Passing Hartwell House, formerly the residence of Dr. Lee, a well-known friend of London Geologists, and of whose scientific tastes the many large ammonites (*Ammonites giganteus*) built into the park wall are memorials, the party proceeded to the quarries, on the road to the village of Stone. Here is exhibited a fine section of the Portland Stone, with Purbeck Beds forming the upper strata.

Cardium dissimile is abundant and *Ostrea falcata* by no means uncommon, while the many fine specimens of *Ammonites giganteus* before-mentioned as studding the wall of Hartwell Park, testify to the frequency with which that large species is found in this locality.

Nearer still to the village of Stone, a bed of fine white sand of probably Neocomian age, and worked for glass-sand, is met with. It contains large concretions of siliceous matter, which assume, in some instances, very curious forms.

The route was continued through Stone to the south-west, until an exposure of Purbeck strata arrested the attention of the Members, who found the rock which is quarried here to be full of the casts of cyprides. The party then returned to the town of Aylesbury, where the train was taken for London. At each section visited during the day, Professor Morris described in detail the beds exposed, their extension in the district, and the physical geology of the surrounding country.

EXCURSION TO EASTBOURNE AND ST. LEONARDS.

MAY 23RD AND 24TH, 1873.

Directors.—The Rev. E. S. DEWICK, M.A., F.G.S.; JOHN HOPKINSON, Esq., F.G.S.; and J. E. H. PEYTON, Esq., F.G.S.

(Report by Mr. Hopkinson.)

On their arrival at Eastbourne the Members were met by the Directors of the Excursion and at once proceeded to the Eastbourne College, to inspect the collection of local fossils in the College Museum. This collection has been formed within the last few years by Mr. Dewick, who pointed out some of the more remarkable specimens, and gave a brief account of the succession of the beds in which they had been found. After paying a short visit to

Dr. Ogier Ward's fine collection of fossils, the Members visited the Caldecott Museum, where they were received by F. C. S. Roper, Esq., F.L.S., F.G.S., and C. J. Muller, Esq., two of the Trustees. There is here preserved an extensive collection of local fossils, a small typical collection of the fossils of other localities, and specimens illustrative of the recent botany and zoology of the neighbourhood (terrestrial and marine), &c., arranged and classified by various members of the Eastbourne Natural History Society. Mr. Roper, who is now President of the Society, then very kindly entertained the party at luncheon, at his residence, Palgrave House.

After luncheon the excavation for the new baths at "The Wish" was inspected. Here an alluvial deposit, containing land and freshwater shells, antlers of the red and roe-deer, and remains of the wolf, horse, ox, and pig, is seen to overlies the Gault.

The fine cliff-section of Upper Cretaceous rocks exposed between the Wish and Beachy Head was next examined. The lowest bed seen is the Gault, which is brought up by an anticlinal under the Wish Tower (Martello Tower, No. 74), a small portion only, almost unfossiliferous, being exposed. The Upper Greensand, or Chloritic Series, with phosphatic nodules, and fossils only in its upper layers, is next seen. Here it is 30 feet thick, but it thins out to about 20 feet at Beachy Head. The Greensand, a grey calcareous sandstone, gradually becomes lighter in colour and more calcareous as it passes into the Chalk Marl, which is here very fossiliferous, having a bed of calcareous sponges at its base, then several bands of ammonites, and other fossils in its higher zones.

In the extensive quarries in the Middle Chalk at Holywell, several fossils, including some fine so-called "palatal" teeth of *Ptychodus*, were obtained. Here a descent was again made to the shore; and in continuing the walk under the cliff to Beachy Head, the numerous faults and slickensided surfaces of the chalk, the anticlinal near Cow Gap (which again brings up the Gault and Upper Greensand, the latter here much more fossiliferous than at the Wish), and the landslip which obscures the greater part of this anticlinal, were especially noticed; and at the farthest point reached were collected specimens of Polyzoa and Echinodermata, which abound in the lowest zone of the Upper Chalk, here forming an almost perpendicular cliff about 500 feet in height.

The party then returned to Eastbourne by the path along the edge of the cliff, and in the evening attended a meeting of the

Eastbourne Natural History Society, at which Mr. Dewick read a paper "On the Alluvial Beds of the Wish," preceded by a brief general account of the geology of Eastbourne.

On Saturday morning the Members left Eastbourne for St. Leonards. On their arrival at the station they were met by Mr. Peyton, who had most kindly provided carriages for the day. The Old Roar quarry, an extensive excavation in the Wadhurst Clay, was first visited. Here, a bone-bed, almost entirely made up of the teeth and bones of the old Wealden reptiles and fishes, is exposed. It appears to have formed the bed of a river, and may at one time have been continuous with the similar bed exposed at the Black Horse quarry, near Battle.* Overlying the bone-bed a leaf-bed containing impressions of ferns is seen; and below it the Wadhurst Clay encloses a bed of stone, a concretionary argillaceous limestone from three to four feet thick, for which the quarry is worked. Below this is a bed of blue clay, and then another bed of stone, the whole reposing on the Ashdown Sand. Two other quarries, one in the upper part of the Ashdown Sand, the other in the Wadhurst Clay, were then visited, and in each of them numerous fossils were found.

The beautiful glen of Old Roar especially attracted the attention of the geologists. The stream runs along a fault, and the glen most probably owes its existence to the convergence at this spot of three lines of fault. At Silverhill a fine section of the Tunbridge Wells Sand was observed; and on the return to St. Leonards the party had an opportunity of observing sections of each of the beds of which the Wealden Series is composed. In descending order these are:—Weald Clay, Tunbridge Wells Sand, Wadhurst Clay, Ashdown Sand, and Ashburnham Beds,† the last named being probably the equivalents of the Upper Purbeck Beds of Dorsetshire. The Members were then hospitably entertained at dinner by Mr. Peyton at his residence on the Marina.

After dinner the party proceeded westward towards Bexhill. The fault by which the Ashdown Sand is let down against the

* I am informed that this bone-bed, which I examined some years ago, is not now to be seen.

† Mr. Peyton informs me that since this excursion took place the Geological Survey has re-named the Ashburnham Beds the "Fairlight Clays," and that "the limestone and shale beds of Rounden Wood, Archer's Hill, Netherfield, &c., which used to be called the 'greys' and 'blues' of the Ashburnham, are now marked as Purbeck," this being settled by the discovery of the gypsum at the Netherfield boring.

Ashburnham Beds was observed at Bo-Peep Station; and the "submerged forest" between Bo-Peep and Bulverhithe, which can only be seen when the tide is at its lowest, was next visited. Here remains of oak, yew, hazel, and other trees, in their natural position, were seen, and a few hazel nuts, &c., were collected. On the shore the Ashdown Sand, the mottled clays of the Ashburnham Beds, &c., were successively passed over, and in the Bulverhithe and Bexhill cliffs fine sections of these beds were observed. They are very difficult to work out, owing to the numerous faults which traverse them in all directions. Numerous specimens of an *Estheria* were obtained from the Ashdown Sand. In a single zone less than a foot thick this little Crustacean is especially abundant.

We are now under Tower No. 44, which stands on the very edge of a lofty overhanging cliff of the Ashburnham clays and sandstones. The mottled clays of the Ashburnham Beds are seen on the shore at low-water, passing upwards into sandstone in distinctly bedded layers, thin seams of lignite being here and there exposed; and just at the top of the cliff repose the Ashdown Sands, supporting one of England's old, now useless, defences, which at no distant date will become a prey to the ever advancing waves.

At Bexhill tea was kindly provided by Mr. Dewick, and the Members separated at the station for their respective destinations, having spent a most enjoyable time in exploring the Wealden and Cretaceous Rocks of Eastbourne and St. Leonards.

EXCURSION TO FINCHLEY.

MAY 31st, 1873.

Director—HENRY WALKER, Esq., F.G.S.

(Report by Mr. Walker.)

A large party of the Members and their friends assembled at King's Cross Station, Great Northern Railway, and took the train for East End. At East End Station the company retraced their route for a short distance, and stood on the lofty railway embankment over the valley traversed by Mutton Brook, in order to survey the geographical features of the Finchley district in so far as those features have been determined by the Glacial Beds. By the aid of