

MALACOLOGICAL SOCIETY OF LONDON AGM
Species delimitation and chirality: molluscs as model organisms
17 April 2013
Flett Theatre, NHM London

Programme (tbc):

- 1.30-2.00pm: Malacological Society of London AGM
- 2.00-3.00pm: Nico Puillandre: Museum National d'Histoire Naturelle, Departement Systematique et Evolution, Paris "*Large scale species delimitation method for hyperdiverse group*"
- 3.00-3.30pm: coffee & tea
- 3.30-4.30pm: Menno Schilthuizen: Netherlands Centre for Biodiversity Naturalis, Leiden "*Through the looking glass: mirror images in animal form*"
- 4.30-6.00pm: wine and discussion

Large scale species delimitation method for hyperdiverse group
Nico Puillandre

Speciation is rarely an instantaneous event, but rather a process during which the characters (DNA, morphology, ecology...) will accumulate differences at various rhythms. Consequently, species delimitation methods should rely on several lines of evidence, and species should be considered as hypotheses that will be modified with additional characters. Furthermore, traditional approaches are sometimes not adapted, especially in hyperdiverse groups such as the Turridae (Gastropoda, Conoidea), where most of the species remain unknown and where homoplasy and plasticity makes morphological characters weakly reliable. We propose to overcome these difficulties by using first COI barcodes, analysed with a new method we developed, called ABGD (Automatic Barcode Gap Discovery), which automatically identifies in the pairwise distribution of genetic distances the limit between intra and interspecific distances. We use a range of prior intraspecific divergence to infer from the data a model-based limit for intraspecific divergence. The method then detects the barcode gap as the first significant gap beyond this limit and uses it to partition the data. Inference of the limit and gap detection are then recursively applied to previously obtained groups to get finer partitions until there is no further partitioning. Species hypotheses obtained with ABGD were also compared with results from GMYC, and then modified and validated using other available evidences (an unlinked gene – 28S, geographic and bathymetrical distributions and morphological characters) in an integrative context. Following this methodology, we delimited 94 species of Turridae, of which more than 50 are likely new to science.

Through the looking glass: mirror images in animal form
Menno Schilthuizen

Although many animals, especially the so-called Bilateria, seem bilaterally symmetric, many are internally strongly asymmetric, and some even externally. Snails are a good example of the latter. With the exception of their head and foot, their bodies are coiled helically. Although the spiral-like shape of snails is very familiar, the phenomenon poses many riddles. For example, we still don't fully understand the genetics and development of coiled development. Another mystery is how and why right-handed coiling evolves from left-handed coiling and vice versa, and how some species maintain both coiling morphs in the same population. In this talk, I will explore the evolution of asymmetry in snails, and then expand the malacological insights to asymmetry in the body shapes of other animals.

Registration: Registration is [free](#), but please email the organizer, Suzanne Williams (s.williams@nhm.ac.uk) and let her know you will attend the meeting.