

climbing to about 26,000 feet. He writes that the Sinclair camera and the big lens by Taylor, Taylor & Hobson have been a great success. The latter was a heavy addition to the outfit, but it saved his life in the disaster which befell the third climbing party, for it proved too heavy for the climb in the new soft snow below the Chang La, and he had been compelled to turn back from the rear of the party only a few minutes before the train of porters was carried away by the avalanche.

Captain Noel in his letters mentions many difficulties in photography at extreme altitudes: the most curious is the effect of the dry Tibetan climate on the cinematograph film, which cracks and sparkles with electric sparks when pulled through the hand, so that it is necessary to work with a wet hand when threading the film on the developing frames. Happily this effect was anticipated, and the makers of the Newman-Sinclair camera succeeded in making the film run through the gate without friction, and provided open-mouthed film boxes, so that damage from electrical markings is reduced to a minimum.

The official photographs which have come home from the expedition up to the time of writing comprise about 200 quarter-plate negatives on glass, a certain number of large panoram films, and two small V.P.K. films. These are supplemented by good series of pictures taken by Dr. Longstaff and Captain Finch, which have been placed at the disposal of the Committee. A selection of enlargements is shown in the Photograph Room of the Society, but the record must be very incomplete until the arrival of Captain Noel in October with all the larger plates. Enlargements from these will be shown as soon as possible, and the Mount Everest Committee will probably arrange for a public exhibition of the pictures in the Alpine Club Hall after Christmas, as was done last January.

We hope to publish in the October number of the *Journal* a first selection of the photographs in photogravure.

THE ROCKS OF MOUNT EVEREST

Dr. A. M. Heron

DURING the attacks on the mountain by the climbers of the second Expedition, a small collection of rock-specimens was made at heights of from 23,000 to 27,000 feet, under difficulties hitherto unequalled in geological field-work. These specimens confirm the views I reached last year on inspecting the mountain by telescope from the Rongbuk valley from a distance of about 10 miles, and by examination of moraine material derived from its northern faces and spurs.

The specimens show Mount Everest to be a pile of altered sedimentary rocks—shales and limestones—converted into banded hornfels, finely foliated calc-silicate schists, and crystalline limestones. The hornfels and fine schists are in the field blackish or dark green rocks, conspicuously

slabby and with a general low dip to the north, which, I believe, adversely and even dangerously affected climbing. The crystalline limestones are fine-grained pure white rocks.

The specimens from 23,000 and 25,000 feet show in microscope sections a very fine-grained aggregate of quartz and a greenish mica, with irregular lenticles and veins of chlorite and epidote, and in addition sometimes calcite pyrites and sphene.

The mountain, from 21,000 to 27,000 feet, is made up of these black and dark green rocks, with occasional beds of white limestone, and veins of quartz and muscovite granite. From 27,000 to 27,500 feet extends an almost horizontal belt, a sill in fact, of schorl muscovite granite, along the whole length of the mountain, which rock presumably, by its superior hardness, gives rise to the prominent shoulder of the mountain north-east of the main peak (shown as 27,390 on Major Wheeler's photographic survey map). Above this again are black schists. Captain Finch informs me that he saw ammonites at a height of about 26,500 feet, but was unable to collect them.

As to the age of the rocks forming Mount Everest, they may perhaps be assumed, for the present, to be Jurassic or Trias.

REVIEWS

EUROPE

The Palace of Minos at Knossos.— Sir Arthur Evans. Vol. 1. The Neolithic and Early and Middle Minoan Ages. Macmillan. 1921. Pp. xxiv. and 721. *Map and Illustrations.* £6 6s. net.

GEOGRAPHICAL students who for their special purposes consult this magnificent archæological record will find most of what they seek in the Introduction; and forward references in notes thereto will guide them to the author's grounds for his statements. The geographical result of Sir Arthur Evans' excavations and publication of them consists, naturally, in their demonstration of the part played by Crete before the seventeenth century B.C. in collecting influences of civilization from other lands and distributing her own influence and products afield in a very ancient world—these processes, of course, implying intercommunications by sea, and also some passage to and from continental interiors. The volume of traffic, whether in warfare or in peace, rendered probable by the evidence which he has amassed and expounded, is astonishing, considering the remote dates that are in question—dates long before the Phœnicians, and still more the Greeks, entered the commercial field. Indeed, Sir Arthur makes out a strong case for communication between Egypt and Crete even in the pre-Dynastic age of the former; and a less strong but arguable case for a migration of popular elements from Egypt to Crete, which might explain the suddenness and rapidity of the latter's rise out of the common Neolithic barbarism of the Levant. M. Raymond Weill's interpretation of the submarine remains at Alexandria investigated by a French engineer, M. Gaston Jondet, during the war, is, however, too incredible to serve Sir Arthur's argument.* Nothing could look less like the outline of a practicable harbour, whether

* See *Journal*, vol. 53, p. 201.