

the experiments of Delesse and Daubr e\* and the discoveries and opinions of Sedgwick, Ramsay, and Murchison, concerning the origin of the porphyritic rocks of North Wales and the Lake District.

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NOTICES OF BRITISH AND FOREIGN  
MEMOIRS.

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I. DER HANNOVERSCHER JURA. By KARL VON SEEBACH. Berlin, 1864. 4to. 158 pp.

THIS work is a very useful and very valuable addition to the previous memoirs illustrative of the geology and fossils of North Germany, by Roemer, Strombeck, Credner, Wagner, Schlonbach, &c., as also to those of Opper and Quenstedt. It is divided into two parts, Geological and Pal ontological, comprising 158 pages of letterpress, a geological map, and 10 plates of fossils. The first part contains a sketch of the geographical distribution of the Jura formation in North-west Germany, a description of the various strata, and some general remarks on the whole group. The lowest bed, which is but briefly noticed, is the zone with *Avicula contorta*. The Jurassic beds are described under three sections—the Lias, Dogger, and Upper Jura; each of these again subdivided into certain zones or strata, somewhat similar to those usually adopted by geologists for the Oolitic group. The Lias comprises nine of these zones, of which four belong to the lower, three to the middle, and two to the Upper divisions. The Dogger contains six, and the Upper Jura nine.

Dr. Seebach's subdivisions, and his lists of characteristic fossils, will doubtless be found useful for comparison with those of the British area. Dr. Seebach himself is inclined to consider that the Lower Jura formation of Hanover, up to the Cornbrash, resembles that of South Germany, whilst the Baltic Jurassic strata present a greater similarity to the French and English types.

The second or Pal ontological part contains a table of 373 species, zoologically classified, and showing at the same time their geological distribution. This is followed by a description of the new species named by the author, and critical remarks upon species previously described; the whole forming a useful contribution to the pal ontology of the Jurassic formations.—J. M.

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II. SKETCH OF THE GEOLOGICAL STRUCTURE OF THE SOUTH STAFFORDSHIRE COALFIELD. By J. BEETE JUKES, M.A., F.R.S., &c. (Prepared at the request of the South Staffordshire Local Committee, for the use of Members of the British Association, at the Birmingham Meeting, 1865.) Birmingham, 8vo., pp. 20.

WE reprint the following extract from Professor J. Beete Juke's pamphlet on the Position and Lie of the Rocks in the South Staffordshire Coalfield.

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\* Also, Observations on the Structure of Mount Sorrel Syenite, by H. C. Sorby, F.R.S., noticed at p. 448 of GEOLOGICAL MAGAZINE for October.

‘The Coalfield is an island of Palæozoic rocks surrounded by the Triassic beds.

‘The line of the Palæozoic rocks may be sketched as follows:—An anticlinal ridge, complicated by three local irregular dome-shaped elevations, runs from Dudley for four miles to the NNW. The three dome-shaped elevations, the most northern of which has an elevated synclinal trough attached to it on the west, bring up to the present surface the Silurian floor on which the Coal-measures rest, and this floor rises again to the surface on the east about Walsall, but at a much more gentle angle than on the anticlinal ridge. Between these two Silurian exposures the Coal-measures lie in a shallow basin tilted up a little to the north, so that the beds below the Thick Coal crop to the surface between Wolverhampton and Walsall. They are, however, soon thrown in again by the great Bentley fault, which is a down-throw to the north of 120 yards, and north of which dislocation they have no longer a basin-shaped form, but dip gently but steadily to the west, so that the higher beds (representing the Thick coal) come in about Wyrley, and the lower beds crop out about the Brown Hills. North of that the Coal-measures seem to retain pretty much the same lie up to Brereton.

‘South of Bilston the beds dip gently to the south, and are also thrown down to the south by a succession of faults which range east and west across the basin till we come as far south as Tipton. On the east they crop gently towards the Walsall Silurian district, but are sharply bent up into a nearly vertical position on the flanks of the dome-shaped Silurian elevations as they crop to the anticlinal on the west.

‘Round the southern and south-western margin of this anticlinal the Coal-measures lie at a more gentle angle, dipping everywhere towards the south and south-west, in which direction they are also thrown down by a long fault, called ‘the Russell’s Hall fault,’ which runs from north-west to south-east, parallel to the direction of the anticlinal ridge, but extending much farther to the south-east.

‘At right angles to this direction, from the southern termination of the anticlinal ridge, in the town of Dudley, a pair of faults forming the Dudley Port trough run to the north-east for about three miles; and it is remarkable that the faults on the south-east side of that trough run mostly north-east and south-west, and are down-throws to the north-west, while to the northward of the Dudley Port trough the faults run chiefly east and west, and are down-throws to the south.

‘The high ground to the south-east of Dudley, capped by the Rowley basalt, continues in the same line as the high ground of the anticlinal on the north-west of Dudley. The tilting and disturbance of the beds, however, is not apparent south-east of Dudley, except by the continuation of the Russell’s Hall fault, since the Coal-measures seem to be nearly horizontal under the Basalt, and in all the district to the south of Oldbury, as far as the Birmingham and Hales Owen road at all events, and as far as is known to the south of that up to the Permian boundary.

'The portion of the Coalfield which lies between Dudley and Stourbridge is divided into two irregular basins by the Netherton anticlinal, which runs north-east and south-west for about three miles from Netherton to the Lye Waste. The Thick and other coals crop round this local elevation in continuous lines. The outcrops of the Thick coal are about a quarter of a mile apart in the central portion of the ridge.

'A mass of Basalt shows itself on the axis of this anticlinal a little south of Netherton, but has obviously had no more effect in disturbing the beds there than in other places. The greatest disturbance has been produced at the Lye Waste,\* where some of the Ludlow rock, with its included limestone, shows itself at the present surface, and the Thick coal just east of it was tilted into a vertical or even an inverted position.

'From Netherton and Brierley Hill and the Old Park the Coal-measures dip gently towards the west till they are cut off by the Kingswinford boundary fault. From Dudley Wood and Cradley they appear to dip regularly but gently towards the south till they are covered by the Permian beds which form the high ground of the Clent Hills and Frankley Beeches.

'Thus the southern end of the coalfield seems to be covered by the Permian beds, resting in apparent (but only apparent) conformity† on the Coal-measures; while the northern end seems to be covered unconformably by the Triassic beds. On the east and west the coalfield is bounded by long down-throw faults, which bring in the Permian and Triassic beds variously against the Coal-measures. Other faults have been traced in these beds themselves, in the country both east and west of the coalfield.

'It is probable that many of these faults may have originated at different periods, and almost certain that in none of them has the whole amount of throw been produced at once. They are the result of slow creeping movements in the rocks at the different periods when the district has been affected by those disturbing influences, of which we see the external symptoms at the present day in the occurrence of earthquakes.'

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## REVIEWS.

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I. ON THE OCCURRENCE OF STONE IMPLEMENTS IN LATERITIC FORMATIONS IN VARIOUS PARTS OF MADRAS AND NORTH ARCOT DISTRICTS. By R. BRUCE FOOTE, Geological Survey of India. 8vo. Madras, 1865; pp. 42, 29 plates.

A LARGE series of stone implements, collected by Mr. Foote, Dr. Oldham, Mr. King, Dr. Cornish, Mr. Fraser, and Mr. W. R. Robinson, at forty-seven places in the districts above indi-

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\* A good section across this part of the anticlinal, showing the outcrop of the lower coals, was exhibited in the cutting of the Birmingham and Stourbridge railroad just north of this place.

† The proper definition of unconformability is 'The upper group of beds resting on an eroded surface of the lower group.'