EXCURSION TO THE GORGE OF THE MEDWAY, AND
KIT'S COTY HOUSE.—MONDAY, MAY 1ST, 1876.

Director—Professor JOHN MORRIS, F.G.S.

(*Report by* W. H. HUDLESTON, Esq., M.A., F.G.S.)

The party from London, after proceeding by the North Kent line, entered the valley of the Medway at Stroud, opposite Rochester. From this point the Maidstone branch of the railway is carried up the remarkable gorge in the Chalk, through which the waters of a large portion of the Weald find their way into the sea. This is one of the four great breaks which traverse the North Downs. At Snodland, which is situated upon the Gault, the funnel-shaped entrance to this gorge, on the escarpment side, is very apparent.

Here the party descended from the train and crossed the Medway towards Burham, where there are extensive quarries in the Lower Chalk. These yielded several interesting fossils, and amongst others true coprolites, often mistaken for conical fruits. Some of the members thence ascended towards the Middle Chalk of Blue Bell Hill, where, under the guidance of Mr. Johnson, they found several ventriculites. The bulk of the party followed Professor Morris along the road at the base of the escarpment. This road crosses a country much covered by grey-wethers. Four immense stones of this kind, relics of the Lower Tertiaries, constitute the remarkable monument known as Kit's Coty House, said to be the finest cromlech in the south-east of England. It is situated towards the middle of the Chalk escarpment, and commands a complete view up the valley of the Medway in the direction of Maidstone. Here the Director took the opportunity of delivering an instructive address upon the subject of the denudation of the Weald, and the formation of these remarkable gorges, at the entrance of one of which the party was then standing.

“Looking at the controversy which had long been waged between the rival champions of marine and sub-aerial denudation, he considered that it must be admitted that the latter had, in a great measure, proved their case, and that in point of fact a considerable portion of the clays of the longitudinal valleys of the Weald had been removed in the course of ages and carried down through these gorges, which were themselves the result of

erosion of the harder beds, acting in all probability upon lines of weak resistance, and partly also determined by an alteration in the strike. Therefore the scooping out of the great longitudinal valleys, as well as the erosion of the transverse valleys, must be in a great part due to rain and rivers, which have been acting ever since the rise of the old Wealden dome. The Quaternary beds of the Medway Valley are of the highest interest, and extremely fossiliferous, but are the most extensively developed and contain the greatest quantity of remains in the funnel-shaped mouths of the gorges such as this at Aylesford, and also in the same valley above Maidstone, where there is an analogous break in the Lower Greensand escarpment. At such places there seems to have been a great spreading out of the waters, arising from a choke in the narrows during times of flood. This gave rise to temporary lakes, into which the carcases of animals were floated. At present Aylesford is only about 38 feet above the sea level, and yet there seems to be evidence that the Medway flowed at a far higher level during a period when the neighbouring fauna was much the same as when the elephant-gravels of the Aylesford pits were formed. For in the heights above Maidstone, gravels occur at elevations of 300 feet, containing nearly the same kind of bones as those of the lower terraces. The inference is that the Medway has done much excavating work during the period which elapsed between the deposition of these high-level gravels near Maidstone and the low-lying ones of Aylesford."

Early in the afternoon the party lunched at Aylesford, in company with Mr. Bensted, and several gentlemen from Maidstone and the vicinity. They then adjourned to the gravel-pit, where a most striking section is exposed. At the base is 20 feet of almost pure white sand, the bleached and incoherent beds of the Folkestone-series of the Lower Greensand. On this reposes a splendid series of mammaliferous gravel and sand, bearing evidence of much erosion, hollowing out, and redeposition by current action; indications of ice action also are noticeable. Though three-fourths of the recognizable pebbles and stones consist of Chalk flints, there were noted boulders of the Folkestone-beds, huge masses of Kentish Rag, and other fragments of Lower Greensand, with *Gryphæa sinuata*, and—most interesting of all—a few well-rounded fragments of Wealden (Hastings) rock with *Cyclas*. The presence of these latter was held to indicate that the direction of the pebble-transporting currents must have been

from south to north, or in the same direction as that in which the river now flows, and may be deemed to supply evidence against those who consider the bell-mouthed entrance of the Medway gorge a proof of the old river having discharged itself in a southerly direction. Many teeth of *Elephas* were secured by Members, together with other prizes, and the whole party had the satisfaction of seeing an immense curved tusk, not less than 10 feet in length, which formed a prominent feature in the face of the section. This glory of the old Pleistocene world gradually yielded to repeated blows of the pick-axe, and most of the Members thus secured a souvenir of the great pit at Aylesford. Two fine teeth of *Rhinoceros* were also found.*

The next place visited was the brickyard, where about 50 feet of Gault and Chalk Marl were visible. At the time of the visit the base of the working was about on a level with the *Ammonites varicosus* zone of Folkestone, and the following were some of the fossils noted:—*Belemnites minimus*, List.; *Nautilus* sp.; *Hamites* sp.; *Ammonites varicosus*, Sow.; *A. lautus*, Sow. (var.); *A. inflatus*, D'Orb.; *A. splendens*, Sow. (perhaps derived); *Alaria Orbignyana*, Pict. et Roux.; *Dentalium decussatum* Sow.; *Inoceramus sulcatus*, Park, *I. concentricus*, Park; *Nucula pectinata*, Sow.; *Pentacrinus Fittoni*, Aust.; *Trochomilia sulcata*, Edw. and Haime. The upper portion is less fossiliferous, and is succeeded by Chalk Marl with very little intervening Upper Greensand.†

This Chalk Marl, which forms the top of the excavation, was observed to be sliding forwards down the face of the quarry in a sort of viscous condition, and with its surface crevassed exactly like that of a glacier.

Notices of this district are to be found in the "Proceedings of the Geologists' Association," Vol. i., page 63; Vol. iii., page 38, *et seq.*

* A depth of nearly 20 feet of gravel is here seen resting on the sands of the Folkestone Beds. It is false-bedded with sand, fine gravel, and loam. Many bones have been found here, chiefly *Rhinoceros* and *Elephas primigenius*. Mr. Boyd Dawkins identifies one of the specimens from this place as *Elephas antiquus*, Falc. This fossil has been recorded from no other locality within the Weald. The terrace to which the Aylesford gravel belongs spreads in a continuous sheet from the Burham Gault pits to near Cob Tree.—"Memoir on the Weald," p. 174.

† The pits at Aylesford and Burham give some of the best sections of the Gault in the interior; usual thickness, 100—120ft., as at Snodland. About 18 inches of "greenish grey marly sand," with dark grains, phosphatic nodules, and cream-coloured concretions are interposed between the top of the Gault and the Chalk Marl.—"Memoir on the Weald," pp. 47 and 153.