STRATIGRAPHY AND PROCESSES

Beneath the towns and fields of Suffolk are geological deposits, witnesses to Suffolk past. Ancient seas are represented by Chalk (some 95 to 80 million years old), London Clay and associated deposits (about 55 million years old) and Crag (between 4 and 1½ million years old). There are thus long periods of time not represented by deposits, evidence of ancient lost lands until the next marine episode of erosion and deposition. Following the retreat of the Crag sea over one million years ago, Suffolk has been land until the present day; but the history is preserved for us as glacial deposits and as river deposits and valleys. Changes continue. Today, where land meets sea, in rivers and on slopes and where humans toil, processes act which are witness to Suffolk future.

Chalk is the oldest deposit at the surface in Suffolk, but hidden below, far older rocks – the remains of rugged mountain chains – have been found in deep boreholes.

Chalk underlies all of Suffolk and contains vast quantities of natural groundwater, that most precious of our resources. Some layers contain bands of flint nodules which, through erosion, become the dominant constituent of more recent gravels. Later earth-movements tilted the Chalk towards the south and east, thus the oldest Chalk outcrops in the west of the county, the youngest in the east.

The London Clay contains thin layers of volcanic ash, evidence of the newly opening North Atlantic Ocean. Red bricks were formerly made from this clay. Sarsens, hard sandstones which often cause trouble to excavating machinery, are associated with a sand below this clay.

The richly fossiliferous Crag deposits contain evidence of the origins of the modern British marine fauna, whilst contained phosphate-rich stones (‘coprolites’) provided the raw material for the Victorian origin of the local superphosphate fertiliser industry.

The quartz-rich Kesgrave Sands and Gravels give rise to much of the ‘Sandlings’ heathlands east of Ipswich; they are the deposits of a major ‘Proto-Thames’ river. Chalky boulder clay, a deposit of glacial origin, covers the greater part of our county and forms the basis of our rich farmlands; it contains many ‘erratic’ stones brought here from the north by ice sheets. Warm climatic fluctuations during the ‘Ice Age’ are known as interglacials and lake deposits of these times, found at Hoxne and Ipswich, give those names to national use. The formation of present day river valleys can be dated by gravels and clays deposited by their rivers.

Since modern humans have entered this area they have changed much of the landscape; extracting materials for construction; excavating cuttings and making embankments; importing rock and stones for buildings. Meanwhile, the North Sea continues to create, by erosion and deposition, wonderfully varied landforms. Suffolk is at the shore of this new North Sea, a voyage of adventure in time for our children to follow.

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