

# Beyond the veil

## COLOSS returns to Asia



Fig. 1 The impressive honey processing facilities at KAAC. Honey is big business in Korea

In 2020 (Carreck, 2020; 2021) I reported on the successful COLOSS conference held in Chaing Mai, Thailand, which was intended to be the first in a regular series of COLOSS Asia meetings to counteract the inevitable European axis of this global network. Sadly, the subsequent Covid-19 pandemic, and the tragic death of the conference organizer and COLOSS Asian regional representative Prof. Panuwan Chantawannakul (Disayathanoowat & Chantawannakul, 2022, Pickard, 2022) caused a serious loss of momentum. A well attended COLOSS Asia online meeting was held in 2021, organized by scientists in Okinawa, Japan, but it could not substitute for an in-person meeting.

It was thus pleasing that February 2024 saw the COLOSS Asia Conference held at Seoul University, South Korea in association with the 40<sup>th</sup> Annual Meeting of the Apicultural Society of Korea. It was organized by a team led by COLOSS

Executive Committee members Chuleui Jung of Andong University, South Korea and Huoqing Zheng of Zhejiang University, China. It was attended by some 200 delegates from China, France, South Korea, Israel, Japan, Malaysia, New Zealand, the Netherlands, Switzerland, Thailand, Taiwan, the UK and the USA. The rest of the COLOSS Executive Committee was represented by Dr Victoria Soroker (Volcani Institute, Israel) and myself. Dr Jeff Pettis, President of Apimondia from the USA, and Angus McPherson from The New Zealand Trees for Bees Trust were also invited. It was good to see that many of the delegates were students and early career researchers, and indeed some of the best talks were from students giving their first presentations at an international conference (and mostly in English!).

There were some 68 talks given in three halls, in plenary sessions and symposia, and 45 posters. The plenary topics covered:

bee health; pollination and honey plants; bee biology; beekeeping; and bee products. The Symposia covered: the current status and future prospects of digital (smart) beekeeping; expanding honey forest and enhancing public service; and control of infectious diseases in the honey bee.

A number of the talks covered varroa and *Tropilaelaps* spp. mites and *Vespa velutina*. It is so interesting that the yellow legged Asian hornet is not native to South Korea, being first found there in 2003, since when it has become a major pest of honey bees and displaced other native species of hornet.

We were taken on a technical tour which first involved a visit to the Korea Apicultural Agriculture Cooperative. This cooperative is the largest in South Korea, and it has impressive processing facilities (Figs 1-2) and a beekeeping museum (Figs 3-4). It produces honey



Fig. 1 The fully equipped laboratory for honey quality control.

Fig. 2. Part of the enormous honey drum store at the Korea Apicultural Agriculture Cooperative

Fig. 3. Log and wooden hives in the bee museum.

Fig. 4. Extractors and foundation presses in the museum.

Fig. 5. Commercial honey bee colonies are overwintered under huge barn-like structures. Note the piped in supply of syrup and heating cables to keep each colony viable.

Fig 6. Plenty of brood present in February.

(all photos: Norman Carreck)

in many different forms, and other hive products, in particular propolis, mostly in extremely attractive and sophisticated packaging. We were then taken to visit a commercial beekeeper, and were shown his overwintering site at his home. The site held several hundred hives, side by side, with electrical heating, and pipes to supply syrup feed, all under a protective roof (Fig. 5). The weather was inclement, but a few

bees were flying, and the colonies seemed strong and contained plenty of brood (Fig. 6). Finally, we visited the Strawberry Research Institute at ChungNam where we were shown experimental strawberries grown in raised beds using a hydroponics system and pollinated by commercial bumble bee colonies. Following the rain, the next day, we were treated to about four inches of snow.

The final day of our visit was the workshop of the COLOSS Virus Task Force organized by Eui Joon Kil of Andong University, South Korea, together with Delphine Panziera (Netherlands) Orlando Yañez (Switzerland) and Anne Bonjour-Dalmon (France). This was only the second COLOSS workshop to have been organised outside Europe, and the lively audience, mostly of students and young scientists (Fig. 7) showed that there is



Fig. 7 Delegates at the COLOSS Virus Task Force workshop holding their fingers in a traditional good luck gesture.

much interest in viruses in Asia. It became clear that there are some differences in the nomenclature used for various viruses, and a need for standardisation.

A strength of COLOSS has been its ability to carry out scientifically rigorous joint experiments in many different countries simultaneously, and new joint experiments on viruses between Europe and Asia were suggested. Sacbrood virus has long been known to be devastating in *Apis cerana* colonies, especially in Thailand, but seemingly throughout Asia, and there is a need to compare the strains responsible with those involved in the (much less common or serious) sacbrood found in *Apis mellifera* in Europe. It was reported that the existing chapter on viruses in the COLOSS *BEEBOOK*, published in 2013 is now being updated by the group. For the first time the *BEEBOOK* will include an online database of the primers used for the molecular identification of viruses.

I think the visiting scientists all agreed that it was a most worthwhile conference. As before, I should have liked to see more about the conservation of the other *Apis* species and stingless bees, but hopefully there will be growing interest with continuing collaboration. I should like to thank the COLOSS Association for funding my attendance.

By Norman Carreck NDB

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