Geological landforms: Dorset and The Isle of Skye

The landscape of Dorset

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In Dorset the landscape is shaped by a completely different underlying geology to that of Skye and you will see that we will be dealing with a whole succession of sedimentary rocks and their response to erosion. As well as being one of the most beautiful coastlines in Britain, the Dorset coast is also of considerable scientific importance. It's perhaps best known for it's variety of rocks and some world famous fossil localities. But it also has some impressive landforms. These include landslips, this one's at a promintary known as St Alban's Head. There are natural arches, this ones at Durdledor. Between Studland Bay and Poole Harbour, there's a marvellous beach and sand dunes. In contrast, other parts of the coast have impressive sea cliffs like these at Warbarrow Bay. And inland a rolling landscape of hills and valleys. At ground level it's difficult to make out any pattern to the landscape but from a higher vantage point and looking east you can see that the hills terminate at the distinct ridge that curves across the landscape to form a flat top an area that's cut by cliffs at the coastline. From the air, here's another view where you can see the ridge curving round towards St Alban's Head. Approaching these cliffs from the sea, and this time looking west you can recognise St Alban's Head again. So what clues can be find for the underlying geology of the area.

Well, important evidence comes from the stones used in local buildings. Widespread use has been made of two local limestones. The Purbeck stone is often used in the construction of cottages in Dorset and the Portland stone is more durable and used for major public buildings. So we might expect that these limestone’s form an important part of the underlying geology. The white rocks capping the cliffs at St Alban's Head show good horizontal layering, that is : they're bedded, and they're sedimentary in origin. It's a limestone, in fact it's a Portland limestone. Lower down on the cliff is a much softer grey rock that when wet resembles potter's clay. Close up it's very loose and pliable. This clay is one of a series of softer sedimentary rocks mainly clays and shales which underlay the harder limestone above.

Landslips occur when the clays become water-logged, particularly after prolonged periods of rainfall and when the sea erodes the relatively soft clays and shales at the foot of the cliffs. This is the Kimmeridge Bay and it's much better exposed a few miles to the west of 8t Alban's Head where it forms the cliffs and shores at Kimmeridge Bay.
Here you find some very fossil rich rocks among the relatively thin bands of clays, shales and limestones. This fossil is an impression of an ammonite in the Kimmeridge shale. And here's another example of an ammonite fossil which occurs in one of the limestone’s found in Dorset-spectacular isn't it?