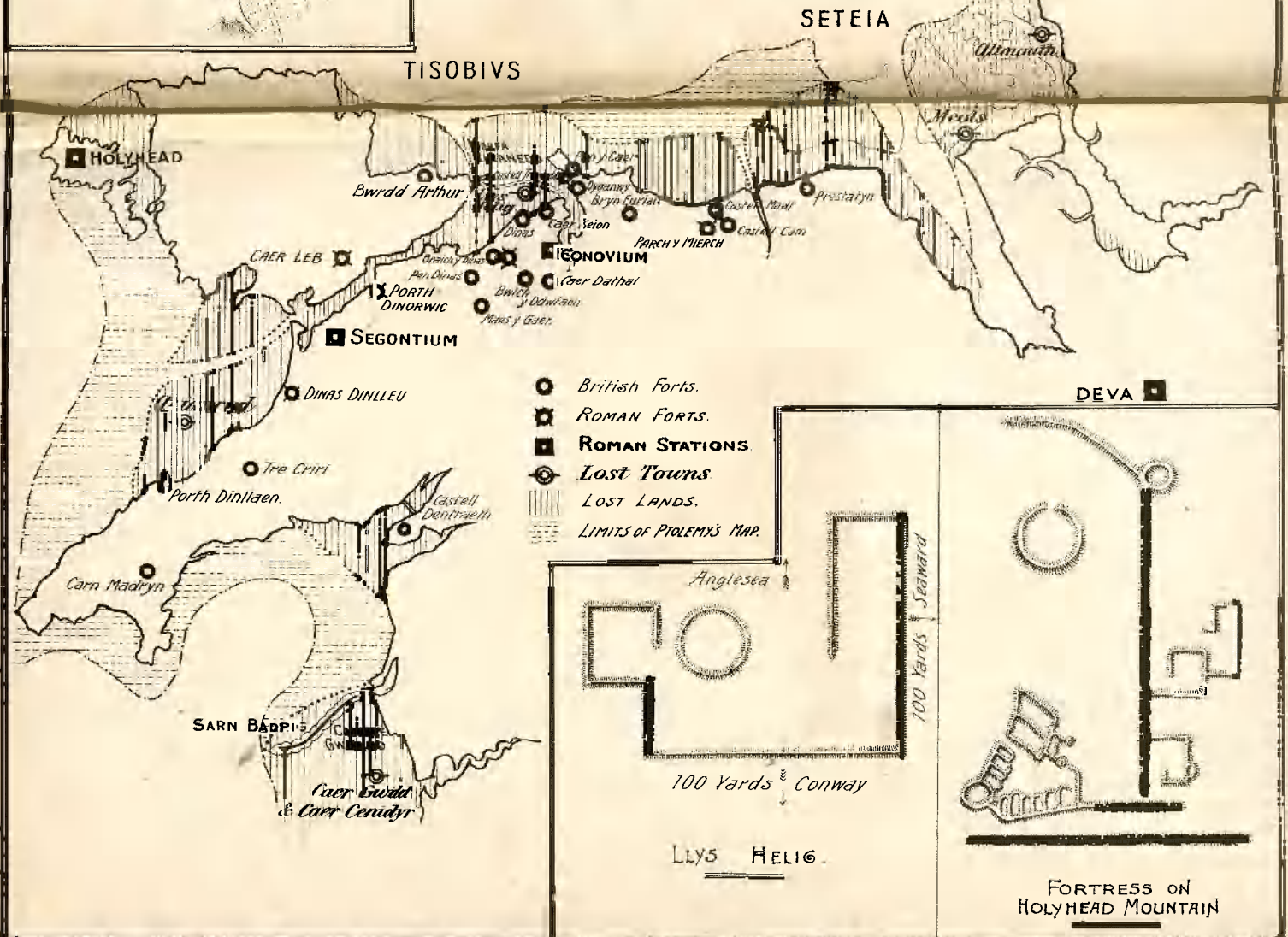
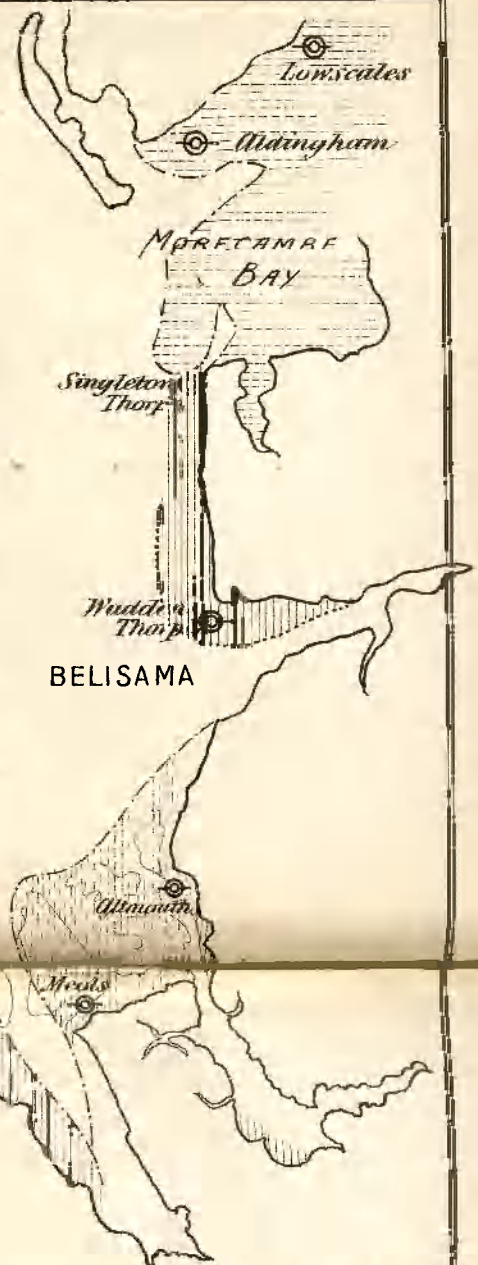
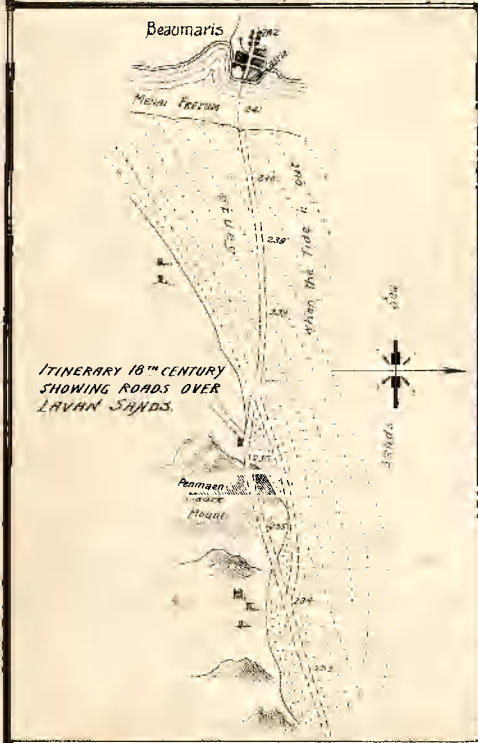


MAP SHOWING PRESENT COAST LINES. LIMITS OF LAND SUBMERGED SINCE 5<sup>TH</sup> CENTURY AND LINES OF PTOLEMY'S MAP OF BRITAIN. ALSO ROMAN AND BRITISH COAST DEFENCES AND LOST TOWNS.



TRACES OF SUBMERGED LANDS ON  
THE COASTS OF LANCASHIRE,  
CHESHIRE, AND NORTH  
WALES.

*By Edward W. Cox.*

Read 23rd March, 1893.

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GEOLOGY.

IT would be well if this paper could be prefaced by a geological lecture, dealing with the causes of change in the levels of land and the coast-lines of Britain from the latest geological age, when man first appeared on the earth to replenish and subdue it, down to the present time, in order to prove the continuity and vastness of extent to which these forces worked. I can do no more than take them for granted, and refer to them in the briefest possible way, to show that only a small part of the great whole is contained within the limits of comparatively recent history and tradition with which we have to deal.

The easiest way to do this is to put before you Professor Boyd Dawkins' map of the Pleistocene Age, while Britain still formed a part of the Continent, and paleolithic man hunted the bear, the reindeer, and the woolly mammoth, the hyena and similar desirable cattle, among its forests and prairies. I do this, chiefly to disentangle from other



and later evidences those furnished by the great peat beds and forestal remains that form our mosses and moorlands, and which now extend in enormous tracts beneath the sea. These relics are apparently so little affected by decay, that they give rise to the opinion that they show very recent submergences ; and they confuse the archæological evidences, which are the only ones, or nearly the only ones, we can depend on to give us approximate or definite dates. By far the larger part of these remains belong to the Pleistocene Age, when some huge catastrophe swept away, by flood or ice, those great forests, and buried them in lagoons and swamps and mosses. At some yet unmeasured intervals of time, subsidences to the total depth of 600 feet separated these islands from the mainland, and submerged the wide tract shown on the map. But this, probably, did not take place all at once. Other depressions, doubtless, still further reduced the land areas. The smaller map will show the shape of our coasts while the depression was 250 feet less deep than at present, and the Irish Channel only twenty miles wide. The later series of sinkings, within historic times, are possibly shown in Ptolemy's map of Britain by a line of darker shading ; and the present lines of coast are shown black.

We are not, then, to take these submerged forests as evidences of date. There may be, and probably are, some that belong to the historical era, but, so far as I know, they cannot be distinguished from the pleistocene peats. If it be doubted whether such terrestrial movements still continue, I think it may be shown conclusively that they do. I will presently cite instances, very shortly indeed, and without dwelling on any details, leaving them for after-examination ; our task being to deal only with our own local cases.

It will facilitate the examination of these if we consider at this point the four kinds of forces that influence the depression of terrestrial levels in such measure as to cause submergence. This is necessary, because we shall meet with the varying results in the lost lands, and it will enable us to recognise their action as we reach their details, without needless repetition.

First, we have those vast cosmic movements arising from deeply seated, internal action, which have raised or depressed whole continents and mountain ranges, extending over enormous reaches of time. These are in some cases gradual. Sir Charles Lyell speaks of one formation, 4200 feet in thickness, gradually deposited in shallow waters, which had slowly subsided during the whole period of its deposition. Other action has been violent and sudden. To such deep-seated action the changes during the age of pleistocene man seem to belong, when, extending over very wide areas, some violent cataclysm, involving great climatic changes, broke the continuity between the early and later Stone Ages.

The next cause is denudation by rivers and weather, which are continually wearing down the higher lands and scooping out valleys. This comes so little into our review, that we need only say of it that it is destructive of all subjected to its action.

The third is local subsidence, not connected with the major action of internal forces, but due to such causes as the removal of loose substrata by water, the release of impounded waters from porous beds, such as peat and sand, the escape of soluble strata, such as salt, or the sliding of looser strata over impervious and slippery clays. These may be either gradual or sudden. Of the latter, the Sandgate subsidence serves as an admirable

illustration—a practical geological lesson that its inhabitants will not soon forget.

The fourth is erosion by the sea, or waters fretting away the less-resisting earths and rocks.

Now, there are two entirely differing results arising from submersion: those caused by the sinking of the surface, and those by the forces of denudation and erosion; both of which come directly within the scope of this paper.

The condition of the relics of the lost lands is good evidence of the forces to which they yielded. So soon as the solid surface of the ground is below the level of water, almost all action upon it ceases. It is true that loose and soluble alluvium and unfixed sands may be affected to a small extent by strong currents; but the deeper the water, the more perfect the rest of the subjacent surface. Consequently, any features existing on land suddenly submerged remain comparatively unchanged even by decay. On the contrary, denudation and erosion by seas or waters are utterly destructive. The unquiet waves of the sea-margin, that constantly mine and batter, like engines of war, the bastions of the land, are the forces which the strongest masonry cannot for many centuries resist; while the depths lie at rest. Thus in our lost lands there remain distinguishable, ruins of buildings, and causeways, and roads. Traditions speak of sudden floods and submergences here; these relics tell the same tale. In the case of the Meols shore there is a further complication of similar causes, due to fresh water inundations; where sea erosion is now obliterating what the earlier causes preserved by submersion.

I will only instance, without comment, a very few examples of changes of level and submersion in historical times. The Temple of Serapis, in the

Bay of Baicæ, sunk slowly in the sea to about one-third the height of its columns. These were bored by marine insects before the temple again gradually rose to nearly its old level, at the end of the last century. There were on the south coast of Crete, certain Greek naval ports, which were recently sought for in vain by an archæologist, who eventually found the foundations of some of them twenty feet above the sea. On the north side of the island, some ruined cities, formerly high above the water, are now partly submerged. St. Michael's Mount, in Normandy, stood, A.D. 709, in the forest of Scissy, nine miles from the sea. It is now an island; and in 1822 the ancient causeway leading to the gate was exposed, at a depth of ten feet below the level of the present sands. The Channel Islands are described by Cæsar and Tacitus and Diodorus Siculus as promontories, and Jersey was accessible over the sands well within the Christian era. In the Middle Ages the Island of Echerau, now an uninhabitable rock, was peopled, and contained a monastery, where service was daily held. St. Michael's Mount, Cornwall, is not spoken of as an island in Domesday Book, but it is said to contain twelve times as much land as it now does. Its British name means "the hoar rock in the wood."

If we require modern examples of subsidence, we have that of the Zuyder Zee, in Holland. The Runn of Cutch, a flat land once cultivated, subsided in a few hours in 1819, and 2000 square miles of land became an arm of the sea. The terrible inundations in China during the past year or two are probably due to the same cause. Mr. Albert Bickman, in the *American Journal of Science*, July, 1868, says that near Foochow and the mouth of the River Min an area of land in China had been slowly subsiding.



## TRADITION.

We now turn from generalities to the subject of this paper; and, first, as to history. It may be said that between the somewhat mythical bardic literature of the fifth and sixth centuries and the records of the fourteenth century nothing that can be called unmixed and definite history connected with these coasts exists, and this record relates to land lost to the See of St. Asaph. Of tradition, however, we have abundance, both strong, consistent and definite. It is true that certain MSS. are referred to, relating to the lost lands; but they only purport to record the traditions; therefore all they do is to prove that such traditions originated in remote times, chiefly the fifth and sixth centuries, also that they have come down to us with scarcely any alteration, and in their original form. They are accompanied in many cases with definite and picturesque incident, and with traits of personal character, and with historical names and events that are most striking; and they agree with the incidental references found in the bardic and other literature of the fifth, sixth and seventh centuries. I first heard of these traditions about 1853, from the Rev. Griffith Edwards—a good antiquary and no mean poet—who had collected these and many others from the peasantry. In his poem of *Cantre Gwaelod* he introduced the incidents I speak of, and I closely questioned him whether these were poetic additions of his own. He assured me that he had adhered strictly to all the incidents of the legends. This I afterwards found to be quite true; some of the local peasantry to whom I have spoken had the legends more perfectly than others, but enough could be gathered to find that all were in agreement.

It is much the fashion to discredit tradition. I think this is unwise. I have myself done so, and

yet have seen tradition remarkably confirmed ; notably when in Ireland, in 1845. A tumulus near Mallow—which, to my disgust, the people persisted in assuring me was a fairy moat—proved on examination, years afterwards, to contain remains of that small race which modern research identifies with the traditions of the fairies. Tradition crystalises, as it were, among the unlearned, who have no reason for changing it, however grotesque the form in which it comes ; and I am not sure whether such tradition is not far more trustworthy than partisan history. Such traditions of the lost lands as have come down to the present day are strong, explicit, widely current, and consistent in their details throughout the Principality. One small farmer, residing at Penrhyn, not only gave me particulars of these, but, as we walked together towards Llandudno, he pointed out the limits of the former land, the course of the lost river Ell, and the city of Helig. He stated that the land reached beyond the Great Ormes Head to past Priestholm ; and on my objecting to that being possible, as deep water existed beyond Great Ormes Head, he said : “ You may know better than I, but I was told it as a boy, and all the “ people hereabouts believe it.” The character of this tradition comes very close to history, whilst it is found to be in agreement with the few written records that exist, dating from the fifth and sixth centuries.

#### MAPS.

There is scarcely any ancient document so untrustworthy as a mediæval map. They are, as a rule, either unintelligent and debased copies of Roman or Greek maps, or mere conventional itineraries, with no pretension to accuracy. It is different with the maps of Roman geographers,



which were carefully measured ; and, though containing in many cases palpable errors, they are laid down with points of latitude and longitude, and have some measure of correctness in outline and detail. I give a tracing of Ptolemy's map of the British Isles, from Roy's *Military Antiquities of the Romans*. It is plainly from Mercator's copy.

Mr. T. G. Rylands,<sup>1</sup> who gives a portion of the same map from the copy of 1480, identical in outline, has published some most able pamphlets on it, dealing with the distortion of the map of Scotland, and with the deviation from the present lines of coast in Lancashire, Cheshire, and Wales. The Mersey is apparently lost, by an error of half a degree in placing its bearings. A glance at the Roman map will show other strange deviations, notably in Cornwall. There is apparently no Island of Anglesea, and very little indication of Morecambe Bay. Now, if the coast-lines were the same as at present, there would be this error of about half a degree in the point for the Mersey ; but I do not entirely agree with Mr. Rylands that they were necessarily the same, although he proves several errors in the latitude and longitude. I have drawn the present coast-lines, and on the same map have placed the outline of Ptolemy's map for this part of the coast. The spaces he shows as land and estuaries and inlets, which vary from our maps, will give as nearly as possible the very areas of the lost lands of tradition ; not only so in our district, but also the lost tract of Lyonesse, on the north coast of Cornwall, is exactly in the place suggested in Mr. Peacock's very able essay on the general question of subsidences, and by Professor Rhys' location of it in his lectures on the mythology of the Arthurian legend. Moreover, the outlets of the

<sup>1</sup> *Transactions*, vol. xxxi, p. 96.



Pre-Glacial Britain.



Ptolemy's Map of Britain.

Mersey and Ribble become one estuary, and the geographical point is moved nearly a third of a degree north of the present mouth. With the addition of this land the Mersey would answer to its name Belissama, for it would traverse a wide tract of marsh to reach the sea, which in its present course it certainly does not.

LOST LANDS IN WALES.—MERIONETHSHIRE.

However interesting it might be to deal with the whole of the submerged lands on the British coasts that reach into history, the subject is far too wide for this paper. The most distant of the lost lands that I propose to treat of, among the many of which tradition and archæology tell us, is the Cantre Gwaelod, the lowland Hundred which lies on the Merionethshire coast, from Mochras Point, a little south of Harlech, and stretches twenty-two miles along the coast to the west of that place. The name of this tract itself carries evidence that it was regarded as land. The Cantref, or Hundred, is an early territorial division that dates from early British times. Immemorial tradition, both oral and contained in various MSS.—one of which MSS. is called the Black Book of Carmarthen—attribute the possession of this district to Gwydno, who held it from A.D. 460 to 520. He was surnamed the *Garon hir*, or son of the long-shanked. His city was called *Caer Gwydd* (Gwydd's City).<sup>2</sup> I have been told that traces of the city can still be discerned, but at the time I was there the tide did not admit of their being seen. On the seaward side of this submerged tract—which is to some extent composed of peat, similar to the beds

<sup>2</sup> Mr. Williams and Mr. Hicklin communicated particulars of the ruins of houses seen at low water on Barmouth Sands to the Rev. Charles Massey, of Chester, about 1850. See *Transactions of the Chester Archæological Society*, vol. i.



on the Meols shore—a long causeway of stone stretches in a south-westerly direction, called Sarn Badrig, or the causeway of St. Patrick. Tradition says this was miraculously constructed to help the saint to visit Ireland. Another causeway, called Sarn y Bwch, runs out from north-west of Harlech to meet this, and formerly enclosed the Cantre as by an embankment. Some have thought this a natural ridge of stones caused by the tides; it is not a beach, however, but a regular embankment of fair-sized stones, and these lie flat on the ground, and have a uniform width of 24 feet. At the end of the causeway are sixteen large stones, one of which is sixteen feet in diameter. The local legend, as well as the *Mabinogion*—a work of the sixth century (see Lady C. Guest's translation)—attributes the loss of this land to the carelessness of one Seithenyn, called a king, who was “of feeble wit,” and neglected to close the sluices; also that Gwydno was the father of Elphin, patron of the bard Taliesin. The Rev. F. Parry says this is recorded in the Tulo MS., p. 439, and that the date there given is 339, possibly an error for A.D. 539.<sup>3</sup>

This causeway or embankment is now seen only at low tide, and there is no escaping the conviction—if this be an artificial structure, which, from the small portion I have been able to see, I think it is—that the legend is true. No one would build such a causeway fifteen feet below high water-mark,

<sup>3</sup> Of the Cantre Gwaelod plain to the south of the Dovey, a large flat tract still remains. It is marsh to a large extent, swampy and useless, and very little above high water-mark. Ancient MSS. and verses of Taliesin describe the tract as the richest in Wales. On its shore, facing the open sea, the little watering-place of Borth represents Porth Gwydno (Gwydno's Port). It is now an exposed and open roadstead, but before the loss of its outlying land it may have been a sheltered port in the estuary of the Dovey; it was counted as one of the three principal ports of North Wales. I have seen high tides flood the adjacent lands widely and drive the cattle to the small elevated spots, a few feet only above water, that for the time formed islands of refuge.



Collins' Hydrographic Chart.



Causeway on Lavan Sands.

and the land must have subsided to bring it into its present condition. The fact that it retains its form, and has not been ruined and broken up, and removed piecemeal, also strongly tends to prove that subsidence and not erosion placed it beneath the sea.<sup>4</sup>

CARNARVONSHIRE.

The next places in order are the less-known lost lands on the north-west of Carnarvon, where the peninsula of Lleyrn stretches into the sea. Here also tradition points out the site of a city, of the name of *Caer Arianrhod*. It lies between the point of *Llandwyn* and *Clynnog Vawr*. This is the more wonderful, because there is upon these coasts much deep water. Very strong tidal currents, caused by the *Menai Straits*, prevail on this coast, which may well account for the removal of traces of land, whereas the *Cantre Gwaelod* is protected from them by the peninsula of *Arfon* and the southern headlands of the bay. In the mediæval fairy tale called *Mabinogion Gacilent*,<sup>5</sup> this fortress was said to be on land now covered by the sea. The Rev. *Elias Owen* gives most valuable information of the existence of this tradition in the neighbourhood; and Mr. *Crofton Croker*, in *Fairy*

4 The inundation of *Cantre Gwaelod* comes indirectly into history. *St. Tudno*, who founded the Church of *Llandudno* on *Ormeshead*, and his four brothers, entered into the religious life at the British College of *Bangor Iscoed*. They were sons of *Seithenyn*, whose possessions were lost by that calamity; and when they are spoken of, the words are nearly always added: "Whose lands were lost in the sea."

5 The careful and exact manner in which the topography of the ancient *Mabinogi* of "*Math the son of Mathonwy*," recorded in *The Red Book of Hergest*, is dealt with, enables us to identify and partly to date the existence, and ascertain the site and occupation of the lost stronghold of *Arianrhod*, as well as to learn something of its characteristics. In this *Mabinogi* it is always spoken of as an existing *caer*, never as a lost or submerged one, as are those of *Caer Gwydno*, *Llys Ielig*, and *Caer Cenedyr*. It may be taken for granted either that this legend was written prior to the overwhelming of the *Cantre Gwaelod* and *Morfa Rhyanedd*, or that the destruction of this settlement occurred at a later period. The former conjecture is the more probable, for this legend introduces no later characters into its pages.



*Tales of Ireland*, vol. ii, page 175, says that Dr. Pughe, discovered its site. His words are:—  
“Being in conversation respecting the names of  
“places in Anglesea with a late friend of mine  
“from that country, he said that there was a  
“remarkable ruin in the sea nearly midway between  
“Ilandwyn Point and Clynnog Church in Carnar-  
“vonshire, which the sailors in passing over see in  
“the water, and which is dangerous to vessels,  
“and called by them *Caer Arianrhod*.”

Between Clynnog and the extreme point of Carnarvonshire an ancient road, coming over the Yr Eifl Mountains, ends in the sea opposite Bardsey Island. This might have been a pilgrims' road to the hermitage on the island, but it is more likely to have led to the submerged low lands. Bardsey was an island at an early date. From Clynnog to the southern end of the Menai Straits a small strip or remnant of the low land remains, running to Nant y Belan fort. Near this is a strong Roman circular earthwork, Dinas Dinlle, but it is not a port, and no trace of a road here crosses the straits. Two other great forts of British origin are found on the Eifel Mountains and on Porth Dinllaen, commanding this last tract, whose significance I will refer to further on. The flat land near Nant y Belan was, a few years ago, in danger of loss in the sea by the erosion of the sand banks.

On the southern boundary of Carnarvon is Traeth Mawr, at Port Madoc, which was, early in this century, rapidly disappearing, and was saved only by a large and costly embankment. It adjoined the north end of Cantre Gwaelod. The land side of this embankment is now below the level of high tides, and is imperfectly drained by sluices; yet it is in a well-sheltered inlet.

ANGLESEA.

To the north-west lie the low lands of the Anglesea coast. Here were two parishes; Newborough, which still retains its church, has scarcely any parish, that having gradually disappeared in the sea; and of the neighbouring parish all but a small remnant has been swallowed up.

Near Aberffraw, the Rev. W. Buckley, who travelled in Wales in 1798 to 1801, says he was prevented from reaching Holyhead by the bursting of a bank, which caused several hundred acres to be overflowed at high water.

Aberffraw was once the chief Royal town of Anglesea, north-west of which are the Maldraeth Sands, which tradition says were overrun by the ocean. Rowlands, in his *Mona Antiqua*, published in 1723, says he has seen there the walls of houses and the enclosure walls of fields. In *Archæologia Cambriensis*, vol. ii, 1855, these remains are included in a list of the then-existing British antiquities. When I passed the sands, about thirty years ago, traces, I thought, could be seen of lines and piles of stones. Beyond are the sands and shallows between the land and Holyhead Island, and upon both these sands are ancient burial cairns, piles of stones that must have been erected when these sands were dry land. Many of these are marked on the ordnance maps. The original road to the Island of Holyhead was always a raised causeway, and was considered to be of Roman origin, leading to the fort at Holyhead.

From Holyhead Harbour and on the coast have been dredged up bones of the mammoth, proving that the same formation prevailed there; but, so far as I know, there is no local tradition of loss. Near Holyhead an ancient burying-place, without any trace of a church, is partly cut away by the sea.

## EVIDENCE FROM THE ROMAN INVASION.

Before speaking of the next great area of submersion, let us turn to the account of the invasion of Anglesea by the Romans, from which we may gather some information as to its then existing condition. At that period, Suetonius Paulinus, according to Tacitus, swam his cavalry across the Menai, while his infantry crossed in boats, the passage being made, it is supposed, near Llanidan, where Rowlands, in 1723, says the mound remained in his day, full of ashes and bones, marking the site of the battle or massacre, and the great fires kindled by the Druids, into which the Romans cast the bodies of the slain. At the second invasion of Anglesea, by Julius Agricola, the general had no boats, and he determined to cross by fording the straits. Both the cavalry and infantry passed without boats, by fording and swimming. Rowlands carefully sought for indications of shallow water that could admit of this, and located the crossing at a place called Crig, near Llanidan, but he frankly admits that even at low tides the depth is from one to two fathoms—far too deep for a heavily armed host to cross. Certainly the feat could not be performed now, yet we have in the place-names on the Carnarvon shore, opposite Llanidan, the evidence of this operation—*Rhyd Equestre* and *Rhyd Pedestre* “Ford of the Cavalry,” “Ford of the Infantry.” The strait, therefore, at this point, could not have been of its present width and depth; and we have seen, in the traditions of Arianrhod, that the low lands of Carnarvonshire stretched across its western entrance, from Clynnog to Llanddwyn Point, in Anglesea. The strait, moreover, is constantly spoken of as the River Menai, not the straits; and was probably really the shallow tidal estuary of the adjacent rivers. This will appear more clearly in treating of the following section.



THE LAVAN SANDS.

This great tract of lowlands formerly formed a coast district of Flintshire and Denbighshire. It originally stretched across the bay of Abergele from Prestatyn, and ran out seaward beyond the Ormes Head, past what is now Puffin Island, Ynys Seiriol, known in the fifth century as Ynys Glannog or Glannog's Isle, and joined the levels now forming Redwharf Bay. The boundary between the counties was the River Ell, still spoken of in local tradition and in the Arthurian legends of the sixth century, whose course is now wholly below the sea. Through the flat lands, the Conway, whose course now ends at Deganwy, flowed through an ancient bed, now dry, by the village of Mochdre, of tithe-resisting notoriety, the name of which signifies a running, or a flowing, though it is now a dry valley, the gravelly bed of the ancient river. Possibly this was part of a delta with two outlets. Thence the river passed between Anglesea and Puffin Island, receiving on its course the waters of the Ell. All this is quite clearly described by local tradition. I have stood with a peasant farmer of Penrhyn while he pointed out the ancient limits of the land and the course of the river, and told me the tradition of its loss. Long before visitors came to Llandudno, Mr. Elias Owen says, this tradition was quite confidently told. I have found it still strongly surviving, both in that vicinity and near Colwyn Bay, and it is in exact agreement in every way with that given by Mr. C. R. Hall in his pamphlet, read some years ago, before the Liverpool Geological Society, and told to me by others. Mr. C. Potter had the same tale repeated to him as Mr. Hall received, but like myself when I first heard it, he treated it with incredulity. Geological evidences do not disprove but rather confirm it, and my own more recent and

other archæological researches do so still more strongly.

The lord of these lands, says the tradition, was Helig ap Glannog, and the land was called Morfa Rhyanedd, between Great Ormes Head and Priestholme, and the account of the land and its inundation is preserved in an ancient MS., which gives the following genealogy:—

“Einon ab Cynedda Wledig (or the popular) had issue Llyr Merini, who had issue Caradoc, surnamed Vreichoras (the strong arm, or the valiant), who in right of his wife Guinian was afterwards king of North Wales, who had many and great conflicts with the Romans. Caradoc had issue Grogan Gled-dyvadd, or Grogan with the bloody sword, who had issue Glannog, who was father to Helig ap Glannog. This Helig was lord of Abergele, Rhos, Arlechwydd, Lley, and Cantre Gwaelod, and was also Earl of Hereford. In his time happened the great inundation which surrounded Morfa Rhyannyd, the most fruitful and pleasant vale lying from Bangor vawr yn, Ngwynidd, to Gogarth, and so to Dyganwy or Gannoc Castle in length, and in breadth from Dwygyfilchi to the point of Flintshire which comes up from Rhuddlan to Priestholme;<sup>6</sup> and in the upper end thereof did extend from Alun and Llanvair to the river Ell; which did divide Carnarvon from Mon, and did likewise divide Mon from Flintshire,<sup>7</sup> and did surround many other rich bottoms and vales within the counties of Carnarvon and Flintshire and Merioneth, most of them being the land of Helig ap Glannog, whose chiefest palace stood in this vale, much about the middle way between Penmaen Mawr and Gogarth. The ruins are now to be seen on a ground ebb some two miles within the sea, directly against Trwyn y Wylfa, or the Point of Wailing,<sup>8</sup> which is a hill lying in the midst of the parish Dwygyfylchi, within the land of Sir John Bodrel, Knight;<sup>9</sup> unto which hill Helig ap Glannog

<sup>6</sup> Here notice that Priestholme, though close to Anglesea and now opposite Denbighshire, and separated by a wide sea from Flintshire, is still a part of that county; thus confirming its traditional boundaries.

<sup>7</sup> Here we have evidence that the Menai in Roman times consisted of the estuaries of small rivers running between Priestholme and Penmaen, and discharging itself into the sea a great way beyond Priestholme.

<sup>8</sup> This point, though now written Trwyn y Wylfa, which means the Point of Watching, is recognised by the country people as the Point of Wailing, or lamentation, and may originally have been Trwyn y Wylo, which has this signification. The Lavan Sands themselves are called Traeth Wylovan, the Inlet of Lamentation.

<sup>9</sup> Here we obtain a clue to the date of this manuscript, which plainly was written during the life of Sir John Bodrell.

and his people did run to save themselves being endangered by the sudden breaking in of the sea, and there saved their lives. And being come up to the point of the hill, and looking back, beholding that dreadful spectacle which they had so survived and looked upon, instead of their incomparable vale, which did abound in fruitfulness, and excelling all other vales in this part of England in all fertility and pleasantness, Helig ap Glannog and all his people wringing their hands together made a great outcry, bewailing their misfortune and calling upon God for mercy. The point of which is called to this day *Trwyn y Wylfa*—the point of the Doleful Hill.”

So far this MS.<sup>10</sup>

Now it is well to notice some of the inconsistencies of this narrative. If Helig be the third generation from Caradoc, the land can hardly have been lost later than the second century. Indeed, there is some reason to think a later date is more correct. St. Cybi and St. Seiriol were living in the year 328; they are said to have met on this land, and there is a tradition that St. Seiriol assisted the people to make a new road round Penmaenmawr, to replace one lost through inundations. Again, the lost River Ell could not have extended to the boundaries of Merionethshire; but this may refer to the Clwyd, the whole of which was called the Elwy before the Strathclyde Britons named it the Clwyd, when, in the ninth century, they reoccupied the Vale of Clwyd. An approximate date is obtained from the fact that Helig had twelve sons, who, like the sons of Saithenyn, became monks of Bangor Iscoed. One of them, Rwchwyn, founded a church near Llanwrst, called after him; Celynin the church of Llangelynin; and Brothen built the church of Aber.

<sup>10</sup> The account given of the MS. by Mr. C. R. Hall is, that it was drawn up by a Welsh clergyman, in order to keep the oral tradition on record; and that an aged lady, a descendant of the clergyman, who at the age of eighty was in possession of the document, had it printed in 1850 in a magazine, a copy of which the Rev. C. Parry lent to Mr. Hall, who copied it as above. The names of the clergyman and the lady have not been given. It is most common in Wales for possessors of documents to be very reticent about them.



There is one point worth investigation, were it possible, that might attach this land to the former over-lordship of Caradoc, and that is, its name. *Morfa Rhyanedd* means "the Marsh of the Maiden," or the feminine land; and *Rhianni* means "a provision made for a queen." Tradition says that Caradoc, in right of his wife Guinian, was king of North Wales. It is possible that this land, which eventually came down to Helig, was originally the land for the provision of the queen, and that several intermediate names have fallen out of the genealogy.

It is most likely that this district of Morfa Rhyanedd was not all submerged at the same period, nor did it sink at once to its present level.<sup>11</sup> It is quite probable that the subsidences were partial, and extended over a period between the fourth and the sixth centuries, the greatest catastrophes, those of the Cantre Gwaelod and Llys Helig, being among the later incidents; and that Arianrhod was submerged during the first half of the sixth century. There appears to have been some depression in the bed of the sea at a comparatively recent period. Below the present sands almost the whole consists of a turbary, with a slight covering of sand. This will be apparent by the description of the archæological indications, to which we now turn.

About 25 years ago I went to Dwygyfylchi at the date of the lowest tide of the year, and with a good telescope I could see the long lines of walls and buildings, covered with black seaweed. They were visible for about half-an-hour; but from the land it was not possible to measure or plan them. Mr. C. R. Hall and the Rev. F. Parry, however, had in 1865 visited the locality in a boat, and they then

<sup>11</sup> Hence the varying dates given. The bard Taliesin, who lived at the end of the fifth and early in the sixth century, refers to the event as occurring during the life of his own contemporaries.

obtained approximate measurements. The boatman who accompanied them had been there twenty years before with the Rev. J. F. Fergie, of Ince, Wigan. Mr. Hall reached down to the long lines of weed, and, as far as could be judged by feeling with the oar, they seemed to be growing on the top of a wall, the stones of which appeared to lie just as they would be if thrown down by the action of the sea. They pulled the boat along the lines of wall, which they measured approximately. The boat just floated over the top of the wall; but on each side of it the depth of water was from five to six feet. The plan is given in Mr. Hall's pamphlet. He does not appear to identify the buildings with any British remains known to him; his plan, therefore, seems the more authentic, inasmuch as it defines with great accuracy buildings very like in structure and plan those which still exist on the mainland and which are undoubtedly British work. Two or three years ago a young artist visited these remains and found them left visible by the tide. He made a drawing of part of them, and alleged that he found on some of the stones incised six-armed crosses.

I think it is worth while here to refer to an incident in the Saxon invasion, which seems to me explicable in no other way than by accepting the tradition as true. A fragment of the defeated army of Brocmail, driven from the neighbourhood of Chester in 606 or 613, by Ethelfrith, King of Northumbria, retreated to the south-west along the line of the Roman roads leading towards Anglesea, and it is recorded that it was followed as far as Ynys Seiriol, Puffin Island. In the same spot, in A.D. 629, Cadwallon was blockaded by King Edwin of Northumbria. How they could thus retreat, and could be followed, except by means of the Roman roads across the sands, would appear incredible; nor could they find accommodation on

Puffin Island for a large army, unless it were still partly surrounded by some level land. The choice of such a retreat also, in which an army would speedily be starved to death, is one that no sane general would make. But within a few miles of Puffin Island, on the Llwydiart mountains, is the great British camp of Bwrdd Arthur, which must have been the point of retreat; and if some of the levels there existed as land, it was a defensible military position.

#### THE ORMES HEADS.

Between Great Ormes Head and Conway Bay a strip of the ancient low land, still called Morfa Rhyanedd, survives, protected partially by the outlying rocks of the head and by the rocky substrata from submersion. The head has its strong British entrenched camp or village on the precipitous rock at the south-east; and to the east of the Little Ormes Head another small and narrow strip of low land has as its protection the fortified British city of Bryn Eurian, or the Golden Hill. On the Conway side of Llandudno Marsh stood the Roman post of Castell Tremlydd and the British city of Dyganwy, which guarded the road to the copper mines, and, possibly, also a road to the Morfa Rhyanedd.

The mines in the head were worked for copper by the Romans. Their fort is now in the sea, and having been destroyed by erosion of the clay banks, it is utterly ruined, and its site is only marked by a bank of loose stones and large boulders, among which are found Roman coins and fragments of tile. Fuller details of the traces of occupation must be left for another opportunity, as well as those of Bryn Eurian and of the Vale of Clwyd, which present the features of defending passes and heights, in their proper relation to the still existing vales and plains.



Near St. Tudno's Church, to the south, a double line of upright stones—plainly an ancient British road, marked by a double range of upright stones—leads northward from a British stone enclosure, called Lletty Fadog (the Farm of Madoc), to the edge of the cliff, and thence down a steep way to the sea. It is called *Hwylfa Ceirw*, the Roadway of the Deer. Tradition which I have heard, and which Buckley says was current in 1799, says it was the path by which the deer used to descend to the meadows below the head. This would make the head to have been wholly separated from the sea by meadow land. The point in the head to which this road now leads is a precipitous rock, with a narrow strip of beach covered with large boulders. It is unfit for a marine landing-place, and leads to no trackway along the shore.

There is another tradition, also mentioned by Buckley, that St. Tudno and St. Cybi were friends, and met every week near Priestholm. Tudno was called the White Tudno, because he went from his church westward; Cybi was called the Tawny, because he travelled with the sun in his face. This tradition does not agree with others as to date, as Cybi lived in the fourth, and Tudno in the sixth century. Another tradition makes Cybi meet Seiriol, who was really his contemporary. Possibly the tradition means no more than that both men traversed land which is now sea.

#### ABERGELE BAY AND COLWYN BAY.

On these shores we have continuous records of loss of land up to quite recent times and within living memory. A good deal of this loss has been caused by erosion of the sea, and the only ancient traditions, beyond those already quoted, speak of the former ownership in mediæval times and the extent of the ancient coast lines. The Constable

Bank, according to these traditions, was at one time land. Mr. H. Caraher states that people now living can remember houses standing in the low ground half-a-mile seaward of the present shore ; and beyond Llandrillo, some distance to seaward, stood the monastery and parish church of St. Teilio, no longer existing. Capel Trillo, by the fish weir, lately destroyed by mischievous excursionists, is said to be the only relic of this district. Another tradition says that the lost church was a parish church, and the present Llandrillo Church was Enfydd Fechan's chapel attached to his palace of Llys Euran, and that the south aisle was added by parishioners when the old church was lost. If so, it was lost late in the fifteenth century.

In Colwyn Bay, a quarter of a mile from low-water mark of spring tides, in line with the lower end of Erias Dingle, is seen the top of a black rock, only partly visible at dead low-water. This goes by the name of Maen Rhys, and local tradition says that on this rock the shepherd Rhys used to sit and watch his flocks grazing in the fields, now covered with nine feet of sea at low water of the lowest tides. There is a tradition that on the rock is the remains of a castle overthrown by the sea, which broke through a protecting embankment. It is notable that this legend should be connected with the name of Rhys, inasmuch as the same name attaches to a tradition of lost lands on the coast of Pembroke. A correspondent of a Liverpool newspaper visited this rock in March, 1893, and describes it as a mass of conglomerate, similar to that in Erias Dingle. Showing no trace of building, it stood two feet above low-tide mark, and was surrounded by nine feet of water. The summit was 9 feet long and 3 feet 3 inches wide, widening to 7 feet below.

When we come to the east side of Abergele Bay, we have further evidence of loss of land. In Thomas's *History of the Diocese of St. Asaph*, p. 350, mention is made of an abatement of quit-rent for Gro-Nant-is-y-mor, made to Bishop John Trevor, because the sea had eaten up his land in those parts. Trevor was bishop 1395 to 1410, and the loss of land must have been great, otherwise it would not have been a subject of correspondence and rearrangement of rents. Gro-Nant is a township in Llanasa, a parish between Mostyn and Prestatyn. Here, therefore, we have a date of a considerable loss. But there is another feature at this point which connects the district with British occupation. A range of hills on the east side of the Vale of Clwyd and all the passes through them are defended by strong forts and earthworks. The narrow strip of flat land now left between Prestatyn and the sea is not of sufficient extent to manœuvre an army upon, nor would a commander attempt it with an enemy on his flank in the hills. If the land were of considerably wider extent it would serve an invader to turn the flank of the eastern Clwydian defences, while it would require works<sup>12</sup> for its protection. Yet this was probably the route taken by Offa, king of Mercia, in 795, when marching to battle against the Welsh on the marsh of Morfa Rhuddlan, a locality now quite unsuited for a battlefield.

As we approach the English boundaries tradition becomes less distinct, as might be expected from the fact that the Saxon invasion in some measure broke its continuity. At Mostyn and Saltney are lands now level with the spring tides, which two or three feet rise or fall would convert either into land or water.

<sup>12</sup> Such a work we actually find in Castell Prestatyn, a square earthwork built by the Strathclyde Britons.



## CHESTER.

When we come to Chester, there are evidences that may be due to subsidence, but are not certainly so. An ancient Roman wharf ran down from the present Watergate to the site of the present gasworks. It was a kind of pier supported on oak piles, shod with iron set in concrete. These were found in excavating for the gasworks, their tops fully twenty feet below the present level, and at the same depth was a beach, on which were found pieces of tile, cannel coal, and a pig of Roman lead. If the situation of these indicated subsidence, the land has been restored by silting, which still goes on, as the Dee Conservators know to their cost.

Hilbre Islands tell us no more than that they have lost by erosion all but a very small part of the stratum of clay overlying the rock. From the Eye have been washed paleolithic flint implements, some of which are in Mr. Potter's possession.

## THE MEOLS SHORE.

No district in our vicinity has been the subject of so many theories, geological and antiquarian, as the Meols shore, its peat beds with roots of trees and timber embedded, and its many ancient relics of habitation. It is not surprising that this formation should have been a subject of great discussion, as it appears to have been subjected to several complex actions, which require a very close study to disentangle and understand. I am not going to discuss them, as their elucidation belongs to another science. I will only say that there is the strongest evidence that the forest beds and their estuarine clays belong to the latest of the great pleistocene movements, though they show traces of the existence of men of the Paleolithic Age. To my mind they show also minor subsidences

belonging to historic times. These were probably both general and local, and on a comparatively small scale. In addition there have been formed in historic times lagoons of fresh water, due to changes of level, or the damming up of brooks and outlets; and there has likewise been subsequent loss of land by erosion. There certainly is a tradition that the Hoyle banks were once dry land, but beyond this no details have come down. It is said that a map in Lord Mostyn's library shows the Hoyle bank as land, but search recently made failed to discover it. I will at once go on to the archæological evidences.

As the fretting of the sea removes the blown sandhills, there appears, a few inches below the level of spring tides, an ancient surface, showing traces of cultivation. Upon this the remains of mediæval and older houses are continually washed out, together with ploughs, spades, and other agricultural implements; showing that this was arable land. The houses are mostly built on rough stone foundations set in clay, with clay floors, and the walls of the upper part of rough stakes and wattled work. These seem to have lined an irregular village street. On one occasion, in 1890, traces of wheels of carts, horses' feet with round shoes, and the footsteps of cattle and of men, who wore pointed shoes, were for a short time visible on ground below the level of high tide; by the side of the road were refuse heaps, containing bones, shellfish, fragments of iron, coal, cloth, and shoes similar to the footmarks. About a foot below the mediæval floor-level, and about eighteen inches below the line of spring tides, a circular hut was exposed, which I only saw after it was broken up by the tide; but in April, 1892, I was fortunate enough to find the foundation of another circular hut, one half of which was visible

beyond the scarp of the sandhill. The stones were partly rough, but had a few pick-marks and holes cut in them, in which to set the stakes for the conical roof. This hut was certainly  $1\frac{1}{2}$  to 2 feet below the level of high tide. Among the innumerable "finds" of ancient objects of every age found on this shore, I will only refer to one set, in the possession of Mr. Potter, that is, the fragments of a British funereal urn. It is of the fragile, badly baked clay commonly used for such urns, and ornamented with string and reticulated patterns. It could not have endured any long exposure, and when found must have been recently washed out of its grave-mound. This is an object not likely to have been carried about, like implements, coins, brooches, or personal ornaments might have been. It vouches for a British occupation and a British burial.

The fact that the British huts are below high spring tides appears to prove some degree of subsidence. A further feature in these ruins has a similar bearing. All these residences have their upright stakes preserved, but in a soft condition, to a uniform height of about 15 to 18 inches; above this height all trace is gone. This could only be caused by the submergence of the land in a shallow fresh-water lagoon, water preserving what lies below its surface. Mr. W. F. Irvine has found traces of this lagoon between Meols, Moreton and Bidston, in place-names; Mr. Potter, in beds of fresh-water shells; while I find it in the above-named condition of the ruined residences. I have been told that a similar circular hut was uncovered some years ago on the New Brighton shore, some distance below high-water mark. For the protection of these dwellings, and others on the level lands, it is probable that forts or places of refuge occupied the hills of Grange, Bidston, and



Wallasey. On the first, some years since, British urn interments were found. These relics are now in the possession of a Gloucestershire antiquary. I hope one day it will be made clear, by the discovery of early relics, that the traces, like those of an entrenched town, at Wallasey are really those of the Weallas who took refuge there.

There is a very general tradition in this district that Wallasey parish had three churches: the parish church of St. Hilary; the second a chapel in the grounds of Liscard Manor, traced by Mr. Ashby Pritt; the third near Leasowe, now lost in the sea. Nothing in this vicinity has been more disputed and doubted than this last tradition. I give the evidences collected for what they are worth. In 1828, during a survey for a suggested canal to Wallasey Pool, Mr. Nimmo found on the shore human skeletons, which he said lay east and west, as in a graveyard, and near the surface. Among the peasants and fishermen it was said that here slabs of stone had been seen, supposed to be gravestones. Mr. Joseph Boulton interviewed a man who said he had seen them; but because they were described as being of considerable size he rejected the account entirely. The late Mrs. Maddock, who died a few years ago at an advanced age, and who had resided all her life at Liscard, was told by her father that at the same spot, below the lighthouse, half-way down to low-water mark, he remembered a ruined enclosure wall, which he took to be that of the lighthouse which had been destroyed. As this temporary lighthouse was of wood, the account which others gave of such remains was rejected. There is no reason why older work may not have been uncovered at this site. No record of church or churchyard exists in any of the ecclesiastical annals, and it is objected that burials would not be made in peat; but these remains were near the

surface, and the superincumbent soil in which the graves were dug had been lost by the action of the sea. I see no inherent impossibility in the existence of some Saxon, or Danish, graveyard and chapel having stood there; moreover, among the ruins of the mediæval dwellings a few well-wrought stones have been found; and Mr. Potter found below the floor of one a broken stoup, or font, of early mediæval date.<sup>13</sup> So far as the remains of these dwellings show, they were destroyed by fresh water about the reign of Edward III, as relics of a later date are scarce.

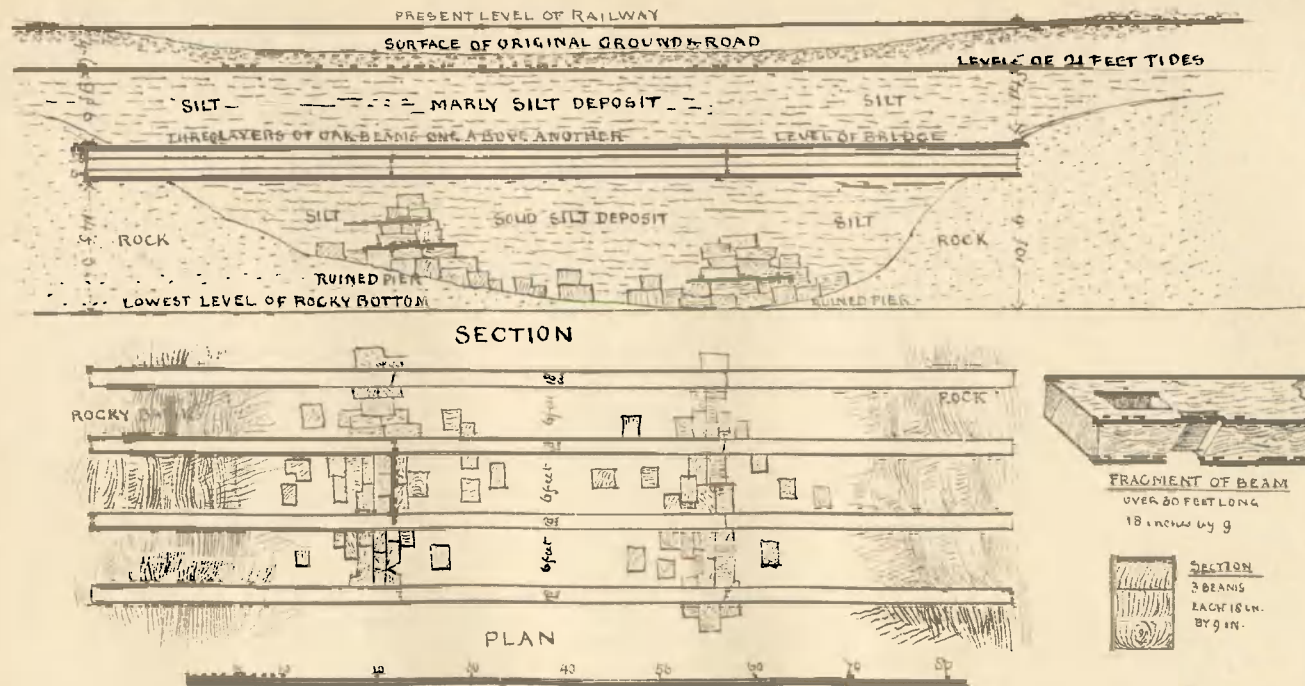
#### THE MERSEY.

In the Mersey itself we have good historical evidence of serious loss of land in the upper estuary. Two great inundations overwhelmed the meadows of Stanlaw Abbey; these, like the other lost lands, being low, marshy ground. In one of these 150 acres were lost, and the road between Ince and Stanlaw destroyed. The *Coucher Book of Whalley* gives the petitions to Pope Benedict IV for permission to remove thence, in consequence of the floods, which was done in 1296.

Near Eastham a paved road, eighteen feet below the surface, was cut across by the Ship Canal, which level is below high-tide lines. I cannot refer here to the geological evidences shown by the same cutting.

In the Chester Archæological Society's *Proceedings* for 1850 the Rev. Charles Massey gives a full account of a bridge, believed, with fair probability, to be Roman, discovered in making the Chester Railway to Birkenhead Dock, I think in 1845, with plans by Mr. Snow, Engineer. It was composed of four lines of oak bearing beams, lying horizon-

<sup>13</sup> In the present year (1895) a metal cross, about nine inches long, was found near Dove Point.



Plan and section of submerged bridge at Birkenhead (supposed Roman).



tally in three spans, equally spaced. The abutments were rock, and there were two rough stone piers to carry the beams, which the workmen, in excavating for the new bridge, had partly destroyed. The total length was about 100 feet; the width, 23 feet, being about that of a Roman road. The timbers were well squared, of heart of oak, 18 by 9 inches, laid in three courses, one above another, to give depth and strength, and were evidently *in situ*. Some of the timbers were grooved, as if to receive a trellis-formed parapet. The level of the roadway was fourteen to fifteen feet below the level of high tides, and was covered with river silt. Mr. Massey also gives an extract from the *Liverpool Courier* in 1828, stating that during spring tides the bar from Rock Point to Wallasey Hole was nearly laid bare, and disclosed a number of stones, three or four feet thick, stretched across from one side to the other, giving the appearance of a ford. This is not far from the position where a circular hut was uncovered at a later date.

During the excavation of the Manchester Canal, several canoes have been found in the reaches of the river. In all cases these have been at a depth of twelve to twenty-five feet from the surface of the land, and about ten to fifteen feet below the level of the water.

During the present year, 1895, a most interesting paper was read by Mr. May, of Warrington, on two ancient canoes, found twenty-five feet below the surface, near the River Mersey, above Warrington. They were associated with fragments of Roman tile, showing their date to be Roman-British. Certain skulls found in their vicinity are of the Celtic type. Above these in the silt were ranges and groups of piles, and indications of a lattice-work of smaller stakes and brushwood, such as were used for the construction of crannogs and

pile, or platform dwellings. There were only few and uncertain traces of occupation, or of superstructure. The heads of the piles were ten feet below the present surface, and barely up to low-water level. There was only one morticed beam found. The structure was undoubtedly of later date than the canoes, as the stakes were above them. The heads of these timbers being ten feet below the surface might possibly indicate some such subsidence as appears to have occurred at Stanlaw Abbey, lower down the river; the pile constructions being post-Roman, but early enough to continue Celtic fashions. These objects may, however, have come into their present position from other causes, and this explanation is conjectural.<sup>14</sup>

On the Lancashire shore, the only traditions I have met with are that a forest once extended from Formby and Sefton to Hilbre, also that the Burbo Bank was once dry land, and that a fresh-water well was to be found upon it surrounded with masonry. The only confirmation of this that I am able to find is that in a map purporting to be a copy of Ptolemy's, in the edition of his Geography dated 1511, an island is given at the mouth of the Mersey, supposed by Mr. T. Glazebrook Rylands to be the Burbo Bank. On the Formby and Crosby shores are several ancient roads leading to the sea, now apparently objectless. Near Altmouth, in making the Crosby outfall sewer at the upper part of the shore, foundations of dwellings were found—possibly the old lost village of Altmouth; but they were not carefully examined. In a recent paper on Altcar, the Rev. William Warburton says that the mosses in that parish, a little above high-water

<sup>14</sup> The depths below high-water mark of many of the traces show a curious correspondence with each other; *e.g.*, Sarn Badrig, Llys Helig, the bridge at Birkenhead, and the causeway at Puffin Island are all between 14 and 20 feet below the level of spring tides.

mark, contain the trunks of felled trees. As we go northwards the evidences of great changes diminish until we reach the Fylde and Morecambe, which is practically the limit of the present investigation.

Giraldus Cambrensis, while present at St. David's, preaching the Crusade, in the year 1187, speaks of a recent great hurricane on the Pembrokeshire coast, in these words:—"The sandy shores of South Wales being laid bare by the extraordinary violence of a storm, the surface of the earth, which had been covered for many ages, re-appeared, and discovered the trunks of trees cut off, standing in the very sea itself, the strokes of the hatchet appearing as if made only yesterday." This denudation of the peat and stumps is notable for the mention of axe marks, which seem to indicate a date of submersion of peat or woodland much more recent than that of the pleistocene forest beds.

#### LOST ROADS.

Another indication of submerged lands adjacent to these coasts is to be found in the existence of a number of ancient roads and trackways which led down to the low lands, but now terminate in the sea, from Llanllechid, Crymlyn, Aber, Llanfairfechan, Penmaenmawr, and through the small pass of Traeth Wylofain at Dwygyfylchi. This latter road Mr. Elias Owen identifies as a Roman vicinal way, branching from the main road between Conovium and Aber.

Not only does this road now lead directly on to the sands, but it actually stretched across them by a causeway to Beaumaris, and was used until some time in the eighteenth century, as shown upon an Itinerary in the possession of this Society, in another published in the middle of last century, in the possession of Mr. C. Potter,



and in Collins' Chart, dated 1693, which shows the roads and the ferry. This was no mere track over the sands. Mr. Elias Owen, in a letter to me, says :—" I well remember, thirty-five years ago, noticing particularly the ridge or raised roadway then existing, and which there was every reason for believing was a Roman road, raised and paved, going over the sands, and which most likely ended in a ferry opposite Beaumaris, available at low water."

The long piece of causeway extending from Priestholme in the direction of Penmaenmawr, visible for about  $1\frac{1}{2}$  miles at 7 to 10 feet below the water at ordinary low tides, is almost certainly a branch of the road to Beaumaris. I have seen and examined a part of this causeway below the water on a clear and fine day. It is a raised causeway, twelve to fifteen feet wide, apparently paved with large stones, well fitted together. Mr. Owen's recollection of the road is most important, inasmuch as its construction, as he describes it, appears to correspond with the causeway from Puffin Island. The boatman who took me to see it, assured me that it was recognised by the country people as a road, and not as a ridge of rocks; the tradition is retained in the neighbourhood that it reached to Penmaenmawr. The same boatman pointed out to me a position in the sea, opposite the village of Penmaenmawr, which is called *Muriau*, "the Walls"; and informed me that when fishing near there when a boy, his father had pointed out to him the ruins of houses below the water. In answer to my enquiry as to their forms and dimensions, he said that some were square like houses, others resembled sheep-folds, and others were merely long lines of wall; that they were all certainly buildings and not ridges of rock, and that they were built like the fences of fields, of rather

large stones, but the walls were stronger and thicker. Near the same place is pointed out by tradition prevailing all through the country the palace of Helig ap Glannog. It is visible twice in the year, at the lowest tides, above the surface of the water.

The termination in the sea of various ancient roads which formerly extended to the plains, has already been mentioned ; it remains to suggest the lines with which they were connected on the low lands.

In Collins' *Hydrographic Survey*, 1693, is marked the road formerly existing over the Lavan Sands, from Conway to Beaumaris, which continued in partial use until within living memory. Two roads are marked ; one called the low-water, and the other the high-water way. The former passed along the shore diagonally, in a line nearly due west from Penmaen Bach, at almost half-tide mark, till nearly opposite Beaumaris, where there was a ferry across the narrow channel. The high-water road, of which some remnants still exist on the mountain-side, left the shore at Penmaenmawr, and skirted the lower slopes of the mountain, descending near Llanfairfechan in a nearly parallel line to the south of the other road, and thence falling into the low-water route. The map appears to indicate regularly made roads rather than mere shore tracks. The causeway (sarn) running south-east from Puffin Island, probably a branch of this road, is also plainly marked on the chart, pointing in the direction of Llys Helig. It commences at the Middle Rock in the strait, not from the island, in Collins' Chart, and is marked "Causeway." Its length is over a mile.

In Abergele Bay a road appears to have ran along the coast-line of the low land, now lost in the sea. Foryd, near Rhyl, was the ford for this road across the Clwyd. Thence trace of it is lost,

till we find an ancient trackway crossing by Penrhyn, in rear of Little Ormes Head, where it appears to have trended, with a branch towards the south-west, to meet the causeway projecting from Ynys Seiriol. About half-way along this line it would pass Llys Helig, and branch off nearly on the low-water line shown on Collins' Chart, passing in its course the submerged ruins known as Muriau, and thence along the strait to Dinas Dinlle, continuing in a direct line over what is now sea to Arianrhod. From Dinas Dinlle and Conovium the coast road, after passing Traeth Mawr, probably ran on the summit of the ancient embankment, traditionally said to have been used by St Patrick on his embarkation to Ireland. These lines of road would serve as the most direct for the ports and coast places, and the lost stations of Llys Helig, Castell Tremlydd, Muriau, Caer Gwydno, and Arianrhod, together with the surrounding ones of Dinas Dinlle and Seguntium, would be natural points of junction or defence on these routes.

#### PLACE NAMES.

Among the surviving names of the lost towns, there may be some significance as to their former character. Llys Helig means the "Palace of the Willow," and though Helig is a personal name, it may have been derived from the willows growing on the marshy land by the junction of the rivers Conway and Ell, near which the palace would stand. The Ell means the "Eel River," an appropriate name for a marsh stream, that gathered the waters of only a few small brooks from the mountains. Arianrhod means the "Silver Circle," and near it was Bryn Aryn, the "Silver Hill." At the northern limit of Helig's land was Bryn Eurian, the "Golden Hill," still so named. Caer Cenydir, in the Contre Gwaelod, is the "Camp of the Tribes."



One of the lost cities of Cardigan Bay, and near the centre of Cantre Gwaelod, was Cadair y Cedawl, the "Chair or Throne of Cedawl," one of those seats whence judgment was delivered. There was a saint called Cedawl—"The chair of Cedawl "God has overthrown." (*Black Book of Carmarthen*.) Sarn y Bwch, the ruined embankment now in the sea, is the "Causeway of the He-goat." Sarn Badrig is the "Road or Causeway of St. Patrick" The use of the word "sarn," or causeway, applied to all these embankments, rather than "cloddfa," an embanking only, is an indication that they were raised roads as well as defences against the encroachments of the sea.

Most of these names suggest characteristics of regular military occupation or transit; none of them are connected with marine associations; and they most likely bring down to us something of the features of the lost lands.

#### SUMMARY.

To sum up shortly these somewhat meagre items of tradition and archæology into a consistent whole, I think it will be admitted that their general unity and consistency makes the whole case a very good and credible one. Built up as it is of mere fragments of evidence, there is little in the structure of a difficult or discordant character. Take, first, tradition: it is strong and general; it is unvarying in any important detail; it is not the repetition of some literary fable, for all its literature simply recognises a formerly-existing oral tradition.

The fact that the continuity of these losses and subsidences come eventually quite clearly into the mediæval and recent history of the same districts suffices to prove them part of a series of such movements dating from very early times, running back in regular succession to the age of paleolithic man and the pleistocene mammals.

Next, we have the ranges of forts set in the uplands, the strongest being those leading from the lowlands and now bordering the sea in such a way that they would be for such defence comparatively useless. I hope to show in another paper how those of the great stronghold between Conway and Ogwen guard roads that lose themselves in what is now sea. A still more striking instance is the fort of Dinas Dinlle, with its triple wall and huts for a permanent garrison, formerly guarding the road from Arianrhod to the fastnesses of the Eifel mountain. Standing on a projecting promontory, it could be cut off by a small force from the hills as it now stands; while Porth Dinllaen guards the Roman fords, now unfordable, and, on the southern side of the Eifel range, the great camp of *Caer Criri* was the retreat from the *Traeth Mawr* and *Cantre Gwaelod*. *Bwrdd Arthur* serves a similar purpose for the west of the *Abergele* lowlands and *Castel Cam*, and the *Clwydian* forts supply its eastern defences. In the north of *Wirral*, no less than four of the oldest roads and tracks lead directly into the sea, as also do some at *Crosby* and *Formby*.

Lastly, we have the ruins of buildings below the sea at *Cantre Gwaelod*, *Arianrhod*, *Maldraeth*, three cairns marked on the sands near *Holyhead*, *Llys Helig*, the causeways on the *Lavan Sands*, and the great embankments at *Cardigan Bay*, the *Meols* dwellings, and the sunken bridge at *Birkenhead*. These indications have been held as incredible, and have been attributed to natural geological peculiarities. From what I have seen of them, I should think nature had gone much further out of her way to produce a consecutive series of such marvellous results, than that the traditional causes, which say they are the works of man, lost by subsidences of the land, should be deemed incredible.

The value of arable lands and levels fit for cultivation would be extremely great in a country such as Wales, with which the communication was through difficult roads and passes, liable to be interrupted by storms, or harassed by guerilla warfare. They would be of the highest importance, both to the natives, who were accustomed to moving from the plains to the hills in summer, and still more so to the Romans, who had to provide sustenance from the land for their garrisons. In *Archæologia Cambriensis*, 1855, an ancient saying is quoted : " If Anglesea can grow corn for all North Wales, Carnarvon can give mountain pasture."

It is evident that the losses of land on these coasts within historical times have not been due to great, simultaneous, cosmic movement involving the whole coast, but have been of a local character ; and, so far as tradition and history serve us, they have been successive, from the second or third century, to the present day. We cannot in any other way reconcile their chronology. Their progress also seems to have been from south to north, the southern being the earliest in date, though they may have occurred more than once in the same district. It is almost certain this was the case in the Mersey estuary and Lavan Sands. The date given for the loss of Cantre Gwaelod would place it in the sixth century, if we are to accept the genealogy of Gwydno ; and though both the sons of Saith-enyn and of Helig are said to have accepted the religious life at the college of Bangor Iscoed, it does not follow that both families did so at the same time. The college was founded A.D. 180, and destroyed in A.D. 603. The date given for the submersion of part of the Morfa Rhyanedd is 331. There is reason to believe that Gwydno and Helig both lived early in the sixth century, as Taliesin, in the middle of that century, appears to refer to the submergences as recent,



and he was rescued from the fish weir. As the names of SS. Cybi and Seiriol are connected with this disaster, St. Cybi being Bishop of Holyhead in 328 and a pupil of this college, this is also a possible date for partial losses. Helig, whose palace was submerged, lived at the end of the fifth and early in the sixth century. There is no certain date for the destruction of St. Teilo's Monastery in Colwyn Bay. About 1400, the lands of Gronant were lost to the see of St. Asaph, and in the thirteenth century occurred the destructive floods that drove the monks from Stanlaw; and about the reign of Edward III the dwellings of the Meols shore were, according to archæological evidence, submerged in a lagoon, and the tidal erosion now destroys their remains. Later, we have the Abergele tombstone,<sup>15</sup> and the record of farms lost within living memory near Colwyn Bay, the embankments to save Leasowe marshes, and £30,000 expended recently to stay the rapid loss near Rhyl. The Mostyn and Flint marshes twenty-one years ago were pastures traversed by numerous tidal rills; now they are a sea of mud, mostly devoid of vegetation.

Thus, from age to age, the forces that make and unmake our world go on, and their sequence connects us with the marvels of geology and physics, and, not least, with the unwritten history of our race that lies hidden in the traditions and relics of the past.

<sup>15</sup> The inscription on this tombstone is as follows :—

*Translation.*

“ Yma mae'n gorwedd  
Y Monwent Mihangel,  
Gwr oedd a'i annedd  
Dair milltir y gogledd.”

“ Here lieth,  
In the Churchyard of St. Michael,  
A man whose dwelling was  
Three miles to the northward.”

Abergele Churchyard is now about half-a-mile from the sea northward. The epitaph is quoted by Edward Jones in 1802.