

## International Interest in the Wrekin Area

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COWIE, J.W. (1984). International Interest in the Wrekin Area. *Proceedings of the Shropshire Geological Society*, 4, 28-29. Visit to the Ercall quarries to examine the granophyre and the basal Cambrian sedimentary strata by members of the Working Group on the Precambrian-Cambrian Boundary which is a part of international investigations sponsored by the International Union of Geological Sciences (I.U.G.S.) in cooperation with the International Geological Cooperation Programme (I.G.C.P.).

Report of excavations with a mechanical digger near Charlton Hill in the Rushton district of Telford, Shropshire, to reveal the Comley Limestones.

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In 1983 and 1984 there have been many visits, no doubt, to the Wrekin and Ercall hills near Wellington, Telford, Shropshire by geologists from abroad who are interested in both the igneous and the sedimentary rocks and their interrelationships. The author has been concerned with two such visits.

### Visit 1

In May of 1983 a party of fifteen (led by the author with the assistance of Jeremy Krause) visited the Ercall quarries to examine the granophyre and the basal Cambrian sedimentary strata. They were members of the Working Group on the Precambrian-Cambrian Boundary which is a part of international investigations sponsored by the International Union of Geological Sciences (I.U.G.S.) in cooperation with the International Geological Cooperation Programme (I.G.C.P.). These geologists (mainly stratigraphers, sedimentologists and palaeontologists) came from the German Federal Republic, United Kingdom, China, Denmark, France and the U.S.S.R. in this particular field party, but the Working Group consists in total of about 100 members from over 20 countries.

For this Working Group the Ercall has two especially interesting aspects:

(i) the Wrekin Quartzite is probably the earliest Cambrian formation in Shropshire (leaving aside the problem of the age of the Longmyndian strata in this context). From correlations with the Midlands and the southern outcrops at Comley, near Church Stretton, and the southern Malvern Hills it may be quite early in age in the Cambrian period. It seems, however, not to be of the earliest Cambrian age and not comparable with older strata

and fossils found in southern China and in eastern Siberia, Mongolia, Newfoundland, India, Mexico, Iran and elsewhere. Fossil evidence in the Wrekin Quartzite is poor and the visiting field party searched for fossils but with only limited success.

(ii) the Ercall granophyre has been dated by radioisotopic analysis in recent years giving good results using Rubidium-Strontium methods ( $533 \pm 12$  million years before the present) and Uranium-Lead methods ( $531 \pm 5$  million years before the present). The corroboration between these two methods has a special value and  $531 \pm 5$  can therefore be interpreted as a well-substantiated isotopic age for the Ercall granophyre. From recent re-examination of the existing outcrops the granophyre can only be seen in outcrop at present to intrude and therefore postdate the upper part of the up to 50 m regional thickness of the Wrekin Quartzite (not earliest Cambrian in age). Before erosion took place at a higher level above the present hill, the granophyre probably then cut younger Cambrian beds present at that time due to the dip of the strata. The extra height above the present summit for this to have occurred need only be of the order of 60 m.

The age of the Precambrian-Cambrian Boundary calibrated in millions of years still has a wide range of uncertainty. At present the possible range could be 530 to 600 million years before the present. The best evidence available at present to calibrate the age of the Precambrian-Cambrian Boundary in the United Kingdom seems to be from the Ercall granophyre which is quite accurate, relatively speaking, on geochronometric grounds, but is singularly lacking in stratigraphic precision.

## Visit 2

In March 1984 the author accompanied Professor Klaus Müller and Fraulein Ingelore Hinz (from Bonn, Germany) to undertake excavations with a mechanical digger near Charlton Hill in the Rushton district of Telford, Shropshire. The party is most indebted to the farmer of the land, Mr. Colin Davies, for his cooperation and also to the Agent, Mr. C.A. Eadey, who, on behalf of Lord Barnard, the landowner, made the research possible. The rocks concerned, the Comley Limestones, were hidden under a top-soil cover and had been previously examined by E.S. Cobbold and R.W. Pocock over 50 years ago. The strata, although not as well-calcified as at Comley near Church Stretton (Shropshire), yield representative macrofossils and are now being processed chemically to extract microfossils. Some of these microfossils are less than one millimetre across but have great potential value for

biostratigraphic international correlation in the younger parts of the Early Cambrian and later rocks.

The above research is, of course, only a small fraction of the world-wide projects which are in progress. Shropshire has a great part to play in world geology because of its famous and critically important rocks, exposed and unexposed.



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