

Scandinavia. The remaining water species furnish no definite evidence as to temperatures, but the few land species present (*Carychium*, *Lauria* and *Discus* sp.) confirm that the climate was warm.

The mollusca are most likely to have lived in a gently moving river; it is improbable that they lived in a lake. The three main species vary somewhat in the conditions they prefer (Boycott, 1936). *Valvata cristata* lives in running water and likes plenty of mud and water plants. *Ancylus fluviatilis* prefers places with a quick current and a clear bottom. *Acroloxus lacustris* may live in the same river as *Ancylus*, but it inhabits stretches of quieter water where there is much submerged vegetation. All three can occur in lakes but they would scarcely be the dominant species. The fauna is definitely not that of a turlough, intermittently empty of water, such as Lough Aleenaun.

There are several peculiarities about the fauna, however, which make its interpretation difficult. In the first place, land species account for a remarkably small percentage of the total shells. In typical river mud, for instance that of the Fergus River today above Inchiquin Lough, land species account for 5 to 10 per cent of the total and are probably mostly picked up by the river in time of flood. A low percentage could mean that the deposit was laid by a river with a freedom from floods or was derived from a lake with a nearly constant water level.

Secondly, it is surprising that such genera as *Bithynia* and *Lymnaea* are not better represented. They dominate the fauna in the lowland lakes at the present time (e.g., Lough Bunny) and are the main genera in the Fergus River muds together with *Ancylus*. Perhaps a partial explanation is that the material in the cave has been strongly size-sorted. The maximum size of shell is about 3 mm. The larger shells of such genera as *Bithynia* and *Lymnaea* may have been washed elsewhere. However, even if this happened small fragments and opercula should have been found in greater numbers if these genera were abundant.

The age of the deposit is presumably not earlier than the Atlantic period (Zone VIIa), though the possibility of it being interglacial cannot be entirely ruled out. It is interesting to note that it contains no *Theodoxus fluviatilis* which now occurs abundantly in parts of the River Fergus.

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REFERENCES

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APPENDIX 2

REPORT ON THE FERGUS RIVER CAVE ERRATICS

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A number of erratic pebbles from the Fergus River Cave were examined. The assemblage as a whole consists of igneous-textured granite pebbles with smaller amounts of pure quartzite, clayey sandstone, porphyry dyke-like fragments and pieces of migmatite. They may be classified into four groups:

(A) This group consists of: (a) fine-grained aplitic granite; (b) hornblende-potash feldspar-plagioclase granite in which the hornblende is partly altered to chlorite plus epidote; (c) bits of muscovite-bearing quartzite and pieces of quartz; (d) a schistose, fine-grained granite with chlorite after biotite; (e) a slightly clayey sandstone with an interesting piece of hornblende schist intruded by a migmatitic granite.

(B) This group consists of pebbles and fine-grained acid granite, other coarser grained granite, a clayey sandstone and a migmatitic granite.

(C) This consists mostly of a dark igneous rock, which is probably a chilled, acid, porphyry dyke rather than a basic rock, and some quartzite fragments are also present.

(D) The material in this group is mostly granites, some with potash feldspar phenocrysts and some containing hornblende. Also present are muscovite-bearing quartzite fragments and a piece of migmatitic granite.

On the whole, this assemblage could have been derived from the Connemara basement and the Galway granite complex. While it is impossible to identify any fragments with certainty as coming from the area, or to rule out completely other sources of supply, it seems probable that this area was the source of supply. This is based on the similarity of the migmatitic granites to those found in Connemara; the similarity of the quartzite fragments to the main quartzite, which is usually rich in muscovite, in Connemara and the resemblance of the igneous granites to the various facies of the Galway granite. The piece of migmatite intruded into the hornblende schist is particularly helpful and the prophyry dyke fragments are also useful as pointers to this diagnosis. The pieces of sandstone could have been derived from the Silurian sandstones which are now exposed in north-east Connemara.