

called, is the part of the animal most exposed to attack when fighting. The proboscis is broad and fleshy to the tip, and its length forward from the canines is about equal to the distance between the canine and the eye. It is exceedingly thick and heavy, and its width is about equal to the space between the eyes. In one specimen taken, it was nine inches long. When the animal is crawling, the proboscis is relaxed and pendant.

The author found that the proboscis is not capable of inflation. When withdrawn, it is simply massed into compact folds on top of the head. There is little indication of the proboscis in the half-grown male, and it is probable that it does not develop until sexual maturity is reached.

The specific distinctness of the northern elephant seal is well shown in photographs of the skulls of *Macrorhinus angustirostris* and *M. leoninus*, the

account of the geology of the region than any of his predecessors, to lay down more accurately the boundaries of the several formations, and to trace a number of important faults. As his map shows, the Syrian upland on either side of the Jordan valley from the southern end of the Dead Sea almost up to the Lake of Gennesaret consists of Cretaceous rocks chiefly of Senonian and Turonian age, with an occasional exposure of the underlying Cenomanian.

At the beginning of the Senonian were slight and local volcanic outbreaks, and this formation is sometimes bituminous. Marine deposits of Eocene age are first seen on the west side of the Jordan about the latitude of Jaffa, and become more extensive in proceeding northward. No marine beds of Miocene or Pliocene age occur in the hill country; the deposits in the Jordan valley are

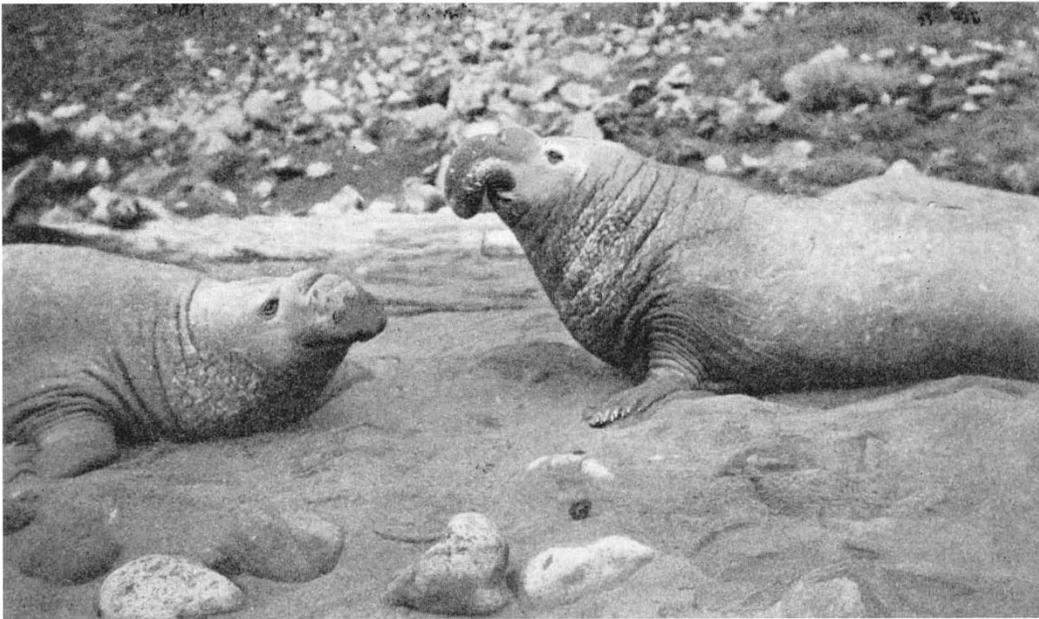


FIG. 2.—Male elephant seals approaching to fight. When within striking distance, both rear high on fore flippers, retract proboscis, and open mouth very wide.

skulls of both species exceeding twenty-two inches in extreme length, *angustirostris* being longer, while *leoninus* has the greater zygomatic width.

Mr. Townsend has directed the attention of the Mexican Government to the existence of this unique herd, and the Mexican authorities have already taken steps to prevent its destruction.

THE NATURAL HISTORY OF THE DEAD SEA AND JORDAN VALLEY.¹

IN the volume before us Dr. Blanckenhorn has collected the results of his researches into the geology and natural history of Palestine, the latest of which occupied the first half of 1908. These have enabled him to give a much more minute

¹ "Naturwissenschaftliche Studien am Toten Meer und im Jordantal: Bericht über eine im Jahre 1903 unternommene Forschungsreise in Palästina." By Prof. Max Blanckenhorn. With geological map in colours, 6 plates from photographs, and 106 figures in text. Pp. vii + 478. (Berlin: R. Friedländer & Sohn, 1912.) Price 12. 45.

mapped as *diluvium* (when will foreign geologists abandon this discredited and misleading term?), and the latest therein, with those in the Kishon valley and on a large part of the coast, are "alluvium." Then came the volcanic discharges which built up the great basalt mass of the Hauran with the minor outbreaks west of the Jordan, which are obviously subsequent to the formation of its valley. On a separate sheet Dr. Blanckenhorn exhibits in a tabular form (very convenient to the reader) his conclusions in regard to the dates of the later movements and deposits, and their correlation with those in Europe. According to this, a continental elevation, causing a steeping of the general slope and the first great erosion-phase of the rivers, began about the middle of the Pliocene. Dr. Blanckenhorn places the second phase of earth movements, bringing about the first fractures running from north to south,

i.e., the trough faulting which gave rise to the Red Sea and the Gulf of Akabah, the Wady Arabah and the Jordan valley, at the beginning of the Pleistocene, and with this he associates the great basaltic discharges already mentioned.

A large fresh-water lake was next formed in the Jordan valley, which he considers to be a record of a pluvial phase and contemporaneous with the Günz glaciation of the Alps. Towards the end of this began a third epoch of earth movements, producing some folding and faulting in a north to south and north-north-east to south-south-westerly direction and bringing up some older strata, among them probably the Cambrian, which he discovered south of the Dead Sea. These caused some more eruptions. A short dry period followed, in which the level of the lake was lowered, the water became brackish, and the salt beds of Jebel Usdum (the top of which is about 600 feet above the present level of the Dead Sea) were deposited. This corresponded with the first interglacial phase of the Alps. The Mindel glaciation of that region brought on a pluvial phase in Palestine when the Jordan valley-lake was at its greatest, extending from the north of the Lake of Gennesaret to some distance south of the Dead Sea, and small glaciers formed in the Lebanon. A long dry phase succeeded, corresponding with the second interglacial of the Alps, during which the Jordan lake sank nearly to the present level of the Dead Sea; all the valleys were much eroded, and some streams of lava (the last in this region) were ejected.

The Riss ice age of the Alps (that when the glaciers attained their greatest size) corresponded with a third pluvial phase which produced the middle terraces in the Jordan valley. The lake again retreated in another dry period, representing the third interglacial of the Alps, but the lower terraces in the Jordan valley are records of the Würm glaciation, after which the climate gradually changed to its present condition. Valley erosion went on throughout, and an elevation of the coast occurred just before the Würm ice age. This, according to Dr. Blanckenhorn, corresponds with the Mousterian, Aurignacian and Solutrian ages of man, the Chellean and Acheulean being placed in the preceding interglacial phase and the earliest of our forerunners at present acknowledged (the Reutelian) being regarded as contemporaries of the glaciers of the Lebanon.

The tabulation is undoubtedly a neat one, but it does not seem clear how Dr. Blanckenhorn explains the separation of the Dead Sea (and the greater part of the Jordan valley) from the Gulf of Akabah. The watershed between these is about 700 feet above the latter and is suggestive of movements transverse to the Jordan-Akabah trough. It is also singular that the period of greatest cold in Palestine—that of the Lebanon moraines—should correspond with the Mindel glaciation of the Alps, and that both the times of heaviest precipitation should be contemporaneous with the two smaller advances of the Alpine ice and not with the two greater, the Riss and the Würm. It

is, of course, possible that the zone of heaviest precipitation did not shift southward with that of lowest temperature, but some explanation, we think, might have been offered of this rather obvious anomaly.

Perhaps also scepticism may be still permitted as to some of the subdivisions in the relics of primitive man, and even the identification of the earliest among them, but this we know is thorny ground.

The book, we think, would have been improved if the author, instead of retaining the form of a diary, had been content to give his itinerary in the fewest possible words and to group together his results so as to give continuous accounts of the stratigraphy and of his views about the physical geology, with the reasons for them. The reader at present loses his way in the mixed multitude of personal and scientific details, and perhaps sometimes fails duly to appreciate the latter. The illustrations also leave something to be desired, the sketches of sections generally being very rough. Still, Dr. Blanckenhorn has spared no pains in collecting a great quantity of information on the geology of Palestine, besides giving lists of the fauna and flora of the country, so that his book will be a very valuable addition to our knowledge of that interesting region.

T. G. B.

THE MEDICAL NEW YEAR.

ON October 1, our medical schools begin their winter session; and in many of the chief medical schools this New Year's Day is observed by giving a ceremonial address to students and others. This good custom shows some signs of old age. The need is less than it was that medical students should be warned against idleness, off-hand manners, or unkindness. The introductory address tends to have an old-fashioned air; and, it may be, the time is coming for some kind of ceremony more in accord with our present ways. The like embarrassment seems to attend the annual orations in praise of Harvey and of Hunter at the Royal Colleges of Physicians and Surgeons of England. Harvey and Hunter, we begin to think, would be glad to know that their immortal names were given a rest, in favour of the praises of some of their successors.

Still, one would be sorry that the First of October addresses should be abandoned at our medical schools. The reports of some of them, published last week in *The Lancet* and *The British Medical Journal*, are of notable interest, and cover a wide range of thought.

At St. George's Hospital, Mr. Grimsdale spoke on the present duty of the medical citizen; and the very phrase "the medical citizen" tells how far we have come from the old professional individualism of the doctor. Imagine the feelings of the physicians of King George III. if they had been told they were medical citizens. Still, there was no National Insurance Act in those not very spacious times; and Mr. Grimsdale was mostly