

The Axmouth Landslip of 1839

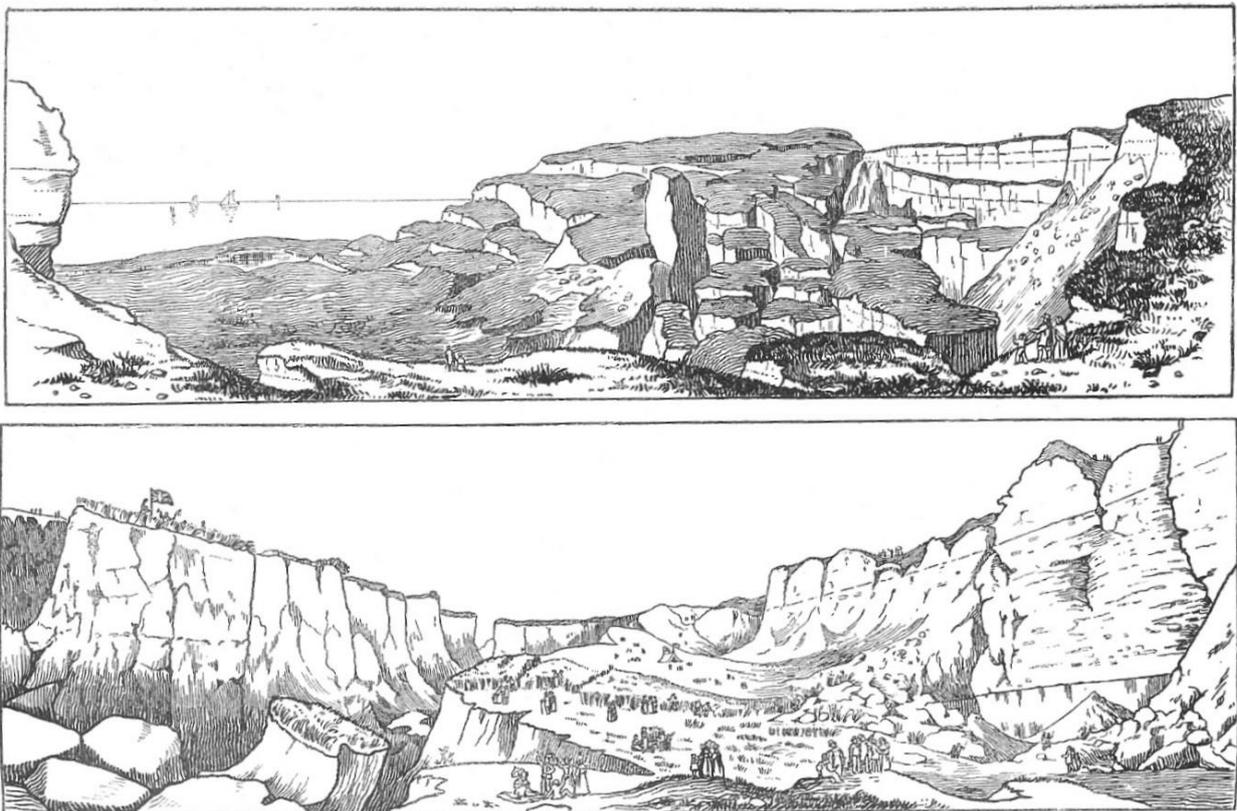
Background

On Christmas Day 1839 there was a massive landslip affecting the cliffs between Axmouth and Lyme Regis. By happy chance Dr William Buckland and his wife were spending Christmas at Axminster with Rev William Daniel Conybeare and his family. They were both among the leading geologists of their day, and very familiar with the local area, Buckland having been born at Axminster, and Conybeare being at that time the vicar. Mrs Mary Buckland was a renowned scientific illustrator in her own right.

Description of the landslip

The following description comes from Chapter VII of 'The Life and Correspondence of William Buckland', written many years later by one of the Bucklands' daughters. Although out of print, this is accessible locally via the Devon library service.

"Dr and Mrs Buckland were both quickly on the spot, and while the Professor made careful investigations into the cause of the catastrophe, his wife, with her clever pencil, made a series of careful drawings of this curious phenomenon ..." two of which are shown below.



AXMOUTH LANDSLIP.

The Axmouth landslip of 1839, drawn by Mrs Mary Buckland

William Buckland's own description of the events is quoted below. These words, taken from the biography cited above, were written by him for a lecture which he delivered at Oxford, soon after the landslip. He had for some years been the University's first professor of geology. In the interest of clarity, Buckland's very long paragraphs have been broken up, but in all other respects the words and punctuation are his.

"The recent sinking of the land and elevation of the bottom of the sea at Axmouth, Devon, which occurred during two days, December 25th and 26th, have no analogy to the motions of an earthquake, but come from an entirely different cause.

"The cliffs on that part of the coast consist of strata of chalk and cherty sandstone, resting on a thick bed of loose sand or fox-mould, beneath which is a series of beds of fine clay impervious to water. Owing to the long continuance of wet weather in the last autumn, the lower region of the fox-mould had become so highly saturated with water as to be reduced to semi-fluid quicksand.

"The coast from Axmouth to Lyme Regis presents vertical cliffs of chalk about five hundred feet above sea level, between which cliffs and the beach a space, varying from a quarter to half a mile in extent, is occupied by ruinous fallen masses of chalk and sandstone, forming an undercliff similar to that in the south coast of the Isle of Wight. The landslip at Axmouth began in the night of December 24th, 1839, and during the following day slight movements of the undercliff were noticed; a few cracks also appeared in the fields above.

"About midnight of December 25th the inhabitants of two cottages in the undercliff were awakened by loud sounds produced by the grinding of slowly moving masses of the adjacent rocks; they found the floors of their houses rising upwards towards the ceiling, and with difficulty escaped. In a few hours one cottage was thrown down.

"About midnight also the two coastguards observed a huge reef of rocks gradually rising out of the sea at a short distance from the shore; they moved slowly upwards during December 26th, until a reef or breakwater was formed half a mile long and ranging from ten to forty feet in height, between which and the shore was a basin of salt water about five acres in extent and in some parts twenty-five feet deep.

"The men who saw the reef rising fled to the top of the cliffs, where they soon found the fields on which they trod intersected by chasms, from which they made their escape with difficulty. Fifty acres were gradually severed from the mainland during December 26th. Of these a portion subsided about fifty feet below its former level, and the rest sank into a tremendous chasm extending three quarters of a mile from east to west and varying in breadth from two hundred to four hundred feet.

"Towards the face of the new cliff, a portion of the mass presents a most picturesque appearance of ruin and confusion, arising from the fact of its having broken up into fragments, which having sunk to unequal depths and being divided by deep chasms give the appearance of castles, towers and pinnacles. The upward movement of the reef was simultaneous with the downward movement of the land.

"A similar elevation of a reef was produced in March 1790 by the subsidence of about eight acres of chalk in the parish of Beer, three miles west of Axmouth. A third example of the same kind but on a minor scale took place last February in the daytime at Whitlands, about a mile and a half west of Lyme. The most decisive confirmation of the theory of hydrostatic pressure causing the elevation of reefs beneath the sea was afforded at Whitlands by the rising of two reefs at a short distance from the shore, which were seen to rise as the undercliff descended."