



News from above and below the waves

CIIMAR's monthly NEWS LETTER



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All Aboard

Strategic thinking in an Associate Laboratory

Dear Friends,

Six editions after its debut, **Waves** is now entering into its "post-embryonic stage"! It has been a very interesting challenge, which would not have been feasible without the collaboration of you all. **Waves** aims to report the scientific activities being conducted in CIIMAR not only for its members but for a wider general audience as well. This month, between 22-28 CIIMAR will be participating in Science and Technology Week. CIIMAR is deeply involved in several activities in several places around Porto (see "**This month at ...**" section). These efforts are of tremendous importance for the community.

Enjoy and Participate!!

The Editors



Project of the Month

CIIMAR research lines in action

Physiology of ion and iron regulation in the parasitic marine lamprey (*Petromyzon marinus*)

PI: Jonathan Wilson, Ecophysiology

From an evolutionary perspective, the marine lamprey (*Petromyzon marinus*) is an intriguing species to study because it represents a very basal vertebrate and thus may offer us some insight into the evolution of ion and iron regulation in vertebrates. In the proposed project, a multidisciplinary approach will be used to address the ontogeny of ion-regulation and the lamprey-host interaction through the development of tools to describe the basic mechanisms of ion regulation in lamprey (cell types and ion transporter expression and the modulation of their expression with salinity and life history stage) focusing on sodium, chloride and iron.

The project includes researchers from CIMAR (LECOF, BIOLIEF, LAUNCE), IBMC, INEGI, and U.Minho.



More at www.ciimar.up.pt

(IN)FORMATION BOGA

The Aquatic Organisms Bioterium (BOGA) presents the second edition of "Species (IN)FORMATION" where we talk about the main aquatic species used in our facilities.

Senegalese Sole (*Solea senegalensis*)

Senegalese sole is one of the most promising flatfish species in European aquaculture industry. The current market price in the EU is around 8 to 14 €/Kg, depending on size and season. Broodstock management and natural spawning in captivity has been achieved successfully since the end of the nineties. However, there have been some difficulties in producing large numbers of quality sole fry. This species, in our facilities, is mainly used by LANUCE in research both for diet optimisation and cultivation techniques to improve growth and muscle quality (<http://www.ciimar.up.pt/lanuce/?sec=home>). Other CIIMAR laboratories also use this species for immunology, toxicology and ecology studies.

Senegalese sole is a native species from the eastern Atlantic (North to southern Atlantic). Sole can be found in coastal zones (until ~ 60 m) and in estuaries. This species, like many other flatfish species, usually hides in the sand. They can mimic the sand colours (see attached photo) or bury themselves just keeping their eyes out. In this way, they can see and not be seen!

Sole is a marine species (33-35 %) that prefers water temperatures between 16 and 22 °C. Due to their benthic behaviour (hide under sand or mud) we should maintain this species in tanks with sand, to guarantee the animals' well being.

Together we will have more and better research in BOGA-



Open Calls

Funding Opportunities

1. FP7, ERA-NET Scheme, European Commission
Biodiversa ERA-NET Opens a Pan-European call for international research proposals on biodiversity and ecosystem services

The call addresses the following themes, across all ecosystems and organisms:

- a) **Relationships between biodiversity and ecosystem services;**
- b) **Valuation of biodiversity and ecosystem services** (monetary and non monetary), and better **incorporation of biodiversity and ecosystem services into society and policy.**

Dead line: 17 February 2011 (mandatory pre-registration stage, dead line: 5 January 2011)

Information: <http://www.eurobiodiversa.org/>

2. WELCOME II – Promoting the return of researchers to the European Research Area

The FCT launched the WELCOME II Programme allowing Post-doc researchers of any Member State / Associated Country nationality living and carrying out research for the past 3 years in Third Countries (such as USA, Japan or China) to join institutions in Portugal, by signing 3-year employment contracts with their host institution.

Dead line: 12 December 2010

Information: <http://alfa.fct.mctes.pt/welcome2>

3. Transnational cooperation 2011-2012
Funding applications for Research Mobility between Portugal and the Czech Republic (FCT/ASCR Agreement)

Dead line: 15 November 2010

Information: <http://alfa.fct.mctes.pt/apoios/cooptrans/checa/2010/index.phtml.en>

Funding applications for Research Mobility between Portugal and Serbia (FCT/MSTD Agreement)

Dead line: 30 November 2010

Information: <http://alfa.fct.mctes.pt/apoios/cooptrans/servia/2010/index.phtml.en>

Susana Moreira

This month at...

- ▶ **1 to 30** Exhibition "Litoral de Vila do Conde" - 9-19 h. CIIMAR Hall
- ▶ **1 to 30** Exhibition "O Clima está a mudar. E tu?", 14-18 h CMIA de Matosinhos
- ▶ **1 to 30** Exhibition "Vila do Conde NATURALmente", 10-18 h, CMIA of Vila do Conde
- ▶ **18 to 24** Scientific Cultural Week CMIA Vila do Conde
- ▶ **18 to 24** Scientific Cultural Week CMIA Matosinhos
- ▶ **8** Seminar *Oceanus* "Preparing for the sea: the physiology of anadromy and its importance to Atlantic salmon conservation" Dr. Stephen D. McCormick, 14:30, CIIMAR Auditorium.
- ▶ **15** Seminar *Oceanus* "INTERACTIONS OF EMERGING ORGANIC CONTAMINANTS WITH CYANOBACTERIUM *MICROCYSTIS AERUGINOSA*" Dr. Teodor Stoichev, 14:30, CIIMAR Auditorium
- ▶ **17** Seminar "Aquacultura" Dr. Rodrigo Ozório, 21 h, CMIA of Vila do Conde
- ▶ **18** Seminar *Oceanus* "Emergent cyclic imine marine toxins targeting nicotinic acetylcholine receptors" Dr. Jordi Molgo CNRS, 14.30 h, CIIMAR Auditorium
- ▶ **29** Seminar *Oceanus* "My name is Bo(u)nd: Double bound" Dr. Filipe Castro, 14:30, CIIMAR Auditorium.

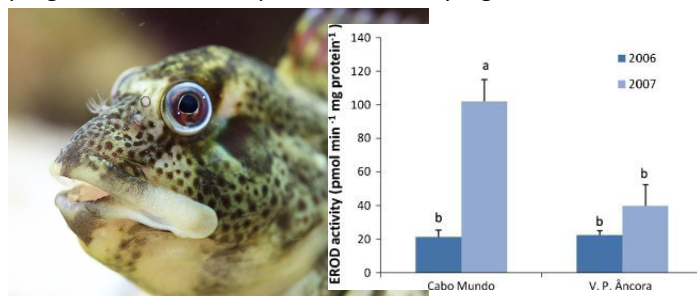
Paper of the month

CIIMAR publishes

Validating a multi-biomarker approach with the shanny *Lipophrys pholis* to monitor oil spills in European marine ecosystems.

M.M. Santos et al., 2010, Chemosphere

Oil spills are an importance source of polycyclic aromatic hydrocarbons (PAHs) in the aquatic environment. Intertidal communities are particularly sensitive since most organisms from these ecosystems are sessile or present reduced mobility. Hence, it is important to validate the use of resident species as sentinels to characterize the impact of oil spills on the rocky shores and the improvement during the restoration process. Recently the advantages of using the shanny *Lipophrys pholis* in pollution monitoring within the northwestern Atlantic coast has been pointed out. Therefore, with the aim of further validating the use of *L. pholis* in pollution monitoring associated with petrogenic hydrocarbon contamination, a multi-biomarker approach study was carried out 1 week after a moderate oil spill from the waste treatment plant (WTP) of the major Portuguese refinery in the north of Portugal (Petrogal). Fish collected at 2 km from the accident displayed a significant induction of ethoxyresorufin-O-deethylase activity (EROD) and fluorescent aromatic compounds (FACs) in bile (up to a 5-fold induction) in comparison with the pre-spill scenario, and a 15% induction in erythrocytic nuclear abnormalities (ENA), a biomarker of genotoxicity. In contrast, no significant differences were recorded in the reference site. In order to better characterize the time-course accumulation of FACs in bile after a PAH insult, laboratory exposure of *L. pholis* to benzo[a]pyrene (B[a]P) was performed. A clear dose-response accumulation of B[a]P metabolites was observed that closely reflected nominal exposure concentrations already after 3d. Overall, the findings of the present study highlight the potential of *L. pholis* in pollution monitoring dealing not only with chronic contamination, but also with oil spill accidents of a moderate scale. Taking into consideration that EROD and FACs determinations in *L. pholis* are cost effective, rapid and easy to use, they offer a great potential to be incorporated into risk assessment of PAHs in the scope of national monitoring programs and the European Water Policy legislation.



Have your say in *waved*

Contributions welcome. Contact Vitor Vasconcelos, Filipe Castro or Jonathan Wilson @ waves.ciimar@gmail.com