



**XV International Symposium on Flatworm Biology**  
CEBIMar. BRAZIL, 2023

## **Program and Abstracts**



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**July 24-28, 2023**

**Centro de Biologia Marinha**

**Universidade de São Paulo, SP, Brazil**



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**Program and Abstracts**

## **Convenor**

Fernando Carbayo, Universidade de São Paulo, Brazil

## **Organizing Committee**

Álvaro Migotto, Universidade de São Paulo, Brazil

Fernando Carbayo, Universidade de São Paulo, Brazil

Fernando Portella de Luna Marques, Universidade de São Paulo, Brazil

## **Scientific Committee**

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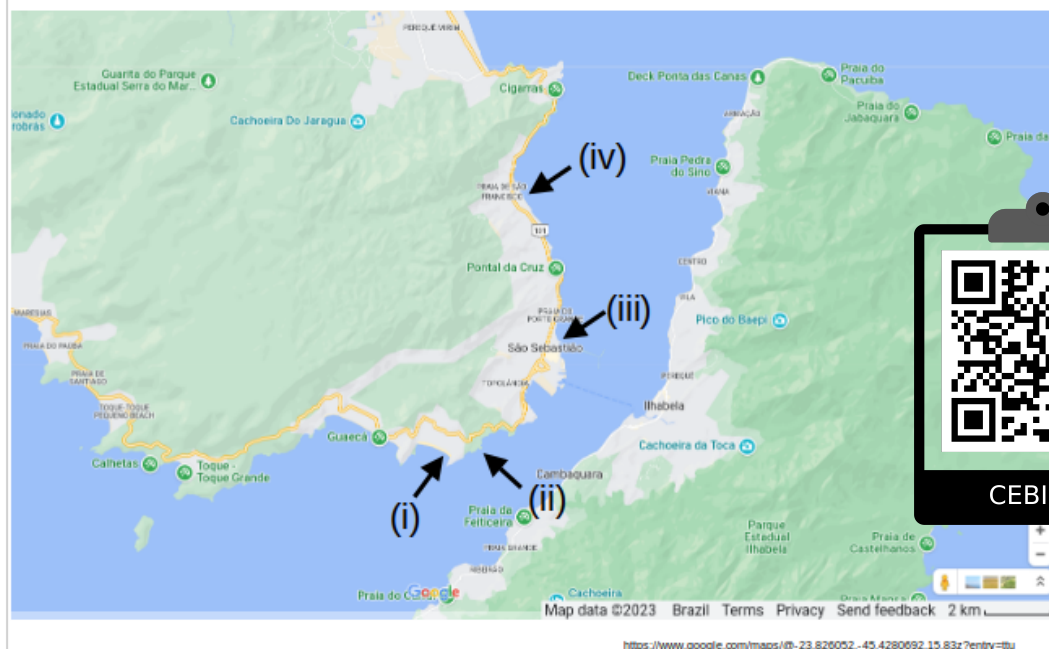
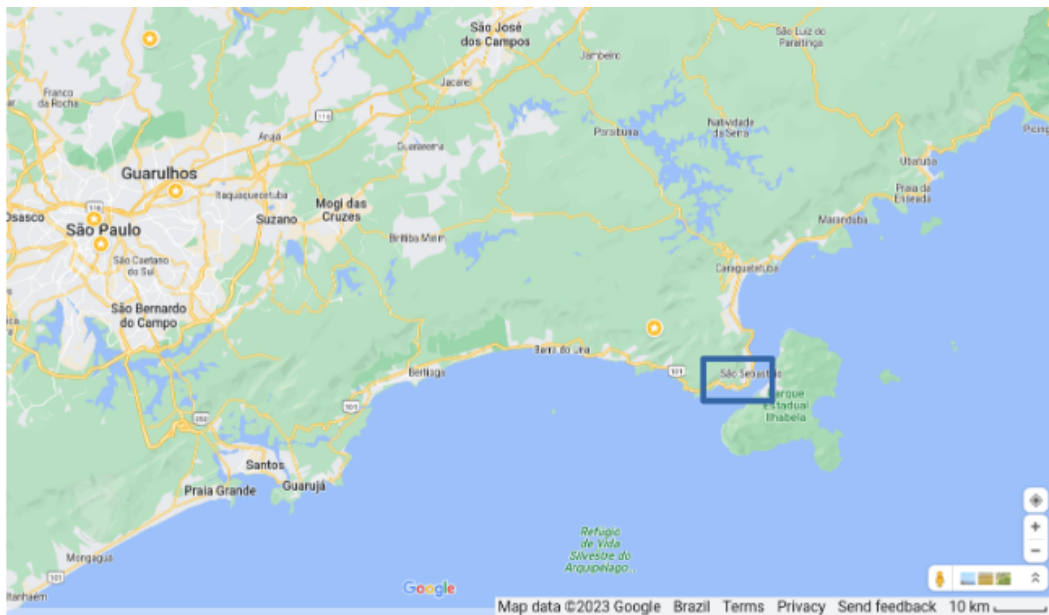
Beatriz Elias Ranelli, Universidade de São Paulo, Brazil

Karine Goubetti de Oliveira, Universidade de São Paulo, Brazil

Yolanda O. Portella de Luna Marques Ferreira, Universidade Estadual Paulista, Brazil

# Synthetic Program

24 July, 17.00-20.00	(i) Material pickup and Welcome reception (Official Hotel)
25 July, 08.30-09.30	(ii) Material pickup (CEBIMar)
26 July, 20.00	(iii) Official dinner (Restaurante Brasileira Gourmet)
28 July, 9.00-17.00	(iv) Boat excursion (Pier São Francisco, São Sebastião)
25-27 July, 8.50-18.00	(ii) Scientific program - see next pages (CEBIMar)



## TUESDAY, 25

- 09.00 - F. Carbayo:  
09.10 Opening of the XV ISFB
- Session 1: Phylogenetics**  
**Chair: Christopher Laumer**
- 09.10 - <sup>1</sup> K. De Baets:  
09.50 Constraining the deep origin and evolution of parasitic flatworms with fossil evidence and novel co-phylogenetic methods
- 09.50 - <sup>2</sup> M. Lorenzo, R. Sabaté, M. Álvarez-Presas, D. Dols-Serrate, L. Leria, F. Carbayo & M. Riutort:  
10.10 Phylogeography and historical processes shaping the genetic diversity and distribution of *Cephaloflexa bergi* in the Brazilian Atlantic Forest
- 10.10 - <sup>3</sup> M. Riutort, D. Dols-Serrate, L. Guo & L. Kruglyak:  
10.30 Chromosomal rearrangements, hybridization and more: the complex evolutionary history of *Dugesia* in the Corso-Sardinian archipelago
- 10.30 - **Coffee- break**  
11.00
- Session 2: Cell biology and evolution**  
**Chair: Jordi Solana**
- 11.00 - <sup>4</sup> L. O. Saad, T. Cooke, K.D. Atabay, P.W. Reddien & F. D. Brown:  
11.20 Novel mechanism for evolutionary trait loss: lower rates of eye-specialized neoblasts led to eye reduction in cave planarians
- 11.20 - <sup>5</sup> N.W.L. Van Steenkiste, K.C. Wakeman & B.S. Leander:  
11.40 Patterns of host-parasite associations between marine microturbellarians (Platyhelminthes) and rhytidocystids (Apicomplexa) do not show evidence of phyllosymbiosis
- 11.40 - <sup>6</sup> L. Gąsiorowski, C. Chai, A. Rozanski, G. Purandare, B. Wang & J. Rink:  
12.00 Stepwise evolution of adult pluripotent cells in flatworms
- 12.00 - **Lunch**  
14.20
- Session 3: Anthropogenic disturbance**  
**Chair: Veronica Bulnes**
- 14.20 - <sup>7</sup> G.K. Kasembele, A.C. Manda, M.W.P. Jorissen, W.J. Luus-Powell, W.J. Smit & M.P.M. Vanhove:  
14.40 Assessment of anthropogenic impacts on the aquatic environment and biodiversity in the Katangese Copperbelt Area: a parasitological approach (DR Congo)
- 14.40 - <sup>8</sup> S. Noël, V. Roy, Y. Fourcade & L. Dupont:  
15.00 The invasion of *Obama nungara* (Platyhelminthes: Geoplanidae) in metropolitan France and its impact on earthworm communities
- 15.00 - <sup>9</sup> J.-L. Justine, L. Winsor, D. Gey, P. Gros, J. Thévenot, L. Dupont, V. Roy, Y. Fourcade & Romain Gastineau:  
15.20 Alien land planarians in France (Platyhelminthes, Geoplanidae): Ten years after
- 15.20 - **Coffee-break**  
15.40

TUESDAY, 25

**Session 4: Species interactions**

**Chair: Marco Curini-Galletti**

- 15.40 - 16.00 <sup>10</sup> M. Monnens, T. Artois, Y.L. Diez, K. Fraser, M. Santos, K. Smeets, N.W.L. Van Steenkiste & M.P.M. Vanhove:  
Molecular evolution of rhabdocoel flatworms as a case study on the acquisition of endosymbiosis
- 16.00 - 16.20 <sup>11</sup> J. Reyes, D. Binow, R.T. Vianna, F. Brusa, K.D. Colpo & S.E. Martins:  
Details of a tumultuous relationship between two Temnocephala species and a freshwater snail (*Pomacea canaliculata*) in a southern Brazilian wetland
- 16.20 - 16.40 <sup>12</sup> K.J.M. Thys, M.P.M. Vanhove, M.V. Steenberge & N. Kmentová:  
A failure to diversify on a surface of exchange: the case of *Dolicirroplectanum lacustre*, the monogenean parasite infecting African latids
- 16.40 - 17.00 **1-minute oral presentations of posters:**  
**Marine flatworms**
- <sup>13</sup> J. Bahia, J. Jung, H. Kil, H. Kim, K. Kim & E. Nam:  
New records of Polycladida (Platyhelminthes: Rabdithophora) from South Korea
- <sup>14</sup> Y. Oya & A. Tsuyuki:  
Distribution patterns of five *Notocomplana* (Polycladida, Acotylea) species along the coast of Japan
- <sup>15</sup> M. Gammoudi, J. Girstmair, I. Dittmann, B. Egger, P. Tomancak & V. N. Bulnes:  
A new cotylean polyclad flatworm species from Ghar El Melh lagoon (Northern Tunisia)
- <sup>16</sup> A. Tsuyuki, Y. Oya, N. Jimi, Y. Kushida, H. Kohtsuka & H. Kajihara:  
Discovery of an undescribed polyclad genus associated with octocorals in shallow waters in Japan
- <sup>17</sup> K. Kim & J. Jung:  
Rhabdocoela Research in Korea: 4-Year Overview and Findings
- <sup>18</sup> R.K. Okazaki & H. Kajihara:  
Proseriatan turbellarians in the egg mass of the commercially important Horsehair crab, *Erimacrus isenbeckii*, from Hokkaido, Japan
- <sup>19</sup> T. Cortez, T. Cândido & S.C.S. Andrade:  
Hidden but never forgotten: exploring molecular diversity through species delimitation of proseriates across the Brazilian coastline
- <sup>20</sup> G. Marangoni, T. Cortez & S.C.S. Andrade:  
Meiofauna Proseriata community diversity along the Brazilian coast
- 17.00 - 18.00 **Poster session 1: Marine flatworms**

## WEDNESDAY, 26

### Session 5: Evolutionary patterns: Phylogenomics and Morphology

**Chair: Miquel Vila-Farré**

- 08.50 - 21 Invited speaker. L. Benítez-Álvarez:  
09.30 Understanding evolutionary patterns in the diversification of free-living planarians: From ribosomal genes to phylogenomics and comparative genomics
- 09.30 - 22 C. Laumer:  
09.50 Establishing a genomics-compatible phylogenetic outline of microturbellarian biodiversity through nanopore transcriptome skimming
- 09.50 - 23 C. Hahn, P. Resl, H. Hansen, W. Boeger, C. Bouguerche, X. Ding, O. Ditrich, J.-L. Justine, N. Kmentova, S. Leeming, L. Du Preez, S. Stojanovski, D. Blazekovic, A. Tripathi, D.B. Vaughan, L. Zangl, M. Kasny, M.P.M. Vanhove & S. Koblmüller:  
10.10 The interrelationships of Neodermata - a phylogenomic perspective
- 10.10 - 24 J.P.S. Smith III:  
10.30 Evolution of the Proboscis Armature in Schizorhynchia: What we presently know
- 10.30 - **Coffee- break**  
11.00

### Session 6: Cell Biology and regeneration

**Chair: Federico Brown**

- 11.00 - 25 B. Chandra, M.G. Voas, E.L. Davies & R.H. Roberts-Galbraith:  
11.20 Transcription factor Ets-1 regulates glial maintenance and regeneration in *Schmidtea mediterranea*
- 11.20 - 26 M. Vila-Farré & J.C Rink:  
11.40 Probing the evolutionary dynamics of whole-body regeneration within planarian flatworms
- 11.40 - 27 E. Emili & J. Solana:  
12.00 Allometry of cell types in planarians by single cell transcriptomics
- 12.00 - **Lunch**  
14.20

### Session 7: Diversity

**Chair: Jean Lou Justine**

- 14.20 - 28 M. Curini-Galletti, D. Fontaneto, M. Gammoudi & A. Martínez:  
14.40 The census of marine Platyhelminthes: an update from the Western Mediterranean
- 14.40 - 29 V. N. Bulnes & M. L. Adami:  
15.00 Insights into the rocky shore intertidal microturbellarians of Northern Patagonia
- 15.00 - 30 J.N. Brand:  
15.20 Support for a radiation of free-living flatworms in Lake Tanganyika
- 15.20 - **Coffee-break**  
15.40



## WEDNESDAY, 26

### Session 8: Evolution and Ecology

Chair: Ulf Jondelius

- 15.40 - 16.00 <sup>31</sup> V.E.O. Milanese & F. Carbayo:  
Do land planarians (Platyhelminthes, Tricladida, Geoplanidae) regenerate?
- 16.00 - 16.20 <sup>32</sup> N. Kmentová, K. Thys, J. Vorel, A.J. Cruz-Laufer, C. Hahn, S. Koblmüller, M. V. Steenberge, L. Makasa, A.C. Manda, T.M. N'sibula, P.M. Mulungula & M.P.M. Vanhove:  
Mystery of the parasites inhabiting pelagic zones: the case of monogeneans in Lake Tanganyika
- 16.20 - 16.40 <sup>33</sup> T.P. Gobbin, M.V. Steenberge, M.P.M. Vanhove:  
Temporal changes in the flatworm parasite communities of Lake Victoria cichlid fish in response to ecosystem changes
- 16.40 - 17.00 **1-minute oral presentations of posters:**  
**Terrestrial flatworms**
- <sup>34</sup> I. Rossi, A. Hartmann, A.M. Leal-Zanchet & V.H. Valiati:  
A new genus and three new species of land flatworms (Platyhelminthes: Geoplaninae) revealed by integrative taxonomy
- <sup>35</sup> B.E. Ranelli & F. Carbayo:  
Taxonomic study of a land planarian species of *Obama* (Platyhelminthes, Tricladida) from Serra do Tabuleiro, South Brazil
- <sup>36</sup> J.-H. Song & F. Carbayo:  
Two new bipaliin species (Bipaliinae, Geoplanidae, Tricladida) from South Korea studied through an integrative approach
- <sup>37</sup> I. Rossi, P.K. Boll & A.M. Leal-Zanchet:  
Multispecies multicolor: resolving the century-old taxonomic mess of *Geoplana multicolor* Graff, 1899 (Platyhelminthes: Geoplanidae)
- <sup>38</sup> K.G. Oliveira, M. Álvarez-Presas & F. Carbayo:  
Description and phylogenetic positioning of two new species of *Amaga* and *Bogga* (Geoplaninae)
- <sup>39</sup> S.A. de Waart & R. Sluys:  
Colonization history and diversification of land planarians in the Gulf of Guinea archipelago
- <sup>40</sup> D. Lago-Barcia, L.A. Conti, E. Solà, F. Carbayo & M.B DaSilva:  
Land planarians (Geoplanidae) in the Atlantic forest: Time of diversification and influence of climatic fluctuations in the formation of areas of endemism
- <sup>41</sup> Y. Fourcade, L. Winsor & J.-L. Justine:  
Ecological niche modelling reveals the global invasion risk of bipaliin flatworms under climate change
- 17.00 - 18.00 **Poster session 2: Terrestrial flatworms**

## THURSDAY, 27

### Session 9: Genomics

Chair: **Marta Riutort**

- 08.50 - 42 Invited speaker. L. Guo:  
09.30 From Genetics to Sex Chromosome Evolution: a tale in *Schmidtea mediterranea*
- 09.30 - 43 J. Schlagbauer, P. Resl, L. Zangl, S. Koblmüller & C. Hahn:  
09.50 Genomic insights into an explosive adaptive radiation of *Gyrodactylus* spp. (Monogenea)
- 09.50 - 44 J.N. Brand, M. Ivankovic, K. Zadesenets, L. Pandolfini, T. Brown, M. Pippel, A. Marquez, A.  
10.10 Rozanski, L. Robledillo, M. Vila-Farré, S. Zhang, A. Papantonis & J. C. Rink:  
The comparative analysis of *Schmidtea* genomes reveals rapid structural evolution
- 10.10 - 45 Ulf Jondelius: the genome of *Nemertoderma westbladi* and comparative genomics of  
10.30 Acoelomorpha

10.30 - **Coffee- break**  
11.00

### Session 10: Molecular Cell Biology

Chair: **Rachel H. Roberts-Galbraith**

- 11.00 - 46 J. Montagne & U. Koziol:  
11.20 Stem cell proliferation and differentiation during larval metamorphosis of the parasite  
*Hymenolepis microstoma* (Cestoda)
- 11.20 - 47 E. Failache, M. Preza, J. Montagne, I. Guarnaschelli & U. Koziol:  
11.40 Massive loss of somatic nuclei and G2 stem cell quiescence in larval development of the  
cestode *Hymenolepis microstoma*
- 11.40 - 48 I. Guarnaschelli, U. Koziol & A. Lima:  
12.00 Cellular organization and composition of the tegument of cestodes

12.00 - **Lunch**  
14.20

### Session 11: Taxonomy and Nomenclature

Chair: **Maarten P.M. Vanhove**

- 14.20 - 49 J.-L. Justine, C. Bouguerche, Z. El M. Ayadi, F. Tazerouti & R. Gastineau:  
14.40 Mitochondrial genomes and correct morphological identification and characterization in large  
Monogenea
- 14.40 - 50 F. Carbayo:  
15.00 Rise and (almost) fall of the name *Geoplana* (Platyhelminthes, Tricladida)
- 15.00 - 51 J.-H. Song & F. Carbayo:  
15.20 Present and future of the biological study on Korean terrestrial flatworms (Geoplanidae,  
Tricladida, Platyhelminthes)
- 15.20 - **Coffee-break**  
15.40

THURSDAY, 27

**Session 12: Barcoding**

**Chair: Julian P.S. Smith III**

- 15.40 - 16.00 <sup>52</sup> N. Kmentová, S. Rosell, J. Reniers, A. Jacobs, S. de Waart, A. K. Murchie & M.P.M. Vanhove:  
Experiments and barcoding to improve policy preparedness for detection of the invasive New Zealand flatworm *Arthurdendyus triangulatus*
- 16.00 - 16.20 <sup>53</sup> M. Greilhuber, B. Egger, P.R. Frade & E. Haring:  
Integrative taxonomy and DNA barcoding of Austrian turbellarians
- 16.20 - 16.40 <sup>54</sup> L. Zangl, J. Schlagbauer, I. Prikrylova, A. Simkova, M.P.M. Vanhove, S. Koblmüller & C. Hahn:  
Novel primers and a rapid COI barcoding protocol for *Gyrodactylus* spp. (Monogenea)
- 16.40 - 17.00 **1-minute oral presentations of posters:**  
**Miscellaneous**
- <sup>55</sup> N.W.L. Van Steenkiste, A. Closs, T. Froese & B.S. Leander:  
Molecular phylogenetic position of a rare and enigmatic meiofaunal flatworm from the Pacific Ocean: an undescribed species of *Retronectes* (Platyhelminthes: Catenulida)
- <sup>56</sup> A. Catalá, L. Benítez-Álvarez, Y.L. Diez & M. Riutort:  
Insights on the freshwater triclad fauna (Platyhelminthes: Tricladida) from Cuba
- <sup>57</sup> L.P.A. Mulvey, R.C.M. Warnock & K. De Baets:  
Where traditional extinction estimates fall flat: using novel cophylogenetic methods to estimate extinction risk in platyhelminths
- <sup>58</sup> Z.E.M. Ayadi, F. Tazerouti, D. Gey & J.-L. Justine:  
Plectanocotylidae (Monogenea) from Mediterranean triglid fishes
- <sup>59</sup> C. Bouguerche, J.-L. Justine, D.C. Huston, T.H. Cribb, E. Karlsbakk, M. Ahmed & O. Holovachov:  
Importance of museum collections in accessing host-parasite relationships in some poorly known trematodes: a case study of *Progonus* Looss, 1899 and *Derogenes* Lühe, 1900 from Scandinavian, Arctic and Mediterranean waters
- <sup>60</sup> C. Bouguerche, J.-L. Justine, M. Ahmed & O. Holovachov:  
Some Lepocreadiidae Odhner, 1905 from the Northeast Atlantic: New species of *Opechona* Looss, 1907 from the Swedish coast of Skagerrak
- <sup>61</sup> V. Roy, M. Ventura, Y. Fourcade, J.-L. Justine, A. Gigon & L. Dupont:  
Metabarcoding of earthworm species in the gut content of the invasive land flatworm *Obama nungara*
- <sup>62</sup> P.K. Boll, I. Rossi, S.V. Amaral & A.M. Leal-Zanchet:  
Regeneration in *Luteostriata abundans* (Graff, 1899), a Neotropical land planarian (Platyhelminthes: Geoplanidae)
- 17.00 - 18.00 **Poster session 3: Miscellaneous**

**A new cotylean polyclad flatworm species from Ghar El Melh lagoon (Northern Tunisia)**

M. Gammoudi<sup>1,\*</sup>, J. Girstmair<sup>2</sup>, I. Dittmann<sup>3</sup>, B. Egger<sup>3</sup>, P. Tomancak<sup>2</sup> & V.N. Bulnes<sup>4</sup>

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A new *Phrikoceros* polyclad species is described from Ghar El Melh lagoon, a natural seawater lagoon situated in the north of Tunisia. Specimens of the new species were handly collected among Tunicates. They were photographed, measured, and fixed with Bouin's fluid. The embedded specimens in paraplast were serially sectioned at 7 micra, and stained with Azan. DNA was extracted from a small piece of tissue and PCR for partial small and large nuclear ribosomal subunits (18S and 28S) was performed.

Our new species is characterized by black spots on the dorsal surface contrary to the white spotted dorsal colour pattern of its congeners. The small, narrow, ovaly-elongated pharynx is located in the anterior third of the body and stretches about 1/6 of the entire body length. The mouth opens in the centre of the pharyngeal cavity. The main intestine reaches 7/8 of the body length and extends from the level of the brain, up to almost the distal margin. The male copulatory apparatus is directed to the front and provided with a free prostatic vesicle half being as big as the seminal vesicle and slightly elongated. The penis papilla is armed with a sclerotized stylet. The female genital pore is located 0.5 mm behind the male one. The vagina is provided with a glandular pouch.

We provide some insights into the biology of this species, like the plastic tentacle configuration and the variability of body form and outline. We also include some observations about the protusion of the male copulatory organ. The new species was found among tunicates of the species *Ciona intestinalis*, suggesting a posible trophic relationship.

**Keywords:** Polyclads, *Phrikoceros*, Mediterranean, Tunisia, lagoon