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TAPHONOMY OF FOSSIL INVERTEBRATES IN FLINT BEACH CLASTS (UPPER CRETACEOUS), NORTH NORFOLK COAST

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ABSTRACT

The beach of north Norfolk between Cromer and Overstrand is littered with many hundreds of durable clasts of locally derived, water-worn flint (Upper Cretaceous). Although they contain many fossils, these are most commonly seen only in section and are difficult to identify except at a high taxonomic level, such as a sponge. Two unusual specimens are described here; the first, a tall, vase-like sponge has a spiral shell attached to its outer surface. This is likely the serpulid worm Proliserpula ampullaceal (J. de C. Sowerby) which grew attached to the sponge in life. Less convincingly, it may be an ammonite. A second specimen, the belemnite Belemnitella? sp., is preserved as an external mould. It was densely infested by borings post-mortem, identified as Trypanites? isp., which are preserved infilled by flint.

**ON THE SUPPLY OF FLINT CLASTS TO THE WESTLETON BEDS:
A REVIEW**

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ABSTRACT

The Norwich Crag Formation is an East Anglia Early Pleistocene shallow marine deposit that formed between 2.6 and 1.8 Ma. In north-eastern Suffolk, the uppermost member of the Norwich Crag Formation, the Westleton Beds, is well known for its localised developments of gravel units in which the clasts are almost solely of flint. The gravel units mainly occur as the infill of large channels with the clasts having been remobilised from beachface environments by longshore drift. However the mechanism by which these coastal sediments were initially fed with their source material has been much debated. This paper reviews various proposals regarding provenance and supply advanced over the last 150 years. It is concluded that a penecontemporaneous river was the likely provider. Whether the flint clasts were discharged directly into the sea or whether they were exhumed from river terraces by marine ravinement remains unclear.

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THE WROXHAM CRAG AT SALHOUSE, NE NORFOLK: DEPOSITIONAL PROCESSES AND EVIDENCE FOR POSSIBLE QUATERNARY NEOTECTONICS

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ABSTRACT

This paper describes the sedimentology of early Middle Pleistocene Crag sediments at Salhouse in NE Norfolk. Analysis of the sedimentary characteristics including size distribution, sorting, sedimentary structures, palaeo-flow direction and clast and heavy mineral lithologies suggest that the deposit is part of the Wroxham Crag Formation and was formed by shoreface and tidal current processes with material derived from the Thames and Bytham rivers with variable input from coastal erosion and glacially-sourced sediment pulses. These sediments also host a small normal fault with down throw to the north. Comparison with recent work on the neotectonic history of the region suggests the fault may be associated with the adjacent Spixworth Fault, which has displaced Crag landforms, and may separate the uplifting central East Anglia from the more stable NE part of the region. We stress, however, that this interpretation is not definitive and the fault may have been caused by periglacial, glacial or solution processes.



BOOK REVIEW**SCENES FROM PREHISTORIC LIFE****Francis Pryor, Head of Zeus, London 2021. xxix+338 pp.****Hardback. ISBN 978-1-78954-4-145. £25.00***Reviewed by* **Stephen K. Donovan**

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What is landscape? Where do we look for scenery? The eye of the beholder may be influenced by personal ideas, experience and prejudices. A favourite reference on my shelves is Marr (1909). Marr is introduced as a Fellow of St, John's College, Cambridge, yet little of his text is directly applicable to nearby East Anglia and eastern England. Three chapters consider mountains, one volcanoes and so on. Admittedly, there are discussions of lakes, glacial deposits, plains and so on, but only after the chapters on mountains. But this is not surprising; for scenery in the British Isles, people consider uplands such as the Lake District, north-west Scotland, Snowdonia and so on, but less so East Anglia and adjacent areas. Perhaps it takes a different eye to truly appreciate eastern England, such as that of an archaeologist like Francis Pryor. Not everyone needs to look up at their scenery.

I said elsewhere that Pryor understands readers (2019) and truly he does. In a book of 15 chapters ('scenes'), all are about 20 pages long, including figures. I enjoyed reading this book as it is structured, at a calm rate, one chapter per day. It was easy and interesting going. Each chapter is snappy and full of 'meat'. That is, even a lazy reader can read *Scenes* ... at their own speed and in their own order, if necessary; each chapter is self-contained. Pryor's chapters are interwoven and chronologically ordered, yet independent. I recognise that this is an author who has not just written, but has written to be read. *Scenes* will be enjoyed and, in so being, will captivate many readers. There is also an introduction, ample notes and an index.

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BOOK REVIEW

EXTRACTION TO EXTINCTION: RETHINKING OUR RELATIONSHIP WITH EARTH'S NATURAL RESOURCES

David Howe, Saraband, Salford, 264 pp.

Softback. ISBN 9781913393274. £9.99

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The first pages of *Extraction to Extinction* will be resonate for many of us. The author describes how it [geology] all began for him on a school fieldtrip to Alderley Edge, pondering the vastness of time and the thrill of collecting malachite. It took me straight back to the mid-1970s, when my inspirational geography teacher, Bob Morris, took the lower sixth on a day trip to Kent, exploring the 'Wealden of the Weald' especially collecting pyritised ammonites in the Gault Clay. For David Howe a geology degree at Durham followed on, and while never a professional geologist, his love for the subject and landscape has endured.

The overarching theme of this book centres on the contradiction all human beings live with: we are a clever, inventive species good at exploiting natural resources for myriad uses, yet largely insensitive to the environmental degradation that inevitably follows. Would you have ever thought that mining, quarrying and pumping minerals from the Earth's upper crust results in more movement of rock, soil and sediment per year than the global actions of rivers, glaciers and other physical weathering combined? Or that our discarded plastic weighs more than the mass of all marine and terrestrial animals? These are two of the startling facts that David Howe spotlights in this stimulating and illuminating book.

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BOOK REVIEW**GEOLOGY OF THE NORFOLK COAST: HUNSTANTON TO HAPPISBURGH****Jill Eyers, Chiltern Archaeology, Lane End 2021. 68 pp. £12.50***Reviewed by* **Stephen K. Donovan**

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Field guides are an essential part of the core literature of the field geologist (Donovan, 2021). I write them, buy them and hoard them, and dig out the relevant guides when I travel. What better way to discover local geological relationships than in being directed by an expert author? You can read it in transit (assuming, like me, you travel by train and bus) and get an early idea of what to expect. Priceless. So, as you may imagine, I am pleased to see *Geology of the Norfolk Coast*, an excursion through a favourite field area, denied to me for two years due to the impositions of COVID19.

Norfolk Coast is attractively produced. It is a good size for a pocket, 210 x 148 mm, and thus convenient for the field. The paper is glossy, thus showing off the images and photographs to the best advantage. The structure is good; four introductory chapters, seven field guides, bibliography, glossary, but no index. Many of the diagrams in the field guides are obviously taken from the author's notebook and effective they are, too. But the map in figure 15 lacks a scale and north arrow, teaching the inexperienced reader bad habits. Several other figures lack a scale.

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