JANUARY MEETING

First Speaker

Our Chalk Landscape

A talk by Melanie Wrigley – *The White Cliffs Countryside Partnership*

Reported by Alan Lee

Our famous 'White Cliffs of Dover' are known the world over and is part of a truly remarkable landscape. So began Melanie's talk. This stretch of chalk cliff, where the North Downs meets the sea, runs from Folkestone in the west to Kingsdown in the east, a distance of about fifteen miles.

Melanie then shared with her audience many details of the chalk and rock that makes up this part of the Heritage Coast and the Kent Downs Area of Natural Beauty; both show how valuable the area is.

Chalk is a very pure form of limestone, and it is this pureness that makes it so white. Living here in the Dover area we are used to seeing this but chalk cropping on the earth's surface is exceedingly rare around the world.

Chalk was formed during the Cretaceous era, some 65 to 142 million years ago, when dinosaurs roamed the earth and there was run-a-way global warming. This was caused by a large number of volcanoes erupting and giving off gasses. The ice caps had melted, sea temperatures were 82-84˚F [28-29˚C] and the sea levels were 330-925 feet [100-300 metres] higher than they are today and the mid-ocean ridges were splitting apart.

In these ancient warm seas lived marine algae coccolithouspores (coccoliths) and other microscopic plankton plant and animals.

The oceans absorb the carbon dioxide in the atmosphere and the marine algae convert this into calcium carbonate to make their tests (shells) of chalk. When they died the tests sank to the ocean floor and over time formed a thick sediment. Over millions of years this sediment consolidated and eventually uplifted which created the chalk that we see today.

Melanie said that this should function as a warning as to the consequences of the ice caps melting because of continued global warming we are concerned with today.

Over millions of years there have been more times when the earth has not had ice caps than when it had.

View from Whinless Down

The shallow continental shelves have always served as nursery beds for fish and sea creatures, whereas the very deep water in our oceans has made many species extinct.

Over years sea levels have fluctuated wildly in height and this is shown in the rocks at Folkestone Warren. Lower Greensand being the shoreline deposit (estuarine) with dinosaur footprints being discovered. On top of this is the Gault Clay and above this the chalk layer.

The coast at Folkestone is quite different to that at Dover. At Folkestone the three layers are visible and underwent "rotational shearing." At Dover much of the layers are underground with erosion being caused by pebbles and gravel in the waves hitting the base of the cliff. This then causes large columns of chalk to collapse. This is what creates the "White Cliffs."

Looking across the Channel we can see similar rock types making up the white cliffs at Cap Blanc-Nez (Cape White Nose).

England and France were joined together, some 500,000 years ago, by low laying marsh land. To the east a large lake formed, fed by glacier melt and the Thames and Rhine rivers. As the level of this lake increased, the water flowed over the higher ground in the form of a Mega-flood. A number, which occurred near Dover, were some of the largest in the world and washed away much of the low lying ground. It is thought that the final land bridge was eventually fractured and destroyed by a massive earthquake.

Summarising, Melanie stated that there are many reasons that have contributed to make our area such an interesting place for geology, with the special biodiversity of plants and animals that rely on the chalk for their survival. It therefore makes sense to be part of a Geopark that would help increase tourism in the area.

We have the greatest number of plant species and greater number of each species in our south-east corner of Britain compared to any other area.

Part of the work of the WCCP is to manage the chalk grassland around Dover, about 0.5% of the world's total; with Kent having about 2%. Volunteers help staff care for the habitats, grazing animals, wildlife and landscape that exists throughout our area. It is this team effort that makes so much excellent work possible.

The Society wishes to thank Melanie for her most interesting and informative presentation.

If you are interested in helping or want more details of volunteer workdays or how to become an animal 'looker' then please contact.

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WCCP So Much To Do