

at about 135 ft. above O.D., and is covered by a deposit of Coombe Rock, varying from 6 in. to 9 ft. deep. Three main facts result from my investigation :

- (1) The raised beach contains Chellean hand-axes and large thick flakes, both much rolled.
- (2) At the top of the beach occur Acheulean ovates.
- (3) Next comes a flake industry, which preceded the deposition of the Coombe Rock.

(1) The large flakes from the beach closely resemble in form and colour those found in the Cannon shot gravels of Norfolk. There are traces of striation. Some are reminiscent of Clacton types.

(2) From the top of the beach come several Acheulean ovates. Some are moderately rolled and battered ; others are unabraded. We are probably dealing with a storm beach, which was occasionally subjected to the action of the sea. The subsidence involved is about 120-125 ft.

(3) The lowest part of the Coombe Rock contains a floor yielding remains of a flake industry. There are Levallois flakes with faceted platforms, and flakes struck from unprepared cores. The industry includes rough hand-axes, both ovate in shape, and with squared corners, also choppers and large points, 'Abri Audi' in form.

From the 80-90 ft. raised beach south-west of Slindon Park, I have obtained several rolled flakes of Cannon shot gravel type.

I suggest that much of the beach belongs to the same interglacial period as the Cannon shot gravels. Its latest phase may be contemporary with (a) gravel deposits at Corfe Mullen near Wimborne in the Hampshire basin, where the surface of the gravel is about 135 ft. above the river ; (b) the Dartford Heath gravel in the lower Thames valley, where the top of the gravel reaches 137 ft. above O.D. Both these sites contain late Acheulean ovates.

The Coombe Rock at Slindon readily falls into line with a similar deposit which buried the early Mousterian workshop at Northfleet, and with the Upper Chalky Boulder Clay of East Anglia which succeeded early Mousterian cultures at Hoxne and Foxhall Road, Ipswich.

Mr. J. Reid Moir has kindly examined my material, and is in agreement with my general conclusions. A full report will be published in due course.

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Nov. 2.

Angle of Elevation of Short Wave Rays

AN important problem in short wave propagation from both the purely scientific and the commercial aspect concerns the angle of elevation of the path of the ray both at the transmitting and receiving end.

During the past year the Radio Section of the Post Office Engineering Department has been investigating this problem. At Rugby Radio Station, energised aerials consisting of one or more tiers of horizontal radiators have been raised in stages from the ground and the resulting field has been measured near New York by the staff of the American Telephone and Telegraph Co., and the Bell Telephone Laboratories, who have closely collaborated in the tests. By plotting a series of curves giving the relative field strength of the rays projected at various angles of elevation as the aerials were raised and comparing

with the received fields, it has been possible to ascertain the direction taken by the ray at the transmitting end. The details of the tests will be published later. In the meantime it is relevant to record that the usually accepted theory that for long distance transmission almost grazing angle to the earth gives the best distant field is inaccurate in the case of the Rugby-New York circuit. The investigation shows that during the past year the best angle of projection of waves traversing an all light path has varied only $\pm 2^\circ$ or 3° from 10° to the horizontal.

Aerials giving rise to beams of varying concentration having their maximum radiation at angles of elevation changing from 5° to 10° have shown in all cases that the average field as measured at the receiving end has corresponded approximately to that portion of the energy radiated along a direction having an angle of elevation of 10° . Field-strength measurements made in Berlin and Teneriffe by the courtesy of Herr Baumler of the Reichspostzentramt, and Mr. W. H. Warren of the Compania Telefonica Nacional des Espana, confirm that there is a definite angle of projection of energy along which attenuation is a minimum.

This angle is not necessarily the lowest to give a minimum number of reflections from the *F* layer associated with the name of Prof. E. V. Appleton.

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Oct. 31.

Dr. William Garnett

THE obituary notice of Dr. Garnett in NATURE of November 12 omits to mention his long connexion with the Royal Commission for the Exhibition of 1851 ; and as Dr. Garnett was justly proud of his membership of this body, perhaps a supplementary note may be of interest. The facts are these : Dr. Garnett was an original member of Lord Playfair's committee which devised and introduced the Commissioners' scheme of research scholarships, a scheme which has done so much for the improvement of scientific education both at home and overseas, and has also contributed in no small measure to the advancement of science. From 1890 until a few months ago, Dr. Garnett served without intermission as a member of the Science Scholarships Committee of the Royal Commission, and his recent resignation from that body, prompted by increasing deafness which latterly prevented him from following discussions at meetings, deprived the Committee of its senior member and its oldest friend ; and now his death removes the last link with that eminent body of men of science to whose wisdom and foresight higher education in Great Britain owes so much. I am privileged to know that, on his relinquishing his active participation in the affairs of the Royal Commission, Dr. Garnett received from H.M. the King a most gracious message of appreciation of the valuable services which he had rendered to the Commission for more than forty years. I believe that readers of NATURE will be glad to have their attention directed to this further aspect of his long and useful life.

EVELYN SHAW.

1 Lowther Gardens,
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Nov. 14.