

rather was that the cerebral capacity does not necessarily prove that the person who carried the skull was of extremely low stature. In fact, up to the present time, though individual dwarfs are known to have existed in America, and are even said to have been artificially cultivated in Mexico for the amusements of the nobles (!), no dwarf tribe has yet been discovered.

AMERICAN OBJECTS IN NEPHRITE.

THE proceedings of the Berlin Anthropological Society for January last contain a description by the well known archæologist, Dr. A. Ernst, of Caraccas, Venezuela, of three nephrite axes from that region, one of them found by himself. All three are of rather clear, green color, not presenting the milkiness of the so-called Chinese article—A trait which characterizes the specimen from the same locality which has long been in the Museum of Berlin, and which particularly attracted the attention of the late Dr. Heinrich Fischer, and which he dwells on as important in his classical work, 'Nephrit und Jadeit' (pp. 7, 347).

It is true that up to date we do not know the deposit from which these South American species were taken, but it seems a long way to go to look for it in Burmah or Turkestan, as some would advise. Mineralogists are now of the opinion that neither the coloring nor the chemical composition of these allied minerals is sufficient to designate their source. A better criterion is their microscopic structure. This presents marked and peculiar differences, and if the American specimens could not be traced to any known site on this continent, and presented all the lithological traits of the Asiatic article (which they do not, in as far as examination has proceeded), then there would be some basis for such speculations.

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PHYSICS.

LORD KELVIN AND MR. MURRAY 'ON THE TEMPERATURE VARIATION OF THE THERMAL CONDUCTIVITY OF ROCKS.'*

IN the recent interesting revival of the question of the probable 'Age of the Earth' it has developed that it would be very convenient if it were known whether rocks conduct heat more readily when hot than when cold. Not much was known on this point, and the research bearing the above title was carried out with a view to determining whether conductivity varied with temperature, and if so whether directly or indirectly. In a general way, the plan of the experiment was to produce a steady flux of heat between the two ends of a column of the rock under examination, the temperature of these ends being kept constant, and then to measure the temperature at three points within the column arranged in a line coincident with the flux line. The ratio of the mean conductivities for the portions of the rock between the first and second points and the second and third would then be defined by Fourier's theory of conductivity, as a function of the steady temperature at these points and the distance between them.

The columns of rock were not large, being generally about three or four centimetres square and six or eight centimetres high, although somewhat larger in one or two cases. They were split in halves in a vertical plane parallel to the flux line, to allow of the introduction along the centre line of thermo-electric junctions consisting of platinoid and copper. These were of wire fitted in small grooves, and the two parts were then pressed tightly together so as to resemble an unbroken column as nearly as possible. The lower end was kept at a nearly constant high temperature by means of a bath of molten tin. The upper surface was covered with mercury into which the

* A paper read before the Royal Society on May 30.

heat flowed easily, being carried off by a quantity of cold water resting on it, the water being continually renewed so as to maintain at this end nearly a constant low temperature. The difference of temperature between the two faces was about 200° C. The most successful experiments were made on slate and granite. Each experiment lasted about two hours, and after the first hour the temperature of the three thermo-electric junctions remained sensibly constant.

The results showed in both cases that the conductivity at the higher temperature was less than at the lower. The differences were very decided and such as must certainly be taken into account in all discussions of the transmission of heat by conduction in hot bodies. The work is very important and should be, as it doubtless will be, extended to greater variety of material and wider range of temperature.

T. C. M.

SCIENTIFIC NOTES AND NEWS.

PITHECANTHROPUS ERECTUS.

MR. ARTHUR KEITH contributes to the July number of *Science Progress* a careful account of human fossil remains; he summarizes his conclusions as follows:

"Our human geological record stretches as yet back only to an early post-tertiary period.¹ The millions of men that must have lived in these early times are known to us by only four specimens complete enough to permit of their reconstruction. But, taking these as samples of their race, we can say with some assurance that man has not changed much since the Tertiary period of the earth's history closed. The majority of men were distinctly and considerably smaller-brained than the great majority of the men that now people the earth's surface. Their faces, jaws, teeth and muscular ridges were more pronounced. Since Tertiary times the human structural progress

has lain in an increase of brain and a diminution in the masticatory and alimentary systems. In these features we may suppose that early Quaternary man approached the primate ancestors of the race; in these features he certainly comes nearer the present simian type. But, for the purpose of giving us a clue to the human line of descent, the fossil remains at present known assist us not one single jot. Their configuration is quite conformable to the theory of a common descent; they bear out the truth of that theory. They also show us that man since the Tertiary period has changed structurally very little. There is nothing remarkable in this, for allied primitive forms (*Paleopithecus sivalenses*¹ and *Dryopithecus*²) demonstrate to us that, since the Miocene period, the anthropoid type has changed but slightly. We need not then be surprised at being obliged to seek deep within the Tertiary formations the evidences of human descent."

A PROPOSED COUNTY PARK SYSTEM.

At a recent meeting of the Natural Science Association of Staten Island, Mr. Walter C. Kerr, President of the Association, read a paper on 'A proposed County Park System.' Mr. Kerr urged the desirability of putting into execution, before it is too late, some plan to preserve what still remains of the dense forests which covered the island in earlier times. He does not consider it feasible to establish at once a series of parks with the attendant expenses of immediate improvements, but simply "the purchase by the county, at reasonable prices, of various tracts to be held as public land, and eventually, when the county becomes more densely populated, to become a park system joined by county roads. The larger and more distant tracts, however, would possess, as the years go by, an interest far greater than any conventional park could yield, for with the extensive flora of