

Promoting research, education and conservation: 9th World Congress of Herpetology

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Every 3-4 years, herpetologists from around the world meet at the World Congress of Herpetology. The 1st World Congress was held in England (Canterbury) in 1989 when mysterious amphibian declines were discussed; this was a full decade before one of the main causative agents *Batrachochytrium dendrobatidis* was identified. The World Congress series has since proved very popular so that we recently arrived at the ninth Congress, held this time in New Zealand (5th-10th January 2020). The venue was the University of Otago in Dunedin and even though New Zealand is not the easiest place to reach, 874 delegates from 57 countries attended. It is a pleasure to record that a quarter of attendees were students. For detailed information on the Congress series and its origins, readers should refer to the World Congress of Herpetology Newsletter (2020).

At the Congress opening address, delegates were welcomed by the Mayor of Dunedin and offered a traditional Māori welcome. The schedule thereafter was very busy with a total of 593 presentations, running in up to eight concurrent symposia, covering every aspect of herpetology imaginable from disease ecology, taxonomy, and bioacoustics, to urban ecology and even the life and work of Emeritus Professor Richard 'Rick' Shine from the University of Sydney. The latter included talks from members of his family and former PhD students that have since gone on to start their own labs within various academic institutions around the world. Despite a long list of awards and accolades to his name, Rick is a very modest man and was clearly humbled by the tributes. That evening there was an informal social gathering for the Shine Lab and various offshoots to network and trace academic family trees.

Complimenting the symposia were two equally diverse poster sessions. There were also several workshops exploring emerging techniques and topics. One concerned how to use open-source GPS data loggers for wildlife movement studies. The main issue here is finding a way to attach the loggers to a target species: once this has been established, the process is quite simple and intuitive. Other workshops tackled less technical subjects such as the use of social media to engage with new audiences and amplify the reach of your research. Each day of the Congress began and ended with a plenary talk. These covered a wide range of topics and started with a presentation given by Alison Cree on the problems of studying reptiles (such as tuatara) that have exceptionally long lifespans compared to the length of a researcher's career. Other notable plenaries included Jodi Rowley on amphibian conservation and citizen science and Philippe Kok's journey to study and discover amphibians and reptiles living on the table top mountains (tepuis) of South America. A small number of short films were also available to watch during lunch breaks.

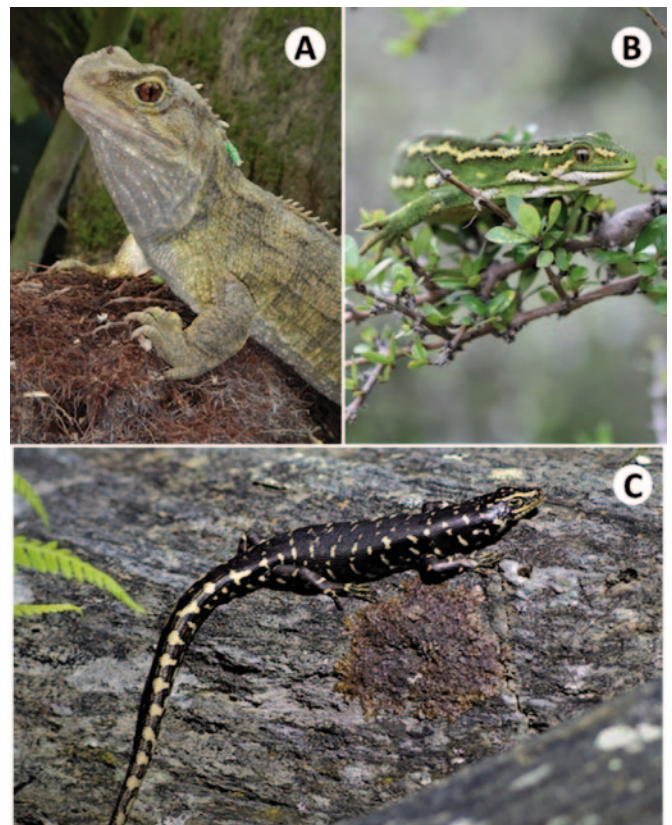


Figure 1. Some of the fascinating New Zealand reptiles seen by Congress participants- **A.** Tuatara *Sphenodon punctatus*, **B.** Otago jewelled gecko *Naultinus gemmeus*, and **C.** Otago skink *Oligosoma otagense*

Student contributions were recognised by an opportunity to win awards for talks and posters. An expert panel selected winners on the basis of a clear message, tackling a difficult problem in a new way, and a meaningful contribution to herpetology. After attending a number of talks and perusing the posters, it was easy to see where herpetology is heading in the future. There are major pushes towards bio-banking and the feasibility of using cryogenically preserved sperm to produce embryos, technological developments to support research such as bioacoustics and morphology, and an increased use of advanced molecular techniques. New tools are becoming available all the time and finding effective ways to use them in a cost effective manner will govern how herpetology advances over the coming decades.

As expected there were many opportunities to socialise

and network both during tea and lunch breaks and at the formal social events. These included a dinner at the Dunedin Town Hall and a visit to one of the Congress's sponsors, the Emerson Brewery. There was also ample opportunity to do a spot of herping both before and after the Congress. The ticketed events took delegates to nearby locations such as Orokonui Ecosanctuary and Otago Peninsula. Both of these are important areas for local reptiles, with the Orokonui Ecosanctuary being the largest predator-free cloud forest in New Zealand. If the weather is kind then there is the likelihood of seeing tuatara (*Sphenodon punctatus*, Fig. 1A), Otago jewelled geckos (*Naultinus gemmeus*, Fig. 1B) and Otago skinks (*Oligosoma ottagense*, Fig. 1C) among the other rare endemic species. If delegates missed out on any of these field trips, then a small number of local amphibians and reptiles could be seen in a secure lab within the University of Otago. There were also other predator-proof sites open to the public that combined habitat recovery with the eradication of invasive species; these have been designed in a way to bring long-term economic benefits to the local community.

The native fauna of New Zealand has evolved in isolation, but is now threatened by non-native species from elsewhere in the world. Despite its small size, New Zealand accommodates a large diversity of reptiles and amphibians, some of which are endemic to very particular islands. Alongside the tuatara are four species of frogs, 63 skinks and 43 geckos all of which are endemic to the archipelago. With this in mind, there was a specific symposium on 'Improving the interface between research and management for conservation of New Zealand reptiles and frogs' that presented the multiple species programmes led by the Department of Conservation. It was a great opportunity to see New Zealand's commitment to protecting the last refuges of their native fauna, eradicating invasive species, and restoring habitats. Among the non-native species being controlled is the alpine newt (*Ichthyosaura alpestris*) that was first detected in New Zealand in 2013. The climate of Dunedin and the Otago Peninsula is not unlike that of Britain, which makes the diversity of reptiles there even more astounding. Imagine if there were native skinks and geckos

present in Britain!

On the subject of alien species, New Zealand has rigorous management of potentially invasive species. In managed reserves and even on remote islands, the Department of Conservation has possum and rat traps placed every 20 m or so in an attempt to control these damaging species; others include such introductions as the European hedgehog (*Erinaceus europaeus*), the blackbird (*Turdus merula*) and the house sparrow (*Passer domesticus*). It was alarming to see how many European mammals were dead on the roads and how frequently this occurred. The customs checks on arrival in New Zealand are just as stringent as you'd expect, looking for every last seed or animal product that could potentially cause further damage to country's already imperilled fauna and flora.

One output of the Congress was the 'Aotearoa Climate Change Declaration' calling upon the international community to acknowledge evidence for global climate change and to take appropriate action. In particular, the Declaration calls for all air travel to future World Congresses to be carbon-mitigated via reputable and certified avenues, with the eventual goal that they should be 100 % carbon-neutral. So the important question is where will the next World Congress be in 2024? There were four candidates bidding for this honour and after much debate and discussion Kuching (Malaysia) won the bid. Malaysia has an impressive assemblage of herpetofauna that will make the 10th World Congress an unforgettable event.

REFERENCE

World Congress of Herpetology Newsletter (2020), 1. 68 pp. <https://www.worldcongressofherpetology.org/newsletter> (accessed July, 2020)

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