The cliffs to the west of Budleigh show cavitation hollows possibly formed by wind erosion or the action of salt weathering.

As you walk west along the beach below the cliffs you will see the Budleigh Salterton Pebble Beds, also deposited by river action. The pebbles are rounded and have clearly been transported some distance to achieve the rounded character by attrition (banging together). Further to the west the rocks change to mudstone, a massive clay formed in quieter water conditions possibly river flood plains due to seasonal floods perhaps

USEFUL RESOURCES:

Maps: Ordnance Survey 1:25,000 Explorer Map 115.

British Geological Survey Map Sheet 326 Sidmouth.

Books: Geology of Devon edited by Durrance. University of Exeter.

Coast and Country Geological Walks in and around Dorset CD. DGAG.

Geology of the Jurassic Coast, the Red Coast Revealed. Richard Edwards. Jurassic Coast Trust.

Websites:

dorsetgeologistsassociation.org

jurassiccoast.org

southampton.ac.uk/~imw



The cliffs further west at Budleigh Salterton showing cavitation hollows above and Budleigh Salterton Pebble Beds below.

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WORLD HERITAGE COAST LOCATIONS:

BUDLEIGH SALTERTON

ANCIENT RIVER AND SAND DUNE SEDIMENTS IN THE CLIFFS AT BUDLEIGH



The view from the western end of the Promenade at Budleigh Salterton, the orange red sandstone is typical of much of east Devon's geology.

WHAT'S SPECIAL ABOUT THE GEOLOGY AT BUDLEIGH SALTERTON?

A walk from the mouth of the River Otter along the beach and Esplanade and about 500 metres or so along the beach to the west of Budleigh exposes a wealth of interesting geology.

HOW TO GET THERE:

1. Location: Budleigh Salterton, Devon GR SY 073820.

2. Reach Budleigh Salterton via the A3052 from Lyme Regis and Exeter and then the B3178 from Newton Poppleford. Alternatively, from Exmouth use the B3178 to reach Budleigh. Park in the Lyme Kiln Car Park at the end of road through the town at GR SY073820.

3. Facilities. Budleigh Salterton is a substantial centre with a range of shops, cafes and restaurants especially in the summer.

HEALTH & SAFETY

1. This coast section is relatively trouble free. However, there are sections of pebble beach to walk on which is better achieved in good shoes or boots.

- 2. The cliffs west of Budleigh are high and liable to rock falls so you should walk as far away from the cliff as possible.
- 3. The beach is broad so unless you walk the section in a storm at high tide there should be little problem.

THE GEOLOGY:

All the rocks in this section are of Triassic age, in this case about 240 million years old. The orange red colour tells us that they were formed in tropical continental (land) arid or semi-arid conditions. These conditions are mirrored now on the northern edge of the Sahara Desert and the Mediterranean coast of Africa. The reason for this is that the U.K. was located much further south during the Triassic in a land locked location and was therefore dry (part of the Pangea supercontinent).

The rocks dip gently to the east as can be seen in the cover picture. Most of the rocks are sandstones either formed in a fluvial (river) environment or in a desert sand dune environment. It won't always be easy to determine this unless you have access to a hand lens with moderate magnification (X 10). The river sands have angular guartz grains while those that formed the desert dunes are more rounded (often called millet seed grains). The red colour is developed because most of the grains are coated in red iron oxide (hematite), again an indication that the sediments were formed in a continental environment. It may seem strange that rivers were flowing in an arid environment, but consider the presentday River Nile flowing thousands of kilometres across Africa. In this case the rivers flowed from far to the west. Further along the beach pebbles can be seen in the cliffs and these indicate a source including what we now call Brittany. Such pebbles seen on the beach eroded from the cliffs and can also be found in Chesil Beach.

Please remember it is illegal to remove pebbles from the beach.



Above: Cliffs on the east side of the mouth of the River Otter at Budleigh Salterton. The red colour of the Triassic Sandstone is clear and was formed in semi-arid conditions found now in North Africa.