REPORT

British Triassic palaeontology: literature supplement 47

Since the completion of the previous Supplement (No. 46, *Mercian Geologist*, **21**, 59–60) the following works on or relating to aspects of this subject have appeared or come to the compiler's notice.

Benton, M.J. 2025. Extinctions: how life survives, adapts and evolves. *Proceedings of the Open University Geological Society*, **11**, 1-6.

Brownstein, C.D., Simões, T.R., Caldwell, M.W., Lee, M.S.Y., Meyer, D.L. & Scarpetta, S.G. 2023. The affinities of the Late Triassic *Cryptovaranoides* and the age of crown squamates. *Royal Society Open Science*, **10**:230968. DOI: 10.1098/rsos.230968. 20 pp.

Carpenter, S. 2021. Saltford: walking through the geological past. *Nature in Avon*, **81**, 2-12.

Edgar, K.M., Butler, J.G., Larwood, J.G. & Smith, J.J.P. 2025. Determining the relative scientific and cultural "value" of the UK's *in-situ* dinosaur track sites. *Proceedings of the Geologists' Association*, **136**; doi.org/10.1016/j.pgeola.2024.12.003. 23 pp.

Evans, D.H., Klug, C., King, A.H. & Page. K.N. 2024. Hettangian, Early Jurassic coleoids from west Somerset, SW England – filling a gap on the coleoid record of NW Europe. *Acta Palaeontologica Polonica*, **69**, 425-445.

Frauenfelder, T.G., Birch, S.A., Bell, P.R. & Campione, N.E. 2024. Revealing the use of dental indices to infer taxonomic variation in sauropod dinosaurs. *Palaeontology*, **67**, e12725. DOI: 10.1111/pala.12725. 25 pp.

Gale, A. S. 2024. British Fossil Cirripedia. Part 1, Introduction, Iblomorpha, Eolepadomorpha, Archaeolepadomorpha and Pollicipedomorpha. *Monographs of the Paleontographical Society*, **178** (668), 1-104. DOI: 10.1080/02693445.2024.2420447.

Hartley, A.J. & Watson, D. 2024. Permian and Triassic: changing climates in the centre of Pangaea. In: *The Geology of Scotland* / 5th ed, edited by M. Smith, & R. Strachan. London: The Geological Society, 351-378,

Hodges, P. 2024. The Bivalvia of the Penarth Group, Triassic-Jurassic, of south-west Britain. *Monographs of the Palaeontographical Society*, **178** (670), 1-127. DOI: 1-1080/02693445.2024.2429220.

Hoffmann, S., Malik, R.S., Vidyasagar, A. & Gill, P. 2025. The inner ear and stapes of the basal mammaliaform *Morganucodon* revisitied: new information on labyrinth morphology and promontorial vascularisation. *Zoological Journal of the Linnean Society*, **203** (2); doi.org/10.1093/zoolinnean/zlae062. 23 pp.

Hounslow, M.W. & Andrews, J.E. 2024. Improved chronostratigraphy and fine-tuned timing for Late Triassic palaeoenvironmental changes in SW Britain using coupled magnetic polarity and carbon isotope stratigraphy. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **656**. DOI: 10.1016/j.palaeo.2024.112579. 19 pp.

Hounslow, M.W., Posen, P.E., Warrington, G. & Page, K.N. 2025. Omission and pacing of events at the Norian-Rhaetian and Triassic-Jurassic transitions in Britain. *Geological Magazine*, **162** (e27), doi.org/10.1017/S0016756825100162. 27 pp.

Kirkham, A. 2018. Arborescent microbialites in the Holkerian (Lower Carboniferous) Concretionary Beds and Rhaetic (Upper Triassic) Cotham Marble, Bristol area. *Nature in Avon*, **78**, 31-39.

Lindström, S. 2023. *Valvaeodinium hymenosynypha* (Morbey) comb. nov., a dinoflagellate cyst from the uppermost Triassic and lowermost Jurassic (Rhaetian and Hettangian) of Europe. *Palynology*, **47**, doi.org/10.1080/01916122.2023.2252482. 8 pp.

Macadam, J. & Evans, B. 2025. Dinosaurs are apparently protected by GDPR – but can we protect their footprints from human thieves by a mere interpretation board? An ongoing tale from Wales. *Proceedings of the Ussher Society*, **15**, 141-142.

Mathieson, A. 2018. Liostrea Limestone. *Nature in Avon*, **78**, 21-26.

Millard, R. 2025. Symposium field trips: Aust Cliff and Manor Farm. *Proceedings of the Open University Geological Society*, **11**, 61-64.

Milroy, P.G. & Wright, V.P. 2024. Facies, facies control and diagenesis of lacustrine ooids and associated grains from the Upper Triassic, southwest England. *Geological Journal*, **37**, 35-53.

Moreno, R., Dunne, E.M., Mujal, E., Farnsworth, A., Valdes, P.J. & Schoch, R.R. 2024. Impact of environmental barriers on temnospondyl biogeography and dispersal during the Middle-Late Triassic. *Palaeontology*, **67**, e12724. DOI: 10.1111/pala.12724. 18 pp.

Purvis, K., Bird, A., Dempsey, E. & Hardman, K. 2025. U-Pb age dating of calcrete from the Triassic Helsby Sandstone Formation, south-east Devon: pilot study results. *Proceedings of the Ussher Society*, **15**, 150-155.

Quinn, J.G., Matheau-Raven, E. R., Whiteside, D.I., Marshall, J.E.A., Hutchinson, D.J. & Benton, M.J. 2024. The relationships and palaeoecology of *Pachystropheus rhaeticus*, an enigmatic latest Triassic marine reptile (Diapsida: Thalattosauria). *Journal of Vertebrate Paleontology*, **43**, e2350408. DOI: 10.1080/02724634.2024.2350408. 26 pp.

Renaud, M., Duffin, C.J., Hildebrandt, C. & Benton, M.J. 2024. Microvertebrates from the Rhaetian bone beds at Blue Anchor Bay, Somerset. *Geological Magazine*, **161** (e8). DOI: 10.1017/S001675682000268. 14 pp.

Swaby, E.J., Coe, A.L., Hutchinson, D., Riva, L. & Nel, A. 2024. A new Liassophlebiidae (Odonata: Heterophlebioidea) from strata close to the Triassic-Jurassic boundary in Somerset, UK. *Historical Biology*, **36**, 2478-2484.

Trudgill, M., Rae, J.W.B. and 23 others. 2025. Pulses of ocean acidification at the Triassic-Jurassic boundary. *Nature Communications*, **16**:6471, doi.org./10.1038/s41467-025-61344-6. 11 pp.

Tucker, M.E. & Sparks, R.S.J. 2024. Fluvial-lacustrine interactions in the Marginal Triassic, Clevedon, Bristol Channel Basin, UK: deposition, dolomitization and silicification. *Geological Magazine*, **161** (e18). DOI: 10.1017/S0016756824000396. 21 pp.

Vickers, M. 2025. Surveying dinosaur footprints in Wales with a drone: Why? What? When? and How? and What's Next? *Proceedings of the Ussher Society*, **15**, 147.

Wallace, K.J. 2025. Bendrick Rock, Barry, South Wales. *Proceedings of the Ussher Society*, **15**, 147.

Weeks, O.J., Cooper, R.B. and 6 others. 2025. Microvertebrates from a Rhaetian neptunian dyke at Holwell, Somerset: dating the fissures. *Proceedings of the Geologists' Association*, **136**; doi.org/10.1016/j.pgeola.2025.101112. 21 pp.

Whiteside, D.I., Chambi-Trowell, S.A.V. & Benton, M.J. 2024. Late Triassic *Cryptovaranoides microlanius* is a squamate, not an archosauromorph. *Royal Society Open Science*, **11**:231874. DOI: 10.1098/rsos.231874. 23 pp.

Wright, P.V., Hodges, P., Huggett, J.M. & Marriott, S.B. 2025. Palaeosols from the Upper Triassic of South Wales. *Proceedings of the Geologists' Association*, **136,** doi.org/10.1016/j.pgeola.2024.12.005. 14pp.

Zalasiewicz, J. 2025. Sailing shoes. *The Palaeontological Association Newsletter*, **118**, 51-55.

Zhen Xu, Jianxin Yu and 15 others. 2025. Early Triassic super-greenhouse climate driven by vegetation collapse. *Nature Communications*, **16:**5400**,** doi.org./10.1038/s41467-025-60396-y. 14 pp.

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THE RECORD

Secretary's Report 2024/5

At the time of reporting our individual membership stood at 164 including 28 joint members. The number of institutional members has declined slightly and stands at 26. We give a formal welcome to new members who have joined the Society during the year. Additionally, Council was pleased to nominate Dr Ian Sutton as an Honorary member of the East Midlands Geological Society.

We must record with regret the passing of three former members of this Society: Mrs Nina Ford (of West Bridgford, Nottingham), who died about the beginning of October 2024; Professor Geoffrey Walton, who died 25 February 2025; and Helen E. Boynton (née Sadler), whose death on 14 September 2020 was not reported to us at the time because she had left the Society in 2019. Helen joined the EMGS in 1965 and had some 15 contributions published in *Mercian Geologist*, mostly palaeontological and focusing more especially on the Precambrian fossils of Charnwood. An obituary for her appears in *Charnia*, which is accessible online.

This was a special year for the East Midlands Geological Society, as it celebrated its Diamond anniversary. In recognition of this, a day of talks was hosted at the Keyworth site of the British Geological Survey on 12 October 2024. The talks were broad ranging, but with an over-riding perspective on the East Midlands. It was a memorable and very enjoyable day with a good attendance. In parallel with the talks there was a display of research posters, which provided a focal point for further discussion during refreshment breaks. The day was rounded off with an evening meal at the Hotel on the campus of the University of Nottingham. Council would once again like to thank the sub-group of Council members involved in convening the event, namely Andy Howard, Janet Slatter, Ian Sutton and Peter Jones, as well as the speakers: Tim Pharaoh, Stuart Clark, Paul Nathanail, David Boon, Briony Bowler, Mike Spence, Paul Wignall, David Bridgland, and the session chairs: Mike Allen, Karen Hanghøj and Tony Waltham. Joanna Thomas and Sue Cotton are thanked for organising and preparing refreshments on the day. Finally we should like to thank the British Geological Survey at Keyworth for hosting our conference and especially Sally Stone and Steph Henrys for ensuring the BGS' excellent facilities were perfectly prepared for the day.

The varied fieldwork programme coordinated by Mike Allen and Joanna Thomas comprised seven visits, some in collaboration with the North Staffs Group of the Geologists' Association. There were day trips to: the Coal Measures rocks and fossil plants in Sheffield's Graves Park and Botanical Garden (Andy Howard and Mike Allen); North Lincolnshire Museum and Frodingham Ironstone at Conesby Quarry, Scunthorpe (Paul Hildreth); Charnwood Forest (John Carney); the Alport Mining Field (Tony Ward), and Ercall Quarries, Wrekin (Ian Stimpson). Ian Stimpson also led an evening visit to Brown's End Quarry, Waterhouses and Andy Howard led a two-day visit to the Yorkshire Coast. The visits were well received by all that attended, and leaders are thanked both for the quality of the trips and their attention to health and safety matters.

The lecture series, organised by Dr Ian Sutton, comprised six excellent, well attended talks, including the Presidential address in February. The programme started with Paul Hildreth, *The Lower Cretaceous 'East Lindsey Group' – a jewel in the geological crown of Lincolnshire*, in April 2024; followed by F. Dunn, *Charnwood Precambrian fossils*, November

2024; Albert Benghiat, *Medicine and geology – an exploration*, December 2024 (Christmas Social); Ian Stimpson, *Geothermal energy*, January 2025; Tony Waltham, *Atlantic volcanoes*, February 2025; Paul Roebuck, *50 years of mineral collecting: a hands-on demonstration,* a demonstration in March 2025. Ian has continued to liaise with the University of Nottingham to ensure that we are able to continue enjoying the benefits of these facilities for hosting the talks. Peter Beastall's assistance with the technology is appreciated by Council.

Our web editor Rob Townsend stepped down at the end of the year after some 25 years of developing and managing the EMGS website. He built the first version while still studying as a student at Nottingham in 2000 and has seen the website through numerous refreshes and re-launches while online technology has developed at pace over the last two decades. His upgrades included an online portal for Mercian Geologist which has substantially broadened the reach and profile of our journal. Rob has volunteered his services to EMGS entirely in his spare time while in continual full time employment, most recently in the NHS Ambulance Service in North Wales. EMGS is sincerely grateful to Rob for his many years of hard work and his diligence in ensuring a smooth hand over to the new web editor in 2025.

A lot of work continues to be done with respect to society publications. Joanna Thomas has maintained the high standard of The EMGS Circular and ensured its delivery at a frequency that keeps the membership informed of forthcoming activities. This, in parallel with Andy Howard's work on the EMGS social media presence, enables us to optimise the promotion of talks and field visits. These are significant and much appreciated contributions. The Nottingham Caves and the Blue John guides, for which we are indebted to Tony Waltham, are still available and continue to attract a steady rate of sales. Mike Allen is thanked for his effort in meeting supplier requirements for these publications. Special thanks are directed to David Bate who continues to edit the Mercian Geologist, and to his editorial board. Mercian continues to be a flagship for the Society because the readership generally finds it informative, readable and entertaining.

Mike Allen kindly took on the President's role on top of his fieldwork and membership secretary roles. Council is very appreciative of this. Further benefits to the society for which we are grateful include Joanna Thomas's hosting of the six Council meetings that took place at her home during the year, Robert Brown's able management of the accounts and Peter Jones's reporting on the Beryl Whittaker Award to students. Finally, we would like to thank all members of Council for each of their contributions to the running of the Society.

Vanessa Banks
EMGS Secretary

Rock, ice and minerals in Greenland

Captions for photographs on the back cover, clockwise from top (photos by Tony Waltham).

Greenland's ice cap, known to the locals as the Inland Ice, seen across the western coastal mountains behind Kangerlussuaq. Slow retreat of the ice margins is exposing new areas of basement rocks with potential for further mineral resources that await discovery.

The beautiful Eqip Glacier that calves into an arm of Disko Bay after descending from the western side of the Inland Ice.

Foliated gneisses of about 1800 Ma exposed in the western coastal mountains, with the Inland Ice in the background. Nearby to the south, the Isua gneisses are more than twice as old and are the oldest rocks currently known on the planet; these include huge areas of Banded Iron Formation, though they are unlikely to be worked at such a remote location.

Icebergs drift past the houses of Qeqertarsuaq at the mouth of Disko Bay, on Greenland's west coast. The ice has come down the Kangia Ice Fjord, which is the most productive westward outlet from the Inland Ice; only the larger icebergs survive as far as here, after all the smaller chunks of ice have already melted into the sea.

On Disko Island, plateau basalts that date from around 61 Ma are nearly a kilometre thick behind Qeqertarsuaq, but the foreshore outcrops are Proterozoic gneisses. Palaeogene volcanics are more extensive and slightly younger on Greenland's east coast, where they include the famous layered intrusion at Skaergaard. All these igneous rocks were related to the mantle-plume hot-spot that now underlies Iceland.

The dark mountain of Kvanafjeld rises beyond the coloured houses of Narsaq, near the southern tip of Greenland. The mountain is formed of an alkaline igneous intrusion that dates from 1160 Ma and contains one of the world's richest orebodies of Rare Earth Elements. This valuable and strategic site is close to the grassy valleys of Brattahlid, where Erik the Red first settled in 985 AD and named his new country Greenland.