

# Fossil Insects, Arthropods and Amber: Preface

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This volume comprises 28 papers resulting from the 7<sup>th</sup> *International Conference on Fossil Insects, Arthropods and Amber* which took place at the National Museum of Scotland, Edinburgh, from 26 April to 1 May 2016. The papers are about crustaceans, insects, bivalves, fungi and plants; ranging in age from the Devonian to the Miocene. The latter three groups, along with many of the insects, are preserved in amber from the Lebanon, Spain, Myanmar, India, the Baltic Region and the Dominican Republic. Of the papers that describe or discuss insects, 12 orders are represented: dragonflies (Odonata); palaeodictyopterans (Palaeodictyoptera); earwigs (Dermaptera); crickets (Orthoptera); bugs (Hemiptera); beetles (Coleoptera); flies (Diptera); ants (Hymenoptera); scorpionflies (Mecoptera); lacewings (Neuroptera); tarachopterans (Tarachoptera); and caddisflies (Trichoptera). Four of the papers are by senior authors who were unable to attend the conference (Kaasalainen, Kettunen, Smith and Zheng), however a co-author of each paper did attend.

The Conference Programme was as follows:

26 April Evening Registration and Reception  
27 April Registration, Opening Welcome and Scientific Lectures

28 April Conference Photo and Scientific Lectures  
29 April Scientific Lectures and Evening Conference Meal  
30 April Fieldtrip to Sites in Aberdeenshire  
1 May Fieldtrip to Sites in the Scottish Borders

The venue for this conference was decided in 2013 by vote at the 6<sup>th</sup> Conference in Byblos, Lebanon. Subsequently, the logo for the conference (see front cover) was produced by Sarah Stewart and is a stylised reconstruction of the palaeodictyopteran *Lithomantis carbonarius* Woodward, 1876, from Ayr, the first fossil insect to be discovered in Scotland (see Ross 2010). The white on blue background was chosen to reflect the Saltire (Scottish flag). The book of Abstracts was compiled and published just prior to the conference (Penney & Ross 2016).

One hundred and five delegates from 25 countries (including Australia and New Zealand) registered, with an additional 12 people comprising the NMS team and people who contributed significantly to the conference. Nineteen delegates brought their partners and other family members along to explore Edinburgh.

The initial Registration and Welcome Reception were held at the Royal Society of Edinburgh, George Street (Fig. 1) This included a lecture by Jeff Liston on Scottish whisky and



**Figure 1** Delegates at the Reception at the Royal Society of Edinburgh. Left to right: Scott Anderson; Viktor Baranov (seated); Anna Lena Moeller; Evgeny Perkovsky; Frauke Stebner; Art Borkent; Mónica Solórzano Kraemer (facing away); Jiří Kolibáč; Xavier Delclòs. Photo by Vicen Carrió (NMS), 26 April 2016.



**Figure 2** Nick Fraser giving his welcoming speech in the Auditorium of the National Museum of Scotland. Photo by Rachel Russell (NMS), 27 April 2016.



**Figure 3** Xiaodan Lin receiving her award for the best student talk from President Dany Azar and other committee members of the International Palaeontological Society. Left to right: Ed Jarzembowski; Jacek Szwedo; Andrew Ross; Julián Petrulevičius; Vladimir Blagoderov; Olivier Béthoux. Photo by Chungkun Shih (Capital Normal University, China), 29 April 2016.

a tasting of four different whiskies from different parts of Scotland. Delegates were given souvenir shot glasses engraved with the Conference logo to take away with them.

The three days of lectures took place in the Auditorium of the National Museum of Scotland in Chambers Street. The first day started with welcome talks by the NMS Director of

Collections (Xerxes Mazda), the NMS Keeper of Natural Sciences (Nick Fraser; Fig. 2) and the President of the International Palaeontological Society (Dany Azar), who provided the welcome news that the Society was now officially registered. These were followed by lectures on arthropods and Paleozoic insects, with a parallel session on flies (Diptera).



**Figure 4** A toast to the host at the Conference Dinner at The Hub. Photo by Chungkun Shih, 29 April 2016.



**Figure 5** The Laura Smith School of Highland Dancing entertaining the Conference Dinner guests. Photo by Chungkun Shih, 29 April 2016.

The second day commenced with the conference photo (see Frontispiece), taken in the Grand Gallery of the Museum, next to the first complete skeleton of *Megaloceros giganteus* ever collected (in 1819), figured by Cuvier in 1823. Then followed lectures on insects in general and Mesozoic insects, with a parallel session on wasps, bees and ants (Hymenoptera).

The third day consisted of lectures on amber and Cenozoic insects, with a parallel session on beetles (Coleoptera) and scorpionflies (Mecoptera).

There were 58 scientific lectures and 24 posters in total; for comments on specific talks see the review by Panciroli (2016). In the final session, Xiaodan Lin (Capital Normal University,



**Figure 6** The author explaining the importance of the site at Rhynie. The diagonal darker strip in the field (above Brigitte Brauckmann) was where the University of Aberdeen undertook an excavation in 2003. In the foreground, Sonja Wedmann is pleased with her Rhynie chert souvenir, from the 2003 excavation. Photo by Vicen Carrió, 30 April 2016.

Beijing, China) was presented with an award for the best student talk (Fig. 3), for her talk on the origin of the proboscis in early scorpionflies; and Xavier Delclòs received an award for the best student poster on behalf of Alba Sánchez-García (Universitat de Barcelona, Spain), about work on springtails (Collembola) from Cretaceous Spanish amber. The Dominican Republic won the vote for the venue of the next conference.

During the three days of lectures, small parties were taken to the Palaeobiology Store in the National Museums Collection Centre at Granton, on the north side of Edinburgh (Ross 2013), to study the collections. Most visitors wanted to study the amber collection, consisting of just over 500 pieces (photographs of many of the specimens were published in Ross & Sheridan (2013) and a catalogue of the Mexican amber collection was recently published by Ross *et al.* (2016)). Several specimens were borrowed from the collection, so it is anticipated that future scientific papers will be published as a result.

The Conference Dinner was held at The Hub, a former church near Edinburgh Castle (Fig. 4). A piper greeted guests at the door and, once seated, the guests were entertained by five girls from the Laura Smith School of Highland Dancing (Fig. 5). The girls were presented with amber bracelets at the end of their performance. After the dinner, members of the Polish, Chinese, Spanish and Canadian delegations gave impromptu singing and musical performances, to the delight of all.

The two fieldtrips were optional extras for the delegates. The first trip consisted of taking two coaches to Stonehaven,

the site of the earliest-known terrestrial animal in the world (the millipede *Pneumodesmus newmani* Wilson & Anderson, 2004); however, the beds it came from have recently been re-dated as earliest Devonian (Suarez *et al.* 2017). Some of the delegates from land-locked countries confessed that this was the first time they had visited the seaside. The next site was Rhynie, famous for the Rhynie chert, the source of the earliest-known insects and springtails in the world (Ross & York 2004; Fayers & Trewin 2005); however, one of them, *Rhyniognatha hirsti*, has recently been reinterpreted as a possible centipede (Haug & Haug, 2017). Unfortunately, all that can be seen is a grassy field (the chert lies about 1m below the soil), but pieces of Rhynie chert had been brought along so that the delegates had something to take away with them (Fig. 6). On the return journey, we travelled through the snow-capped Cairngorm Mountains, which looked spectacular in the sunshine.

The second fieldtrip was via three mini-buses to sites not far from Edinburgh. The first visit was to Siccar Point, near Cockburnspath, famous as the site of Hutton's Unconformity. This involved traversing a muddy field full of cows, and it was very windy at the top of the cliffs, which made the trip a more exciting experience. The second locality was Willie's Hole at Chirnside, the site of an important new earliest Carboniferous tetrapod and arthropod fauna discovered by the late Stan Wood. (A memorial volume dedicated to Stan Wood and his discoveries is being prepared for publication by the *Earth and*



**Figure 7** The group at Burnmouth, in front of earliest Carboniferous non-marine sediments. Front row (seated), left to right: Vicen Carrió; Sibelle Maksoud; Dany Azar; Sonja Wedmann; Mónica Solórzano Kraemer; Katarzyna Kopeć; Agnieszka Soszyńska-Maj; Kornelia Skibińska; Christel Hoffeins; Uwe Kaulfuss; Scott Anderson. Back row (standing), left to right: Tong Bao; Ryszard Szadziwski; James Jepson; Shih-Wei Lee; Sarah Martin; Alexey Bashkuev; Wiesław Krzemiński; Thomas Hörnschemeyer; Ewa Krzemińska; Julián Petrulevičius; Andrew Ross; Alexander Schmidt; Vincent Perrichot; Sarah Stewart; Alicja Brysz; Jiří Kolibáč; Jacek Szwedo; Jakub Prokop. Photo by Yves Candela (NMS), 1 May 2016.

*Environmental Transactions of the Royal Society of Edinburgh.*) The final locality was Burnmouth, which displays a spectacular vertical section through latest Devonian and Early Carboniferous non-marine rocks, which have also yielded tetrapod and arthropod fossils (Fig. 7). To get there, we were escorted through the Burnmouth Brae Races, which just happened to coincide with our visit!

The second fieldtrip was rounded off nicely with the discovery of a millipede (Diplopoda) fossil in a fallen block by Alexey Bashkuev and Wolfgang Zessin, only the second millipede to be found there (see Ross *et al.* in press). This discovery was the perfect end to the Conference.

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## References

- Cuvier, G. 1823. *Recherches sur les ossements fossils de quadrupèdes, où l'on rétablit les caractères de plusieurs espèces d'animaux qu'on a cru détruites*. 2<sup>nd</sup> Ed. Vol. 4, contenant les ruminants et les carnassiers fossiles. Paris: Gabriel Dufour.

- Fayers, S. R. & Trewin, N. H. 2005. A hexapod from the Early Devonian Windyfield Chert, Rhynie, Scotland. *Palaeontology* **48**(5), 1117–30.
- Haug, C. & Haug, J. T. 2017. The presumed oldest flying insect: more likely a myriapod? *PeerJ* **5**, e3402. 16 pp.
- Panciroli, E. 2016. 7th International Conference on Fossil Insects, Arthropods and Amber (Fossils X3), National Museum of Scotland, Edinburgh, UK, 26 April–1 May 2016. *Palaeontological Association Newsletter* **92**, 82–84.
- Penney, D. & Ross, A. J. (eds) 2016. *7<sup>th</sup> International Conference on Fossil Insects, Arthropods and Amber, 26<sup>th</sup> April–1<sup>st</sup> May 2016, National Museum of Scotland, Edinburgh, UK, Abstracts*. Siri Scientific Press. 88 pp.
- Ross, A. J. 2010. A review of the Carboniferous fossil insects from Scotland. *Scottish Journal of Geology* **46**(2), 157–68.
- Ross, A. J. 2013. The new Palaeobiology Store at National Museums Scotland. *The Edinburgh Geologist* **54**, 19–22.
- Ross, A. J., Mellish, C. J. T., Crighton, B. & York, P. V. 2016. A catalogue of the collections of Mexican amber at the Natural History Museum, London and National Museums Scotland, Edinburgh, UK. *Boletín de la Sociedad Geológica Mexicana* **68**(1), 45–55.
- Ross, A. J., Edgecombe, G. D., Clark, N., Bennett, C. E., Carrió, V., Contreras-Izquierdo, R. & Crighton, B. In press. A new terrestrial millipede (Myriapoda: Diplopoda) fauna of earliest Carboniferous (Tournaisian) age from the Scottish Borders helps fill ‘Romer’s Gap’. In Fraser, N., Smithson, T. & Clack, J. (eds) *A Legacy in Fossils: A Tribute to Stan(ley) Wood. Earth and Environmental Science Transactions of the Royal Society of Edinburgh*.
- Ross, A. J. & Sheridan, A. 2013. *Amazing Amber*. Edinburgh: NMS Enterprises Limited – Publishing. 64 pp.
- Ross, A. J. & York, P. V. 2004. A catalogue of the type and figured specimens of Hexapoda from the Rhynie Chert (early Devonian) at The Natural History Museum, London. *Transactions of the Royal Society of Edinburgh: Earth Sciences* **94** (for 2003), 391–95.
- Suarez, S. E., Brookfield, M. E., Catlos, E. J. & Stöckli, D. F. 2017. The supposed oldest-recorded air-breathing land animal is early Devonian, not late Silurian, in age. *PloS ONE* **12**(6), e0179262.
- Wilson, H. M. & Anderson, L. I. 2004. Morphology and taxonomy of Paleozoic millipedes (Diplopoda: Chilognatha: Archipolypoda) from Scotland. *Journal of Paleontology* **78**(1), 169–84.
- Woodward, H. 1876. On a remarkable fossil orthopterous insect from the Coal-Measures of Scotland. *Quarterly Journal of the Geological Society of London* **32**, 60–64.
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