

**BOOK REVIEW: ESSEX ROCK – GEOLOGY BENEATH THE LANDSCAPE BY IAN MERCER & ROS MERCER**

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Just published! With over 400 pages packed with full-colour diagrams, illustrations and photographs, this new guide to the geology of Essex brings to life the fascinating and surprising geology of this complex corner of the British Isles. Published by Pelagic Publishing, June 2022, £29.99.

‘Lavishly illustrated, deeply informative, a time travellers’ compendium’

When my PhD supervisor (David Bridgland) suggested that I might like to review a new book on the geology of Essex I jumped at the opportunity; living on the north-Kent coast with views of south Essex on the other side of the Thames estuary where the geology mirrors that of Essex I felt I was ideally placed to read and review the newly published book ‘Essex Rock’.

I was intrigued as to how much there really was to say about the geology of Essex. More often than not I arrive in Essex from Kent after being ejected from the bowels of the Earth by the twin bores of the Dartford tunnel and then proceed through the county via the mundanity of the M25 or M11; there seems little geological inspiration at 70mph! However, I was well aware of the many Quaternary sites on the north bank of the Thames and of course the Palaeolithic type site of Clacton, and the fossil collecting site at Walton-on-Naze, but what else was there? When the book arrived, I soon realised the enormity of the task at hand: how could I possibly do justice to such a lavishly illustrated, and deeply informative book, a book that I soon realised could perhaps be best described as a time travellers’ compendium.

As an undergraduate studying physics and space science, I learnt that one of the most important instruments to include on any planetary spacecraft was a camera, as so much of our understanding of the natural world is visually based. This hasn’t been

missed by Ian and Ros Mercer, who have created the antithesis of a dull text-book by including beautiful colour plates or clear descriptive figures on every page.

Each chapter covers unique epochs. The first few chapters set up the understanding of the deep history of Essex, as not only are the visible rocks and superficial deposits considered, but the authors go deep into the Earth’s hidden history, describing the underlying geological structures, processes and rocks that lie deep below Essex and also much of the south east of England; the deep bore holes made by the Victorians in the late 19th century in their quest to find coal reached a depth of 1150ft which led to the discovery of the basement rock, the ‘Anglo-Brabant Massif – Dinosaur Island’: this transports the reader back 500 million years to a time when Essex was founded in the volcanoes and mud around the edge of the long lost supercontinent named Gondwana close to the South Pole.

Chapter 5 describes the drowning of the Anglo-Brabant Massif by the shallow Cretaceous seas and the subsequent forming of Greensand, Gault clays, Cretaceous chalks and their fossils, alongside very useful explanations on the formation of bands of flint. Chapter 6-8 covers the deposits of the Tertiary seas and their extensive fossil assemblages; deposits that are so prevalent throughout Essex and South-East England, the Thanet sand beds, London Clays. This is followed by a welcome explanation of the 48-million-year time-gap between the Tertiary deposits and the Red Crag deposits.

Chapter 9 ‘Ice Age Essex’ has been given special attention as it is this period of the Quaternary glaciation that saw repeated glaciations and warming periods that have shaped so much of the present landscape of Essex. A section describing the Bulphan Fenlands gives a fascinating insight into how the remnants of

fluvial gravels have protected the soft sediments and have created a unique landscape. This period also saw the emergence of early humans in Britain, with so much of the evidence of their presence preserved as archaeological artifacts within the gravels and sands of the terraces of the Thames.

The final chapters cover the Holocene and climate change, noting that the whole range of Essex rocks described throughout the book have been exploited as resources by us throughout all our history and prehistory: flint for cutting tools, clay for pots and bricks, chalk for marl, as well as lime, sand and gravel aggregate for construction. It's the use of these resources that has given us so much insight into the past worlds preserved in the varying Essex rocks; an example cited is that of brick making which led to the discovery of the remains of over 300 Elephants in an area that became known as the 'Ilford Elephant Ground'.

The book shows that geological research into the past provides clues to future changes and closes with a look into the future of Essex; the effects of natural and Anthropogenic climate change, together with the gradual adjustments of the underlying Anglo-Brabant Massif, will result in the formation of new rocks and an uncertain but always changing edge land of Essex. This is the first book I have reviewed as a student of the Quaternary and Palaeolithic, I thoroughly recommend it to all in the Earth science community, it should firmly have a place on the bookshelves of amateurs and professionals alike.