



The Ecdysiast

The Newsletter of The Crustacean Society

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Message from the President...

Dear TCS-colleagues,

This message comes (or at least has been written) in a time of uncertainty and anxiety due to the coronavirus (COVID-19) pandemic, in a time of physical distancing, quarantine and isolation. I assume none of us has ever experienced an even a remotely similar situation, and I deeply hope that you and your loved ones are healthy.

The pandemic has also impacted the TCS activities. Our Brazilian colleagues, especially the organizers of the regular Mid-Year meeting, Rogério Caetano Costa and Marcelo Antonio Amaro Pinheiro, did an excellent job to prepare this joint meeting in Santos,

Brazil, scheduled for September 2020. But analyzing the Brazilian, as well as the international situation regarding the coronavirus, unfortunately it was inevitable to postpone the meeting in 2020 and look for another date for the event. After numerous E-mails and videoconferences with the TCS-Board members and our colleagues in Brazil, France, and New Zealand, we all agreed on the following dates for the TCS midyear meetings (independent from the SICB-meetings): 2020: no TCS mid-summer meeting; July 2021: Paris, France; June 2022: Santos, Brazil; 2023: ICCX at Wellington, New Zealand (see also joint letter about this topic in this Ecdysiast issue).

In this context, I would like to express my sincere gratitude to all the colleagues involved in the re-arrangement of these meetings, especially for their solidarity and willingness to help each other and their flexibility to eventually change the date of their meeting. Overall, it was a very positive experience how all together we solved the problem of the inevitable cancelation of the 2020-meeting in Brazil.

The COVID-19 has also impacted the printing, distribution and delivery of the printed version of the *Journal of Crustacean Biology* (JCB). The publisher of JCB, Oxford University Press (OUP), informed us recently that they made the difficult decision to hold printing of JCB with immediate effect. The principal problem anticipated by OUP was a significant interruption in distribution and delivery of the journal. Due to the current situation, the capacity of shipping JCB via airfreight is severely reduced. Moreover, many of the customers are not currently available to receive printed copies of the journal and as a consequence, OUP anticipated significant returns. We are in constant communication with OUP in order to find the best solutions in these difficult and complicated times.

But there is also “nonCOVID-19” news. In January 2020, we had again a successful joint meet-



ing with the Society for Integrative and Comparative Biology (SICB) in Austin, Texas. I would like to thank our SICB Liaison Officer, John Zardus, for setting up the TCS part of this meeting, which allowed us to present TCS and JCB to a broad audience. There were numerous oral presentations and posters related to crustaceans, and our new Program Officer, D. Christopher Rogers, did an excellent job organizing the evaluation for the TCS student presentation awards. The results of this competition are summarized by Christopher in another contribution in this *Ecdysiast* issue.

During the TCS-Board meeting held during the SICB-meeting Austin, Shirley Lim handed the TCS-presidency over to me and expressed our gratitude to the outgoing TCS Officers: Benny Chan (Program Officer), Tohru Naruse (Asian Governor), and Alexandre Oliveira de Almeida (Latin American Governor) for their support and contributions to TCS. On the other hand, welcome to the new TCS Officers: Benny Chan (President-Elect), D. Christopher Rogers (Program Officer), Laura López-Greco (Latin American Governor), and Darren Yeo (Asian Governor). I have no doubt that we will form an excellent team to navigate TCS in these complex times.

Shirley is now Past-President, and I would like to take the opportunity to say a big THANK YOU for her work as TCS-President. It was a pleasure learning from her during my two years as President-Elect. Her warm, charming and friendly manner was appreciated by all of us and helped to create a pleasant and fruitful atmosphere during the Board meetings. She consolidated the collaboration with OUP and Burk and Associates, Inc. (BAI), which has been fundamental for a smooth functioning of TCS. I am looking forward to receiving her valuable feedback as Past-President.

As usual, TCS elections will be held in the last quarter of this year. In 2020 we will have the elections for Treasurer, Secretary, European, and Indo-Pacific Governor. If you are interested in these positions, please do not hesitate to contact me or any of the TCS-Board members (<http://www.thecrustaceansociety.org/society-officers>). We are looking for enthusiastic members, who are willing to get involved and to contribute to the TCS-family.

Membership renewal is vital for TCS. We realized that the membership of an impressive number of (previous) members has expired, so we decided that the regional governor is the appropriate person to contact individually these (ex-) members in order to find out what has happened. Please continue supporting TCS by renewing your membership!

Please take care and stay healthy.

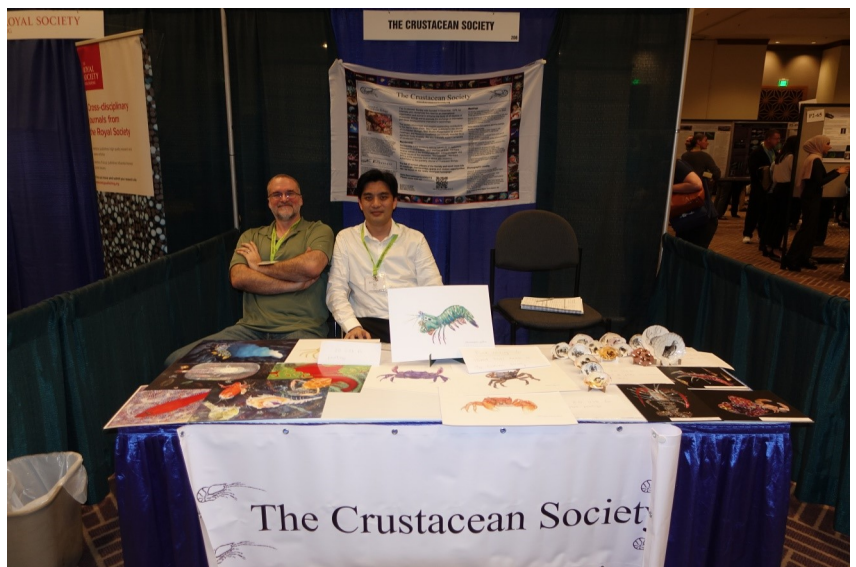
All my best,

Ingo.



Joint meeting of the TCS with the Society for Integrative and Comparative Biology (SICB) in Austin, Texas, January 2020
Left to right: Christopher Rogers, Benny Chan, Ingo Wehrtmann, Brian Tsukimura, Shirley Lim

The passing on of the presidential tie at the joint meeting of the TCS with the Society for Integrative and Comparative Biology (SICB) in Austin, Texas, January 2020 — TCS incoming president Ingo Wehrtmann (left) and Past President Shirley Lim



The TCS table at the joint meeting of the TCS with the Society for Integrative and Comparative Biology (SICB) in Austin, Texas, January 2020 — Christopher Rogers (left) and Benny Chan (right)



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Neil Cumberlidge
Rodney Feldmann
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Mark Grygier
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Bernard Sainte-Marie
Carrie Schweitzer
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Roger Thoma
Brian Tsukimura
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The Ecdysiast is published twice yearly in May and November and it is available in electronic form at <http://www.thecrustaceansociety.org/ecdysiast>. All the past issues are also available from the same web site. Submissions for the May newsletter should be received by mid March, while those for the November newsletter should be received by mid September. All types of crustacean related contributions are encouraged, including announcements of upcoming workshops and meetings, regional updates, meeting summaries (with photos!), new publications and any other crustacean news.

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German Carcinologist Group
Liaison Officer:
 Currently vacant

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Treasurer's Report for June, 2020

In light of the pandemic and resulting issues, the TCS Executive Committee (President Ingo Wehrtmann, President-Elect Benny Chan, Treasurer Jason Williams, Secretary Sarah Gerken, and Program Officer Christopher Rogers) have communicated extensively over the spring and met multiple times in consultation with our business manager Burk and Associates (BAI) and Oxford University Press (OUP). As expected, TCS Schwab accounts are down but remain at ~\$527K (from a high of ~\$644K in February 2020). Prior to the pandemic, the TCS Executive Committee was examining proposals from other money managers (e.g., Waterstreet Financial, Vanguard) but in light of the nature of the market right now, these deliberations have been put on hold. We recently moved the TCS checking account funds (~\$40K) to MainStreet Bank. MainStreet Bank is a “community bank” that has a good working relationship with BAI and provides better service for our needs with no fees.

In terms of the *Journal of Crustacean Biology* (JCB), OUP has proposed a 5% increase on institutional, corporate and personal (non-TCS member) subscriptions. This increase is equivalent to or less than the average price increases across all publishers in the life sciences. In addition, OUP has proposed a 10% increase in Author Page Charges (APC) (£2490/\$3736/€2989; TCS member charge of £2000/\$3000/€2400) that would take effect in August 2020. The APC increase is based on an analysis of competitor APC levels. During the pandemic situation, OUP has tried to minimize the disruption in production and distribution of JCB but was ultimately forced to make the difficult decision to hold printing of JCB (effective April 2020). In addition, the TCS Executive Committee and JCB Editor-In-Chief Peter Castro have been in consultation about moving the journal completely online. The financial impacts of the move to online only to the TCS budget are projected to be minimal. In brief, the estimated drop of ~\$10K in print-related income would be largely offset by cost savings in print-related expenditures (paper, binding, and distribution). There are multiple benefits to going online for JCB editors and authors; see more on this in the report by Editor-In-Chief Peter Castro.

As of April, TCS had 262 renewed members (151 online members, 52 print and online members, 16 patron members, and 43 student members). This number is slightly down (<10 members) from last year at this time. President Ingo Wehrtmann is being pro-active about expanding TCS membership and has enlisted all TCS Regional Governors to reach out to past members and encouraging them, as well as new members from among their colleagues and students, to join. But everyone can help with recruitment and we encourage you to do so - particularly students who are the future of TCS and can take advantage of our research and travel awards.

I hope that you and your families are all safe and healthy through this difficult time. I am looking forward to catching up when we can meet again – hopefully at the 2021 TCS meeting in Paris!

Respectfully submitted,
Jason Williams



Journal of Crustacean Biology: current status

We have been informed by *JCB*'s publisher at Oxford University Press (OUP) that our managing and production editors, both in North Carolina, as well as the typesetting suppliers in India, are working at home. These moves have so far been successful and without any important interruptions or delays.

OUP nevertheless anticipates the possibility of delays or even disruptions at the typesetting and production (print, distribution) stages of the journal. There are still some unknowns ahead, including disruptions of the supplier teams and tools involved in copyediting, typesetting, project management, and web publishing. So far, I'm happy to inform, everything continues as normal.

The potential impact of Covid-19 comes at a time when submissions of manuscript have increased in comparison to late 2019. The Editor-in-Chief is also working at home (and so the many authors, reviewers, and Associate Editors he has been in contact with) and we are all busy with a big backlog of manuscripts, either on peer-review (11 as of 25 June) or waiting for revised, accepted manuscripts from authors (13). The May issue is in print, with all 13 articles already published online in OUP's Advance Access. There will be 14 articles in the July issue, with 12 articles already published online. The September issue is expected to include 15 articles, with seven already transmitted to the typesetters. The November issue will include a section on to the biology of crustacean symbioses. Eight manuscripts have been submitted, three of which have been published online.

Peter (Pedro) Castro, Editor-in-Chief

Latest News: TCS's board unanimously voted today (25 June 2020) to accept a proposal by OUP to publish *JCB* as an on-line-only journal starting in January 2021, a development that has major advantages to both TCS and *JCB*. Details will follow soon!

Support the Society by sponsoring a membership

Dear Members,

This Past-President has for some years been a Patron Member, as I was fortunate enough to have the financial means to pay the fee and thus support TCS over and above a regular membership. But recently, I changed to another strategy. Although I cherish printed material, I changed to an "online subscription" only and will instead donate the difference to either TCS funds or to directly sponsoring memberships. The TCS urgently needs not just financial means, but members if we are to survive as a vibrant in the future. So I approached the President, Ingo Wehrtmann, and volunteered to sponsor three student memberships, chosen by the society among those unable to pay the fee themselves. In this way I support these colleagues here and now and, by recruiting student members, I also do something for the future of our Society. I urge all of you with sufficient means to consider doing the same thing.

Respectively,

Jens T Hoeg, Past-President



TCS Student awards presented at the 2020 SICB Meeting

The 2020 Society for Integrative and Comparative Biology meeting was held in Austin, Texas in January. As always there were plenty of excellent presentations. The Crustacean Society had some 44 students competing for the TCS student presentation awards: 15 were oral presentations and 29 poster presentations, representing 32 different universities and institutions from across the USA.

Both oral and poster presentations could receive a maximum of 100 points each. The judges awarded points based on set criteria. Each presentation was judged by three judges, and all scores were tallied by the Program Officer.

Oral presentations were judged on the following criteria: originality (up to 10 points), hypothesis/objectives (20 points), experimental design (10 points), implementation (10 points), validity of conclusions (20 points), graphic quality (10 points), oral clarity for content (10 points), and answers to questions (10 points).

Poster presentations were judged on the following criteria: abstract (up to five points), originality (10 points), hypothesis/objectives (20 points), experimental design (10 points), implementation (10 points), validity of conclusions (20 points), graphic quality (10 points), answers to questions (10 points), quality of writing (10 points), and bibliography (5 points).

The winners were:

Best Oral Presentation: Jason Dinh, graduate student, Duke University. Title: “Assessing Your Opponent: Snapping Shrimp Use Indirect Cues to Settle Ritualized Contests”. Sponsor: Dr. Sheila Patek.

First runner-up (oral): Nicholas Justyn, graduate student, Auburn University. Title: “Persistence of Carotenoids in the Red Eyespots of Copepods (*Tigriopus californicus*)”. Sponsor: Dr. Geoffrey E. Hill.

Second runner-up (oral): Marisa McDonald, graduate student, University of Hawai'i at Manoa. Title: “Evidence for Ultraviolet Vision in Larval Stomatopod Crustaceans”. Sponsor: Dr. Megan Porter.

Best Poster Presentation: Pier Semanchik, undergraduate student, Centenary University. Title: “Comparison of Parasite Occurrence between Three Native and one Non-native *Palaemon*”. Sponsor: Dr. Lauren Bergey.

First runner-up (poster): Clerson Xavier, undergraduate student, Centenary University. Title: “Differences in reproductive efforts in the invasive grass shrimp, *Palaemon macrodactylus* over gravid native *Palaemon* shrimp”. Sponsor: Dr. Lauren Bergey.



TCS Student awards presented at the 2020 SICB

Second runner-up (poster): Vanessa Bentley, graduate student, Colorado State University.

Title: “Investigating the function of Krappel homolog 1 (Kr-h1) on molt regulation in *Gecarcinus lateralis*”. Sponsor: Dr. Donald Mykles.

All the students did very well, and we were pleased that they shared their research with us. I want to congratulate all our winners, and I want to point out that the top two student poster presentations were presented by undergraduate students. I want to thank all the students who participated, their sponsors, and especially the nine judges who helped determine the winners.

TCS Program Officer,
D. Christopher Rogers

TCS 2020 Graduate Student Fellowship awards

The Crustacean Society 2020 Graduate Student Fellowships awards went to three applicants this year. Unfortunately, we had very few applicants this year; so I want to encourage our students to apply and our professional members to have their students apply for the next round.

All applications were judged by panel based on the following criteria: originality, hypothesis/objectives, experimental design, budget, and letter of recommendation by their sponsor. (I want to emphasise here, that any TCS regular member in good standing can sponsor a student TCS member for a fellowship award). The winners were:

Jason Dinh, graduate student, Duke University. Title: “Olfactory Mechanisms of Winner Effects in Snapping Shrimp Contests”. Sponsor: Dr. Sheila Patek.

Paula Flores, graduate student, Auburn University. Title: “Evolution of worldwide deep-sea squat lobsters Munidopsidae Ortmann, 1898 (Decapoda, Galatheoidea): a total evidence approach”. Sponsor: Dr. Enrique Macpherson.

Timothy Lee, graduate student, University of Hawai'i at Manoa.

Title: “Comparisons of Gammaridean amphipod diversity between native and non-native foundation species”. Sponsor: Dr. April Blakeslee.

I want to thank all the students who participated, their sponsors, and especially the panel members who helped determine the winners.

TCS Program Officer,
D. Christopher Rogers



Dr. J. Stanley Cobb – In Memoriam

In reflecting on mentorship, there are few scientists who have impacted their students and collaborators more than our recently departed colleague, Dr. J. Stanley Cobb. Many of Stan's former students and colleagues feel a deep loss, as we all felt the inquisitive and patient guidance that he provided us in our time with him. He was a jovial presence, a model collaborator, and good friend for many of us. As many have commented on the Forever Missed website (link below), Stan had a positive impact on everyone whose life he touched. His encouragement, thoughtful challenging, and respectful suggestions (he corrected papers in green ink) made us all better scientists and colleagues. His legacy as one of the giants of lobster biology is one as much driven by his publication record as his passion for teaching and mentorship. I was fortunate to have Stan as an undergraduate research mentor at the University of Rhode Island who saw my potential and pushed me to be a better scientist and follow my interests in invasive species biology. Having been in the last cohort to take Stan's animal behavior course at the University of Rhode Island, it is exciting to see one of his former lab members, Dr. Niels Hobbs, currently teaching that course.

Stan's legacy calls for us to take up the call to be mentors for each other and for generations coming up. Those helping hands often make big differences in others' lives, particularly with how careers progress. This is particularly true in fields where retention is difficult and attrition is high, like marine biology, and as we continue to work to increase diversity in our field. Personally, I hope to have had a small slice of that positive impact on my students, interns, and colleagues that he had on me, and will continue to push to broaden participation and retention in marine science. We are all grateful to his family for sharing him with us over the decades. Stan will be missed, as great mentors always are, and a great tree has fallen in the forest of science.

This short remembrance does not do justice to Stan's impact. For additional resources on Stan's impact on all of us, visit the following resources:

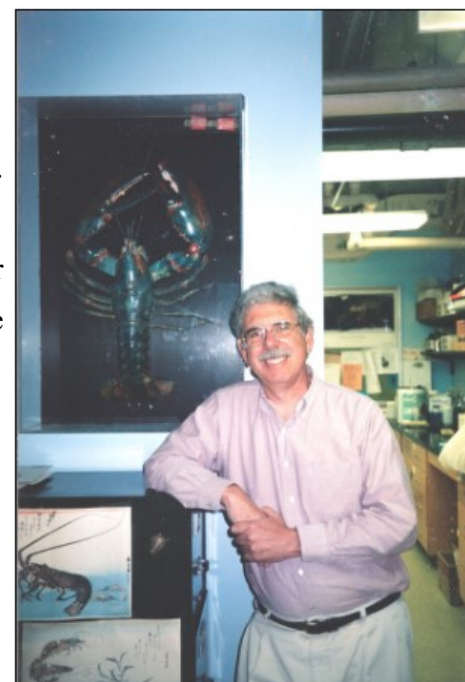
Forever Missed: <https://www.forevermissed.com/jstanley-cobb/about>

Bruce Phillips' review from the Journal of Crustacean Biology about Dr. Stan Cobb's retirement in 2006:

"A Review of the Contribution of J. Stanley Cobb to the Field of Lobster Research" by Bruce F. Phillips, Journal of Crustacean Biology, Volume 26, Issue 4, 1 October 2006, Pages 545–549,
<https://doi.org/10.1651/S-2733.1>

Full Obituary: <https://www.legacy.com/obituaries/providence/obituary.aspx?n=j-stanley-cobb&pid=196088172>

As remembered by Dave Hudson





An R shiny web application for visualizing the large branchiopod crustacean (Crustacea: Branchiopoda) distribution on the Indian subcontinent

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Large Branchiopoda (Anostraca, Notostraca, Laevicaudata, Spinicaudata, Cyclestherida) are a relatively understudied group of crustaceans with nearly 500 species documented worldwide (*sensu* Brendonck et al. 2008; Rogers & Padhye, 2015). Taxonomic and distribution data of this group in tropical Asia and especially the Indian subcontinent is poorly known (Rogers and Padhye, 2015). Recent diversity stands at 47 species after the removal of synonymies, redundancies and dubious records.

Spatial data visualization using R has become easier, highly customizable and interactive using specialized libraries such as ggmap (Kahle & Wickam, 2013) and leaflet (Cheng et al. 2019). The R language now provides the ability for designing and implementing web applications using the Shiny framework (Chang et al. 2019). ‘Shiny’ allows researchers to share their findings with a larger audience through web hosted applications. Through interactivity, these applications allow users to explore data through reactive interfaces, which improve result dissemination and impact as compared to static visualization reports (Ex. Wojciechowski et al. 2015; McMurdie & Holmes, 2015).

This note briefly describes the use of the ‘Shiny’ framework in creating a web app for visualizing spatial distribution of large branchiopods on the Indian subcontinent.

Branchiopod distributional records were obtained from published literature (Rogers & Padhye, 2015; Padhye et al. 2017; Padhye and Rabet, 2017; Padhye & Lazo-Wasem, 2018) and data were compiled to generate a species localities dataset. Data consists of taxonomic information providing species, genus and family name along with the authority, and locality details with site name, plus latitude and longitude (in decimals). This dataset was imported into R Studio (v.3.6.2) to design the Shiny app. Data wrangling and cleaning was done using ‘dplyr’ (Wickham et al. 2020). The geospatial mapping widget was created using the ‘leaflet’ package. This package helps produce interactive maps which can be easily embedded in Shiny (Cheng et al. 2019; <https://rstudio.github.io/leaflet/>). The interface was further customized using ‘shinythemes’ (Chang et al. 2018).



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The app was designed with a very simple graphical user interface (GUI) with the sole purpose of visualizing distributions, with a single parameter control of species name and a reactive map widget. It has a single input in the side panel to select the species name (Fig.1 A) which generates its distributional map (Fig.1 B). The interactive map is a standard ‘leaflet’ widget with built-in zooming abilities (Fig.1 ‘arrow’) on the console and the locality information provides detail on mouse-over. Additional preliminary context is displayed in the side panel in the form of metadata about the family and the authority for the selected species (Fig.1 C).

The app is currently hosted at shinyapps.io, which provides basic free hosting services for small applications with minimal features. The app can be found at (https://sameermpadhye.shinyapps.io/Distribution_of_large_branchiopods_on_the_Indian_subcontinent/) and the code is open source and available on Github (https://github.com/sameerpadhye/Shiny_app_visualization_of_species_occurrence).

Additional advanced features like image metadata, vicinity suggestions and genetic data are under development.

Acknowledgements: SMP thanks Sanjay Molur and Zoo Outreach Organization for their support.

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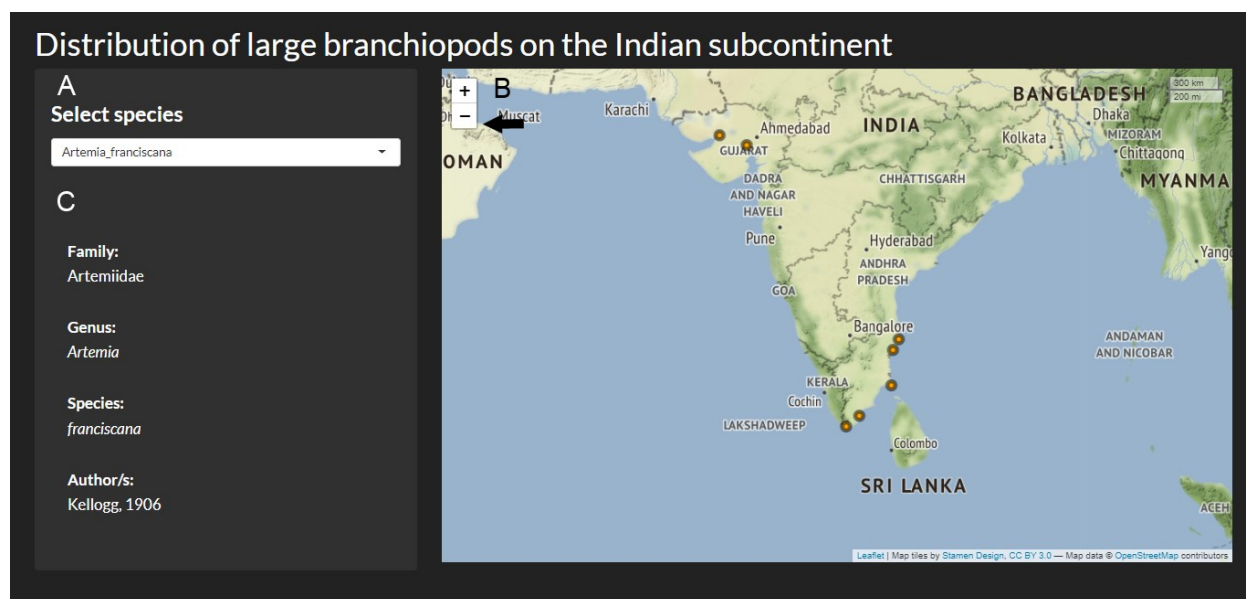


Figure 1: The app interface. A) The species select input; B) The distribution map of the selected species; C) Additional metadata of Family and Authority (arrow showing the zoom feature of the map)



Meeting Postponements

A letter on behalf of the SBC and TCS

18 May 2020

Dear Carcinologists,

We sincerely hope that you and your loved ones are well in these difficult times. Due to the worldwide disturbances caused by COVID-19, and after a numerous communications between the Board of The Crustacean Society (TCS), the Brazilian Crustacean Society (SBC), and the organizers of the XI CBC / TCS Summer Meeting, we all agreed that we have to postpone this congress originally scheduled for September 2020 in Santos, Brazil. After consulting the organizers of the upcoming TCS meetings, we agreed to maintain the Summer Meeting 2021 as planned in Paris, France. The XI CBC / TCS Summer Meeting is now scheduled for 5 – 8 June 2022 in Santos (SP) – Brazil, at the same hotel as planned for 2020. In this way, we are still having this international event (now in 2022), and we hope to fulfill the high expectations of those who already have registered and those who intend to register. For the colleagues who have already registered we propose to maintain the registration active, without any raise of the amount already paid, even if there is a change in the registration category up to 2022. However, if you are already registered and want a refund, just have to let us know about your choice and it will be done. Also, we take the opportunity to thank the colleagues organizing the ICCX-meeting in Wellington, New Zealand, who very kindly agreed to postpone their meeting to 2023, a gesture greatly appreciated.

We apologize for any inconvenience this may cause to you, but we are convinced that it was inevitable to postpone the meeting originally scheduled for 2020. Thus, we are looking forward to welcome you at the meetings in Paris (2021), Santos (2022) and New Zealand (ICCX, 2023). Best wishes and thanks for your patience,

William Santana
Presidente
Sociedade Brasileira de Carcinologia (SBC)

Ingo Wehrtmann
President
The Crustacean Society (TCS)



Meeting Postponements

Dear colleagues and friends,

As everyone knows, the situation we are going through with the COVID-19 pandemic, has led to us to change and reorganize all our plans. In this occasion we want to notify all of you of the postponement of the XII Alejandro Villalobos National Meeting (XII RNAV), which was scheduled to be held from October 19th to the 23rd, 2020, on the campus of the Universidad Veracruzana (UV) in Xalapa, Veracruz. Fortunately, the UV authorities have agreed to reschedule the XII RNAV for a date to be established in May 2021. This new plan relieves us and motivates us, since we can still hold our meeting and not miss the opportunity to meet with all of you. As soon as the new date for the XII RNAV is set, we will inform everyone, as well as the dates to submit abstracts, invited speakers, hotels and other important points about the meeting.

For now, we wish you all to be in good health and hope that we will return to the new "normality" pretty soon.

Sincerely,

The Organizing Committee

Dr. Elizabeth Valero

Dr. Luis Abarca

Dr. Fernando Álvarez

Dr. José Luis Villalobos



Save the Dates!

<https://confer.eventsair.com/icc10/>





Book release: “*Neohelice granulata*, a Model Species for Studies on Crustaceans”

As Editors, we are proud to announce the recent publication of this title, by Cambridge Scholars Publishing. *Neohelice granulata* (formerly known as *Chasmagnathus granulatus*) is a key South American species, endemic to the warm temperate coast of the southwestern Atlantic. The species is distributed along more than 4,000 km of the coastline of Argentina, Uruguay and Brazil, especially in estuarine environments. It is one of the most studied crab species in the world; in fact, almost 600 scientific papers on different aspects of its biology have been published up today. Despite this high scientific production, no comprehensive review integrating the knowledge about this species has been attempted so far. This book not only intends to be a data source about *N. granulata*, but it also aims to be a reference book for any researcher studying the biology of crustaceans, for both undergraduate and postgraduate students, and even a reference for other disciplines in which the species serves as a representative model.

The book is divided into two volumes. The first volume comprises 17 chapters grouped into two main sections: “Life history traits and development” and “Inter-specific relationships, behavioral ecology and ecosystem functionality”. On the other hand, the second volume comprises 16 chapters, also grouped into two sections: “Neurobiology” and “Anatomy and physiology”. Both volumes bring together more than 70 authors from 6 countries, mainly from Argentina and Brazil. The access to the digital or hard-printed version of the book can be found at <https://www.cambridgescholars.com/search?Q=Neohelice&As=true&As=false>

Tomás Luppi, University of Mar del Plata, Argentina

Enrique Rodríguez, University of Buenos Aires, Argentina

