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Choosing science SUPPLEMENT

Marine research guide

THE EurOcean web portal provides a wealth of information on infrastructure and collaborative projects for marine researchers. The portal has just been upgraded and Geoffrey O'Sullivan, Ireland's representative on the EurOcean board, the portal is now a valuable one-stop resource for anybody who wants in depth information about marine science and technology throughout Europe.

Apart from providing information on the 231 research vessels currently operating in the European area, the portal also has information about 69 underwater vehicles and 89 large instruments which are available for exchange.

Two linked and searchable databases within the portal give access to the details on 751 collaborative research projects, and the board is planning to add more information on policy, training and education opportunities.

Access to equipment, said Geoffrey O'Sullivan, can be a big help to researchers, and knowing who is doing makes it a lot easier to identify potential partners. "Publications," he said, "tell you what has been done, but it is only by attending conferences or accessing databases, such as those hosted by EurOcean, that one can find out what is being done right now."

The EurOcean website is www.eurocean.org

Fuel from fungi

A SOUTH American fungus has been found to have the ability to turn cellulose into the equivalent of diesel fuel. Professor Gary Strobel from Montana State University believes that the fungus, *Gliocladium roseum*, which grows inside Ulmo trees of the Patogonian rainforest, has the potential to become a major source of 'green' energy.

When Prof Stobel began to examine Gliocladium roseum he was surprised to find that it was producing a whole range of long chain hydrocarbons. Other wood dwelling fungi also produce hydrocarbons, but in this case he was amazed at the similarity to diesel fuel.

This ability, he noted, gives the fungi a considerable advantage when compared to growing crops for biodiesel. "*Gliocladium roseum* can make myco-diesel directly from cellulose, the main compound found in plants and paper," he said, and this means that an entire stage of production could be eliminated.

Enormous volumes of cellulose are produced as the undigestable parts of food crops, and at present some of this is bring broken down by enzymes into sugars which are then fermented to yield ethanol. With the fungus, there is no need to break down the cellulose.

Compared to sugars, the yield from cellulose is lower, reports Prof Strobel, but he is confident that genetic engineering could boost performance. "In fact, the genes of the fungus are just as useful as the fungus itself in the development of new biofuels."

The fungus may also lead scientists to reassess theories about the origin of fossil oil. The prevaling notion is that great heat and pressures were involved in creating oil, but as Prof Strobel observes, "if fungi like this are producing myco-diesel all over the rainforest, they may have contributed to the formation of fossil fuels."

Scottish turtles

TURTLES once swam in lakes and lagoons on the Isle of Skye. Well preserved fossils, found by researchers from the Natural History Museum and University College London, are the remains of turtles that lived 160 million years ago in the Middle Jurassic period. The species has been named Eileanchelys waldmani by the scientists who believe the turtles lived together with sharks and salamanders in a warm environment made up of low salinity lagoons and floodwater plains.

According to PhD researcher, Jerémy Anquetin, who works at the Natural History Museum, the find of four well preserved fossils shows that turtles were more diverse than had previously been thought from the available evidence.

Marine microorganisms

MARINE micro-organisms dating from the Mid Cretaceous have been found as fossils in amber at Charente in France. A team of researchers working in collaboration with the Géosciences Rennes laboratory were surprised to find marine micro-organisms in amber. Normally only terrestrial insects occur in amber because it is a forest product. Scientists speculate that the micro-organisms may have been washed up into conifers close to the coast in floods or during storms.

The researchers reported a big diversity in marine micro-organisms, includinng diatoms, traces of animal plankton such as radiolaria and a foraminifer. The finds push the earliest records for diatoms back by 10 to 30 million years.