A special issue on DNA barcoding edited by the Belgian Network for DNA Barcoding (BeBoL)

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What is BeBoL?

The Belgian Network for DNA Barcoding (BeBoL) was launched in 2011. It is a multidisciplinary network of 25 research teams active in DNA barcoding and molecular systematics. Between 2011 and 2013, collaborative projects of BeBoL resulted in about 45 ISI publications on DNA barcoding for integrative taxonomy, phylogenetics, phylogeography, identification of cryptic species, biosecurity, forensics, and conservation. BeBoL activities also included organization of congresses (Third European Conference for the Barcode of Life in 2012, DNA in forensics 2014), symposia, workshops and training activities.

Special issue on DNA barcoding

In December 2013, BeBoL edited a special issue of ZooKeys (issue 365) entitled "DNA barcoding: a practical tool for fundamental and applied biodiversity research". This open access publication comprises 21 research papers and includes, among others, contributions of BeBoL partners and participants of the ECBOL3 conference. Contributions focus on many aspects of the DNA barcoding of Life initiative (more info below)
The special issue is available at http://zookeys.pensoft.net/browse_journal_issue_documents?issue_id=377

Main DNA Barcoding partnerships of BeBoL (contact on www.bebol.myspecies.info)

- **Reptiles:** RBINS, UAntwerp
- **Forensic animals:** NICC, RBINS, RMCA
- **Bacteria and Fungi:** UGhent, UCL, RMCA, RBINS
- **Flatworms:** UHasselt, KULeuven, RMCA, RBINS
- **Nematodes:** UGhent, RBINS
- **Slugs and snails:** RBINS, RMCA, UAntwerp, INBO
- **Ticks:** UAntwerp, RBINS, ITM
- **Butterflies and moths:** RMCA, INBO, UAntwerp
- **Caddisflies:** UAntwerp, RBINS
- **Social insects:** ULB, RBINS
- **Mosquitoes and flies:** RMCA, RBINS, NICC, ITM, CRA-W
- **Amphipods**: RBINS, UCL
- **Fishes:** RMCA, RBINS, KULeuven
- **Mammals**: UAntwerp, RMCA, RBINS, NICC
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Topics covered by the special issue:

Technical challenges:

1) A time series study of sequencing success rate with spiders preserved in alcohol (Miller et al.); **2)** DNA barcoding of processed and poorly conserved plant materials (Mankga et al.); **3)** Biobanking in molecular taxonomy (Astrin et al.); **4)** R package to calculate *ad hoc* distance thresholds producing species identifications with an estimated relative error probability (Sonet et al.).

Testing the utility of COI and alternative markers for species identifications

1) Tackling the problematic use of COI in two groups of flatworms (Vanhove et al.); **2)** addressing taxonomic questions in the slug genus *Arion* (Breugelmans et al.), **3)** in a species complex of marine gastropods (Van der Bank et al.) and **4)** in stag beetle species (Cox et al.); **5)** distinguishing North American and West European blow flies (Jordaens et al.); **6)** DNA barcoding Central Asian *Colias* butterflies (Laiho & Ståhls); **7)** exploring the diversity of a family (Hybotidae) of dance flies (Nagy et al.); **8)** DNA barcoding Dutch birds (Aliabadian et al.); **9)** testing alternative markers to identify plants of the genus *Phoenix* (Arecaceae) (Ballardini et al.) and **10)** of the family Combretaceae (Gere et al.).

Validation and application of DNA barcoding identification pipelines

1) Comparison of several DNA markers to identify fish landings (Ardura et al.); **2)** validation tests of DNA barcode libraries for the identification of European fruit fly species (Smit et al.) and **3)** of flies of forensic interest in Belgium (Sonet et al.); successful application of DNA barcoding in order to **4)** monitor the marine mammal biodiversity along the French Atlantic coast (Alfonsi et al.), **5)** contribute to the conservation and the valorisation of forest resources (Laiou et al.) and **6)** differentiate invasive *Dreissena* (Bivalvia) species (Marescaux & Van Doninck); **7)** usage of dog mitochondrial DNA for forensic purposes (Verscheure et al.).

References are all from the special issue: Nagy ZT, Backeljau T, De Meyer M, Jordaens K (Eds) DNA barcoding: a practical tool for fundamental and applied biodiversity research. ZooKeys 365: 1–3. doi: 10.3897/zookeys.365.6681