

Davidii, *T. operculata*, and *Conularia Homfrayi*; the echinoderms by a beautiful star-fish (*Palæasterina ramseyensis*) and by a crinoid (*Dendrocrinus cambrensis*).²³ Careful analysis of the fossils suggests a separation of the Tremadoc sub-group into two divisions. The most characteristic forms of the lower division are *Niobe Homfrayi*, *N. menapiensis*, *Psilcephalus innotatus*, *Angelina Sedgwickii*, *Asaphus affinis*, and more particularly *Dictyograptus flabelliformis* (*Dictyonema sociale*), which is a characteristic fossil of the uppermost Cambrian rocks in Scandinavia and Russia. The upper division contains *Asaphus Homfrayi*, *Conocoryphe depressa*, and other fossils having a general lower Silurian facies.

It is at the top of the Tremadoc strata that the upper limit of the Cambrian or Primordial formations is now drawn in Britain. The late Sir A. C. Ramsay was of opinion that though no visible unconformability could be seen at this horizon, nevertheless there was evidence on a large scale of the transgressive superposition of the Arenig rocks upon the Tremadoc Slates and Lingula flags below them.²⁴

There appears to be more satisfactory proof of a distinct palæontological break at this stage of the geological record in Britain, or at least between the lower and upper part of the Tremadoc sub-group. Up to the present time rather more than seventy species of fossils have been chronicled from the Tremadoc Slates. Of these so far as we know at present only eighteen pass up into the Arenig group above. As these surviving species possess a special interest, in that they connect by a link of continued organic life two great geological periods of such remote antiquity, they are here named—*Arenicolites linearis*, *Asaphus affinis*, *A. Homfrayi*, *Calymene Blumenbachii*, *Cheirurus Frederici*, *Ogygia peltata*, *O. scutatrix*, *O. Selwynii*, *Lingula petalon*, *L. Davisii*, *L. lepis*, *Orthis Carausii*, *O. lenticularis*, *O. Menapiæ*, *Conularia Homfrayi*, *Theca simplex*, *Bellerophon multistriatus*, *Orthoceras sericeum*.²⁵

In the northwest of Scotland, the discovery of the *Olenellus*-zone, already referred to, has given a definite geological horizon from which to work out the stratigraphical succession above and below. It has conclusively proved that the thick mass of Torridon sandstone, formerly classed

²³ Hicks, Quart. Journ. Geol. Soc. xxix. p. 39.

²⁴ Mem. Geol. Surv. vol. iii. "Geology of North Wales," p. 250.

²⁵ This list is compiled from Mr. Etheridge's "Fossils of the British Islands," vol. i. 1888.