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Hamuli

Newsletter of the International Society of Hymenopterists

In this issue ...

Dr. John La Salle 1951–2018

By: *Andy Polaszek (ISH President, 2016–2018)*

Our friend and colleague John La Salle, ISH President 2000–2002, died in May this year in a tragic driving accident in Australia. During the recent ISH Congress in Matsuyama, Japan (23–27 July 2018), in the presence of Çiğdem, Sam and Alex La Salle, a special session for John was included on the final day. Tributes reflecting three main phases of John's career—Riverside, London and Australia—were presented by Jim Woolley, John Noyes and Andy Austin, respectively. The following are their transcripts of those tributes, with additional contributions from Lynn LeBeck (The Riverside Years) and Joanne Daly (The Australia Years).

John brought energy and humour to everything he became involved with. He was a caring and generous colleague to me during his years at the Natural History Museum London, always ready with a joke, a smile, and most importantly a degree of collegiate support that is rare. ○

John La Salle — The Riverside years

By: *Jim Woolley and Lynn LeBeck*

John La Salle was born and raised in Pasadena, California, in Los Angeles County. A block away from their second home in town was the famous Gamble House, where Dr. Brown (Christopher Lloyd's character) in *Back to the Future* "lived". John was the middle of three brothers. An early picture of the three boys shows John with an insect net in his hand, revealing an emerging interest in entomology.

John started his undergraduate studies at University of California, Santa Barbara, but later transferred to U.C. Riverside, with some time out to work on a farm in Alberta, Canada. He was an Entomology major at Riverside, earning his B.S. in 1976. During this time, he worked for Paul DeBach, mostly slide-mounting and photographing parasitoids of scale insects and whiteflies. Here he became exposed to the rigors of chalcidoid identification

and specimen preparation, working primarily with tiny aphelinids such as *Aphytis* and *Encarsia*.

When Gordon Gordh joined the Riverside faculty in 1977, John quickly determined that they had many common interests in chalcidoid systematics, so John soon joined the Gordh lab. We [John and Jim] were also both students in the Gordh lab at the time, which quickly grew to 10 students or so, working on systematics, ecology, and natural history of various groups of Chalcidoidea. Among the students in the lab at this time were John Huber, Alejandro González, John Luhman, Brad Hawkins, and many others. It was a vibrant and exciting intellectual community, which also included students in many other labs in the Division of Biological Control, including those of Earl Oatman, Bob Luck, Jim McMurtry, and many others, as well as students in the Population Biology program. One summer, John mustered a number of us from this research group to help Lynn LeBeck (a non-systematics student in Gordh's lab) who needed a really simple key to the Chalcidoidea so she could teach the laboratory for Biological Control. We developed a key, about which John said "if LeBeck can identify whatever we give her, this key will work for anyone". That key was foolproof and allowed her to use it for teaching for many years in biocontrol classes at the University of Hawaii.

Gordon stressed the importance of all of the classic entomological arts for his students, particularly those involved in taxonomic projects. John initially started out interested in the encyrtid genus *Ooencyrtus*, and he and Woolley borrowed material of unsorted chalcidoids from many U.S. collections to sort out material for their research projects (Signiphoridae in Woolley's case). Sorting and identifying many thousands of chalcidoids to family provided us with a crash course in the superfamily. Suffice it to say, that after John had a hard look at *Ooencyrtus*, which is something of a black hole taxonomically, he decided to look for another project.

Gordon also stressed field work, and the central importance of collecting and preparing chalcidoid material properly. During those years, the Gordh lab was in the field collecting somewhere in southern California almost every week from the early Spring in the low desert to the Fall in the nearby mountains. During these trips John became interested in the chalcidoids that form galls in the common legumes in southern California, such as mesquite. This developed into a serious interest in the family Tanaostigmatidae, which became the subject of his dissertation research. Gordon, John and Jim took a collecting trip to the Southwestern Research Station in Portal, probably in 1978, and during the long drives we discussed in detail our proposed dissertation research projects with Gordon. By the time we returned, the die was cast for both of us. John's dissertation title was "A Revision of the New World Tanaostigmatidae (Hymenoptera, Chalcidoidea)" and it was subsequently published as "New World Tanaostigmatidae (Hymenoptera, Chalcidoidea)" in *Contributions of the American Entomological Institute* 23(1). The work remains today as the standard reference on the family, and it is a model taxonomic monograph in all respects.

Everyone that was associated with John in those years remembers his wonderful sense of humor and sharp wit, his kindness, his incredible generosity, and the good-natured banter that he inspired wherever he went. Even though he was clearly a gifted scientist, he had a direct manner and down to earth personality that is hard to describe. He had a way of reducing complex problems to simple first principles. He also had many other interests, such as sports, juggling and magic tricks. He was someone you would never bet with unless you were prepared to lose. We remained close to John throughout our careers. He was truly a unique person in so many ways. We will miss him. ○

John La Salle — The London years

By: *John S. Noyes*

I first met John in March 1982 when I visited Gordon Gordh's lab at the University of California at Riverside. He was one of three PhD students who were doing research on different groups of chalcidoids. John Huber was revising North American *Gonatocerus* (Mymaridae), Jim Woolley studying the classification and taxonomy of Signiphoridae and John who was doing a project on Tanaostigmatidae. It immediately became apparent that John was slightly alternative in many ways and had a very special sense of humour and playful personality. Within no time at all he was cracking jokes with his characteristic excited, anticipatory laugh that we all just had to join in. ("Wait a minute, I've only known this guy for three minutes and he is already telling risqué jokes"). He also showed a very serious side when explaining his project and questioning me with regards to my work. However, in no time he was again showing his more fun side by juggling four or five oranges that he found whilst we were visiting the famous Riverside citrus orchard. This guy was clearly FUN, but at the same time very knowledgeable about chalcidoids, taxonomy and biocontrol in general. One day the chalcidoid group decided to take me on a trip to the Sonora Desert south of Riverside. It was loosely deemed a collecting trip and we all piled into a minibus with John driving. On the way, it started to rain quite heavily. Someone mentioned, probably John, that this must have been the rainfall for the Sonora desert in a whole year. Sometime later several of us asked John to pull off the side of the road to answer a call of nature. Immediately the bus pulled off the side of the road the wheels were up to their axles in soft wet sand. Being apparently miles from the nearest civilization we all thought we would be stuck out there for days and so we all screamed to John to put his foot on the accelerator and steer us out of there. As luck would have it we eventually managed to slip and slide back to the road and safety. Wow! John was my hero, but he just acted as though

nothing had happened and proceeded to tell jokes about courting couples getting stuck in the desert and not being discovered for weeks. It was also on this trip to the Sonoran desert that I tasted my first ever burrito; it was delicious.

I kept in touch with John and he eventually passed through London in 1987 on his way to St Petersburg in Russia where he was going to study the Kostjukov collection of Tetrastichinae. Apparently, he had decided to take on the challenge of becoming an expert on this group, possibly the most daunting of all taxonomic challenges within chalcidoids. His decision to tackle this group was probably because he was in contact with Marcus de Vere Graham in Oxford and was aware that he was about to publish a reappraisal of the genera of the group. This was to stand him in good stead because in 1989 he was offered the position of a taxonomist at CAB Institute of Entomology based in the British Museum (Natural History) as a replacement for Zdenek Bouček who had retired shortly before. John telephoned me at the museum and after I tried my hardest to deter him from taking the job because of the low salary and high cost of living in London he said that if he wanted to make money he would not be doing taxonomy.

John arrived in London a few months later and turned up with an earring in one ear and a hairstyle that included a short "rat's tail". He certainly was not going to change his "style". Not long after John arrived, I helped him move to a small flat in Shepherd's Bush, about 2.5 miles from the museum. The flat was small and had a strongly sloping floor. So much so that John had to put his mattress against a wall to stop himself rolling off it in the middle of the night. Within a very short time he became incredibly well known and liked within the museum. He even charmed and flirted with all the girls in the department. They would normally have slapped anyone else hard had they tried. I was shocked one day when all the science departments went to a meeting where the museum director was giving a presentation on his vision for the museum. At the end the director asked for questions and John stuck up his hand. The director said "Yes John". I asked John afterwards how the director knew who he was, after all he was not even working for the museum. John just said, "Oh I occasionally have a drink or catch the train with him".

In his early days in London John joined a softball team that played regularly in Hyde Park, not far from the museum. One day he came in to work and announced that his team had won the British championship. That made us all sit up and take notice. This must have been more serious than we had all thought and maybe John was actually a half-decent sportsman!

John showed his generosity by helping Marcus de Vere Graham to publish the second part of his treatment of the Tetrastichinae (1991). Perhaps this was out of self-interest, but John had to spend many days proof-checking, correcting idiosyncracies and eventually arranging to get the manuscript into a suitable state so that the printing could be done from camera-ready copy.

John was also the perfect foil for over-critical reviews of taxonomic manuscripts. He often spent a lot of time on reviewing taxonomic papers and on occasion, if he could see their value, he would almost completely rewrite papers and improve them immensely. He could also be very critical, sometimes extremely aggressively so. However, those on the receiving end, after the initial shock, respected him for his comments. One such recipient wrote some very moving comments to me about him after he so tragically died. On one occasion, he spent many days of his own time compiling an identification guide to the parasitoids of leaf miners for a postgraduate student who was studying the influence of ants on these parasitoids in Costa Rica. I once saw him completely take over an important meeting as impromptu chairperson after the original chairperson could not carry on after becoming embroiled in an argument with someone on the floor of the meeting.

Shortly after John moved to London he came into the museum with an extra spring in his step and a big grin. He had met this fabulous girl the previous night. Of course, this was Çiğdem. It was not long before they were married (1991).

During his earlier years in London John and I used to roam London every few weeks looking for Mexican restaurants which we both loved. We called this our "boys' night out". In general, these nights usually resulted in a few beers, a game or two of darts or pool and a meal in whatever Mexican restaurant we could find. In later days, these became any restaurant because London was not very well supplied with decent Mexican restaurants. On one particular night, we had quite a good deal to drink. I saw this coming and luckily booked in a day's leave the following day. John was not so lucky and turned up at the museum the following day with a massive hangover. I later found out that he was so drunk when he got back to their flat that Çiğdem locked him out. I thought "John's met his match at long last".

Our own children loved John's visits to our house, which were many. In the early days, he played games with them, joked with them and showed them juggling and card tricks. He was excellent at juggling and his card tricks were excellent. To this day I do not know how he managed some of them—they were extremely convincing. Our children were always asking when John was coming next.

John and Çiğdem moved very quickly from the flat in Shepherd's Bush to a larger flat in Hammersmith, and then another in Southfields near Wimbledon in 1992 and from there into a house in Wimbledon in about December 1993.

During their time in Wimbledon their two sons were born, Sam (1994) and Alex (1997). It was not long before the taxonomists of CAB Institute of Entomology moved to Silwood Park near Ascot, from their home in The Natu-

ral History Museum (formerly British Museum (Natural History)), in London. As a result of this move John and Çiğdem decided to move to Ascot and in 1998 moved to a very nice house in South Ascot not far from Silwood Park. Two sides of John soon resurfaced during the time at Ascot. John built a huge tree house in an oak tree in the back garden of the house. He also showed his amazingly inventive and humorous side. It was from several action men, received as presents by the boys, that Chalcidman was born. John used these action men, to compile a 6-page cartoon using a digital camera, Photoshop and Word telling the story of Chalcidman saving the unique ancestor ("Protochalcis rex") of Chalcidoidea from destruction in the Cretaceous. (The cartoon is available on the Universal Chalcidoidea Database). This is a wonderful illustration of John's sense of humour and inventiveness.

It was pretty obvious even before the "Silwood" years that the identification service of CAB Institute was in serious trouble. None of us was surprised when John accepted a job offer as a Hymenoptera taxonomist in the Australian National Insect Collection at CSIRO in Canberra Australia. He and his family moved to Canberra in November 2000 and made us all envious when he showed us photos of the home he bought at the bottom of Black Mountain for what seemed a pittance.

Looking back on those 11 years in London John had experienced a relatively meteoric rise. He had arrived in London with very little and lived in a cramped one-bedroom flat in Shepherd's Bush and ended up with a lovely wife, two great sons and a fairly large house in South Ascot. Above all, when he moved to Australia, he was missed by all of those who knew him. His leaving party was one of the best the Entomology Department in the Museum had ever experienced. ○

John La Salle — The Australia years

By: *Andy Austin and Joanne Daly*

John arrived in Australia to take up a research/curatorship at the Australian National Insect Collection in 2000, as the hymenopteran taxonomist. In 2000, CSIRO had two positions vacant in ANIC. They were looking to recruit specialists in Diptera and Coleoptera, but the selection panel was so impressed with John, that they decided to make a third permanent appointment. Within a year he became Director of ANIC, after the untimely death of Ebbe Nielsen, a position he held until February 2012.

After arriving in Australia, John's research largely continued along the same lines as his work in London; that is—the systematics of various eulophid groups, and biosystematics to support various biological control programs. However, he also became interested in the huge diversity of gall-associated chalcids in Australia.

One example of John's systematic support was the successful biocontrol program of two Australian invasive wasps that threatened Eucalyptus plantations throughout the Mediterranean basin. Through CSIRO sponsorship of the project, John provided both taxonomic and field support for the project.

There is insufficient space here to go into the details of his research track record, but suffice it to say that he published nearly 200 papers by the end of 2017, with an extraordinary 269 co-authors from 35 countries! And the book he edited with Ian Gauld, Hymenoptera and Biodiversity published in 1993 is still attracting a significant number of citations.

In about 2002 John was appointed by the Australian Entomological Society (AES) to the Science Panel of the International Congress of Entomology (ICE) held in Brisbane in 2004. John chaired the Panel which involved overseeing 20 concurrent sessions for five days, with over 1700 speakers. It was a time-consuming and sometimes frustrating job—but was also extremely rewarding, and John did it with great relish. For his efforts, he received service awards from both the AES and CSIRO.

John believed passionately in education of young people and as part of the ICE organised a morning of entomological presentations for schools in Brisbane, and a session on Young Citizen Science. Linked to this—he was particularly proud of Project Shrek. Leading up to the ICE he worked with six local Canberra primary school children with an interest in insects. This group included his two sons, Sam and Alex. As a group, they went through the process of naming a new species of wasp, with all the children as authors on the resulting publication. We believe Alex still holds the record for the youngest author of a taxonomic description! John also worked with the children to prepare a PowerPoint presentation with embedded video clips of the them explaining the project which was presented at the International Congress. In recognition of this project, John was designated as a "Local Hero" by the Canberra Times newspaper in 2006.

Coming to Australia also triggered a real shift in John's focus. He started to realise from his own experience that, despite his efforts revising eulophid wasps for over 20 years, that he had barely scratched the surface, and would make little dent in the taxonomy of this hyperdiverse group over his whole career. He came to understand that success in biodiversity science required systems thinking where the solution would be greater than the sum of its parts. He began to see that a radical rethink was necessary in current approaches to species identification and that an integrated approach working across multiple fields was needed. While this thinking is commonplace in many areas of science it was not an intrinsic view in taxonomy and collections science, and certainly not at ANIC at the time.

By the mid 2000s John was coming to the view that taxonomy needed to radically embrace new technologies if it had any chance to contribute significantly to sustaining and conserving biodiversity. To this end, he started to engage in technologies that could (1) speed up species identification; (2) capitalise on largely inaccessible data

stored in collections, and (3) could incorporate citizen science into its knowledge base. John had an ability to think strategically about where innovation and change needed to occur and then to set about making this happen. Indeed, his progress in moving collection science and biodiversity towards a common goal will likely be his greatest achievement and legacy.

For example, John's continued interest in the application of his taxonomic work to agriculture led him to create the world's first real time remote microscope network. This allowed people to stream videos of specimens under their microscope directly to the Web to be examined by experts from anywhere in the world in real time. Further, in 2011 John initiated a collaboration with the Canadian Barcoding initiative as an example of how new technology could be married to static collections, and he organised for 20,000 species to be DNA barcoded from the ANIC moth collection. However, at the time it was highly controversial, and John bore the brunt of some animosity from ANIC staff for the way the project unfolded.

In 2012 John moved to the Directorship of the Atlas of Living Australia (the ALA), a role that was a much better fit for him, matching his vision to his ability to foster change. ALA was a massive initiative that aims to bring specimens, species names, distributions, biology, habitats and more into an integrative platform to make the data available to everyone from researchers and policy makers to farmers and school teachers.

Few people know that John was integral in the original project proposal for the ALA in 2007, and was its first interim Director. After the first Director was appointed, he worked quietly behind the scenes with members of the CSIRO Executive to develop bids to Government that resulted in an injection of a further AU$30 million into the Atlas.

John also sought to simplify the delivery of global biodiversity informatics, where many countries were duplicating effort independently. With this in mind, John and his team at the ALA have persuaded 10 countries to use the ALA platform as the engine for their national initiatives. And by year's end this will grow to 20 countries! The ALA now presents a staggering 80 million records to the world and has an enviable suite of tools to assist in analysing these data.

On a personal level John was supportive of the people he worked with, and always shared credit with his team or those with who he collaborated. He went out of his way to help people, and often shared his wicked sense of humour liberally, which at times got him into trouble. He was quite simply the best friend anyone could want.

And then one Sunday in May, on a day's fishing excursion, the lights went out for John, and his loss as a scientist, innovator and friend is still hard to bear. ○

Letter from the President

By: *Barb Sharanowski, University of Central Florida, Orlando, USA*

It is my great honor to serve you as your president for the next two years. I hope I can be as effective as the numerous colleagues who have come before me in promoting, protecting, and expanding our society, as well as mentoring and inspiring our student and early career hymenopterists and colleagues around the world.

9th International Congress of Hymenopterists.—The Congress in Matsuyama, Japan was a brilliant success, with numerous fascinating talks on our favorite organisms. The venue was in a beautiful city with an ancient castle, famous onsen, and polite and friendly people. Many thanks to the entire local organizing committee for organizing such a successful meeting with wonderful parties and dinners, collecting trips, and cultural displays that made everyone feel welcome and excited to be hymenopterists, and ensuring a very smooth meeting despite nearby flooding and a typhoon. We even had our first Hymenoptera raffle, that was fun and invigorating for everyone. Many thanks to the scientific committee as well for the wonderful and diverse array of inspiring presentations and posters.

Election Results.—It is my pleasure to announce that Dr. Lars Krogmann has been voted in as president-elect of ISH starting 2018. Congratulations Lars!

Award and Honors.—ISH Distinguished Research Medal: Awarded to Jean-Yves Rasplus, (Director of Research, INRA Centre de Biologie pour la Gestion des Populations (CBGP); CIRAD, IRD, Montpellier Sup Agro, Université de Montpellier, France) for his incredible record of scientific research on Hymenoptera. He has numerous published works with over 7,000 citations covering topics including taxonomy of several chalcidoid families, biocontrol, invasive species, fig wasp evolution, and phylogenomics of Chalcidoidea, among others. He has been instrumental in these fields from field work, to specimen collection and management, to detailed data collection and analyses. He has trained numerous junior researchers that have gone on to successful careers in their own right. Congratulations Jean-Yves!

ISH Service Award.—Awarded to Katja Seltmann (Director, Cheadle Center for Biodiversity and Ecological Restoration, Earth Research Institute, Santa Barbara, California, USA) for her many years of service as the webmaster. Katja was instrumental in bringing our society into the modern era, allowing online payments, developing a member database, and increasing the digital presence of our society. Congratulations and thank you Katja!

ISH Student Travel Awards.—Five deserving students received travel awards and gave fantastic presentations, including: Amber Bass (USA), Huayan Chen (USA), Nokuthula Mbanyana (South Africa); Sariana Faure (South Africa), and Tamara Spasojevic (Switzerland). Congratulations Students!

Best student oral presentation and poster.—The best oral presentation was awarded to Jeremy Frank (USA) and best poster to Hironori Iwai (Japan), both for scientific excellence and clear delivery. Congratulations!

Venue for next ICH Congress in 2022.—The executive is actively seeking preliminary proposal bids for the next ISH Congress Venue. A 1–2 page pre-proposal should be submitted to me by January 5, 2019. More details on what should be included in the pre-proposal will be added to the website. We would love to hear from you if you are considering organizing the meeting in your country. The executive will evaluate pre-proposals and request full bids from selected recipients in February, with full bid proposals due May 2019.

Constitutional changes.—The Executive will be sending out the latest changes to the Constitution for your vote this fall. Immense thanks to Andy Austin (Australia), Jim Woolley (USA), and Denis Brothers (South Africa) for their hard work on making careful edits that create a much more robust and proper governing document for our society. Please participate by reading and voting on the changes.

Code of Conduct.—We have finalized a version of a Code of Conduct for our society, as many scientific societies have been doing. This is long overdue and represents a policy that promotes inclusion and is intolerant of harassment. This work would not be possible without the pioneering efforts of Carly Tribull (USA) and the many voices who have helped shaped the document.

JHR.—Several years back our society switched to Pensoft as our publisher, which provides open access publishing. Pensoft has made the publishing process easy for our editor and subject editors as well. Unfortunately, it also offers no source of revenue for our society, which is not ideal for long term financial stability. I will be establishing an *ad hoc* committee this fall to look at new options that may include the best of all worlds—open access, reasonable publishing costs, and a source of steady revenue for the Society. Anyone interested in serving on this committee, please do respond when I send the call out. All ideas are welcome.

New possibilities for expansion and inclusion.—Each year ISH holds a mini meeting with talks and a business meeting at the Entomological Society of America Annual Meeting. These meetings help keep the Society running smoothly between each 4-year congress. However, it also creates a North American bias to our society. To have a more inclusive, diverse and active society between meetings, I thought perhaps we should have similar meetings in other regions of the world, associated with popular meetings in those regions, such as Asia, Western and Eastern Europe, Central and South America, the Middle East, Australia, and Africa. This would likely require new positions, such as Regional Directors that were appointed or elected and that organized scientific talks annually at a larger meeting. This type of format, which has been discussed at numerous meetings, would help increase and sustain membership and offer students additional venues to present their research and network with hymenopterists. I will be formalizing this idea and looking for feedback this fall or in the early new year as well. Ideas, comments and critiques are welcome. ○

Call for proposals for 2022 Congress of Hymenopterists

If you are interested in hosting the 10th International Congress of Hymenopterists in 2022 please submit a 1–2 page proposal to our President (Barb.Sharanowski@ucf.edu) and President-Elect (lars.krogmann@smns-bw.de):

Proposals should be sent by e-mail by **5 January 2019**.

Proposals must include a brief outline of reasons for the choice of location (*e.g.,* unique location or long overdue, access to a unique membership, location appeal, identification of a team of local organizers and support network, potential venue, potential registration and meeting costs, and opportunities for fieldwork; all points are to be addressed).

Proposals will be evaluated by the Executive Committee, and bidders contacted by February 2019.

Successful bidders will be required to submit a more complete proposal by 30 May 2019, including details on dates, hotels, room charges, registration estimates and a business plan for the meeting, post-congress activities such as collecting trips, and congress activities such as visits to nearby natural areas and tourist locations, archeological or historical sites, *etc*.

These proposals will be evaluated by the Executive Committee and the successful bid announced by 1 July 2019.

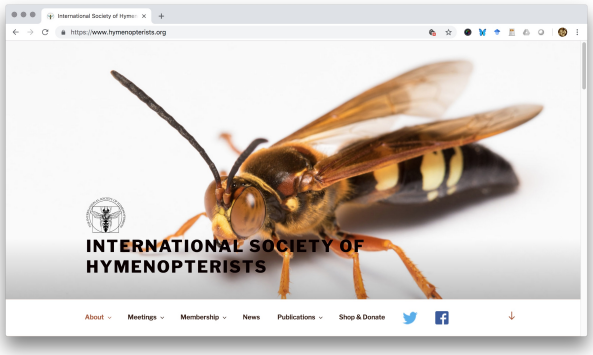
New ISH website!

By: *Erinn Fagan-Jeffries, University of Adelaide, South Australia; erinn.fagan-jeffries@adelaide.edu.au)*

We have recently launched the new ISH website! It's located at the same URL as always: hymenopterists.org, and is currently just getting the final touches of text, pictures and functionality. I encourage everyone to head to the "members" section, from which you can log in—if it is your first time using the new website, you'll need to click "forgot my password" and enter your username or email address to receive a new password link. If you have any issues logging in, just send me an email.

Once members are logged in, you can update your profile (we weren't able to bring any of this information over from the old website) and view the membership database. If you don't wish to appear in the membership database, which is only visible to logged-in members, you can let us know. You can also view your account information, and from December 2018 you will be able to renew your registration through the website using PayPal if desired, or even change to a recurring PayPal membership (which you can cancel any time) so that you never have to remember to renew again! We'll send out more info about this at renewal time.

Also on the new website are forums visible only to logged-in members. These are for any members to use if you wish—how successful they become as a communication tool will depend on how often members make use of them. Suggestions are that they might make a good place to request specimens or post about job opportunities!



We also have a publicly visible blog (under the "news" menu item) which I would love for as many people as possible to write for. This replaces the old ISH blog. If you have a fun field story, a non-jargon-filled summary of a new paper, an issue you'd like to raise awareness of, an announcement that would be of interest to both members and non-members *etc*. send it in to the blog! If you'd like to write regularly, let me know and I'll set you up with an account. If you have a one-off story or post, just email it to me and I'll load it up! This blog and our social media is how we show potential new members and the general public what a friendly, active community of hymenopterists we are, so please send me in your blog posts!

One last request is for images for a rotating header image of the website. Do you have a fantastic picture of your study group? Send images to me with a short blurb about the animal in the picture—why it is so cool and what makes it interesting? Then we can start showcasing the wonderful diversity of taxa we work on! ○

Have you renewed for 2019?
Visit hymenopterists.org!

Quest for fire: Can we increase the ISH membership?

By: *José Fernández-Triana, Canadian National Collection of Insects (CNC), Ottawa, Ontario, Canada*

As one of the candidates in the last election for president of the International Society of Hymenopterists (ISH), I had the chance to outline briefly some ideas of what we could do to increase ISH membership, and I promised to detail more in a future article for *Hamuli*. I did not win the election, but I am very happy as the President-Elect, Lars Krogmann, is a very deserving candidate and will surely keep the Society moving forward, together with the rest of the ISH officers. Nonetheless, I wanted to keep my word and share my ideas with fellow members, in case there is some value there. So here I go.

The first thing that is clear to me: the reduction (or lack of increase) in membership is not exclusive to the ISH, and has not much to do with the work the ISH does. It is rather a reflection of the rise of the social media and the multiplicity of choices that we have today for pretty much anything. It used to be that belonging to a scientific membership (or a membership of any kind, for that matter) was important to connect people with similar interests. Meetings were the venue where members could share ideas, common projects. Students got to know established scientists, and perhaps found opportunities for future work, which were not easy to find otherwise. Other advantages were also gained, for example publishing in a prestigious society journal. Although all of the above is still valid, today it is much easier to be in touch even if not necessarily connected via membership to a society. Do you need to contact Professor X? Just Google her/his name and get the email address. Do you want to find out about a potential PhD opportunity? Check the many free sites listing that, or be part of student groups sharing that info. Are you interested in your research to be more widely known? Twitter, Facebook, Instagram, Research Gate, and a myriad of similar venues are there for you to use them. Do you need to coordinate some research activity? Skype, Google Hangouts or similar venues allow you to virtually meet pretty much anyone on the planet these days, again freely. As for "high-impact" journals ... that is such a contentious and unfair topic, but even then, most scientific societies do not have "high ranked" journals anyways. The truth is that we do not necessarily *need* to be part of the ISH to successfully carry on researches on Hymenoptera and/or being connected to other colleagues in that field.

Even more, with so many scientific societies and memberships available out there, why would one need to choose the ISH over other possibilities? Would it not be better to spend the (always limited) time and money somewhere else? If one works in biocontrol, where Hymenoptera plays such a big role, would it be better to be part of ISH or instead be affiliated to some of the many organizations and societies devoted to biological control?

Same for pollinators, ants, social insects in general... or even local societies (*e.g.*, there is a Japanese Society of Hymenopterologists, which even publishes its own journal (*Tsunekibachi*)!). Beyond Hymenoptera, would not it be better to be part of some national entomological societies (some of which have thousands or hundreds of members), or international societies devoted to wider subjects such as ecology, evolution, or any other subject equally relevant to one's research? Yes, being part of several societies at the same time is an option, but for most people limited time and money mean a selection of some sorts must be made. Is the ISH one of the attractive choices right now? Is the ISH an affordable one? I certainly believe that ISH is an attractive and compelling society, but work remains to be done and improvements are always possible.

In my opinion, there are two relatively easy ways to increase ISH membership. One is to facilitate entry of students and amateur hymenopterists (defined as those working the group without having a paid job to do so), as well as fellow hymenopterists from less wealthy countries (for whom, even the relatively modest ISH membership fee can be huge). The Society could move to have reduced memberships for some of those cases, and even free memberships for those who cannot really afford paying dues. I am sure this would be a contentious issue, and steps would be needed to avoid abuse of those opportunities (perhaps an ISH committee should be formed to evaluate cases where such free or reduced memberships are warranted). More importantly, I advocate that those benefiting from free/reduced membership fees have to pay back the Society in other non-monetary ways. A simple example: as part of your free membership, you should be asked to review several papers of the *Journal of Hymenoptera Research* (*JHR*), or help organizing ISH-sponsored meetings (I will elaborate more on those two points below). That would avoid "free rides", while at the same time would give opportunities to legitimate researchers that currently have no monetary solvency to enter and contribute to the ISH.

Another way to increase membership is reaching to sectors of the larger Hymenoptera community which are usually underrepresented. How can we better connect to people working on biocontrol, pollinators, ants, and biodiversity and conservation studies? Most of them already belong to other scientific societies related to their own work. Can we convince them to add ISH to their profile? We can absolutely make better efforts to contact them, either on a personal level or on behalf of the society (*e.g.*, a letter of the ISH President addressed to those groups). But that might fail if it is only words. Just because we call people to action does not mean they are going to respond; just because we think ISH is worthy, does not mean others would agree, or suddenly become members.

What if we offer something as part of that request? And I am thinking here on a much better, diverse, vibrant journal. To be honest, the *JHR* has already been improved substantially, and there is no question that the Pensoft platform is more attractive and makes submission/editing of papers easier. But we still publish too few papers in the *JHR*, and waiting times are far from being competitive. Both aspects are, of course, related: more papers would allow us to produce more JHR issues, which would expedite publication of papers -similar to what other Pensoft journals already do. Yes, we need current members to send more papers to *JHR* but we also need them to be more involved as reviewers/subject editors. And we should strive to cover topics beyond the ones usually covered by *JHR*. One example, what if we prepare a special issue about biocontrol? And then invite non-ISH members to contribute, in the process hopefully showing that JHR is a viable and competitive venue for such papers? Would not that work as a marketing strategy to attract the biocontrol community towards ISH?

Perhaps the most important member of the ISH executive is the Editor-in-Chief, because a strong *JHR* would attract and engage more members, in a way that perhaps few other ISH activities can. That also connects with an idea mentioned above: we can strengthen the editorial/reviewer force of *JHR* by requesting that free/reduced memberships include a commitment to help with the journal. And, at some point, hopefully sooner rather than later, this increase in the number of articles published in the *JHR*, faster reviewing/editing/publishing times, and wider variety of topics covered, make the *JHR* to become *the* journal to publish on everything Hymenoptera. [That would also increase the citation of *JHR* articles, which would then increase the journal impact ... however misleading those metrics are].

The main difficulty right now is that publishing in the *JHR* costs money, as ISH actually pays Pensoft for using its platform and resources. It is not as simple as waiving publication costs for ISH members, which would be the ideal solution in an ideal world. That is the more difficult obstacle to overcome (if producing the *JHR* would only cost time for the ISH members, then perhaps we could implement more "free papers" to encourage more submissions). Unfortunately we cannot do that, at least not with the current state of things. But perhaps it is time to renegotiate terms, in a way that some real advantage would come from being an ISH member. For example: any member has the right to publish in the *JHR* "X pages for free every year"; or any member that reviews "X papers gets to publish Y pages for free". How we could implement that I am not sure, as I am fully aware that Pensoft is a business and needs to make money. And the ISH does not have (and will never have) enough funds to cover the costs of every member publishing X pages for free. But we need to seriously consider some ways to get at least some free pages from Pensoft (which already gives discounts to editors and reviewers, and it is usually open to negotiate fees, I speak from personal experience). Perhaps we, as a society, should negotiate X pages

for free yearly for the *JHR*. And then allocate those pages to members who cannot pay for publishing in the *JHR*. I understand this is a difficult point, but *JHR* should be the Society flagship—and thus we must try to remove at least some the limitations that money imposes on current and/or potential ISH members. Perhaps someone else has better ideas here? Regardless, we should keep exploring possibilities to make things easier and cheaper for potential contributors.

But, why do we need to cheapen the membership to the Society? After all, does not ISH need the money to work properly? Indeed, but just consider this example: instead of having 200 members paying full dues ($10,000/year, assuming $50/year per member), what if we would instead have 150 members paying full membership ($7,500/year), 200 members paying some sort of reduced membership ($4,000/year at $20/year per member) and 50 members not paying any fee? The society revenues on member fees would still be the same, or about the same ... but the membership would double, with all the strength that a larger membership would give to the ISH. A membership fee of $20/year should be affordable for most students and amateurs in economically wealthy nations (and that is only an idea, not necessarily the right figure; in fact we could have several reduced fees if needed, to accommodate for different situations). For those that cannot pay for even reduced fees, free memberships would still benefit the ISH (in a number of other ways already mentioned above). We need to facilitate more access to scientist and students from nations that are not that economically wealthy. The ISH is still too centered in North America and Europe—as evident in its membership composition, its ISH officers, and its ISH business meetings.

Another possible change: Increase the ISH visibility by having more satellite and/or ISH-sponsored meetings. We have now the ISH Congress, held every four years. And there is the annual ISH business meeting held at the same time that the Entomological Society of America (ESA). We were also lucky to have two ISH-sponsored symposia in the latest International Congress of Entomology (ICE) in 2016 in Orlando (although those ICE symposia were organized by personal initiative and only later became supported by ISH; *i.e.*, it was not originally an idea from ISH). But we could easily improve a lot on that. For starters, ISH business meetings could be held in another place that is not North America. And ISH-sponsored meetings could be held in other major congresses that are not the ICE. Allow me to share my (perhaps naïve or idealistic) vision by using a sport metaphor.

The main sport event of the world is the Olympics, held every four years. And the second most watched sport event is the FIFA World Cup, also held every four years, with a two year gap respect to the Olympics. In between there are a plethora of unique, regional/local Games, Leagues, etc. In my mind, the ISH congress should be like the Olympics (would not it be cool to brand that meeting as "The Hymenoptera Olympics"? I am half-joking there!). Then, we should make a habit of having ISH-sponsored symposia during all ICE Congresses, which would be like the FIFA world cup (the ICE is also held every four years, with a two year gap compared to the ISH congress). Then we could have in the other two years that remain in between, satellite ISH meetings within some regional/national societies, in different regions of the planet (Europe, Latin America, Asia, *etc*.) Where is the money coming from for all that? Well, there is no need to have money (or just very few) if those meetings are organized by local ISH members attending those local meetings—actually, they might even be involved with the organization of those regional meetings anyways. Attending those "more local ISH meetings" does not need to be widely international (just as no European country participates in the Pan American Games). But, by being regional, it would facilitate local ISH members (some/many of whom perhaps cannot attend the ISH congress due to lacks of funds) to be able to at least attend some sort of ISH meetings, that way connecting and feeling part of the larger ISH society. Members of the ISH executive could take turns to make sure that at least one of them attends such meetings, providing the necessary link between local and international ISH levels. The only thing preventing us to do that right now is precisely the relatively limited presence of ISH members from other regions that are not North America and Europe. But if we implement reduced/free memberships that situation would improve!

Other, potentially easy improvements would involve a more active and updated ISH website. Yes, it was just recently upgraded, and it looks much better now. But it goes way beyond design. It actually requires more active participation from members. Just as Hamuli became a great success a few years ago (and still continues to be a great success), we should try to have the ISH blog as a mechanism where any ISH member could post something Hymenoptera-related, at any time. Does not need to be fancy or big literature, even small notes could serve as blog posts. For example, interesting or unanswered questions about Hymenoptera ("What is the largest/smallest known example of group Z?" "Does anyone one have an idea about that special shape of scape in wasp group X, and what could it be used for?"); or just simply "I am willing to exchange Malaise trap residues from X with anyone having residues from Y", with some minor elaboration on the topic. What we cannot continue to have is a blog that has 2–3 posts per year, with information that is usually outdated. We must also improve on linking to other websites, adding lots of pictures (of ISH meetings, a gallery of Hymenoptera images), comments on recent Hymenoptera papers ... in that last regard, the ISH Twitter account has already improved tremendously (thanks in large part to the ISH members in charge of that; that is precisely what we need for other aspects of the ISH website!).

But, how feasible are all of the above ideas to be implemented? [Otherwise this writing is just wishful thinking]. Some are relatively easy to do, and would only require a minimum of agreement and willingness to lead efforts. For example, having ISH-sponsored meetings only requires dedicated members from other regions of the world to commit to organize them. Having special *JHR* issues devoted to topics that are usually not widely covered by ISH members only requires one/few members to organize that [I, for one, am willing to prepare an issue composed of articles only written by students; or an issue devoted to Hymenoptera and biological control]. On the other side of the spectrum, deciding on funding or mechanisms to cover some page fees in the *JHR* will require a change to some ISH by-laws and/or negotiations with Pensoft. Having membership fees with several tiers (and deciding on the quotas of free or reduced ones) might require to change some of ISH bylaws and/or forming extra ISH committees to deal with that. Some voting on those topics must be needed down the road. Change may be difficult to implement in some cases, no one is saying it would be easy.

Which brings me to the article title, "Quest for fire", a direct reference to the 1981 French-Canadian film of the same name [If you have not seen it, I recommend you check it online]. In the movie, a Paleolithic tribe loses its fire after a fight with another group. They did not know how to make fire, but only knew to keep a small flame in a container to use it as a fire starter for bonfires. Facing potential annihilation, they decide to send some of its members to search for another fire source. Leaving their comfort zone they travel and explore, experience all kind of adventures, and discover a lot of things. In the process they actually learn how to make fire by themselves, and their return to the tribe is a great victory. Could it be that an analogy with the ISH (and potentially increasing its membership) is possible? Future will tell. ○

Exploring the wild world of parasitoid viruses

By: *Jim Whitfield, Department of Entomology, University of Illinois, USA*

Over the past couple of years, my research has continued to focus on three areas: biology and descriptive taxonomy of microgastrine braconid wasps, phylogenomics of the Microgastrinae and the broader Ichneumonoidea, and comparative genomics of polydnaviruses, especially bracoviruses. These interests often do not overlap in terms of research tools, expertise and even the day-to-day flavor of doing the work. The last two years have brought me into some fun collaborations that have allowed me to combine all three in exciting (well, at least exciting to me!) ways.

IRBI field team near Tours June 2017

To step back a bit, what we know of parasitoid viruses is in its early stages still. We are still discovering new virus/parasitoid associations in both braconid and ichneumonid wasps. Even with the bracoviruses, where it appears that all the groups who carry them have a common evolutionary origin and we have surveyed their presence relatively thoroughly, we have barely explored the comparative genomics of the viruses in different lineages, although a few genomes are now available and the first assembled and annotated microgastrine wasp genome is now completed. In ichneumonid wasps the story appears more complicated, with several somewhat related groups of "polydnaviruses" and virus-like particles described from several related, but not exactly sister, lineages. Surveys of the presence of such viruses have barely begun, at least with the kinds of tools that would clearly confirm or contradict their existence in the wasps.

Collecting ichneumonoids with Marie Frayssinet near source of the Lez River

Marie dissecting out ovaries and venom glands

Pinning up vouchers from dissections

Discussing ichneumonoid phylogenomics with Seraina Klopstein, Nathalie Volkoff and Tamara Spasojevic in Montpellier

Several laboratories in France are now at the forefront of the study of comparative genomics of bracoviruses and ichnoviruses. It has been my pleasure to spend several months with them the last couple of years, in Tours in 2017 and Montpellier in 2018. The Tours group (within IRBI - the Institute for Research on the Biology of Insects), contains several labs headed up by Jean-Michel Drezen, Elisabeth Herniou and Elisabeth Huguet, focusing on the biology and genomics of bracoviruses. Their work has been highly productive over the last few years and is beginning to converge on some larger comparative genomics surveys which I am just beginning to contribute to. At the University of Montpellier, Anne-Nathalie Volkoff and associates in DGIMI (invertebrate-microbial interactions) are concentrating on the ichnoviruses and related virus-like particles, and often exploring puzzling new cases of previously unknown associations.

Both groups are well equipped to handle genomics and functional aspects of polydnavirus biology, but they do need other information: a phylogenetic framework for comparisons, and information on the basic biology of the wasps. This is where I really enjoy the collaboration. I get to go out and actually try to find the target wasps alive, bring them back, ID them if I can (while they are alive or recently killed), and enjoy while the rest of the processes of dissection, TEM, DNA barcoding, and any comparative genomics carry on around me. And then I help supply a framework phylogeny to help interpret the results. Of course I also get to enjoy being in France (!) with such good colleagues, great food, old buildings, music ... ○

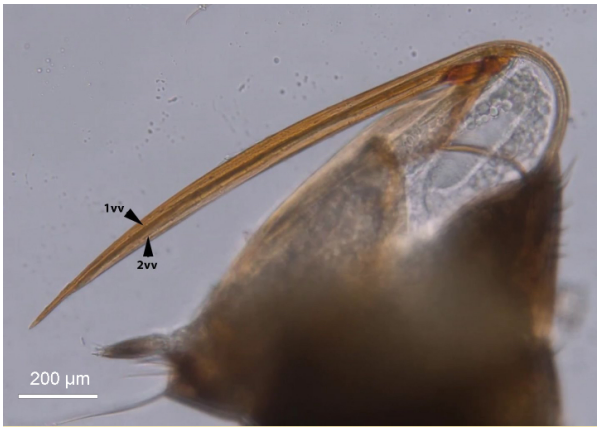
Pan traps can collect live insects for morphology, histology, and more!

By: *Carolyn Trietsch, Department of Entomology, Penn State, USA; István Mikó, University of New Hampshire, USA*

The basis of a pan trap is simple: fill a bowl with water and add a drop of non-foaming, environmentally-friendly soap to break the surface tension. Insects that fall into the water sink and drown and ultimately can be collected. But what about using pan traps to collect live specimens?

We set out pan traps one sunny Thursday morning, collected the samples the following morning, and were surprised to find that many of the insects we collected were still alive. Over half of the Ceraphronoidea in the sample were still moving, and we were able to make videos of mechanisms that had never been recorded before.

For example, Ernst *et al*. (2014) hypothesized that the left and right T9-second valvifer muscle pairs in the ceraphronoid ovipositor contract alternatively so that the left and right first valvulae slide back and forth, allowing the ovipositor to drill into substrate and deliver eggs down the length of the ovipositor shaft. Now, for the first time, this movement can be shown in live specimens (See figure below).



The ceraphronoid ovipositor, showing the first (1vv) and second valvulae (2vv). The original video is available at `https://doi.org/10.6084/m9.figshare.6932969.v1`*; a video showing a closer view is available at* `https://doi.org/10.6084/m9.figshare.6932978.v1`*).*

Similarly, we were able to observe the movement of the harpe (video available at `https://doi.org/10.6084/m9.figshare.6932981.v1`) and the gonossiculi (video available at `https://doi.org/10.6084/m9.figshare.6932984.v1`; a video showing a closer view is available at `https://doi.org/10.6084/m9.figshare.6933029.v1`) in male Megaspilidae. For functional morphologists working on insects they cannot keep a colony

of, it is a nice gift; finally, you can see if the structures move in the way you hypothesized based on their three-dimensional shape and position. While there are more sophisticated methods of achieving the same goal (dos Santos Rolo *et al*. 2014), nothing compares to seeing the actual movement in real life.

Though many collectors move specimens from pan traps directly into ethanol, we put the specimens into 0.1M phosphate buffer instead for morphological study and dissection. Since the specimens were still alive coming out of the soapy water, it stands to reason that they could have easily been moved into 0.1M cacodylate buffer and properly fixed for histological purposes (including SBFSEM, TEM, *etc*.) Living specimens collected from pan traps could also have been put into ethanol or RNA*later* Stabilization Solution for molecular purposes (DNA extraction, transcriptomics, *etc*.)

Collecting live microhymenoptera for histological work using a sweep net and aspirator. Not an easy job!

Pan trapping could potentially be an effective way to collect live specimens for research. But how long can insects survive immersed in water? We've heard personal stories from others who have set pan traps out for an afternoon or evening of trapping, removed their desired insects, then dumped the rest of the contents on the ground so that the bycatch could recover and move on. Concerning the literature, one study found that *Manduca sexta* pupae could survive at least five days after being immersed in tap water (Woods & Lane 2016). Fifth instar larvae of *Manduca sexta* could survive immersion in tap water for up to four hours; larvae immersed for longer started to move, but all of them died within 24 hours (Woods & Lane 2016).

Collecting with yellow pan traps. No age limitation! Photo by István Mikó

We don't know how long the living ceraphronoid specimens were immersed in the pan traps. Though we left the traps out for 24 hours, the live insects we observed may have entered the traps just before we collected them. To ensure that insects stay alive, some simple solutions would be to check the traps more frequently or reducing the time that the traps are kept out. The next step could also be to fill the traps with saline solution (or 0.1M phosphate buffer).

There are several advantages to using pan traps to collect insects, particularly for those working with microhymenoptera. Pan traps have captured microhymenoptera from at least 7 superfamilies (Pucci 2008; Shweta and Rajmohana 2018), and seem particularly effective for capturing Proctotrupoidea, Ceraphronoidea, and Chalcidoidea (Masner 1976; Noyes 1982; Noyes 1989; Rameshkumar *et al*. 2015; Shweta and Rajmohana 2018).

Another advantage of pan trapping is that it may be less damaging to smaller, fragile insects than other sampling methods. Callahan *et al*. (1966) found that insects collected by vacuum methods were in better condition than sweeping, and Shweta and Rajmohana (2018) suggested than the act of sweeping could damage smaller, fragile insects like mymarids (Chalcidoidea). In the past, we often used sweep nets to collect live ceraphronoids for our histological examinations (Fig. 2), but it was always difficult to remove the microhymenoptera from the net. Using an aspirator to pull out only the microhymenoptera came with the risk of specimens escaping, and even if you collected the entire contents of the net, there was always much more plant matter and other debris to sift through (as opposed to the occasional leaf or pine needles that fall into a pan trap).

You would also be hard pressed to find a more cost-

effective or versatile sampling method– all that's required is a plastic bowl and soapy water (Fig. 3) (for more details on sampling with yellow pan traps (YPT), check out Lubomír Masner's (2011) "International YPT Cookbook").

This is a new approach to collecting live specimens that should not be underestimated, but investigated as a potential method for the capture of live specimens for histological and molecular analysis. ○

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Congress report: Tamara Spasojevic

By: *Tamara Spasojevic, Natural History Museum of Bern, Bern, Switzerland*

"You never get a second chance to make a first impression", as they say, and I am more than glad to have been left with a great impression of my first ISH congress after my visit in Japan. Entering the world of hymenopterists just three years ago, by starting my PhD with ichneumonids, was a whole new experience. Since then I had not many chances to interact with fellow colleagues. I remember reading the congress program and being excited about all the people I was going to meet, ones with familiar names but unfamiliar faces.

Already arriving and being in Japan was amazing and exciting enough, and I took time on the way to Matsuyama to do a little sightseeing tour. Unexpectedly, first ichneumonologists started to appear even before the congress in the mystical forest of Fushimi Inari-taisha shrine, foreshadowing a great ISH meeting.

The first days of the meeting were especially interesting for my research with many great talks and discussions. The level of the presentations was very high, and there was much I could take home, with respect to the latest methodological and taxonomic advancements. I was positively surprised by many comprehensive molecular datasets and integrative taxonomic approaches most of the researchers were applying. In addition, I could finally meet in person many of the few ichneumonologists working around the world (all accumulated at one spot!), who were very open for scientific exchange and discussions. This was extremely helpful and motivating at this

last stage of my PhD, and I got many useful feedbacks. The good impression was complemented by the traditional "ichneumonoid dinner", which was also a perfect opportunity to further extend the contacts.

Needless to say, the organizers did their best to present the Japanese culture in the finest light. We all enjoyed the amazing food during the welcome reception, lunch breaks and conference dinner, which was accompanied with the funny raffle and enjoyable Japanese drummers. The place, where few of us students stayed during the conference in Matsuyama, was cozy with an extremely welcoming staff, and only few meters from the famous Dogo Onsen. Although breakfast was not included, we did get some onigiri from professor Konishi. This was just one of many hospitable gestures by the organizing committee.

From the perspective of a student and newcomer, I especially appreciated the warm welcoming and supportiveness of the society members, but also the comfortable atmosphere created by the organizers of the meeting. It was very inspiring to see how the community of hymenopterists works and how much effort members put to sustain the society and these meetings. I also cherished a lot the present collegiality and readiness for collaboration of many of the members. I was thus delighted to take part on the congress and I am extremely thankful to the International Society of Hymenopterists for the opportunity to do so through the provided student travel grants. ○

Congress report: Amber Bass

By: *Amber Bass, Department of Biology, University of Central Florida, USA*

Thank you to the International Society of Hymenopterists for awarding me one of the ISH travel awards for the recent congress in Matsuyama, Japan. This was my first congress, and throughout I felt welcome and included in the community.

I am very grateful for the opportunity to present my research. I gave an oral presentation about my master's research currently being conducted at the University of Central Florida, entitled "Phylogenetic patterns of cospeciation and host shifts in Aphidiinae". I am interested in whether parasites track the speciation of their host, and I am determining if patterns that infer cospeciation and host switches are present in a tri-trophic system (*Pauesia-Cinara-Pinus*). I was approached by many people after my presentation, all of whom were very friendly and gave excellent advice. It was wonderful to have the opportunity to get feedback from scientists in my field that will impact my final thesis.

It was clear that the organization of this conference required a lot of work, and the organizers thought of everything, making the conference run smoothly. The many coffee breaks, the student get together, and other social events were well attended and well organized. These events were particularly valuable for me, as I will be completing my masters soon. Attending the conference allowed me to make valuable connections with other researchers and students who in time will hopefully be collaborators.

This conference was a great opportunity to hear about the research being conducted in so many institutions and on a wide diversity of Hymenoptera around the world. This allowed me to broaden my knowledge of rare and/or foreign taxa, new and emerging field and lab techniques, and phylogenetic analyses. It was incredible to see some well-known scientists in the field present about their research, as I have only had the opportunity to read about their work previously. I have added many locations to my travel bucket list to collect and visit museums.

Finally, this trip allowed me to have a cultural experience. This was my first time traveling internationally, and it was wonderful to take in another culture. Matsuyama has many beautiful sights that I got to witness during the Wednesday break, and before and after the congress. The architecture of Matsuyama castle was amazing. One of the highlights for me was the final dinner. The taiko was incredible to witness in person, and the seemingly end-

less courses of food that were offered were delicious. I miss the sashimi; it just isn't as good in Florida.

I am looking forward to attending the next ISH congress. It will be exciting to see the progression of the research presented at the conference and hear the full story for some the presentations with interesting preliminary datasets. It will be nice to get together for drinks and conversation with many of the same folks I had to opportunity to meet in Japan.

If you are student, don't forget to like "Students of ISH" on Facebook to hear about MS, PhD, post doc, and job listings. ○

Congress report: Sariana Faure

By: *Sariana Faure, Department of Zoology and Entomology, Rhodes University, Grahamstown, South Africa*

In July 2018 I was afforded the chance to attend the 9th International Congress of Hymenopterists in Matsuyama, Japan. This was made possible by the ISH Student Travel Bursary. I arrived on the Monday to the largest group of hymenopterists I had ever seen under one roof. Presentations started at noon on the use of Ultra Conserved Elements (UCEs), which was something I touched on in my presentation as well. The rest of the week was packed with presentations, poster sessions and informal mingling events, as well as a Chalcidoidea dinner on the Thursday night.

Thursday was also the day of my presentation about "The Systematics of the Afrotropical Chalcididae (Chalcidoidea: Hymenoptera)". I assessed the phylogeny of this group, by targeting their UCEs. This is work that I did with Astrid Cruaud and Jean-Yves Rasplus from the CBGP lab in Montpellier and it was lovely to touch base with them again. Morphological character states of the parasitoids were also scored to be used in the production of a combined analysis of molecular and morphological information, and an identification key for the genera in the Afrotropical region has been developed.

There were 116 participants in this congress and over 70 presentations, ranging from phylogenomics and systematics to the behaviour and biodiversity. Andy Bennett's presentation on Tryphoninae particularly stood out to me. He might have been working on a different superfamily, but understanding his methods has been instrumental in clearing up some issues for me too.

What I have received from this experience is access to a fount of information and knowledge. I have already been in contact with a multitude of people that I met at the congress and received invaluable inputs and fresh perspectives on my project, and I look forward to working with this group in the future. ○

Congress report: Nokuthula Mbanyana-Nhleko

By: *Nokuthula Mbanyana-Nhleko, Stellenbosch University and Iziko Museums of South Africa, South Africa*

Attending the 9th International Congress of Hymenopterists was a great experience for me and a great opportunity to introduce my research to an international science community. In this conference I presented preliminary results of my PhD project. In this study we are investigating biogeographic patterns and phylogenetic relationships of an arid-adapted ant genus *Ocymyrmex* in southern Africa. Species within this genus are more diverse in the eastern arid regions of southern Africa compared to other tropical and subtropical parts of the continent. The distribution of these ants suggests that historical events could have played an important role in shaping the biogeography of this group in southern Africa and these ants may have been selected for arid-adapted traits within the group. The processes that produced the patterns of diversity and distribution of arid-adapted ants in southern Africa have never been reviewed or studied. In this study, we review the taxonomic status of *Ocymyrmex* species using both morphology data and ultraconserved elements (UCEs), which are highly conserved regions of genomes shared among evolutionary distant taxa. Nature and timing of historical processes that may have led to the diversification within this group is being assessed in this study.

Nokuthula Mbanyana-Nhleko answering questions

It was my first time attending and presenting in a conference. I gained great insights from other interesting talks that were presented at this conference. The program was very rich, and covered many interesting topics ranging from behaviour, biodiversity, biogeography, ecology, evolutionary biology, phylogenomics and systematics of Hymenoptera. I was astonished by the quality and interesting research presented in this meeting, through oral presentations and posters. I was very interested to learn about the amount of research that has been done using advanced phylogenomic methods such as UCEs on different groups such as ants, bees and wasps; and the interesting results that have been revealed by these methods.

Students networking at ICH

Aggregation of hymenopterists at ICH

It was a great pleasure to be part of this well organised meeting, attended by over 100 delegates. It was also a great opportunity to meet and interact with some of the legends in the field whom I look up to. I would like to express my profound gratitude to the International Society of Hymenopterists committee, who organised this successful meeting, especially Andrew (Andy) Polaszek, Craig Brabant, Keizo Takasuka and Natalie Dale-Skey whom were very helpful throughout the process. This would never have happened without the generous support of the International Society of Hymenoperists student travel grant. Thank you for the invaluable support and for affording me the opportunity to attend and present my research at the ISH conference. ○

Updated Braconid Manual

By: *Michael Sharkey, Hymenoptera Institute, 116 Franklin Ave., Redlands, California, USA; msharkey@uky.edu*

The *Manual of the New World Genera of the Family Braconidae (Hymenoptera)* was updated a little over a year ago. It is available on Amazon in both electronic and book forms for US$20 and US$40 respectively. All proceeds go to the International Society of Hymenopterists. The link is `https://www.amazon.com/Manual-Genera-Family-Braconidae-Hymenoptera/dp/0692944826/ref=sr_1_1`

The old version of the book is out of print but this version is an almost exact copy of the 1997 version with an addendum at the end of each subfamily chapter. These addenda include all new genera and generic synonymies published since 1997, updates on the generic keys, and references to all recent literature.

It may be somewhat confusing to cite the publication. On the Amazon page it appears as though Rebecca Kittel is the first author of the Manual, however this was simply an error. I suggest that Manual should be cited as it was originally with the new date of 2017. When citing information from a particular chapter, cite the author of the chapter (In: *Manual of etc.*); and when citing information in one of the addenda, cite the author of that addendum.

Many thanks to Rebecca Kittel who took the text I compiled from various authors and formatted it to conform to Amazon's standards. ○

My wing imaging method

By: *Michael Sharkey, Hymenoptera Institute, 116 Franklin Ave., Redlands, California, USA; msharkey@uky.edu*

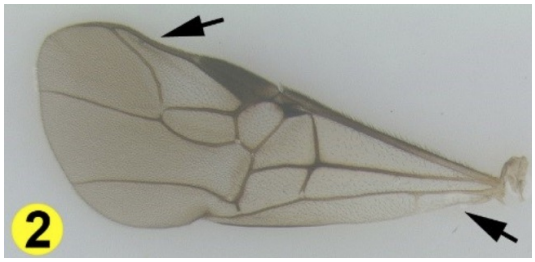
Several people have asked me how I produce the images of wings that I have been publishing over the past years, and I thought I would share with a wider audience. If a reader has a better system, I would surely like to know.

1. Start with a small white pillbox. These I obtained in Bogota, Colombia and I have no idea how to get more, however something similar should be available anywhere.

2. Add a tiny amount of EtOH to the container. If you add too much alcohol, the wings will float away from the coverslip in step 4.

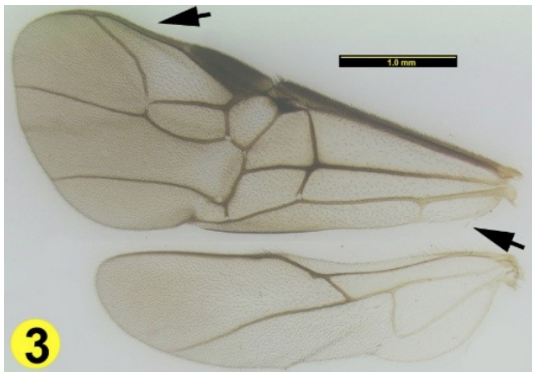
3. Break a set of wings off with a pair of sharp forceps and place them dorsal side up in the alcohol. If the wings are dry and twisted, allow them to soak in a solution of detergent and water for a few minutes and then drain the solution and go back to step 2.

4. Place a coverslip over the wings.



5. If there are bubbles under the wings, add a bit more alcohol, turn the container on a 45° and gently press down on the cover slip. If that does not solve the problem, gently lift the edge of the coverslip up and down.

6. Press the coverslip gently and then add enough alcohol to completely cover the coverslip.



7. You are now ready to take images of the front and hind wings separately and these I typically put together in Photoshop. Compare the areas of the fore wing indicated with arrows in figure 2 with the same areas in figure 3. The addition of the coverslip along with a little pressure on top of the coverslip corrects distortions/twisting in the wings. ○

Bee of the day

By: *Laurence Packer, York University, Toronto, Canada*

Just a quick announcement that our Instagram page is live and active: `https://www.instagram.com/thepackerlab/`

The bee genera of the world image bank is also live: `https://www.yorku.ca/bugsrus/resources/galleries/bgow` Note that the same site has images of most of Canada's bee species, and Chile's bee genera. ○

Collecting sawflies in the Yukon, June/July 2018

By: *Spencer K. Monckton, York University, Toronto, Canada*

Phenology can drive you nuts. So Henri Goulet told me after I sent him an update recounting the low catch from my latest field trip to the Yukon to collect sawflies. This was reassuring, as I'd planned my trip carefully: sawflies are short-lived as adults, and although historical records suggest that *Pristiphora* reach peak flight in the first week of July, it's clear that Yukon's spring season is not what it used to be, coming sooner and proceeding more rapidly than it once did. It's also gotten more erratic: during a short trip to the Yukon in June 2016, I collected only larval *Pristiphora*, signaling that the short-lived adults had already emerged, mated, oviposited, and died—their peak flight must have been nearly a month ahead of schedule. Knowing 2016 was an uncharacteristically warm spring, I reasoned that a three-week trip extending barely into July would be a good bet.

In the North, phenology can drive you nuts.

The trip was planned as part of my PhD research: a systematic revision of Nearctic *Pristiphora* conducted alongside a study of their biogeography and host-plant use. The Yukon is an important field destination, both for the disproportionate number of *Pristiphora* species found there, and for its location at the Eastern end of Beringia—a large, unglaciated region stretching across to Siberia and site of the Bering Land Bridge, which occasionally connected North America to Eurasia.

Though I arrived to encouragingly spring-like weather, the daily high soared to an unseasonably warm 28°C within a few days—just a touch too warm for sawflies to take wing. Luckily I could focus on placing the six Malaise traps I borrowed from the Biodiversity Institute of Ontario (in exchange they received the bycatch). My plan was to set these up at pre-selected sites along major routes, stretching from Whitehorse north to the tundra—about 600 km by road. In late June, when the sunlight is near-continuous, it's handy to have traps do the collecting for you through all hours of the day.

I spent the first part of my trip in Central-Southern Yukon, and though much of this region's boreal forest is ecologically monotonous, there are interesting pockets of diversity throughout. Most biologists take interest in the dry grassland ecosystems of this region's south-facing slopes (dipterists especially so), but I seek out the wet spots: little bogs, high-elevation lakes, riverine wetlands. These are the damp, sheltered habitats that sawflies favour.

After a few days, I had netted only one *Pristiphora*,

and even the traps had caught disappointingly few of them—maybe it was the weather?—but one site in particular had me optimistic: a small marl bog with an intriguing selection of potential sawfly host plants where I'd collected larval *Pristiphora* in 2016. I set out a Malaise trap and prepared to learn my next lesson: In the North, one out of six traps don't make it.

This was related to me by Syd Cannings, who has been surveying bumble bees and other invertebrates in the territory with the Canadian Wildlife Service. Recently, he co-authored the description of the locally-endemic *Bombus kluanensis* Williams and Cannings, 2016. As if his words weren't enough, he showed me a shredded vane trap: the work of a curious bear. So it was that when I returned to my little bog, I found the Malaise trap flattened and bear-torn. The sample bottle was empty, but the collecting head and poles were undamaged, so I stubbornly repaired the trap with some duct tape and re-staked it. My mistake was in thinking I had any say in the matter: when I came back next, the trap was completely destroyed.

A destroyed Malaise trap, the result of round two with a bear.

I was beginning to feel fairly discouraged. As I set off further north, however, it was like embarking on a whole new trip. The heat turned to rain as I neared the Klondike Plateau, crossing the threshold into Beringia proper. Although it remained unglaciated thanks to how little precipitation it received, nowadays the Klondike is perceptibly wetter than Central Yukon, with lush narrow valleys hosting mixed forests of spruce, lodgepole pine, Alaskan paper birch, and trembling aspen. In spite of the rain, I deployed a Malaise trap alongside a tailings pile left by a floating gold dredge more than a century ago: a lasting sign of the Klondike Gold Rush.

Pressing on, the packed-gravel Dempster Highway led me to the true grail of my trip: Tombstone Territorial Park, or Ddhäl Ch'èl Cha Nän. This park, whose Hän language name means "ragged mountain land", lies amidst the Ogilvie Mountains and straddles the taiga-tundra ecotone. It is easily one of the most incredible places in Canada. A number of endemic plant species are found there, and at least five undescribed species of *Pristiphora* have been collected there at one time or another. I hoped to secure some DNA-worthy individuals to complement collections from the 1980s and earlier.

Malaise trap set up atop North Fork Pass in Tombstone Territorial Park

I timed my trip to coincide with the Tombstone Territorial Park BioBlitz (29 Jun – 1 July), a great opportunity to survey this fascinating region. The organized excursions were hampered by rain and cold, but happily it seemed that most of the insects caught were flies and sawflies. Wet foliage is an obstacle, but alpine tundra is a sawfly favourite, and a bit of patience and a sharp eye paid off. In spite of the rain, the BioBlitz was the most productive part of my trip. Moreover, collecting in Tombstone's lush alpine tundra helped me to anchor *Pristiphora* in context, and I'm optimistic about the material collected by other participants.

Though I would have liked to blame the weather or the bears, it seems this year was near the historic normal in terms of phenology. My catch of *Pristiphora* only picked up during the final five days or so, ramping up to peak flight right on schedule for the first week of July. Unpredictably predictable. Enough to drive you nuts. In the end, I collected 33 specimens from seven species – all great material from which to recover DNA – including a female of an undescribed species only otherwise known from a single specimen from Eastern Siberia. Discoveries like this one highlight the Yukon's unique Beringian past and its important role in shaping Northern biodiversity.

Participants in the Tombstone Territorial Park BioBlitz, somewhere near the top of Fold Mountain

Finally, a renewed call for specimens (in case you missed the last issue): If you have specimens of *Pristiphora* (including *Melastola*, *Neopareophora*, *Nepionema*, *Pristicampus*, and *Pristola*) from North America and/or Siberia, I would be very pleased to hear from you. I'll gladly sort and identify your miscellaneous Nematinae in exchange, and can pay shipping costs if necessary. You can get in touch with me at s.monckton@gmail.com, or visit my new website at skmonckton.com (built from scratch by my wonderful partner, Katie). ○

Should we do away with points and cards?

By: *Andrew R. Deans, Frost Entomological Museum, The Pennsylvania State University, USA*

The report below is adapted from a recent post I wrote on our museum's blog: `http://sites.psu.edu/frost/2018/09/11/point-mount-disenchantment/`. I am modifying the text and reprinting it here because I think the issue would benefit from the wealth of expertise represented in the ISH membership (probably several centuries' worth of expertise, collectively!) Here goes ...

Point mounts are my bread and butter. Evaniids usually cannot be pinned—they're too small—so we affix them to tiny triangles punched from archival card stock, skewered on a pin. The technique is pervasive, as the entomological collections community as a whole makes >400,000 such specimen preps annually. Check out this video on YouTube from a collections master, Ed Riley of Texas A&M: `https://youtu.be/UhgW2ohlqxc`

This is pretty much how I've done it, for 20 years. He uses Elmer's Glue-All and clear nail polish, but, as hymenopterist tradition dictates, I prefer shellac or fish glue (Seccotine). Only recently have I started folding archival white glues (polyvinyl acetate or PVAc) into the process for certain insects.

However, our use of these adhesives was recently questioned by a visiting museum conservation expert. The subsequent discussion inspired me to survey the Entomological Collections Network for two main pieces of information: (1) What properties do we consider to be important for adhesives used in this context. Is there consensus? And (2) what adhesives do we use? With the results in hand, I dove into the polymer chemistry and museum conservation literature for information that would help me determine whether our chosen adhesives match our required properties. My review is now available:

- Deans AR. (2018) A review of adhesives for entomotaxy. *PeerJ Preprints* 6: e27184v1 DOI: 10.7287/peerj.preprints.27184v1 `https://peerj.com/preprints/27184/`

As a community we pretty much agree on which adhesive properties are important, with the top three being: (1) archival, (2) reversible (many responded that this was equally important to "archival"), and (3) easy to use/prepare. We also appear to employ three main types of adhesives: (1) polyvinyl acetate ("white glue"), in various forms, (2) clear nail polish, and (3) shellac, with a few others used less frequently.

My subsequent adhesive review, I have to admit, has thrown me into an existential crisis. All of our adhesives are critically flawed, and, if you trust the literature from other domains, we are generating hundreds of thousands of curatorial problems each year.

There are a lot of caveats, of course. The physics and chemistry at this small scale—a tiny dot of adhesive, securing cuticle to card—may be quite different from, say, coating a canvas with a thick dollop of PVAc. And I cer-

tainly do not want to discount the vast experience of experts who have had to deal with point mounts and the real process of reversing them. We definitely need more rigorous research here, based on objective observations and data. Given those caveats, however, I think I can comfortably make two solid recommendations:

1. **Stop using Elmer's** for point mounts! It is not archival, it doesn't age well, it remains acidic, and the formula is proprietary and changes over time, sometimes radically. When I told a group of collections experts recently that most of my colleagues used Elmer's for specimen mounts they audibly gasped and followed up with soft, awkward laughter and a lot of head shaking

2. **Stop using** cellulose nitrate-based ("nitrocellulose") **clear nail polish** for specimen repair and point mounts. Its aging properties are worse than Elmer's, and these joints will ultimately fail (almost definitely within our lifetimes)

Other recommendations I am pretty sure will hold up upon further research:

1. **Stop using shellac** for point mounts. Shellac bonds are very strong (likely *too* strong) and difficult to reverse, and the joints will become brittle with age

2. **Stop using PVAc** (AYAF, AYAT, AYAC, Gelva, *etc*.) dissolved in a solvent like ethanol for these mounts. They age poorly, as poorly as Elmer's, and will accumulate dust and debris over time

We're doing more research here at the Frost Museum, including some chemical analyses of other adhesives. Overall, though, I'd say I am disenchanted with this type of specimen prep. I might just move to minutens for some specimens or stick to ethanol. If you're looking for an adhesive with proven long term archivability (but not easy reversibility) I'd look for a **poly(ethylene-vinyl acetate) (PEVA) copolymer**, like Jade 403 or Evacon R. This class of adhesives ages well and is considered archival. Keep in mind, however, that these adhesives have a very short shelf life (six months) in the bottle. (This is true of any PVAc dispersion!) The set adhesive will also accumulate dust and debris over time and ultimately will be difficult to reverse. Another one worth experimenting with:

- **Paraloid B-72 acrylic copolymer.** It is a known archival material, with proven reversibility. You can buy it in prepared tubes or make your own, from beads dissolved in acetone or ethanol

We'll have a lot more to say at the Entomological Collections Network meeting in November, including more on animal-derived adhesives (hide glue, *etc*.), Martha Stewart clear gel, gums, and others. I'll try to summarize the results of those conversations for the next issue of *Hamuli*. ○

Conostigmus arientinus (Provancher, 1887) holotype, pointed with ... gum?

Do you know these hymenopterists? Name the year and the place. See page 21 for the answer!

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Answer: Who are those hymenopterists on page 20? (L to R) John Noyes, Ian Gauld, Mike Fitton, Mick Day, and Barry Bolton. It was around 1977 at the BMNH. Thanks to John Noyes for sharing this photo!