



COPROLITE

No. 97
Summer
2021

Coprolite is the newsletter of the Geological Curators' Group, compiled and produced by Lu Allington-Jones, Senior Conservator at the Natural History Museum, London. Contributions from everyone are welcomed, and should be sent to the Newsletter Editor (coprolite@geocurator.org) by the appropriate deadline:

Spring edition issued in March - Deadline 15th February. Summer edition issued in June - Deadline 15th May. Autumn edition issued in September - Deadline 15th August. Winter edition issued in December - Deadline 15th November.

Chair: Dr Sarah King, York Museums Trust, Yorkshire Museum, Museum Gardens, York, YO1 7FR. chair@geocurator.org

Secretary: Emma Bernard, Natural History Museum, Cromwell Road, South Kensington, London, SW7 5BD. secretary@geocurator.org

Treasurer: Dr Rachel Walcott, Department of Natural Sciences, National Museums Scotland, Chambers St, Edinburgh EH1 1JF. treasurer@geocurator.org

Membership: Cindy Howells, Palaeontology, National Museum Cardiff, Cathays Park, Cardiff, CF10 3NP membership@geocurator.org

Please log into our website and check that your contact details and preferences are correct and check whether you need to pay your subs (due from January 1st).



@OriginalGCG



<https://www.facebook.com/GeologicalCuratorsGroup>



www.geocurator.org

Events

Webinars

The Geological Society of London is hosting "2021: The Year of Space!" A series of talks on our solar system are taking place throughout the year: Asteroids and Comets, 30th June 2021, virtual event

The Moon and Early Earth, 29th – 30th November 2021, at The Geological Society, Burlington House, London <https://www.geolsoc.org.uk/space21>

SedsOnline is an online webinar series sponsored by the International Association of Sedimentologists. They have a webinar every Wednesday at 4pm BST <https://sedsonline.com/events/>

The Natural History Museum's Nature Live Online is continuing with its lunchtime webinars, frequently on geological topics, every Tuesday and Thursday. Volcanoes with researcher Gerallt Hughes: <https://www.youtube.com/watch?v=gfnUsYu2dg>

Conferences and Events

The European Association of Vertebrate Palaeontologists will take place online 6th – 9th July 2021. <https://eavp.org/>

The Museum Galleries History Group is hosting their biennial conference "Museum Networks and Museum History" online 14-16th July 2021. <http://www.mghg.info/programme>

The London Natural History Society is hosting a series of talks in 2021. On the 22nd July 2021, there is a palaeontology themed talk titled Microworld: How Microfossils Unravel Ancient Natural Histories by Anke Marsh. <http://www.lnhs.org.uk/>

The Geographical Society is hosting their 2021 Annual International Conference online 31st August – 3rd September 2021. <https://www.rgs.org/research/annual-international-conference/>

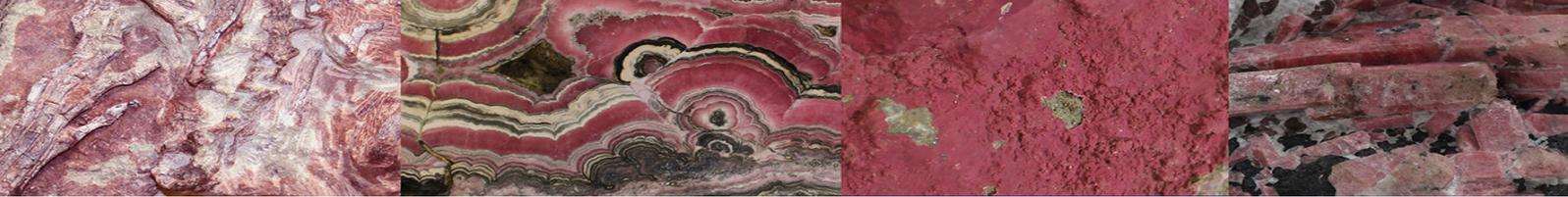
Obituaries

Paul Wenning Sowan Bsc FRGS FGS FLS

GCG is sad to announce that long term member Paul Wenning Sowan passed away on 4th June 2021, aged 81. He was a retired teacher with a degree from University of London in geology, chemistry and physics, and his other interests included industrial archaeology and local history. Paul played a major role in the Croydon Natural History & Scientific Society (CNHSS) for many years, having joined in 1960, and remaining as Honorary Librarian & Archivist until his death. He was never happier than when leading walks to visit disused industrial and mining sites, and many remember Paul for his enthusiasm, his many talks and walks, his environmentalism, his generosity with his time and with his immense knowledge, as an interesting raconteur and as a convivial and genial companion. He was a lifelong vegetarian, never had a television, and to the end rejected email and insisted on the telephone and letter writing. He had been a member of the Geological Curators' Group since at least the mid 1990's.

Colin Huller

GCG is sad to bring the news that Colin Huller passed away on Tuesday 18th May after a long battle with cancer. Colin had been a keen collector and preparator of fossils since an early age, and was heavily involved in the UK Fossils Forum, where he had spent much time giving helpful identifications and advice since the early days of that group. He was endlessly curious and keen to learn from others as well as being free with his own experience and friendly to all. Colin had only joined GCG three years ago, so we were fortunate to have had the chance to actually meet him at the Cambridge seminar and AGM in 2019. It is a shame we were not to have more time to get to know him better.



News Feature

The Winchcombe Meteorite

The first meteorite fall to be recovered in the UK for 30 years

At 9:54 pm on Sunday the 28th February 2021 a spectacularly bright meteor, known as a fireball, was seen blazing across the sky over the south of the UK. Fortunately, a dedicated camera network, the UK Fireball Alliance (UKFALL), was in place hoping to spot an event exactly like this. In addition to catching footage of the fireball, they also received over 1000 eyewitness reports from people who had spotted it. The fireball was caused by an extra-terrestrial rocky fragment entering the Earth's atmosphere and burning up due to friction with air molecules. Preliminary analysis of the footage collected by UKFALL suggested that the object originated in the outer regions of the main asteroid belt and that some material likely made it to the ground as meteorites. Following this revelation, there were some media appearances by researchers from across the UK asking the public in the area near Cheltenham to look out for any rocks that might look different, or unusual.



Ashley King (NHM) shows some of the 'driveway' fragments to Aine O'Brien (University of Glasgow), telling her what to look out for before the planetary science community go and search for meteorite stones in nearby fields.

Image credit to Natasha Stephen, university of Plymouth.

Even before these media appearances, on the morning following the fireball, a pile of dark stones and powder were discovered on a driveway in the town of Winchcombe, Gloucestershire. The material was collected into plastic bags, revealing a small dent in the tarmac. After seeing some of the media reports, the finders got in touch with researchers at the Natural History Museum (NHM) and the Open University who quickly confirmed the rocks they had found to be meteorites. Within days of this, further stones were found on local properties and during an organised search of farmland by the UK planetary science community. I was lucky enough to be part of the initial search of the fields surrounding Winchcombe, however I was quickly whisked back to the NHM to begin the initial weighing, storing and curation of the already found meteorite stones. Whilst I was weighing the 'driveway' fragments, Mira Ihasz and a team of researchers from the University of Glasgow found a beautiful 150 g stone, the largest recovered single piece of the meteorite. This stone did break in half when being recovered: the fragility of the meteorite was one of our first hints this might be something quite special. Through the efforts of the local community, to date >600 g of the meteorite has been recovered from the area, most of which is now being curated at the NHM in London.

Winchcombe - as this meteorite fall will be officially known - is the first meteorite fall to be recovered in the UK for 30 years. Initial petrographic, chemical, and isotopic analysis, some of which was carried out less than a week after the fall, shows that Winchcombe is a CM ("Mighei-type") carbonaceous chondrite, the first ever meteorite of this rare type to be recovered in the UK. The CM chondrites are rich in water-bearing phyllosilicate minerals and organic matter and come from asteroids that have remained largely unchanged since the birth of the solar system 4.6 billion years ago. Winchcombe is a pristine example of the CM group, unaltered by terrestrial processes it provides a unique opportunity to investigate volatiles in the early solar system and the formation of habitable planets.

Of particular interest to the wider planetary science community is Winchcombe's similarity to the material brought back by the NASA and JAXA asteroid sample return missions, OSIRIS-REx and Hayabusa2. These missions visited two near-Earth asteroids which, based on ground-based telescopic observations, looked as though they might contain water-bearing minerals. Hayabusa2 successfully brought back about 5 g of material from the asteroid Ryugu, landing back on earth in December 2020, and OSIRIS-REx recently broke out of orbit from its target asteroid – Benu – aiming to return to Earth in 2023. The OSIRIS-REx team estimate they may have collected up to 2 kilos of asteroid material. Whether this material brought back by these missions is similar (or not!) to Winchcombe is going to be an exciting focus of the upcoming studies on the meteorite.



Four of the largest driveway stones (OE-MIN-2020-11-MET) on cleaned aluminium foil. Most are much smaller, as the stone fragmented into hundreds of pieces when it hit the ground. ©The Trustees of the Natural History Museum, London. All rights reserved.

We were fortunate enough that we were able to organise a display of the Winchcombe meteorite at the Natural History Museum ready for the reopening on the 17th May. One half of the 150 g stone found by Mira is held in a vacuum desiccator with oxygen scavengers, within a display case in the Vault, a gallery which holds some of nature's most unique and valuable treasures. The rest of the meteorite is being stored carefully and securely within the meteorite collection at the museum. We're beginning to send samples around the UK for a consortium study, and we're hopeful that the efforts of the local Winchcombe residents and the planetary science community working together to quickly recover and analyse the meteorite will mean this is one of the most pristine CM chondrites available to study. It should reveal some insights into what the solar system was like before planets had even formed, and it has been an absolute joy being involved in looking after it.

*by **Helena Bates**, Curatorial Assistant, Meteorites (The Natural History Museum, London, UK)*

Helena Bates and Mike Rumsey (NHM) viewing the display they organised of the largest Winchcombe fragment (OE-MIN-2020-15-MET), in the Vault at the NHM. ©The Trustees of the Natural History Museum, London



Coprolite of the Quarter

Answer to last quarter's mystery coprolite:

Stratigraphy:

late Pleistocene - early Holocene (10,000 - 14,000 BP)

Location:

Cueva de Milodon, SW Chile.

Likely culprit:

Mylodon (giant ground sloth).

Size:

approx. 10-20 cm

Collection and image:

Nigel Larkin



Further reading: Hunt, A. P., & Lucas, S. G. 2018. The Record of Sloth Coprolites in North and South America: Implications for Terminal Pleistocene Extinctions. *New Mexico Museum of Natural History and Science Bulletin*, **79**: 277-298.

Last quarter's winners:

Congratulations to Dr Michael A. Taylor, National Museums Scotland and Daniel Falk, University College Cork

Guess the Coprolite

Please send guesses to coprolite@geocurator.org
The answer and winner will be announced in the next quarterly newsletter. The winner will also receive an exclusive GCG tote bag.
If there are several correct answers, one winner will be selected at random.

