

Editorial

A museum is judged on a number of different fronts: its research and collections, its partnerships and also its “front of house” programmes and displays. Our newsletters generally give a run down on our latest research and the application of our taxonomic and systematics expertise. This edition, however, is the second of a pair of newsletters focusing on some of our gallery developments. Despite times of economic downturn it is encouraging to be able to develop and open new displays for our visitors, using external grant funding or with funds made available through savings elsewhere. Alongside those displays we have put together resources and activities through which visitors of all ages can engage with natural history. Several articles in this edition describe that work in more detail.

An ongoing challenge is to make scientific concepts accessible and interesting to non-scientists without losing their substance. Actively testing our gallery interpretation through evaluation and surveys is an important part of the culture of Amgueddfa Cymru – National Museum Wales.

This autumn we tested the public reaction to our *Insight* gallery, introduced in the previous edition of Symbiont. We will incorporate the findings into our planned changes within *Insight* and into our future displays planning generally. The public response to our new *Marine Biodiversity* gallery will also feed into that. In the long term, as we look ahead to possible future redevelopments, further evaluation and public consultation will be key to inform our thinking.

In the meantime we continue to be involved in research, publications and partnerships and flag up some of these in our ‘News in Brief’ section. We will discuss these in more depth in forthcoming issues of Symbiont, along with updates on our new grant-funded projects. These include work to make more of our collections and research accessible via web-based databases and ID guides. We are grateful for the ongoing commitment of funders such as the Leverhulme Trust and the Mellon Foundation for making this type of work possible.

Marine messages – communicating science through our marine exhibits

In June we were delighted to open our brand new gallery *Marine Biodiversity*, and its fascinating exhibits have already proved very popular with visitors. The gallery is specimen-rich: the walls are covered with marine animals, plants and large, colourful images of living marine organisms, and models of larger marine animals hang from the ceiling. Free-standing cases house historic Blaschka glass models of marine animals and fluid preserved specimens of cephalopods worked on by the Museum’s first director, W.E. Hoyle. The variety of specimens and models on show illustrates the huge diversity of organisms living in our seas and oceans.



Skeleton of the juvenile humpback whale in the *Man and the Environment* gallery

Marine Messages cont....

The new gallery links through to the existing displays on shellfish, the leatherback turtle and the humpback whale in the gallery *Man and the Environment*. This much-loved space has been refurbished, with new lighting and seating added and accessibility improved. The specimens and exhibits have also been cleaned and conserved by a dedicated team led by Julian Carter, Senior Conservator of Natural History.

From *Marine Biodiversity* a giant clam draws the visitor on to displays that explore the use and exploitation of many types of shellfish. Beyond that, the gallery is filled by the

skeleton of the juvenile humpback whale that was washed ashore near Barry, south Wales, in 1992. The turtle specimen also on display here is the largest leatherback turtle ever recorded, and was found on Harlech beach in north Wales in 1988. These large and impressive specimens are firm favourites with many of our regular visitors.

Collectively our marine galleries now communicate vital messages about evolution, taxonomy and biodiversity. They also discuss human impact and encourage our visitors to consider the importance of sustainability to the future of the marine environment.

Making models for the new marine gallery

The opening of the new marine gallery has provided Annette Townsend (Conservation Officer) with a fantastic opportunity to mould and cast some exceptional models. One of the most complicated was a 2.24m long Swordfish that washed up on Barry Beach. It was in a poor state but Annette's creative skills enabled her to mould it with plaster of Paris and then finally produce a remarkable life-like replica from epoxy resin. It is now on permanent display in the new gallery.



Annette Townsend moulding the real swordfish specimen

On a smaller scale there is the wall-mounted juvenile Almaco jack model. The original specimen was caught in Milford Haven in 2007. Annette's model is incredibly realistic, because the silicone rubber used for the moulding process has captured minute details from the fish's surface. Annette has represented the colours and translucency through mixing fillers and dyes into the epoxy resin during casting. Final shimmering details were painted onto the surface of the finished model with iridescent paints.

Amgueddfa Cymru – National Museum Wales has gained a unique reputation for specialist model making and conservation due to Annette's work and the skills of the other natural history conservators. This has resulted in commissions from several other institutions and museums. The conservators are also grateful to the enthusiastic members of the public who donate their interesting finds.

Annette has just finished casting three species of marine diatom. These enlarged translucent models will hang in colonies from the gallery's ceiling. Her next exciting project is to model from clay a life size (1 x 2m) Barrel jellyfish and a Humboldt squid. These will also be cast in resin to enhance further the marine display.



Wall-mounted model of juvenile Almaco jack

News in brief

- In May, Heather Pardoe (Research Curator, Quaternary Palynology) attended the VIII Pollen Monitoring Programme meeting in Tartu, Estonia. The main aim of the meeting was to celebrate the life and work of Sheila Hicks, who has been a leading palynologist and exponent of pollen trapping since the 1970s. The meeting also marked the publication of a special Festschrift volume of *Vegetation History and Archaeobotany*, in Sheila's honour. Heather chaired the opening session of the meeting and presented a joint paper describing patterns of surface pollen deposition at woodland edges in Poland, Switzerland, Finland and Georgia.
- Following a successful bid by Dr Ingrid Jüttner (Research Curator, Diatoms) the Scottish Environmental Protection Agency has awarded the BioSyB Department a contract to analyse 200 diatom samples from Scottish freshwaters as part of their annual water quality monitoring programme. Diatom species in these samples will also be used for the project 'Freshwater Diatom Flora of Britain and Ireland' and for taxonomic publications on selected genera.
- Adrian Plant (Research Curator, Entomology) is working with Igor Shamshev (VIZR, St Petersburg) and Evgeny Perkovsky (Zoological Institute, Kiev) in describing a new fossil fly in late Eocene/early Oligocene amber from Rovno in the Ukraine. The new taxon appears to be an ancestor of the modern aquatic Empididae genus *Hemerodromia*. The study will help determine the timing of a key branch in empidoid evolution and contribute to ongoing investigations of the phylogeny and biogeography of these flies.
- BioSyB staff hosted the British Bryological Society's AGM on 10 September. Over thirty people attended a day of talks on diverse subjects, including fungal symbioses in liverworts, epiphytes in the Azores and DNA barcoding of rare British bryophytes. Dr Ray Tangney (Head of Cryptogamic Botany) gave a talk on Falkland Islands mosses following his recent visit.

A Magellanic Mystery

Museum collections can be surprising especially when specimens are found in unexpected places. Shells of a bivalve described in 1859 by the Welsh conchologist J.G. Jeffreys turned up in the Doncaster Museum and Art Gallery when the only other known specimen was in the Smithsonian Institution, Washington DC. These specimens were named *Modiola cuprea* and were reported as coming from the stomach of a goose shot in Yorkshire in 1855. On examining these shells, Graham Oliver (Head of the BioSyB Department) found that they were of the genus *Lissarca*, only known from the Southern Ocean and in particular the Magellan Region. There was no possibility that these shells came from the stomach of a goose that migrates from the Arctic and the whole story must have been an unfortunate mix-up. The species *Modiola cuprea* can now be removed from the European checklist.

European Commission grant

Dr Ingrid Jüttner (Research Curator, Diatoms) has been awarded a European Commission grant, under the LIFE+ Nature and Biodiversity Programme, to collaborate with the Wye and Usk Foundation on the Irfon Special Area of Conservation Project. The project will run from 2010 to 2013. A diatom and water quality monitoring network has been established in the middle and upper catchment of the River Irfon in mid-Wales. Surveys are performed four times a year to provide a 'real time' measure of effective recovery of streams to circum-neutral water chemistry as a result of the restoration of hydrological sources and liming. This will safeguard biodiversity in the Irfon and its tributaries and improve the habitat for several species of fish including the Atlantic salmon.

Recent Publications

British northern hawkweeds



BSBI Handbook No. 15
Tim Rich & Walter Scott

British northern hawkweeds

Northern hawkweeds are a group of plants in the daisy family belonging to *Hieracium* section *Alpestris*. There are 21 endemic species in Britain, 16 occurring in the Shetland Islands, which is a centre of diversity. Most of the species are very rare (one is already extinct in the wild), and all are UK Biodiversity Action Plan 'priority species' for nature conservation.

This monograph is the culmination of over 50 years of work by Walter Scott, a retired amateur botanist, and five years of work by Tim Rich (Head of Vascular Plants). It summarises the taxonomy, history, distribution, biology and ecology of each northern hawkweed, with an assessment of their conservation status. There are keys and notes to help with identification and 231 colour photographs, line drawings and distribution maps packed into the 156 pages.

Rich, T.C.G. & Scott, W. (2011). *British northern hawkweeds* (BSBI Handbook No. 15). Botanical Society of the British Isles in association with Amgueddfa Cymru – National Museum Wales.

Rhagor is the website for our national collections and the stories behind them. A rich selection of articles, image galleries, videos, interactives and more bring the collections alive.

English: www.museumwales.ac.uk/en/rhagor/

Welsh: www.amgueddfacymru.ac.uk/cy/rhagor/