

are now exciting in Britain, Ireland, and Scandinavia, I lose no time in sending you the above rough sketches.<sup>1</sup>

D. MACKINTOSH.

TAUNTON.

P.S.—I see the Rev. O. Fisher, in your last number, has arrived at a conclusion in support of which I have been collecting facts during the last eighteen months, namely, that the superficial angular debris, earth, and loam, from which our slopes and hills partly derive their smooth and rounded forms, is not principally a disintegration *in situ*, but has been *carried or driven along* by a simultaneously *wide-spread* agency,

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#### MARINE DENUDATION AND TIDAL CURRENTS.

*To the Editor of the GEOLOGICAL MAGAZINE.*

SIR,—Without wishing to unduly prolong the discussion on this subject, which has recently occupied so much of your space, may I briefly notice a point in the letter of my friend, Mr. Mackintosh, in which, I think, he seems to reverse the order of cause and effect? Admitting the influence which the form of the coast-line has on the direction and localization of tidal currents, the difficulty on the marine theory, still remains unexplained, as to the original excavation of these inlets and channels, before they could determine the direction of the eroding sea-line.

The phenomena exhibited in shallow seas in the constant shifting of sand- and mud-banks, and the ploughing up and re-deposition of matter, such as is now going on in the German Ocean, and is so well exemplified in both the internal structure and surface-contour of much of the marine drift, seem to afford the strongest evidence of the changeable character and want of local persistency of small marine currents,

As regards deep seas, the difficulty in accounting for the marine excavation of continuous valleys, may be briefly stated thus: If the whole was done simultaneously, it would involve—in the case of many of the Swiss valleys—(having a range of altitude of 7000 or 8000 feet)—a depth of action far beyond what is known to be the lower limit of marine currents; and if progressively by coast action, a persistency of position which seems incompatible with the entire change of contour during emergence or submergence, to an extent equal to the range of altitude of the valley.

A friend, who has recently been in Norway, informs me that the Fjords invariably terminate in a valley; admitting that the cliff-girt sides of the Fjords are the result of marine erosion, does it not seem more probable that this was superadded to a previously existing subaerial valley, than that the junction of the Fjord with the valley prolongation was a matter of accidental coincidence? And if the

<sup>1</sup> Fig. 2 is very regularly grooved, and the whole surface smoothed.

whole had been done by marine action, why does not the vertical cliff structure continue up the valley prolongation of the Fjord to the Norwegian watershed ?

Faithfully yours,

GEORGE MAW.

BENTHALL HALL, NEAR BROSELEY,  
November 10th, 1866

#### DISCOVERY OF *AMPYX NUDUS* AT MALVERN.

In the November number of the *GEOLOGICAL MAGAZINE*, at p. 519, we stated that Mr. E. B. Kemp-Welch had informed us of the discovery of *Ampyx nudus* in the Woolhope Limestone, at Colwall, near Malvern. We stated that the specimen of *Ampyx* shown to us by Dr. Grindrod,—and supposed to be that discovered by Mr. Kemp-Welch—was manufactured, and in that opinion we are confirmed by our correspondent, Dr. Harvey B. Holl, F.G.S., of Elderslie House, Worcester, who says in a letter just received, “the specimen is composed of the tail of *Phacops Downingia*; the rest is artificial.”

Having since been favoured with a letter from Miss Eyton, of Eyton, near Wellington, dated November 3rd, stating that she was present at the discovery of Mr. Kemp-Welch's *Ampyx*, and can testify to its genuineness; and having also been favoured with another letter from Mr. Kemp-Welch, dated from Poole, Dorset, 5th November, protesting against the condemnation of his interesting specimen, we cannot but imagine that the Trilobite discovered by Mr. Kemp-Welch has been mislaid by Dr. Grindrod, and that the supposed *Ampyx* examined by Dr. Holl and myself, is one of those manufactured specimens only too frequently sold to the unwary visitor to the Malvern and Dudley districts, and accidentally placed in the Doctor's Museum. “*Ampyx nudus*,” says Dr. Holl, “has not hitherto been found in the Malvern district.”—H. W.

#### OBITUARY.

WILLIAM HOPKINS, M.A., LL.D., F.R.S., F.G.S., so distinguished for his researches illustrative of the application of Mathematics and Physics to Geology, died in October last. We understand that for some time past his health had been gradually declining. He resigned in 1865, his fellowship of the Royal Society, to which he had been elected in 1837. In the Geological Society of London he filled the office of President, during the Sessions 1851-52, and 1852-53, previous to which, in 1850, he had received the Wollaston Medal from Sir Charles Lyell, who on that occasion, gave an outline of his principal geological researches. In 1854 he filled the office of President to the British Association at the Meeting at Hull, and held the same office in the Cambridge Philosophical Society, in which Transactions many of his most important papers were published. It is said, that he used to complain, that he could not get Geologists to understand his mathematics, nor Mathematicians to take an interest in his geology.