

**An account of the mighty landslip at Dowlands and Bindon near Lyme
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AN ACCOUNT
OF THE
MIGHTY LANDSLIP
AT DOWLANDS AND BINDON
NEAR
LYME REGIS,

December 25, 1839 :

With the incidents of its progress, the locality, historical particulars, its causes popularly treated and the claims of being the effect of an earthquake considered with mention of a more recent disturbance at Whitlands,

BY GEORGE ROBERTS, M. R. S. L.

Author of the "HISTORY OF LYME REGIS."

"Etymological & Explanatory DICTIONARY of GEOLOGY, &c, &c."

Fourth Edition.

LYME:

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BROAD STREET.

1840.

AN ACCOUNT

OF THE

MIGHTY LANDSLIP

AT OSMUND AND EMBON

BY H. R. E. I. N.

A DISCOVERY OF 1853

BY GEORGE ROBERTS, F.R.S.

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P R E F A C E .

Having been called on for some memorial of what has occurred in our neighbourhood, which has drawn several thousand persons to visit the spot, I proceed to describe in a popular manner the Mighty Landslip of Dowlands and Bindon.

In these days of Literary kindness of feeling a Buckland and a Conybeare, though the subject belongs to their immediate province, and they have lectured on it, will view with favour an attempt at registering for posterity important matter that fairly belongs to the history of a place that has occupied so much of my thoughts. I stand in the same position as the Rev. Gilbert White who felt called on to record a Landslip that occurred near his famed parish Selborne. A description couched in the language of science would be out of character with a popular memorial, similar to my account of the 'Great Storm' which may be looked upon as supplementary to the History of Lyme Regis. Detailed particulars of causes with diagrams and sections would be highly gratifying but not suited to every reader—Such it is trusted will be furnished by the Rev. W. D. Conybeare.

The publication is likely to be beneficial to Lyme and Seaton. It begins to be understood, that considerable alarm has been created by the exaggerated accounts which have been inserted in the daily London and Provincial papers; and many persons from having read these horrifying statements view our south eastern coast of Devon and western coast of Dorset with great dread, others with a considerable degree of suspicion.

A letter early in January acknowledged by the Rev. W. D. Conybeare, F. G. S. Vicar of Axminster, coming as was understood from so eminent a geologist did wonders in allaying the fears of the timid and ascribing the mighty effects produced to their right causes. Persons of strong nerves may underrate the services of the Reverend Gentleman in this point of view; but the benefit has been extensively felt. Many were breathless at the first view of the fallen cliffs, and one individual from Honiton was taken home to a sick bed from which he was hardly expected to rise. The city of Exeter has to thank Mr. Conybeare for a lecture on this subject delivered in the Athenæum, February 12.

With this expression of the objects I have aimed at, and trusting these pages will prove interesting I submit them to my fellow townsmen and the public.

The AUTHOR.

Grammar School, Broad Street

Lyme Regis, Dorset.

Feb. 18, 1840.

DESCRIPTION
OF THE
MIGHTY LANDSLIP
OF DOWLANDS AND BINDON.

—000—

Mountains have fallen
filling up
The ripe green valleys with destruction's splinters. BYRON.

Description of the country between Lyme and the Slip.

After the traveller has ascended the hill from the valley of Lyme Regis on his way westward, the height he has attained is not less than five hundred feet. He sees before him a continuation of road without great undulations or depression and a tract of country towards Seaton which formerly was comprehended under the title of 'Down Umphraville.' He has left the *blue lias* of the valley of Lyme and the county of Dorset, and is for a mile on the *green sand* formation, the bright ochry earth, too often sterile, of the farmer, till he reaches Pinney where white *chalk* crops out or makes its appearance. The house and upper cliff appear on the left, and a little beyond the second mile-stone the white gates on the left cross the avenue to Whitlands, not more than a hundred yards farther is a lane leading to Charton; and near the third mile-stone a pathway across the fields to the left conducts to Rusedon, and a lane also on the left not much farther on allows the traveller to proceed at a right angle in a straight line to the farm named Dowlands, a corruption of Down-lands, distant about half a mile from the turnpike road. Though slight geological changes are not easily perceived where the eye has nothing to rest on but cultivated soil; it may be proper to state that *chalk* and *green sand* mostly the former, is uppermost.

The stranger will here ask 'Where is the magic undercliff which made Bishop Atterbury exclaim not a little profanely—I now see why wise men came *from* the east?' We proceed to show that the road has been continued over the summit of the hill; and that the magnificent undercliff lies to the left commencing close to the Cobb at Lyme Regis and is continued in beautiful and endless variety to Axmouth on the eastern side of the valley of Seaton.

The undercliff or as it is locally termed the 'Cliffs', and distinguished by the names of the several estates, 'in the scale and picturesque effect of its features' is as a great geologist expresses it, 'far superior to that of the Isle of Wight.' We have our chines in the landscape and sea view but want the name. There is a succession of splendid wild and romantic scenery. Should the reader ask what the geological features are, we may simply quote the explanation given in a section of the coast published in the Geological Transactions 2 Series by H. T. De la Beche, Esq. F. G. S. &c, "Fallen masses of chalk and green sand." The undercliff of the south of the Isle of Wight has been similarly formed by the wild and rugged arrangement of fallen masses.

*Description of the Slip, about one mile and half east of Seaton,
and three miles and half west of Lyme.*

Parties according to the point from which they have come, arrive at the farm of Bindon or Dowlands. An admission fee of six-pence a head is demanded for which a ticket is given; and no further payment has to be made till in roaming about the stranger comes to the bounds of the other farm, when another six-penny ticket is required in order to pass.

Arrived at Dowlands and having received a ticket for each signed Richard Dare Chappell, we proceeded through the barton across the estate which belongs to Mrs. Inman of Bishop's Hull, about a quarter of a mile, assured an inspection would convince us of the impossibility of any other cause save that of a earthquake producing such effects.

We found that the line of cliff as seen from sea-ward, was lower than the road we had traversed; and to arrive at the brink we had to ascend from a slight depression. Here a portion of grass land had settled down about a foot, and on reaching the edge of the clift we perceived the traces of great cracks below us winding through the sublime scenery of the undercliff, and we continued our walk westward by the edge of the precipice till we came to Dowlands lime-kiln which had been divided in half by a crack. Here the precipice which bounds the undercliff on the land side is about one hundred feet in height of chalk, and from its base wave after wave each a mighty one too, of land succeeds in various forms to lower and lower level of about three hundred feet to the 'moving majesty of ocean' which is about three to three hundred and fifty feet below the summit, in some spots perhaps not so much.

So far we are standing on chalk cliff; but as we approach the site which has led us to this introductory it is trusted necessary, mat-

ter, and leave the ploughed field always descending a little so as perhaps to be on the edge of the cliff fifty feet lower than at the spot where we first approached it, the colour changes and the bright *green* sand takes the place of the chalk. Here we perceive the MIGHTY LANDSLIP which, though many may justly suppose cannot be described yet it is surely possible to sketch it. The scene bewilders many and takes away their breath. This is indeed an effect which the unusual grandeur of the whole justifies.

As we look towards the sea we perceive near us at some depth below in the undercliff a dilapidated building consisting of two tenements; and to the westward the ruins of a similar cottage surrounded by rocks and trees and yawning cracks and fissures varying from a few inches to three or four feet in width.

This is continued to the sea, where at this distance an extensive beach only appears. On turning to the right there the great ravine shows itself in all its grandeur. At this spot, as the ravine at its western extremity turns, no end can be seen: the eye rests on a horizontal plain intersected with fissures, of about 83 to 130 yards wide and bounded throughout its entire length about a quarter of a mile by steep cliffs of green sand that are from two hundred and ten to one hundred and ten feet in height. This ravine existed not before: the land which forms the cliffs on the side of the ravine which is nearest the sea is cut off from the range of cliff on which we are standing by the subsidence of the portion which forms the ravine. The strip so separated contains from 12 to 13 acres of land in tillage. There it stands, an elevation separated from all around and to be attained only by surmounting precipices. Portions of the upper cliff remain standing at the eastern entrance of the ravine of different dimensions like needles and towers with a bright green cap, the remains of a turnip field. The rains have not yet taken off the sharpness of the angles; though their beauty will not be quite removed with much weathering. The summit of this detached portion exhibits deep fissures and the whole of the sunk portions to the east of this spot, the little wood, the needles or pinnacles, the cliffs with their varying tints, the dark cracks seen through the green sward, the peeping or protruding rock make up an almost unequalled view.*

On pursuing the edge of the cliff westward we arrive at some tremendous fissures of many years standing all of which but these

*Mr. Dawson a Surveyor of Exeter has recently surveyed the whole trigonometrically. About 27 acres of tillage land have subsided to form the Ravine. The dimensions of this are

	Breadth.	Depth.
East end	400 feet	165 feet
Middle	365	210
West end	250	110

have gone down : they are referred to elsewhere. We enter Bindon estate and are called on to take the second six-penny ticket. This is the property of Mr. Dare who purchased what was once the estate and residence of the Erle family. On looking back the pinnacles or needles of the ravine appear in a more remarkable form, but the finest point of view some decidedly think has been past. A great judge of the picturesque says "the two extremities of the ravine at the east and west are the finest points. The eastern extremity is undoubtedly most remarkable for its pinnacles ; but to see the ravine thoroughly it must be entirely traversed: the approach from the west is very fine. When you stand on the very brow of the precipice just within the western termination the view though somewhat different is quite equal in grandeur to that of the eastern end, as a subject for a picture I should prefer it."* On looking forward and towards the west the White Cliff above Axmouth harbour is seen distant more than a mile, and the ravine turns off to the south ending "in confusion thrice confounded," and a steep descent to the sea.—It is remarkable that in following as we have done the edge of the upper cliff we have gone on in nearly a straight line. Had we determined to coast along by the edge before Christmas we should have had to go off at a right angle and have gone completely round what was the projecting land of Bindon and Little Bindon, now the separated portion of about 13 acres ; and the ravine has made the line of cliff nearly straight and cut off the projection to be for a period the wonderment of many, a grand feature in the landscape, and a sport for the elements.

A path near the terminus of the great slip at Little Bindon conducts over broken ground to the shore. Here we saw the houses on Seaton beach and a fine section of the cliffs to the valley of the Axe. The undercliff terminates about three quarters of a mile west of the slip at Little Bindon continuing to exhibit through this space mural (wall like) crags of the chertzy and rocky beds of green sand and it at last expires on this side just as it commences on the Lyme side by Ware. White lias and blue lias appear near the shore and the well known red marl of fertile Devon makes its first appearance in any quantity succeeded some way up by green sand, and capped by the chalk which gives the name to White cliff the eastern boundary of the valley of the Axe.

Near the shore the remarkable dryness of the upper cliffs, considering the wet season could not fail to be contrasted with the cracks full of water or overflowing, the green sand saturated and every thing resembling a wet sponge.

*Many go no farther than Dow lands and take no second ticket, but they are wrong to loose the view of the ravine looking east.

The first 'harbour' is to the east of this spot. The ridge which forms the fancied mole or pier is composed of boulders of chert and cow-stone. This was the former rugged beach now forced up by the pressure from the land. The water inside is fresh and is supplied by a strong stream that gushes out from the green sand so as to fill a hogshead in four or five minutes. It is the eastern 'harbour' however that has been the subject of much conversation, and it has even been ridiculously reported that government intended it for a harbour of refuge. Messrs. Dease and Simpson saw similar up-heavings of beach by pressure in the Arctic regions. Drifted masses of ice forced up a beach composed of gravel and coarse sand into mounds. This was pressure from without—a case different to the one being described.

The 'Culverhole or eastern harbour' occurs where the shore was strewn with ledges of a rock called *chert* which is a variety of flint. The same kind of pressure from the subsidence and slipping forward of the land at the eastern side of the ravine which produced less striking effects in the western harbour here exerted itself with amazing force; tilted up a ridge of the chert ledges to the height of some thirty feet splitting them so as to display in the most evident manner the violence used and producing a singular bit of coast scenery. As the ridge continues there is an open mouth and deep water, in the middle some say of twenty feet. The area is greater than that of Lyme Cobb. The subsequent gales have much altered the appearance of this raised beach. The beds of which it is composed dip in land at an angle of nearly 45°.

The 'Pinnacle Rock' so long the admiration of Artists, and which has for years exercised their pencils, that stood at Culverhole point close by the sea in advance of the rocky beach and regular cliffs, is not lost. It is however sunk and appears a small and contemptible object between the ridge and the now pinnacled rocks or cliffs that have been pushed forward. Interesting drawings of its two states the high and palmy, and the low state from the originals by Miss Keates, were exhibited at the Athenæum to illustrate Mr. Conybeare's Lecture.

The cliffs next the shore as seen from the upheaved beach vary much in height and are greatly shattered, and the whole land is pushed forward. Culverhole point on the shore immediately adjoining is only to be ascended at a few places and with steep climbing. The cliffs are to be traversed in a north-easterly direction to visit the cottages spoken of as having been viewed from above. The Priest rock about 30 feet high which stood near them is laid low. A nearer view of the cottages discloses the torn state of the ground, and presents a miserable scene of ruin and contortion. In the new Cot-

tages it is curious to see how the solid lime and sand floor has been upheaved. Keeping some way to the east we ascended by a road which leads to Dowlands' lime kiln near the summit thus completing our circuit, at a point where the ravines of Dowlands and Rusedon undercliffs show the clearest traces of former truly grand slips.

Extent of the Land moved and injury sustained.

This till a survey was made by Mr. Dawson a Land-Surveyor of Exeter, was not known. The ravine and insulated portion or as it has been distinguished by an appropriate term the tract of the 'great disturbance' occupies 40 acres. Cracks and fissures of all kinds traverse at least 100 acres. The area visited as the locality long to be famed does not include less than two hundred acres. A great distinction must be made between the *land in tillage* and the *undercliff*. Bindon estate has perhaps only lost twenty acres of tillage land, and this has become undercliff and will be of some little value though the fissures render it dangerous to send cattle there as usual. Dowlands farm has only lost five or six acres of tillage land. The proprietor Mrs. Inman sustains the loss of the Cottages. Little Bindon estate rented of Chick Bartlett Esq. by Mr. Symes, has had twenty acres of top tillage land go down. All these estates are in the parish of Axmouth.

The reader must disconnect the Great Slip from the Cracks of White Cliff on the west, and the great movement of Whitlands on the east. There is no continuity, though many speak of the bounds of the Slip as embracing these distant points.

The period and manner of the Slip.

The tenants of the cottages worked at Dowlands farm on the summit of the hill: they ascended to the estate by a path now destroyed not far from their ruinous abode. The land which came to the upper cliff had moved (to use the language of one of the labourers) a fortnight before Christmas; and it was a subject of conversation one to another. On Monday before Christmas day (Dec. 23, 1839,) Wm. Critchard saw the plastering of his dwelling was affected and the door hung as he attempted to open it. He says he was not alarmed because the house had not been built more than two years and he considered it was the settling of the house which caused this. At six o'clock on the morning of the day before Christmas he went up to the farm to his work; and did not return to his dinner or at sunset as usual, because he remained and his wife joined him at Dowlands farm to burn the ashen faggot at Christmas eve, according to established custom. He and his wife continued round the farmer's

fireside till one o'clock on Christmas morning. At this hour the path had moved down one foot, from the period of his ascent nineteen hours before. The mother who looked after the children, said upon their reaching their home that she was alarmed and so were the neighbours, and thought there 'was something coming upon them,' or in other words about to happen. The house had been cracking. Critchard returning from recent festivity entertained no fear :

Inspiring bold John Barleycorn,
What dangers thou canst make us scorn.
Wi' tippenny, we fear nae evil;
Wi' usquabae we'll face the ——!—BURNS.

He and his wife went to bed. The house continued cracking a little. At about four o'clock he was aroused by a 'wonderful crack;' at five he said he would lie no longer; rose and found the garden had large fissures in it. He used a stick to open the door, got out and called to his neighbours that the house was going. His neighbour began to take down a new clock; but a joist had settled upon it which prevented him, till great force was used in raising the joist. The land continued cracking all the while. Between six and seven o'clock on Christmas morning their little household goods being out, he went up to tell his master what had occurred. The land had then settled down by the upper cliff seven feet, and he had to climb up. Farmer Chappell sent down a waggon to remove the furniture; and the labourers had here and there to repair the road to enable this loaded vehicle to proceed. All Christmas day the land continued to slip; and every thing appeared in the state it now is on the following morning Dec. 26. There were no noises of any kind.

During a part of the time referred to by Critchard, a preventive man under the command of Capt. Mercer, R. N. Inspecting Commander, was patrolling the cliff near Culverhole on the look out for smugglers. Nothing appears to have attracted his attention before he got his leg into a crack; which as he knew every step of the ground was new to him. He now found that the land was in motion; he particularly observed the rocks and perceived that the ridge of beach was being forced up. His name is Spencer. He said he had been eight years in a man of war still had never seen any thing like it. It was at Little Bindon that he first saw the land slipping down. He went on to Dowlands cliff where he met two men of the next guard and communicated what 'was in action.' He heard no noises.

Rumours of individuals who heard noises at Lyme and even at Charmouth have been widely circulated. Unfortunately the noises attributed to the falling in of the Chasm were too early by one night; for as it has been seen, Christmas day broke, and no chasm or ravine was formed. All was in motion: the President of the Geological

Society the Rev. Professor Buckland was at Lyme; his friend the Rev. W. D. Conybeare, F. G. S. at Axminster: both might have been sent for to view the foundering, struggling mass.

We take this opportunity of contradicting a prevalent report that these two eminent geologists entertain different views as to the causes or nature of the Slip. Professor Buckland has published his contradiction, which was rendered necessary by statements made by persons who followed him about in crowds; almost hustled him when he looked into the fissures, and imperfectly understood his remarks made on the spot to the Rev. W. D. Conybeare and the inquiries of the farmer.

The Causes of the Great Landslip.

Under this head the question necessarily falls whether this is a *Landslip* or an *Earthquake*. To conceal that we consider this movement to be the effect of causes now existing, would be affectation; and we shall lay before the public a series of information and remarks as to the exhibition of those effects in former years, which we trust will produce a conviction as to the point proposed for decision, and fully justify our assumption that it is nothing but a Landslip.

Earthquakes are attended by sudden movements; the land undulates or has a wave-like motion, vibrates, fissures open and shut, bellowings and subterranean noises are heard, the sea is agitated, great waves are produced, man and beast and the feathered race are affected. Earthquakes are never confined to the insignificant space of half a square mile; but are felt over a more extended tract creating universal alarm and agitation. Finally earthquakes are not continuous or progressive for several days; though in countries more illfated than our happy and *stable* isle there has been a long succession of many tremendous shocks, and an earthquake does not occur twice or more times at one spot without being felt a mile off. Not one of these characteristics can be traced in the recent movement at Bindon.

Some thirty years ago a sheet Almanac was circulated from the Sherborne Mercury Office by the newsman, which contained some miscellaneous West of England intelligence. Among other matters appeared

EARTHQUAKE AT LYME, 1689.

In the first edition of the History of Lyme this is referred to; and some allusion is made to what we believe was some catch-penny publication as to its having injured the town. Tradition a few years since spoke of great convulsions to the west-ward, where considerable changes took place in the range of cliffs; and it is said the ledges near the Cobb were sensibly affected. It was reported to us that a

farmer who quitted an estate between Lyme and Seaton, in the present century, had received a traditional account, handed down in the family from father to son, that one of his ancestors very narrowly escaped with his life, which was endangered by huge fragments of the cliff, which becoming detached rolled with immense violence into the undercliff and killed several head of cattle which he was driving.

The late aged 'Tom Pearce,' a well known admirable sea-man, and who sailed as pilot in the 'Palmerin' the fast yacht of George Holland Esq., used to relate what his grandfather knew of the great slips to the westward, viz. those of 1689. They must have been very great.

The parish of Rusedon, or as Lysons styles it Rouse Down, formerly Ralph Down from one Ralph de Donne or Downe, whose family held it so early as the reign of Henry II, is considered by the people to be so named from the land having *roused* or *rouged* down. Had they not known the land had come down there, they would probably not have meddled with the etymology.

A great and similar landslip to the present one took place in Whitlands undercliff a little farther to the eastward about 1765, perhaps in the spring after the memorable wet season of 1764.

A rougement at Beer with an uplifted beach happened about 1790.

A great slip took place at or near the present Great Slip about forty or fifty years ago. Having been directed to an aged man named Samuel Peppin, a labourer who is upwards of eighty years of age, we questioned him as to his recollection of the lands. He was not surprised when he was told of what had happened, for he remembered when a 'deal of top land sinked down and was a spoiled; but people did not come to see the sink tho' (then)'' He remembered great cracks for very many years upon the top.

Mr. James Jones, a very intelligent farmer, was suddenly called out of his house to hear what had occurred. He was not surprised as he had seen *great cracks* upon the top lands *thirty years* ago. He remembered going out upon the cliff with a gentleman, seeing the great cracks and having pointed out to him by the gentleman the traces of a great slip.

At Lyme when a great fissure appears the land outside it is considered as lost. Four miles west of Lyme if land slides by cracks of long standing is it to be taken as the effect of an earthquake? In Dowlands some of the most tremendous chasms exist which have not yet fallen. They were in existence at the beginning of this century.

We can show that what is called in the Isle of Wight *founders* occur in this locality. Brannon, in his companion to that island, says 'these are rarely attended with any very serious consequences, other than the damage done perhaps to a few shrubs or a growing crop.' A labourer told us that as his father was once ploughing at Bindon the horses sunk into such a place, that it was considered almost impossible to get them out. This labourer had heard there had been a slip at Bindon some fifty years ago.

Land slips in the isle of Wight vary from a few or 20 acres to such considerable ones as that near Niton in 1799, when 100 acres descended.

Many great fissures take place without attracting attention. On Christmas day 1828, when on our voyage to Guernsey, we perceived at a distance of a few miles a white undulating line which we clearly saw was the mark of a subsidence of the undercliff. At our return we found it extended from Pinney some four hundred yards into Ware. The subsidence was not more in some parts than two or three feet. No one scarcely perceived it. The land went no further. Had it done so there would have been a mighty slip taking a portion of Ware and Pinney.

It is stated that an aged farmer says there has not been any previous slip at Bindon. We have adduced evidence to show there has. A man, who is not of inquiring mind, is of no authority in these matters, except he has been all his life on the spot. We know where a party arrived at a farm house in Dorsetshire to see one of its most interesting earth works, and was courteously received, but informed that there was no such place there or near. It turned out that the farmer had been there but a short time and probably would not have condescended to learn from aged workmen, much less from younger men. This subject might be more fully and curiously illustrated in allusion to slips, but parties might be much pained, and the value of property affected—a good motive for forbearance.

The slip at Bindon and Dowlands is indeed a mighty one. This admitted there is nothing about it which to an observer of the frequent slips, east and west of Lyme, appears at all novel or surprising. The slip a few years ago which took away the eastern lime kilns on the Church-cliffs had a curious ravine which many remember. It was of course a pigmy one compared with the ravine in question. The upheaving of the beach which staggered some who saw no signs of earthquake above has been repeated at Whitlands Feb. 3, after a slight commencement so early as Christmas.—An account of a great landslip near Selborne from the graphic pen of the Rev. Gilbert White is appended.

Having dismissed the question of Earthquake, we proceed to show that the subject of land slips and their causes not only generally, but in this precise locality, have been the theme of eminent geologists.

The great French geologist De Luc was, as De la Beche states in his report on the geology of Cornwall, Devon and part of Somerset the first, as the writer believes, who *recorded* the waste of the western coast though considerable waste has been occasioned within the memory of persons now living.* “No doubt” says De la Beche much loss of land, in the vicinity of Lyme Regis especially, is occasioned by the *slipping of chalk and green sand*, as represented in the Geological manual, over the lias and red marl into the sea, producing picturesque undercliffs, the fragments of the fallen rocks protecting the coast from the loss of land it would otherwise sustain; but the movement thus caused, if the breakers did not carry away the fallen rocks would be comparatively trifling, equal only to the landslips observed in the valleys near Lyme Regis and Axminster, where from a similar cause, the *green sand* on the slopes of some parts of the hills *slides upon the mud or clay* to lower levels.”

The range of cliffs called the upper cliff or top land of Pinney, Whitlands, Dowlands, Bindon, &c, composed of chalk or green sand, is so porous that to obtain water is a very laborious matter. Wells have been dug to a depth of between two and three hundred feet before any water could be procured. One at Whitlands, lately dug at great cost without success, is about five times the depth of Lyme tower. All the atmospherical water that falls percolates the chalk and green sand; is consequently preserved from evaporation; reaches the marl beds of the lias and calcareous beds impervious to water, and is thrown out in much greater volume than can easily be conceived. The soft beds of green sand and fox mould (a variety so named from its colour) one hundred feet in thickness are greatly affected: much is washed away, and sheets of water are impounded in the fox mould reducing it extensively to the condition of a subterraneous quicksand, and a launch way is as it were prepared for the superincumbent mass to travel down from its high situation to a lower level, upon the slippery clay and saturated materials above enumerated, aided by the direction of the dip which appears to have been towards the sea. The formation of the ravine is due to long prepared channels and internal disturbances with lateral action when the great move took place.

* Could De Luc see the church cliffs at Lyme and the graves of many who lived when he visited the town, ready to deliver the bones they contain to desecration and a raging element below: not one farthing having been laid out to protect the church yard and church, what disgrace would he not attach to that town, what ridicule to collections made in that church for repairs and rebuilding foreign churches!!

The summer, autumn, and winter of 1839 will long be remembered as the wettest that has almost been known. From the 20th of June beginning with an awful thunderstorm with little remission during a part of the harvest rain fell to the present time. There was a greater flood in the Axe in July than has been remembered since the year 1809. In the same month were hurricanes of wind and loss of life by shipwreck in our bay owing to weather that equalled that of ordinary winter storms. The trees lost their leaves which however were renewed in August. This unusually wet season hastened a catastrophe, or caused it, which might have been averted or deferred for many years. As a proof of the long continuance of westerly winds we may mention that in October the *Physalis pelagica* or Portuguese man of war mentioned by voyagers, as seen in the ocean, were floated ashore in great numbers at Seaton, Lyme and the Chesil bank. We had never seen one of these bladder like *Acalephæ* before.—There was a sharp frost May 7th that cut the kidney beans and apple blossom off.

Great Slip at Whitlands.

The great breaking up of the undercliff (the property of J. G. Donne Esq.) at Whitlands which has not created the sensation it otherwise would owing to its near neighbourhood to the Great Slip, is due to the same causes and is on a very large scale. The cracks appeared before Christmas. the two Cottages tenanted by Preventive men were ruined by the settling of the walls and upheaving of the floors, in exactly the same manner as those of Dowlands Feb. 3rd. The columnar and pyramidal masses are here wanting. A double elevated beach extends more than half a mile in length: between the two as the tide recedes is left a lake of salt water. On the summit of this beach stands a large rock which proves by admeasurement to weigh 135 tons! Professor Buckland states, that "after this demonstration of the same phenomena at Whitlands, it seems worse than puerile to talk of an earthquake where no such cause is wanted."

Pinney undercliff in its lower region exhibits many minor fissures and subsidences. Ware undercliff has likewise felt the effects of the wet season.

White Cliff, east of, and hanging over the entrance of Axmouth harbour exhibits some extensive cracks. The preventive station house has been deserted; and the flag post is removed. Reports are brought of cracks on Branscombe hill, and a slip at Beer.

The papers contain accounts of the injury done to a railway company by the fall of a part of the cliff at Dover adjoining Shakespeare Cliff 600 feet long, 40 to 50 feet in depth from the summit and 400 feet in height covering two acres.

If any persons continue to ridicule the statement of eminent Geologists, that any such slip has occurred elsewhere, let them read the following remarkable letter No. 45, of the Rev. Gilbert White in his *Natural History of Selborne*, written in 1778. It is in whole passages a complete parallel with our slip. A distinguished character will accept our thanks for having called attention to this letter, which is omitted in most of the small editions, particularly for pointing out that the geological structure of the country near Selborne is like our own calcareous freestone at the bottom of the chalk with loose green sand resting upon the clay of the gault, which is impervious to water. The high character of that graphic writer Gilbert White is increased by so correct a description of great causes before geology was far advanced as a science.

"When I was a boy I used to read with astonishment and implicit assent accounts in *Baker's Chronicle* of walking hills and travelling mountains. John Philips in his *Cyder* alludes to the credit that was given to such stories with a delicate but quaint vein of humour peculiar to the author of the *Splendid Shilling*.

"I nor advise, nor reprehend the choice
 "Of *Marcley Hill* ;* the apple no where finds
 "A kinder mould: yet 'tis unsafe to trust
 "Deceitful ground: who knows but that once more
 "This mount may journey and his present site
 "Forsaken, to thy neighbour's bounds transfer
 "Thy goodly plants affording matter strange
 "For law debates!"

But when I came to consider better, I began to suspect that though our hills may never have journeyed far yet that the ends of many of them have slipped and fallen away at distant periods leaving the cliffs bare and abrupt. This seems to have been the case with Nore and Whetham Hills; and especially with the ridge between Hartely Park and Ward-le-ham where the ground has slid into vast swellings and furrows; and lies still in such a romantic confusion as cannot be accounted for from any other cause. A strange event that happened not long since justifies our suspicions which though it befell not within the limits of this parish yet as it was within the hundred of Selborne and as the circumstances were singular may fairly claim a place in a work of this nature.

"The months of January and February in the year 1774, were remarkable for great melting snows and vast gluts of rain; so that by the end of the latter month the land springs or *lavants* began to pre-

* *Marcley Hill* is near the confluence of the Lug and Wye, about six miles east of Hereford. It continued slipping for eight hours in 1595; and left a gap or ravine 400 feet long, and 320 feet broad. In its progress it overthrew a chapel and houses.

vail and to be near as high as in the memorable winter of 1764. The beginning of March also went on in the same tenor ; when in the night between the 8th and 9th of that month a considerable part of the great wood hanger at Hawkley was torn from its place and fell down leaving a high freestone cliff naked and bare, and resembling the steep side of a chalk pit."

"It appears that this huge fragment, being perhaps sapped and undermined by waters, foundered and was ingulphed, going down in a perpendicular direction ; for a gate which stood in the field on the top of the hill after sinking with its posts for thirty or forty feet remained in so true and upright a position, as to open and shut with the greatest exactness, just as in its first situation. Several oaks also are still standing and in a state of vegetation after taking the same desperate leap. That great part of this prodigious mass was absorbed in some gulf below is plain also from the inclining ground at the bottom of the hill, which is free and unincumbered ; but would have been buried in heaps of rubbish had the fragment parted and fallen forward. About an hundred yards from the foot of this hanging coppice stood a cottage by the side of a lane ; and two hundred yards lower on the other side of the lane was a farm house in which lived a labourer and his family ; and just by a stout new barn. The cottage was inhabited by an old woman and her son and his wife. These people in the evening which was very dark and tempestuous, observed that the brick floors of their kitchens began to heave and part and that the walls seemed to open, and the roofs to crack : but they all agreed that no tremour of the ground indicating an earthquake was ever felt ; only that the wind continued to make a most tremendous roaring in the woods and hangers. The miserable inhabitants, not daring to go to bed, remained in the utmost solicitude and confusion, expecting every moment to be buried under the ruins of their shattered edifices. When day-light came they were at leisure to contemplate the devastations of the night : they then found that a deep rift, or chasm, had opened under their houses, and torn them, as it were, in two ; and that one end of the barn had suffered in a similar manner ; that a pond near the cottage had undergone a strange reverse, becoming deep at the shallow end, and so vice versa ; that many large oaks were removed out of their perpendicular, some thrown down, and some fallen into the heads of neighbouring trees ; and that a gate was thrust forward, with its hedge, full six feet, so as to require a new track to be made to it. From the foot of the cliff the general course of the ground, which is pasture, inclines in a moderate descent for half a mile, and is interspersed with some hillocks, which were rifted, in every direction, as well towards the great woody hanger, as from it. In the first pasture the deep clefts began : and running across the lane, and under the buildings, made such vast shelves that the road was impassable for some time ; and so over to

an arable field on the other side, which was strangely torn and disordered. The second pasture field, being more soft and springy, was protruded forward without many fissures in the turf, which was raised in long ridges resembling graves, lying at right angles to the motion. At the bottom of this enclosure the soil and turf rose many feet against the bodies of some oaks that obstructed their farther course and terminated this awful commotion.

The perpendicular height of the precipice, in general, is twenty-three yards; the length of the lapse, or slip, as seen from the fields below, one hundred and eighty one; and a partial fall, concealed in the coppice, extends seventy yards more: so that the total length of this fragment that fell was two hundred and fifty one yards. About fifty acres of land suffered from this violent convulsion: two houses were entirely destroyed: one end of a new barn was left in ruins, the walls being cracked through the very stones that composed them; a hanging coppice was changed to a naked rock; and some grass grounds and an arable field so broken and rifted by the chasms as to be rendered, for a time, neither fit for the plough, or safe for pasturage, till considerable labour and expense had been bestowed in leveling the surface and filling in the gaping fissures."

MOUNTAIN-SLIP, OR SLIDE OF THE CERNANS MOUNTAIN.

Foreign papers give a grand account of the Mountain-Slip near Salinon on the night of 29—30 January. The mountain known as the Cernans, a part of the Jura and of the geological formation, generally known as Jura limestone, slipped forward into a valley and destroyed the high road from Dijon to Pontarlier by depressing it in one place 300 feet. A fountain which disappeared 25 years ago is supposed to have been preparing a soft launchway for the mountain; and the slip is attributed to this cause.

"A brief account of the earthquake, the solemn event &c." is the title of a London pamphlet, price 2d.

It crowns the late war—the recent insubordination—the cholera—with this earthquake, shewing that it is that prophesied in Rev. xi. 13, according to Dr. Goodwin, 1639, and foretold in the autumn, by some old man, near Lyme; aged 70. The writer, a Millenarian, seizes with avidity upon this another signal token as he takes it, and which he asserts exceeds 'any thing that the inhabitants of this country remember to have occurred in England.'

*Description of the Plates Published by Daniel Dunster,
Bookseller, Lyme.*

These views are executed in the first style of the art by Day and Haghe,
Lithographers to Her Majesty.

1. View of the eastern basin or harbour, looking westward. The protruded masses of cliff appear to the right: the whole extent of included water, looking like a lake or harbour with the once famed Pinnacle rock at its extremity is seen. All the mole-like ridge to the left is composed of upheaved ledges caused by pressure from the land. Before the slip, the Pinnacle rock was a lofty and prominent object in the view in advance of the cliff.

2. View of the eastern basin or harbour, looking eastward. This presents a fine view of Culverhole point the Pinnacle rock forming a prominent part of the foreground, with the elevated ridge of immense blocks of chert rocks presenting an extensive reef to the right of the basin.

3. The grand PANORAMIC VIEW, looking southward from the summit of Bindon cliff. The ravine is immediately before the spectator; and in front the insulated or separated portion of Little Bindon estate with its pinnacles or needles, fissures and precipices. The chalk cliff of Dowlands appears to the extreme left, a continuation of Bindon estate to the right.

4. A geological and pictorial section of the coast as seen from the sea from Bridport to Sidmouth exhibiting in an interesting manner in colours the various strata, and marking the locality of the great Landslips of Dowlands and Whitlands.

ADDENDA.

Many persons are labouring under an impression that two Preventive men of sober habits, named Spenser and Johns, attested, 2nd March, before Lieutenant Colonel Macalister, and Rev. G. T. Comyns, magistrates, to some extraordinary and previously unheard of facts. Such is not the case. A gentleman on the 15th of January, published a paragraph in the Taunton Courier, which created great alarm. The "flashing lights and intolerable stench," were taken to proceed from something more than an earthquake; a volcano was by many received as the only adequate cause.—The paragraph rested upon the evidence of these two men, which has been impugned, and is deemed unworthy of credit, without casting any reflection upon the veracity of the individuals who are respectable. The writer procured their attestation, and republished their statement in the Exeter and Plymouth Gazette, 10th of March. This is nothing more than the old alarm, to which the recent movement at Whitlands, and the lectures of Rev. W. D. Conybeare have given, it is believed, the *Coup de grace*.

The men nearly lost their lives. One escaped from falling rocks; the other, from a crack which well nigh proved his grave. They heard the crashing of rocks, but none of those bellowings, or internal noises which were fancied to have been perceived at Lyme &c, on Christmas eve, whereas this was on Christmas night. Agitated and exposed to the fury of the gale of wind which then raged, being in the overburdened situation, Shakspeare describes

Man's nature cannot carry
The affliction nor the fear—

they connected the lightning of the storm with the ridge of rocks then being upheaved. The abrasion of the chert rocks naturally produced a strong smell, as any one can prove by rubbing two flints together.

It appears that from September to January 1839-40, exactly one half as much more rain fell than is usual.—Some wanderers at Bindon get into a field of Little Bindon estate where a third sixpence has been demanded.

Humble Green and the Whitlands raised beach are visible from the extremity of Lyme Cobb: nothing of these was ever before seen from that spot.

Price of the Views. No. I; 2s. No. II. 2s. No. III. 4s. No. IV. 9d.

The note page 15 may be omitted as a vestry has considered the state of the cliffs, and a report has been unanimously agreed to that a wall must be built to protect Lyme Church.

