

New species

Geoff Boxshall & Sophie Conroy-Dalton

THE OCEANS ARE HOME TO AN AMAZING variety of living organisms. Documenting and characterising this diversity has been an important aim of European marine biologists and biological oceanographers for over two centuries. Given the vastness of the oceans, it is not surprising that the immense task of naming and describing all the organisms even in European seas is far from complete. Fortunately, there are many taxonomists in MARBEF and we plan to feature a newly-described species from European waters in every issue of the MARBEF newsletter.

In this, the first edition, I have invited Sophie Conroy-Dalton from the Natural History Museum in London to introduce you to a new copepod she has just described. Copepods are the diminutive relatives of the crabs and shrimps...but what they lack in size they make up for in abundance and diversity. One of every ten species of living organisms listed as present in European seas is a copepod, and if that doesn't impress you, it has also been calculated that there are more

copepods on Earth than insects. So, copepods are both abundant and diverse, but they are also beautiful, as Sophie's wonderful illustrations show.

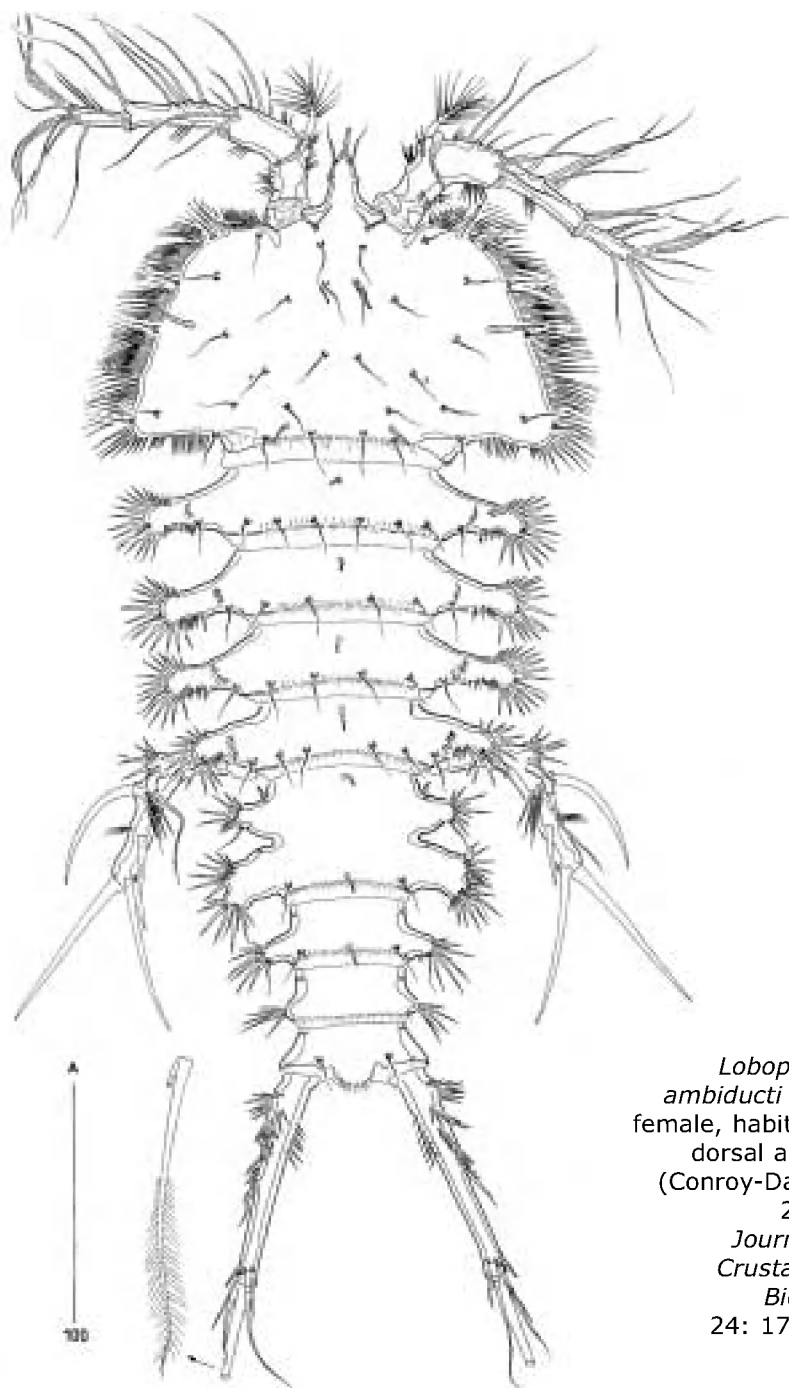
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New copepods: taxonomic gold nuggets

By Sophie Conroy-Dalton

MEMBERS OF THE COPEPOD ORDER Harpacticoida are primarily free-living, marine and benthic, although a few species are ectoparasitic, commensal or planktonic. Their body form, shape and size can vary considerably according to the micro-environment they inhabit. The Ancorabolidae is one of the most visually striking families in the Harpacticoida. Most ancorabolids are instantly recognisable by their conspicuous outgrowths, which arise from the dorsal and lateral surfaces of the body, ranging from simple thorns to highly elaborate branched processes.

Ancorabolids have frequently been recorded from European waters and they have traditionally been thought of as a rare and not very diverse group, assuming a limited distribution in the North Atlantic. Investigations over the last two decades



Lobopleura ambiducti adult female, habitus in dorsal aspect (Conroy-Dalton, 2004: *Journal of Crustacean Biology* 24: 17-36).

Figure courtesy of JCB

have not only more than quadrupled the number of described species, but have also considerably extended the geographical distribution of the family, which now stretches from the Arctic to the Antarctic and from the intertidal to the deep-sea, including hydrothermal vents. The apparent scarcity of ancorabolids was obviously merely a reflection of sampling bias and logistic problems involved in sampling deep-sea benthos. However, investigating remote and unusual environments is not necessarily a prerequisite for the discovery of sensational new taxa. Even in European waters extensive surveys and renewed attention to previously undersampled habitats can still unveil exciting taxonomic gold nuggets.

A recent intertidal survey along the west coast of Scotland led to the discovery of a new ancorolid genus from a sandy beach on the stunningly beautiful, tiny Isle of Iona (just off the island of Mull). *Lobopleura ambiducti* Conroy-Dalton, 2004, is small, less than 0.5mm in length and is strongly flattened. The generic name refers to the highly ornate body, which possesses a series of lobate processes on each side. The species is unique within the Ancorolidae because of the presence of fully functional paired genital systems in both sexes (and the species name refers to this), a condition rarely observed in other harpacticoids. From the morphology of the mouthparts, it seems that this species is probably a surface feeder/grazer, scraping and collecting food particles off the sand grains.

As is common to most ancorabolids, the body of *L. ambiducti* was completely covered by a layer of gunk (detritus and other material) through which only the tips of sensory structures like sensillae and elongate tube-pores protruded. Unusually, *L. ambiducti* was collected from the low-water mark on a sandy beach, but most ancorabolids typically live in the flocculent upper layer of muddy sediments. Clearly, without the development of body processes it would be impossible to maintain sensory function under this cloak of material, and so it seems that the function of these processes is to enhance or at least maintain the animal's sensory performance in detritus-laden environments.

Like most ancorabolids, *Lobopleura ambiducti* occurs in low densities: only three specimens were collected from Iona; additionally, 11 individuals have been recorded from Co Clare (west coast of Ireland) and one female from Co Dublin (east coast of Ireland). ●

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Biogeosciences

A new and innovative journal of interest to the MARBEF community

By Jean-Pierre Gattuso & Jürgen Kesselmeier,
editors-in-chief, *Biogeosciences*

BIOGEOSCIENCES IS A NEW, INTERNATIONAL scientific journal dedicated to the publication and discussion of research articles, short communications and review papers on all aspects of the interactions between the biological, chemical and physical processes in terrestrial or extraterrestrial life within the geosphere, hydrosphere, atmosphere.

The objective of the journal is to cut across the boundaries of established sciences and achieve an interdisciplinary view of these interactions. Experimental, conceptual and modelling approaches are welcome. *Biogeosciences* specifically covers the relationship between biodiversity and ecosystem function, both in present and past ecosystems. It will therefore be of interest to MARBEF partners involved in theme two. The editorial board comprises several editors from institutions participating in the MARBEF consortium.

Biogeosciences is an open access journal and is therefore available without any cost to all colleagues at all times, as long as they have access to the internet. EGU, and ourselves as editors-in-chief, are fully committed to not changing this policy. We also believe that open access is a fantastic endeavour, but is not enough, and we want to make sure that every scientist will be able to publish in *Biogeosciences*. This can only be achieved by keeping the publishing costs for the authors as low as possible. The service charges are modest, starting at €20 or €22 per page depending on how the manuscript is submitted, as a text or Word file respectively. They cover all costs, including colour figures or any kind of supplementary material such as databases, photographs or videos. We believe that these costs are by far the lowest as compared to all other journals. Service charges are waived during the launching phase (2004 and 2005).

The two-step fully transparent review process is another innovative feature of *Biogeosciences*. It provides much more thorough quality control than other journals. Upon submission, manuscripts are quickly evaluated by one of the editors to ensure they are within the scope of the journal and have at least a minimum quality. If a manuscript successfully passes this

access review, it is immediately published on the web in *Biogeosciences Discussion* (BGD) and sent to two or more referees. From then on, the paper is open to discussion to any member of the community. Eight weeks later, the editor considers the referees' reports, the comments from the community, as well as the replies from the authors, and decides whether the manuscript is rejected or accepted for publication in *Biogeosciences* (BG), with or without revision. If the manuscript successfully passes peer review, it is published in BG and posted on the web together with the initial discussion paper, referees' reports and comments from the community and replies from the authors.

This innovative review process has many benefits over the traditional one: it enables discussion (which is quite poor in traditional journals) and leads to strict quality control. The full transparency leads to a better quality of submissions (because authors want to experience a public review process that is as smooth as possible), to more thorough and thoughtful referees' reports (because they will be published, anonymously or not), to full accountability of the handling editor (who is named in the final paper), as well as to unlimited input from the community. These benefits have clearly been demonstrated during the past three years of operation of *Atmospheric Chemistry and Physics*, the highly successful sister journal of BG.

We invite you to take part in, support and benefit from the current move towards open-access journals by considering *Biogeosciences* to publish your best papers on biodiversity and ecosystem function. Additional information can be found on the journal website (<http://www.biogeosciences.net>). ●

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