. Friction is neglected altogether by Sterneck for the Adriatic, but is an important element in Defant's explanation of the Irish Sea tides, in which the amount is of the same order as that used by G. I. Taylor. The negligible importance of friction in the Adriatic may be ascribed to its greater depth and much smaller currents as compared with the Irish Sea. Sterneck calculates the longest free period of the Adriatic to be about 23 hours as against the 16 hours of previous calculations by the "Merian" formula. The larger number agrees well with the observed seiches, and shows the possible error of rough methods. Defant estimates the longest free period of the Irish Sea to be about 18 hours. J. P.

Paris Academy of Sciences: Loutreuil Foundation.

REQUESTS for grants to the amount of 219,600 francs were received by the Academy. Six of these were refused on the ground that they were presented by persons belonging to universities already in receipt of funds from M. Loutreuil. A total sum of 131,200 francs is allocated by the council of the foundation to the following:

I. *Grants to Establishments named by the Founder.*

(1) National Veterinary School of Alfort: 8000 francs for the construction of a special room for researches relating to the therapeutics of cutaneous and respiratory diseases.

(2) National Veterinary School of Lyons: 3200 francs to François Maignon, for the purchase of