and thus caused the long and shallow mark. A heavy slow-walking animal, like a Tortoise, with an irregular gait, on wet sand, it is probable may have caused the track. This creature must have been of immense size, even larger than the *Chelichnus Titan* of Sir William Jardine, and for a provisional name I would propose to call it *Chelichnus ingens*.

Before concluding, I may add that Mr. Rhodes, the proprietor of the quarry where the specimens were found, not only presented the original slab to the museum of the Manchester Geological Society, but he took a plaster-cast of them, which he is desirous of presenting to some public institution.

2. *On the LIGNITE DEPOSITS of BOVEY TRACEY, DEVONSHIRE.*
By Dr. J. G. CROKER.

[Communicated by the President.]

(Abstract.)

THE author first described the physical features of the basin, surrounding the junction of the Teign and Bovey Rivers, in which these beds of lignite and their associated clays (used in pottery) are found. The lignite-beds come to the surface at Bovey Heath towards the north-western margin of the basin; they underlie towards the south-east about 11 inches in the fathom, and are covered by clays and gravels; their vertical thickness is about 100 feet. In the upper portion of the lignitic series are several (five and more) beds of loose lignite, covered and mixed with variously-coloured clays and granitic detritus; a ferruginous sandy clay, 9 feet thick, succeeds, which is followed downwards by ten beds of "good coal" or lignite, separated by bluish clay-beds, and worked for fuel.

Fir-cones, referable to the Scotch fir (*Pinus sylvestris*), have been found in one of the uppermost layers of loose lignite. Large flabeliform leaves also are represented by fragments 2 feet long and 20 inches wide in some of the higher beds, together with tangled masses of vegetable remains. In the second and fourth beds of good coal (the latter about 80 feet from the surface) the lignite abounds with the little seeds lately described as *Folliculites minutulus* by Dr. Hooker in the Society's Quarterly Journal*. The lignite generally is composed of compressed coniferous wood, and resin-asphalte is locally abundant.

The Bovey Basin is about 60 feet above the sea-level, and was almost a swamp until it was drained within the last ninety years. A peat-deposit, in which fir-timber is found, covers the lignites towards the south.

The author also referred to the extensive denudation that the district has undergone, and pointed to the Dartmoor granitic tract as the source of the clays of the lignitic deposits. He also noticed the

* vol. xi. p. 566.

several writers * who have treated of the lignites and the geology of the neighbourhood. Lastly, Dr. Croker supplied some notes on the local occurrence of the numerous varieties of rocks and minerals in the vicinity of the Teign, such as ores of lead, manganese, and iron, also labradorite, schorle, &c., all of which, as well as the lignite and its vegetable remains, were illustrated by a large series of specimens.

3. *Notice of some appearances observed on DRAINING a MERE near WRETHAM HALL, NORFOLK.* By CHARLES J. F. BUNBURY, Esq., F.R.S., F.G.S.

WRETHAM HALL, the seat of Wyrley Birch, Esq., is situated about six miles north of Thetford, in that extensive tract of open sandy plains which occupies much of the south-western part of Norfolk and of the north-western part of Suffolk; a tract which may be called upland in comparison with the fens, but of very moderate elevation above the sea-level, as is shown by the slow course of the streams flowing from it. About Wretham there are several *meres*, or small natural sheets of water, without any outlet. The one to which my attention was particularly called by Mr. Birch occupied about forty-eight acres, and was situated in a slight natural depression, the ground sloping gently to it from all sides. The water has been drawn off by machinery, for the purpose of making use, as manure, of the black peaty mud which formed the bottom. This black mud, which is in parts above 20 feet deep, is nothing else than a soft, rotten, unconsolidated peat; or perhaps it should be described as vegetable matter in a more complete state of decomposition than ordinary peat, showing no distinct trace of vegetable structure. At the depth of about 15 feet, in this peat, occurs a distinct horizontal layer, from 2 to 6 inches thick in various parts, of compressed but undecayed *moss*, unmixed with any other substance. The stems and leaves of the moss, though closely matted together, are easily separable, and are in so good a state of preservation as to show their distinctive characters very clearly under the microscope. All that I have examined belong to one species,—*Hypnum fluitans*; a moss by no means uncommon in watery bogs and fenny pools throughout the British Islands, and often growing in dense masses in shallow water. The layer that I speak of is of considerable extent, although apparently not extending over the whole area of the mere, as there are parts in which the whole thickness of the black mud has been penetrated without finding it. While wet and fresh, it is of a bright rusty red colour, turning to a yellow brown when dry. What is remarkable, I think, in this case, is the occurrence of a distinct bed of moss, perfect and undecayed, beneath 15 feet of mud, in which no trace of moss is to be seen.

* See Phil. Trans. vol. li. p. 534; Parkinson's 'Organic Remains,' vol. i. pp. 112, 126; Trans. Geol. Soc. 2 ser. vol. vi. p. 439; and De la Beche's 'Report on the Geology of Devon,' &c., p. 143.