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2015

# Phylogenetic signal of nematocysts in Staurozoa (Cnidaria)

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## June 26<sup>th</sup> to 30<sup>th</sup>, 2015

### Casa Grande Hotel Resort in Guarujá Brazil



Evolution 2015 is the joint annual meeting of the **Society for the Study of Evolution** (<http://www.evolutionarybiology.org/>) (SSE), the **Society of Systematic Biologists** (<http://systbiol.org/>) (SSB), and the **American Society of Naturalists** (<http://www.amnat.org/>) (ASN). The meeting this year will be held on June 26-30 at the **Casa Grande Resort** (<http://www.casagrandehotel.com.br/pt/Eventos-e-Convencoes>) in Guarujá, Brazil. Evolution 2015 in Brazil will be a great opportunity for the international scientific community of Evolutionary Biologists to interact with Brazilians to foster scientific cooperation programs and discuss their research.

This meeting is the premier annual opportunity for sharing scientific research related to evolution. Symposia presentations, concurrent contributed papers, and poster sessions will be presented by the 1,500 expected participants. Product and service providers will contribute to the meeting through their exhibits.

**Sunday June 28, 19:00 - 21:00 PM**

**Poster Session II**

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|--------|--|
| PO-603 | Reduced cellular immune response in social insect lineages<br>Margarita M López-Urbe   |
| PO-612 | Phylogenetic signal of nematocysts in Staurozoa (Cnidaria)<br>Lucilia Souza Miranda  |
| PO-615 | Revisiting ecogeographic hypotheses behind latitudinal morphological variation: climatic correlates of body size in Torrent Ducks<br>Natalia Gutierrez-Pinto                           |
| PO-637 | BREEDING SYSTEM EVOLUTION INFLUENCED THE GEOGRAPHIC EXPANSION AND DIVERSIFICATION OF THE CORVIDES<br>Petter Zahl Marki   |
| PO-638 | Breeding system transitions and the evolution of reproductive isolation in the large and diverse tropical genus <i>Dendrobium</i> (Orchidaceae)<br>Fabio Pinheiro                      |
| PO-649 | Diversification dynamics of Placentalia (Mammalia): integrating the fossil record with molecular phylogenies<br>Mauro Toshio Caiuby Sugawara   |
| PO-651 | Use of wing geometry to diagnose cryptic species of the <i>Anopheles</i> ( <i>Nyssorhynchus</i> ) <i>strodei</i> complex<br>Flávia Virginio Fonseca                                    |
| PO-666 | Variability in the micro and macroevolutionary scales: a review of the patterns of morphological variability in the Cnidaria Medusozoa<br>Amanda Ferreira e Cunha                      |
| PO-674 | The turtle ants: understanding the diversification of a socially complex lineage and its associated microbes<br>Shauna Price   |
| PO-681 | First molecular phylogeny of the sea-star <i>Echinaster</i> (Asteroidea:Echinodermata) reveals a non-monophyletic genus and insights for evolutionary history<br>Elinia Medeiros Lopes |
| PO-683 | Molecular evolution of Odorant Receptors proteins gene family in two closely related <i>Anastrepha</i> fruit flies .<br>Diana Marcela Rojas Gallardo                                   |
| PO-684 | Scorched Mussels ( <i>Brachidontes</i> spp.) from the Southwestern Atlantic: the role of the Isthmus of Panama and the Amazon River in their Speciation<br>Berenice Trovant            |
| PO-685 | A BLASTP-free clustering method for classifying orthologs within a single gene family<br>Stephen Bond  |
| PO-686 | Tempo and mode of climatic niche evolution in Primates<br>Andressa Duran   |
| PO-687 | Molecular phylogeny of the <i>Utricularia</i> sect. <i>Foliosa</i> Kamiénski complex addressed using rps16, trnD-T, trnL-F and ITS sequences<br>Paulo Cesar Baleeiro                   |
| PO-688 | Diversification at large body sizes: Morphological novelty and ecological opportunity in Neotropical armoured catfishes (Loricariidae)<br>Fabio F Roxo                                 |

## Phylogenetic signal of nematocysts in Staurozoa (Cnidaria)

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Description of cnidome is considered important information for taxonomic studies of Cnidaria, although their value in identifying species has been recently questioned. Staurozoa has the least diverse cnidome among medusozoan cnidarians, with two types of nematocysts, euryteles and isorhizas. These nematocysts are concentrated in two main regions: the secondary tentacles and the white spots on the subumbrella. The aim of this study is to assess the taxonomic and evolutionary information contained by the cnidome from 17 species of Staurozoa. We employ our working hypothesis of evolutionary relationships within Staurozoa to comparatively analyze the phylogenetic signal of nematocysts from secondary tentacles and white spots of nematocysts, as measured with traditional and geometric morphometrics. Additionally, we generate a phylogenetic hypothesis based exclusively on continuous characters derived from nematocysts, as an independent test of the molecular hypothesis. Our results suggest that there is significant phylogenetic signal in the nematocysts from secondary tentacles, and the combined use of nematocysts from secondary tentacles and white spots can be useful to distinguish species. The possible relationship of phylogenetic signal and development of nematocysts in Staurozoa is discussed, as well as the possible evolutionary pressures involved in the presence and absence of phylogenetic signal.