

the Mount was described by Diodorus Siculus in terms which apply admirably to it at present; on the other hand, it could not have taken place in times geologically remote, since the forests consisted of plants still indigenous to the district, and contained remains of beetles retaining all their beautiful colours, as well as the horns of the red deer, which man had fashioned into tools; that, in short, there was nothing compelling the belief that the subsidence happened very much before the time of Diodorus.

The paper concluded thus:—"A careful consideration of all the facts of the case, as well as of the related phenomena, points decidedly to the conclusion that, since Cornwall was inhabited by a race speaking the old British language, St. Michael's Mount was a hoar rock in a wood, and that its insulation resulted from a general subsidence of the country."

From the foregoing sketch it is obvious that, at that time, I supposed the subsidence to have taken place not much more than 2,000 years ago, and this was well understood by Sir C. Lyell and others, who took part in the discussion on the paper. Indeed, the eminent geologist just named, to whom I soon after sent the manuscript, after speaking of the attention I had given to the question (*Principles*, vol. i. p. 543, 1867), adds, "It is a somewhat forced hypothesis to assume that, whereas a retrospect of nineteen centuries displays to us the Mount geographically the same as it is now, yet shortly before that time, when Cornish was spoken, there was a sinking down and submergence of a wooded tract;" thus stating his dissent from the view which, as he knew, I then held.

After reading the paper of 1865, I devoted considerable attention to the literature of the subject, and in the lecture of 186 stated that the tradition of the Mount having been five or six miles from the sea, and enclosed in a very thick wood, was first mentioned, not by *Florence* of Worcester, who died in 1118, and who nowhere alluded to the Mount, but by *William* of Worcester, who visited Cornwall about 1478, or 360 years further from the period to which the tradition was supposed to point, thus rendering the tradition itself of very much less value; that the alleged old Cornish name assumed so many forms, and there was so much uncertainty about its exact import, as to render it improbable that it had any value as evidence; and that the submerged forest in Mount's Bay was known much earlier than I had supposed, having been mentioned by Leland, 1533-40.

The object of the lecture was to show that there had been a general subsidence of the country, that this was prior to the time of Diodorus, and that the era of the cavern deposits in South Devon was much earlier still. In fact, the insulation of the Mount, which was held to synchronise with this subsidence, was used as the first, or most modern, of a series of stepping stones leading backwards towards the era of the ancient Cave-men of Devon.

The printed abstract of the lecture closes with a recapitulation, which contains the following passage:—"Nineteen centuries ago it (the Mount) possessed a safe harbour, so that its insulation must have been effected long before; it was at one time unquestionably a hoar rock in a wood, but in all probability it had ceased to be so long before any language now known to scholars was spoken in the district. Prior to its insulation was the era of the growth of the forests now *submerged* along our entire seaboard," &c.

I am not quite sure to what Prof. Max Müller refers when, speaking of this lecture, he says, "Mr. Pengelly has somewhat modified his opinion" (p. 333). If to the opinion that the insulation of the Mount was due to subsidence, he is unquestionably in error, as I have never wavered on this point. If to that of the old British language having been spoken in Cornwall 20,000 years ago, my reply has already been given—"I never held it." But if it be to the opinion that there was a fair amount of evidence in favour of the traditions of the enclosure of the Mount in a thick wood, and of its alleged old British name; instead of modifying, I had discarded it in 1867, and with it, as a matter of course, the necessity of believing, on the one hand, that the Cornish language must have had an antiquity of 20,000 years; or, on the other, that the subsidence took place but little more than 2,000 years ago. It is unnecessary to say how very much I am gratified at finding the traditions discarded also by Prof. Max Müller (see p. 355 *et seq.*)

Before concluding, I may state that in July 1867, I read a paper to the Devonshire Association, under the title of "The Antiquity of Man in the South-west of England," which was simply an amplification of the lecture of the previous April, and was printed *in extenso* in the following October.* It contained

a few points of interest which had come to my knowledge after the Royal Institution lecture was delivered; such as the fact that the earliest mention of a British name was made, not by Carew in 1602, but by Norden in 1584 and Camden in 1586, who concurred in giving it as "Careg Cowse," which the first rendered the *Grey rock*, and the second *Rupis cana*; the fact that the name occurred in two different forms in Carew; and the fact that there was some error in William of Worcester's statement about Pope Gregory's grant to the Church on the Mount in the year 107c, there being no Pope Gregory at that time.

It is not my intention at present to enter on a consideration of the question, "Have geologists," as Professor Max Müller supposes, "left it doubtful whether the insulation of the Mount was due to the washing of the sea-shore, or to a general subsidence of the country?" or, "May not the Mount have always been that kind of half-island which it certainly was 2,000 years ago?" My object is simply that of correcting an error into which the Professor has fallen respecting my opinion, apparently in consequence of using an anonymous and probably incorrect report of a paper read in 1865, instead of an authorised abstract of a lecture delivered in 1867,—an error, however, which can scarcely be regretted, since to it we owe a "Chip" of great interest and value.

W. PENGELLY

Lamorna, Torquay, Dec. 26, 1870

Glycerine Solutions of Pepsin and other Substances

IN NATURE of December 29, Prof. M. Foster calls attention to the method of making glycerine extract of pepsin pursued by Von Wittich, and remarks with reason that the means hitherto adopted for preparing pepsin for medical purposes are clumsy and inefficient. There is, however, one exception, a mode of preparation which has long been in use, and which is by no means inefficient. This will be found to possess some practical advantages over the process of extracting the fresh mucous membrane with glycerine, while from it the glycerine solution can be prepared quite as pure and clear, and as strong as by maceration.

As long ago as 1858 (*Archives of Medicine*, vol. i. pp. 269-316) I described a method of obtaining the active digestive material from the pig's stomach, which answers perfectly, and has been employed in practice ever since. It simply consists in quickly drying the mucus expressed from the stomach glands upon glass plates.* The dried mucus is then powdered and kept in stoppered bottles. It retains its properties for years. Eight-tenths of a grain will dissolve *one hundred grains* of coagulated white of egg.

Now, from this powder is easily prepared by solution in distilled water a perfectly clear and colourless digestive fluid of great activity, which *can be readily filtered*.

Some years ago I found great advantage from subjecting tissues to the action of a very small quantity of this solution in glycerine, and keeping the whole at the temperature of 100° for some hours. By this process the elements of the tissue were softened, and could be dissected from one another readily for examination under the highest magnifying powers.

No doubt there is much to be learnt concerning the nature of the action of such substances upon tissues by the use of glycerine solutions. For microscopical work glycerine is of more use than any other medium. Not only may various substances be removed from tissues, but others may be introduced, and the tissue subjected to the action of various reagents without destroying it. In fact, the action may be regulated with the greatest nicety. Nearly all the tests required in microscopical examination may be dissolved in glycerine ("How to Work with the Microscope," p. 297, 1867) and tissues of the most delicate character may be preserved in it, and will retain their microscopic characters for years, *if care be taken to obtain the best and strongest glycerine*.

LIONEL S. BEALE

Tails of Comets, Solar Corona, and Aurora

UNDER this heading, in your issue of 5th inst., you report a paper by Prof. Osborne Reynolds, M.A., read at a meeting of the Manchester Literary and Philosophical Society, Nov. 29 last. This paper sets forth that the tails of comets, the solar corona, the aurora, and the Zodiacal lights are due to the ether which "fills" space. Comets' tails, as stated by the Professor, in his paper, are an effect due to the medium through which it

* This Pepsin is prepared for medical purposes by Messrs. Bullock and Reynolds, 3, Hanover Street, Hanover Square.

* *Trans. Devon Assoc.*, vol. ii. pp. 129-161. 1867.