

received by the Chairman of the Museum Committee, Mr. Thomas Davidson, F.R.S., and the Curator, Mr. G. Scott; and the Davidson collection of foreign fossils and volcanic products, the Willett collection of Cretaceous fossils, and the contents of the Museum generally were subsequently inspected. Mr. Woodward lucidly explained the general arrangement of the Museum, which he regarded with especial interest, as well as the great share Mr. Davidson had taken in bringing together a collection which was worthy of the important town of Brighton. Professor Rupert Jones then discoursed on the Elephant Bed, attributing this great aggregation of Chalk *debris* against undisturbed Chalk to a "banking up," which would be produced by a reflex action of the tides consequent upon the obstruction of the isthmus which existed where are now the Straits of Dover. After thanks had been duly tendered and responded to by Mr. Davidson, the Members proceeded to the Aquarium, to visit which they had been courteously invited.

The remainder of the time at the disposal of the party was thus instructively and agreeably spent, and the return to London by the evening train concluded the day's proceedings.

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## EXCURSION TO HATFIELD.

JUNE 28TH, 1873.

*Director.*—J. LOGAN LOBLEY, Esq., F.G.S.

Though little visited as a locality of geological interest, the neighbourhood of Hatfield presents sections both of the older and of the newer Tertiaries of considerable importance. Situated on the northern edge of the London Tertiary Basin, Hatfield is an advantageous point of departure for a geologist who wishes to trace the junction line of the Secondaries and Tertiaries. To enable the Members of the Association to traverse this line, and to inspect the principal section showing the junction of the beds, the Marquis of Salisbury courteously threw open Hatfield Park.

This wide-spreading domain, with its gentle undulations, bearing oaks and elms and limes, afforded to the visitors a typical example of London Clay scenery; while the fine old Tudor house, with memories of Queen Elizabeth, carried their thoughts back to the age

when Bacon was laying the foundation for the science of to-day, and chivalry and poetry were giving to Britain a glory for all time.

On reaching the extreme eastern limits of Hatfield Park the party entered an extensive excavation, in which are seen all the beds occurring in this locality between the London Clay and the Chalk which forms the bottom of the excavation, with the high level Post-Pliocene gravel capping the whole.

Mr. Whitaker, in his important work "The Geology of the London Basin," p. 226, gives the following details of this section :—

		FEET.
	Gravel composed of various sized pebbles of flints, white and pink quartz, quartz rock, and some other rocks, and subangular flints, in coarse whitish sand, in parts as much as ... ..	6
London Clay.	{ Stiff brown clay, more sandy towards the base ... ..	20
	{ Brown loam with green grains ... ..	
	{ Thin bed of brown clay ... ..	
	{ Olive green and dull brown sand ... ..	
	{ Dull brown sand with green grains and perished shells ... ..	
	{ Brown loam with small nodules of stone and perished shells ... ..	
	Thin bed of flint pebbles, mostly small ... ..	about 7
Reading Beds.	{ White and light-coloured sand, with layers of grey laminated clay ; at parts some very small pieces of ironstone, and here and there a flint pebble ; for the most part regularly bedded, but a little false bedding in the lower part ... ..	about 23
	{ Bottom Bed—Flint pebbles and subangular flints ; very dark green (almost black) outside, in sand ; the upper part ironshot, the middle grey and greenish yellow, the base iron shot ; greatest thickness ... ..	about 2
	Chalk with flints. Junction even and with a dip about S.E.	

It will be noticed that the Thanet Sands are not present here, and that the beds immediately below the London Clay Basement Bed have the character of those near Reading rather than of those in the neighbourhood of Woolwich, while the mottled Plastic Clay is entirely wanting. The sands overlying the Chalk might be mistaken for the Thanet Sands, but the thinning out of those deposits considerably to the south of this locality, and the evidence of other sections in the district, leave no room for doubt as to the age of these beds. A multitude of sand-martins find a home in the sands, which are quite honeycombed by these industrious excavators. The section—its teachings, its similarities to, and differences from other sections showing Tertiary Beds above the Chalk—having been explained, the party left the picturesque spot, and ascended to the higher level, where a brick-pit exposes a continuation of the section, and shows the High Level Gravels capping the London Clay.

The Members now proceeded by a north-western route for a dis-

tance of about three miles to a cutting on the Great Northern Railway, where a section nearly half a mile in length exposes the Middle Glacial sands and gravels, with a thin overlying sheet of Boulder Clay forming the subsoil of the land. The railway to Hatfield was then traversed, and the sections of the Glacial Beds along this part of the line were examined by the Members. On arriving at Hatfield the party re-united, and subsequently took train for London.

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#### ORDINARY MEETING, JULY 4TH, 1873.

HENRY WOODWARD, Esq., F.R.S., F.G.S., President, in the Chair.

The following Donations were announced :—

“ Report on the Progress of the Geological Survey of New Zealand, during 1868 and 1869;” from Captain F. W. Hutton, F.G.S.

“ Reports of Geological Explorations in New Zealand, 1870—1872,” published by the Geological Survey of New Zealand; from Captain F. W. Hutton, F.G.S.

“ Geological Survey of Indiana, with Maps;” from E. T. Cox, Esq., State Geologist.

“ Memoir of Sir Benjamin Thomson,” by Count Rumford; from the Smithsonian Institution.

“ The Complete Works of Count Rumford;” from the Smithsonian Institution.

“ Fortieth Annual Report of the Royal Cornwall Polytechnic Society;” from that Society.

“ Report and Proceedings of the Miners’ Association of Cornwall and Devon, 1872-3;” from that Association.

“ Proceedings of the Bristol Naturalists’ Society,” Vols.iii. to vii.

“ Address to the British Association at Brighton, 1872,” by W. B. Carpenter, M.D., LL.D., F.R.S., &c.; from John Hopkinson, Esq., F.G.S., F.R.M.S.

“ Address to the Geological Section of the British Association, 1872,” by R. A. C. Godwin-Austen, B.A., F.R.S., F.G.S., &c.; from John Hopkinson, Esq., F.G.S., F.R.M.S.

“ Abstracts of Proceedings of the Geological Society of London;” from that Society.