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**Crossing Boundaries: Integrative
Approaches to Malacology**

ABSTRACTS BOOK

Rio de Janeiro – Brazil
September 25-29th, 2012

Sociedade Brasileira de Malacologia



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Sociedade Brasileira de Malacologia – SBMa

Universidade do Estado do Rio de Janeiro - UERJ

Instituto de Biologia Roberto Alcântara Gomes

Departamento de Zoologia

Laboratório de Malacologia, Pavilhão Haroldo Lisboa da Cunha, sala 525/2


Rua São Francisco Xavier, 524

Maracanã, Rio de Janeiro, RJ. CEP: 20550-900

Tel: (21) 23340626

www.sbmalacologia.com.br

sbmalacologia@yahoo.com.br

A close-up photograph of a large snail with a brown, ribbed shell moving across a leafy ground. The snail's body is extended from the shell, and it is moving towards the bottom right of the frame. The background is filled with green leaves and some brown debris.

SYMPOSIUM V
SYSTEMATIC, TAXONOMY, ECOLOGY,
DIVERSITY OF LAND AND FRESHWATER
MOLLUSKS

Preliminary phylogeography of *Lymnaea stagnalis*: are there cryptic species of the great pond snail?

Maxim V. Vinarski¹; Katrin Schniebs²; Peter Glöer³; Anna K. Hundsdoerfer²

¹ Museum of Siberian Aquatic Molluscs, Omsk State Pedagogical University, 14 Tukhachevskogo Emb., Omsk, Russia, radix.vinarski@gmail.com

² Senckenberg Natural History Collections Dresden, Museum of Zoology, Königsbrücker Landstraße 159, D-1109 Dresden, Germany, katrin.Schniebs@senckenberg.de, anna.hundsdoerfer@senckenberg.de

³ Biodiversity Research Laboratory, Schulstraße 3, D-25491 Hetlingen, Germany, gloer@malaco.de

The great pond snail, *Lymnaea stagnalis* (L., 1758), is an aquatic gastropod with a Holarctic distribution. It is usually regarded as a single species with no subspecies (Jackiewicz, 1998; Glöer, 2002), but in the past there was a tendency to recognise several taxa of various rank. Kruglov & Starobogatov (1993) proposed splitting *L. stagnalis* into six distinct species. All works quoted above were based on morphology only. Remigio and Blair (1997) reported that there is a significant genetic divergence between European populations of *L. stagnalis*. Barges et al. (2001) stressed that geographically separated populations in Europe “show marked divergences”. We investigated the phylogeographic structure of *L. stagnalis* by using sequences taken from specimens corresponding to the morphotypes of *L. stagnalis* s.str. and *L. fragilis* (L., 1758) collected in Europe, Asia Minor, Siberia, and North America. Most specimens are distributed between two sister clades separated by a genetic distance of 0.085. This corresponds to the distances separating some ‘good’ (morphologically and genetically defined) species of lymnaeids, for example, *Radix balthica* (L., 1758) and *R. ampla* (Hartmann, 1821). It is more than twice higher than the genetic distance between lymnaeid subspecies (Vinarski et al., 2012). No conchological or anatomical characters to distinguish between these clades were so far revealed. The two large clades show almost clear geographic pattern of distribution. One of them includes all snails collected in Western and Central Europe apart from a few exceptions, whereas the second one comprises snails living in Ukraine, Western Siberia and Asia Minor. North American specimens of *L. stagnalis* belong to the ‘European’ clade. Specimens from Albania and Italy form a third branch that may indicate one more species, *L. raphidia* (Bourguignat, 1860). Possibly, it is a case of cryptic speciation, when two or three incipient species have still not diverged phenotypically enough to be discovered earlier on the basis of their morphology.

