

FOREWORD

In 2009, Uwe Kaulfuss, then a research student at the University of Otago, sent me some pictures of fossil spiders discovered at Foulden Maar. These were the first fossil spiders ever found in New Zealand. Spider remains are very rare in the geological record because a spider's anatomy has no hard parts. The presence of soft-bodied organisms at a fossil locality defines that place as somewhere very special: a *Konservat-Lagerstätte*. I was excited!

Being fragile, the specimens could not be mailed, but Uwe sent more photographs and eventually we published an article together. Some of the fossils were identifiable only as 'arachnid' or 'spider'. One, however, was related to the modern spider family Idiopidae, a family that is thought to have dispersed to New Zealand from Australia. Evidence that this family existed in New Zealand during the Miocene suggests a time frame for this event. The presence of spiders and other preserved terrestrial biota at Foulden Maar refutes the hypothesis that the whole of New Zealand was under water at the time.

In 2019, I travelled to New Zealand for an International Arachnological Congress. Daphne Lee arranged for me to see the fossil spiders, and organised a field trip to Foulden Maar so I could get an idea of the total fossil biota and an impression of the original ecosystem. I did not find a spider, but I did discover a rather nice leaf, and the journey through Otago to the little town of Middlemarch was lovely.

The scientific study of Foulden Maar is an excellent example how to do research on *Fossil-Lagerstätten*, which yield their secrets only after detailed scientific scrutiny. Each aspect of the geology and paleontology of this site has been investigated by experts, and Daphne Lee has tirelessly championed its international importance. The site's paleoecology provides data on food webs and ecosystems. Its entombing sediments offer insights into past climate patterns and can therefore be predictive for how ecosystems might alter as future climates change.

This beautifully written and illustrated book is both a comprehensive account of all that we know to date about this exceptional fossil locality, and a tribute to the scientists and journalists involved in revealing its secrets to the world. Like Grube Messel in Germany, which was rescued from becoming a rubbish dump in the 1970s and is now a UNESCO World Heritage Site, Foulden Maar needs to be conserved for research, education and tourism in perpetuity.

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