Rockhall Quarry

Highlights

Rockhall Quarry is the only known locality for *Inopinatella lawsonii* Elliott, which is the only Palaeozoic example of what might be a non-calcified dasyclad alga. It is thus potentially significant for helping us to understand the early evolutionary development of this important family of marine plants.

Description

Stratigraphy

This is the type locality for the Aymestry Limestone Formation, which is a lower Gorstian (lower Ludlow) shallow marine deposit (Holland *et al., 1963*).

Palaeobotany

Elliott (1971) described the plant fossils as *Inopinatella lawsonii* Elliott; they are mostly preserved as coalified compressions.

Interpretation

This Silurian limestone quarry lies just north of the village of Aymestry, in the county of Hereford and Worcester [SO 423 655]. Plant fossils were described from here by Elliott (1971), who interpreted them as probably algal in origin.

This is the only locality to yield *I. lawsonii* (Figure 3.11), which probably grew on the edge of a shallow marine shelf. It has a main stem *c.* 0.3 mm wide and more than 30 mm long, and with branches attached in whorls of four. No reproductive structures have been found, but Elliott noted a similarity to the juvenile stages of the extant dasyclad *Neomaris,* and suggested that it may have been a primitive non-calcified example of that family. If correct, then *Inopinatella* is the only known non-calcified dasyclad to have been found in the Palaeozoic. The Dasycladales has a fossil record that extends back to the Cambrian (Meyen, 1987), but the preservation potential of non-calcified forms would be very low, which could explain their absence in the pre-Silurian fossil record.

Conclusion

Rockhall Quarry has yielded the only khown examples of a marine alga, *Inopinatella,* which is about 420 million years old. It is thought to belong to the group known as the dasyclads, which have been important components of ben-thic vegetation for over 500 million years. Most members of the group have a calcified body, and at one time in the geological past (*c.* 200 million years ago) they were major reef-building organisms. *Inopinatella* was not calcified, however, and is thought to have been a primitive, early representative of the group.

References

(Figure 3.11) Inopinatella lawsonii Elliott. Non-calcified, possibly dasyclad alga; Natural History Museum, London, specimen V.31287. Aymestry Limestone Formation (upper Gorstian), Rockhall Quarry. x 2. (Photo: Photographic Studio, Natural History Museum, London.)