442 UNCONFORMITIES IN THE CHURCH STRETTON DISTRICT.

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UNCONFORMITIES IN THE CHURCH STRETTON DISTRICT.

By EDGAR STERLING COBBOLD, F.G.S.

There are five or six well-marked unconformities in the strata of the Church Stretton district, and two of these will be crossed by the Geologists' Association's excursion.

The first unconformity, at the base of the Upper Llandovery, occurs at Ticklerton, but, unfortunately, it is not very well shown in the brook, the actual junction being obscured by surface accumulations. Within a distance, however, of 200 yards we pass from shales with calcareous beds containing *Pentamerus*, to very similar beds containing *Trinucleus* and other common Bala fossils. There is a pretty little anticlinal fold in the *Pentamerus* bed of the brook which serves as a warning that the actual junction may not be so simple as is shown in the section (Fig. 9).

The evidence for the unconformity is obvious from an inspection of the Survey Map. Near the Severn the Llandovery rests directly on the Upper Cambrian shales, south of this it is in contact successively with the various members of the Caradoc series, until at Cardington it rests upon the upper beds. It then passes to Cambrian Shales again, and for a short distance, at the end of the Cardington Hills, to the Uriconian, after which it again rests upon several members of the Caradoc series; and from Ticklerton to the Onny it is upon the highest known member, “The *Trinucleus* Shales.”

After escaping from the complicated faulted area near Horderley the Llandovery clings persistently to the Longmyndian; at Norbury, farther west, it is upon the “Upper Longmyndian” (Torridonian?); and beyond this it crosses the disappearing Arenig and Llandeilo ridges of the Shelve area.

The actual junctions are exposed in the Shineton Brook (on Cambrian); at Little Stretton (faulted against Longmyndian); at the Onny (slightly faulted against the *Trinucleus* Shales); at Hill End near Plowden (on the middle member of the Longmyndian).

The second unconformity to be crossed is at the base of the Caradoc Series, the grits and conglomerates of which may be seen at Hope Bowdler actually in contact with the irregular pre-Bala floor of Uriconian rocks, and the fossil-bearing sands contain large subangular blocks of the same rocks.

The two sections here are convincing in themselves, but their evidence is strengthened on following the base northwards, when it is seen to pass from Uriconian to Lower and Upper Cambrian, east of the Caradoc and Lawley Hills. It is remarkable that this unconformity has not been traced west of the line of the Stretton Fault, and that only a few miles off, in the Shelve district, the whole of the Arenig and Llandeilo Series intervene with apparent conformity between the Upper Cambrian and the Bala or Caradoc.

The other unconformities of the district are :

That at the base of the glacial deposits ;

An overlapping unconformity beneath the Carboniferous ;

The unconformity at the base of the lowest Cambrian ;

The somewhat doubtful unconformity between the Upper Longmyndian (Torridonian ?) and the Longmyndian proper.

In fact, looking back over the history of the Church Stretton rocks, we see a marked recurrence at many different epochs of marginal conditions of sea and land in the immediate neighbourhood, as well as evidence of repeated earth movements, the last phase of which, the formation of the Stretton Fault, may still be incomplete.

THE BONE-BED IN THE UPPER LUDLOW FORMATION.

By GEORGE J. HINDE, PH.D., F.R.S.

Of the rocks to be visited during the Long Excursion there is probably none so replete with interest as the well-known Bone-bed in the upper part of the Upper Ludlow Series. It was first discovered by the Rev. T. T. Lewis and Dr. Lloyd, and brought into prominent notice by Murchison's description of it in the "Silurian System." Subsequently* H. E. Strickland records its occurrence at Hagley, four miles north of Hereford; round the north-west margin of the Woolhope district between Stoke Edith and Prior's Frome, also between Lyme Down and Gamage Ford on the south-west side of the Silurian area of Woolhope. It has further been noted at Velt House, near the south extremity of the May Hill elevation, seventeen miles from Hagley, and again at Pynton Passage, forty-five miles distant from its outcrop

* *Quart. Journ. Geol. Soc.*, 1852, vol. ix (1853).