

The Oldest Objects Found in Wales

By Dr R.M. Owens

The oldest objects in the National Museum are in the collections of the Department of Geology. Those which are most familiar are fossils, ranging in age from approximately 550 million years old down to a little over 10,000 years old. But there is a group of objects that is considerably older than our most ancient fossils, and unlike the fossils they come not from the Earth, but from outer space.

Most of the objects that we have in this category fell from space onto distant regions of our planet, but one of particular interest was found in North Wales. In the early hours of 21 September 1949, many people in North Wales and Cheshire saw a brilliant light travelling rapidly across the sky. At 1.45 a.m. a guest at the Prince Llewelyn Hotel, Beddgelert heard a series of dull explosions, followed by three or four seconds' silence, terminated by a buzzing sound 'like a light aeroplane' which grew in intensity until a sound of shattering roof slates was heard.

The hotel manager was woken by the barking of his dog, and heard a series of irregularly spaced bangs 'like a naval broadside', but then went back to sleep. The next morning, in an upstairs lounge, his wife found a jagged hole in the ceiling, with plaster and a dark-coloured stone about the size of a cricket ball on the floor. Neither the manager nor his wife knew what this was, nor was it associated with the sounds heard during the night, but it was recognised as a meteorite by an old miner in the bar that evening, who had seen some in a museum. A neat, round hole was later found in the slates of the



• The Beddgelert meteorite, cut to reveal its internal structure. The dimensions are approximately 6cm x 7cm roof.

A meteorite is a natural object that survives its fall to Earth from space. As it passes through the atmosphere the outer layers are heated by friction, causing it to glow brightly and giving rise to the visual phenomena of the kind described above. Meteorites can fall anywhere, at any time, but the chances of being hit by one are (fortunately!) very remote indeed. The Beddgelert meteorite is only the second known from Wales — the other fell at Pontlyfni, near Caernarfon in 1931. The majority probably originate in a cloud of small rocky objects called the Asteroid Belt, which lies between the orbits of the planets Mars and Jupiter, with collisions or gravitational forces giving them orbits that intercept that of the Earth.

Once found, nearly all meteorites are passed to scientists for examination and

analysis, although the Pontlyfni specimen apparently resided under someone's bed for over forty years before being acquired by the Natural History Museum in London! Both the Beddgelert and Pontlyfni meteorites have been carefully cut up and distributed between various museums, universities and research institutes. The National Museum of Wales has a small piece of the Beddgelert meteorite. By dating radioactive isotopes of chemical elements contained in them, the ages of most meteorites, including those from Beddgelert and Pontlyfni, have been determined at approximately 4,500 million years old. This is close to the calculated age of the Earth and the rest of the Solar System. By contrast, the oldest-known rocks formed on the Earth itself are roughly 3,800 million years old (in Wales the oldest rocks are about 700 million years old).

For this reason meteorites are of great scientific interest and importance in studying the earliest history of the Earth and the Solar System, and in giving clues to their primitive condition and how they might have been formed. One particular class of meteorites (but not Beddgelert), of which there is also an example in the Museum collections, contains inclusions that have been interpreted as materials generated in huge explosions of stars; these include samples of some of the chemical elements that form the 'building blocks' of life, and from which all life — including ourselves — was to develop ultimately. But that is another story for a future issue!