

NOTE ON THE OCCURRENCE OF *MICROTUS* *INTERMEDIUS* IN THE PLEISTOCENE DEPOSITS OF THE THAMES VALLEY.

BY MARTIN A. C. HINTON AND GILBERT WHITE.

(Read June 6th, 1902.)

IN 1882 Mr. E. T. Newton, in the Geological Survey Memoir on the Vertebrata of the Forest Bed Series, described and figured the fossil remains of a vole which, in the general pattern of the prismatic molars, agreed very closely with the existing *Microtus amphibius*, but which was clearly distinguished from the latter, not only by its smaller size, but by the very important character of having the molars rooted, whereas in *M. amphibius*, as in other true voles, the molars are never rooted, being developed from permanent pulps. The occurrence of these rooted molars, therefore, indicated the existence in Newer Pliocene times of a vole which, though undoubtedly possessing affinities with the existing water-vole, nevertheless belonged to a more generalised type, making as it did a nearer approach to the ancestral stock of murines of a branch of which the true voles are now generally regarded as being the highly specialised descendants. For this interesting and new species Mr. Newton proposed the name of *M. intermedius*, and hitherto, so far as English deposits are concerned, it has only been recognised from the Forest Bed Series and the Norwich Crag.

The Geologists' Association last year visited a section at Greenhithe in Kent which exposed a very fossiliferous development of the hitherto barren High Terrace deposits of the Thames Valley. Recently one of us obtained a cheek-tooth of a large vole from these beds, which proved to be a right first lower molar. The posterior prism is unfortunately broken, and the anterior extremity is slightly mutilated. Enough remains, however, to indicate an enamel pattern of three outer and four inner angles, or similar to that of the corresponding tooth in *M. amphibius*, for which species it, at first sight, might easily be mistaken. Closer examination shows that in the first place the enamel infolds are not so deep as in *M. amphibius*, and thus the tooth presents prisms more confluent with one another. So far as enamel pattern is concerned, this is the sole point of distinction between *M. intermedius* and *M. amphibius*. The specimen, though belonging to a young individual, distinctly shows signs of rooting in the partial closing of the cavities for the dentinal pulp. This latter character clearly allies the specimen to *M. intermedius*, and taken in conjunction with the pattern and comparatively small size, we have no doubt as to its identity with Mr. Newton's species.

If our specimen is compared with the tooth figured by Mr. Newton in Fig. 3 of Pl. XIII of the work before cited, the closest resemblance as regards pattern is seen between them, the only difference being the more confluent character of the example before us.

ORDINARY MEETING.

FRIDAY, MARCH 7TH, 1902.

H. W. MONCKTON, F.L.S., F.G.S., President, in the Chair.

Alfred Ernest Greene was elected a member of the Association.

A paper was then read by Dr. A. W. ROWE, F.G.S., on "The Zones of the White Chalk of the English Coast. III.—Devonshire." The paper was illustrated by lantern slides taken by Prof. Armstrong, and by sections drawn by Mr. C. Davies Sherborn.

ORDINARY MEETING.

FRIDAY, APRIL 4TH, 1902.

H. W. MONCKTON, F.L.S., F.G.S., President, in the Chair.

Richard Edward Goolden, F.S.A., Allan McDonald, M.A., LL.D., and A. P. Young were elected members of the Association.

A lecture on "Klondike, its Geology and Mining" was delivered by Prof. H. A. MIERS, M.A., F.R.S., and was illustrated by lantern slides.

ORDINARY MEETING.

FRIDAY, MAY 2ND, 1902.

H. W. MONCKTON, F.L.S., F.G.S., President, in the Chair.

The following were elected members of the Association: Tempest Anderson, M.D., B.Sc., F.G.S., Rodolph F. De Salis, F.G.S., William Evans, M.R.C.S., L.R.C.P., John S. Flett, M.A., M.B., D.Sc., F.R.S.E., Arthur Holborow, W. H. Pratt, Miss Emma Simpson, J. T. Stobbs, F.G.S., Herbert R. Sykes, Charles E. Willows, L.D.S.

A lecture was then delivered by Prof. W. W. WATTS, M.A., Sec. G.S., on "The Geology of Charnwood Forest," and was illustrated by specimens and lantern slides.