portion of the glabella of a large individual. This discovery completes the parallel both with the South Wales beds and also with those near Dolgelly, though the number of species found in North Wales still falls far short of those known at Porth-y-rhaw. The fossils found by the author at Tufarn-helig comprised *Agnostus princeps; Microdiscus punctatus; Conocoryphe variolaris*; *Conocor. sp. Holocephalina; Erinnys; Theca; Paradoxides Davidis,* and some fragments at present undetermined. Most, if not all of these had also previously been found by Mr. Homfray, but as yet the beds have only been very partially worked, and it may be confidently expected that many other forms will be found there.

In order to illustrate the position of the beds more clearly, and at the same time to attach a more general interest to the paper, the author gave a sketch of the main features of the geology of the central portion of North Wales, extending in a north-westerly direction to Snowdon and Llanberris, and east and south to the Arenigs and Cader Idris; *i.e.* to the country on both sides the Barmouth and Harlech grits, which form the anticlinal axis before referred to. He also exhibited and explained three of the admirable horizontal sections of the Ordnance Survey, on the scale of 6in. to the mile, which relate to this district.

Palæontographical Society.—A meeting of this Society was held on February 16th, at the apartments of the Geological Society of London, Somerset House, for the purpose of presenting a clock to Dr. J. S. Bowerbank, F.R.S., F.G.S., as a testimony of the high esteem in which he was held by the members of the Society, and of their appreciation of the services which he had rendered to Palæontological Science as the originator of the Palæontographical Society, and in having so well filled the arduous office of secretary for seventeen years. A marble bust of Dr. Bowerbank had been executed by means of subscriptions, and was, by the Doctor's request, presented to the Geological Society.

CORRESPONDENCE.

THE TRANSACTIONS OF THE ROYAL GEOLOGICAL SOCIETY OF CORNWALL.

To the Editor of the Geological Magazine.

Sir,—Having lately, for the first time in my life, had an opportunity of consulting the Transactions of the Royal Geological Society of Cornwall, I have been surprised at the amount of information contained in them. Among other matters connected with rocks and veins, there are some which, at the present day, may be more generally interesting. As others may find as much difficulty in procuring access to these volumes as I have hitherto done, I may

venture, perhaps, to solicit space for an account of some curious circumstances given in two papers in the fourth volume.

The first paper is by J. W. Colenso, Esq.[1] (read October, 1829), entitled "A description of Happy-Union Tin Stream Work at Pentuan."[2] The valley of Pentuan is near St. Austell, and is described as about six hundred feet in breadth, but narrowing in places to three hundred, or even one hundred, the surface having a fall of one hundred and twenty feet in four miles. The rock is blue slate, covered in the bottom of the valley by an alluvial deposit, which, commencing at St. Austell bridge, becomes about sixty feet deep at Pentuan. The section of this alluvium at Pentuan is said to be the following (descending order) :—

g. River and sea sand, silt, etc..... 20ft.
Under this, at one place, just on a level with present low water at spring tides, piles were found as if for the construction of a foot-bridge.

f. A stratum of sea sand, with timber trees, chiefly oaks, lying in all directions, and also the remains of red-deer, heads of oxen, with the horns turning down, different from any now in Britain, said to be like those at the Cape of Good Hope; the bones of a large whale, and *human skulls, supposed to be either African or Asiatic* ... 20ft.

e. Silt, in the middle of which is a layer of stones, conglomerations of sand and silt, with sometimes wood and bone..... 2ft.

d. Sea sand with shells, the water proceeding from which is salt, while that above and below is fresh..... 4in.

c. Silt or "sludge," brown or lead-coloured, with shells, wood, hazle-nuts, bones of deer, oxen, etc.; the bivalve shells in layers, valves often united, spoken of as sea-shells. There was one piece of oak that had been "brought into form by the hand of man," but had floated in the sea, as a small barnacle was fixed at one end ..... 10ft.

b. Dark silt mixed with decomposed vegetable matter, having at top a layer of moss scarcely altered "almost retaining its natural colour," with leaves of trees, hazle-nuts, and sticks, 30 feet below level of sea at low water, 48 below high tides; extends with some interruption all over valley..... 2ft.

a. The tin ground, sand and clay, with fragments of granite, elvan, greenstone, "killas" or clay slate, and *irestone*, a hard black rock, and vein stones, with sand and pebbles of tin-ore, the tin mostly at bottom, varying from.....3 to 6 and 10ft.

This paper is followed by papers on the stream tin-works, by Mr.

[1] Was this gentleman the father of my old college friend and companion, the Bishop of Natal?

[2] See De la Beche's Report on the Geology of Cornwall and Devon, 1839, p. 406.

Carne and Mr. W. J. Henwood, the latter of which gives details of several other stream tin-works in Cornwall, very similar to those given by Mr. Colenso regarding those at Pentuan, particularly mentioning the occurrence of human skulls with bones of other animals. Mr. Colenso expressly states that he sends one skull to the Society for their Museum. If this Museum be still in existence and the skull retained there, it appears to me it would be well worthy of examination by some competent authority.

There is something about the description of the "tin-ground" in these papers that reminds one very much of the "boulder-clay." Whether formed by ice or water, it was afterwards covered by a "moss," and therefore was above the level of the sea then, but was subsequently depressed at different times till covered by more than 40 feet of marine deposits. It seems like the "sub-marine forests," or submerged mosses, with roots and erect stumps of trees found all round our coasts. The most interesting point, however, seems to me to be the finding of human skulls in these beds.

DUBLIN, *February 10th*, 1866. J. BEETE JUKES.

THE RAISED BEACH OF CANTYRE.

To the Editor of the GEOLOGICAL MAGAZINE.

SIR,—I have only just seen Mr. Hull's interesting communication relative to "the Raised Beach of Cantyre," or I would otherwise have made some earlier remarks upon it.

In October last, I spent a week in the neighbourhood of Campbeltown, and I was struck with the apparent proofs, on every hand, of a *comparatively* sudden rise of the land at no distant date, speaking of time in a geological sense. The cliffs of the Island of Davar, and of other parts of the coast, have, in most places, a footing of many yards in width, composed of broken rock fragments; and the rock faces, which contain the sea-worn caves, are now far removed from the direct influence of the waves. The height of the floors of those caves which I examined was from 15 to 30 feet above the present high water mark.

It occurred to me, at the time of my visit, that the cave of St. Kiaran might be used as a cogent argument in favour of the theory that the relative heights of sea and land have not been altered since the Saint inhabited the cave. Were the land to be twenty feet lower, the cave would not be habitable, and it would then be quite unapproachable excepting by means of a boat; whereas, tradition asserts that St. Kiaran occupied the cave as a residence for some years, and that he communicated with his neighbours by means of a horse, that he had trained to go forth and to bring to him the supplies which were sent by his charitable admirers.

St. Kiaran is *believed* to have been the tutor of St. Columba. Of the latter-mentioned Saint, Bede says,—"In the year of our Lord 565, when Justin the younger, the successor of Justinian, had the