found deficient in ſeveral particulars, or chargeable with ſome miſtakes.

Permit me the honour to be,

My LORD,

Your Lordſhip's

Moſt humble and obedient Servant,

H. Baker.

Strand,
Nov. 23d, 1758.

CVIII. *A Deſcription of the foſſil Skeleton of an Animal found in the Alum Rock near* Whitby. *By Mr.* Wooller. *Communicated by* Charles Morton, *M. D. F. R. S.*

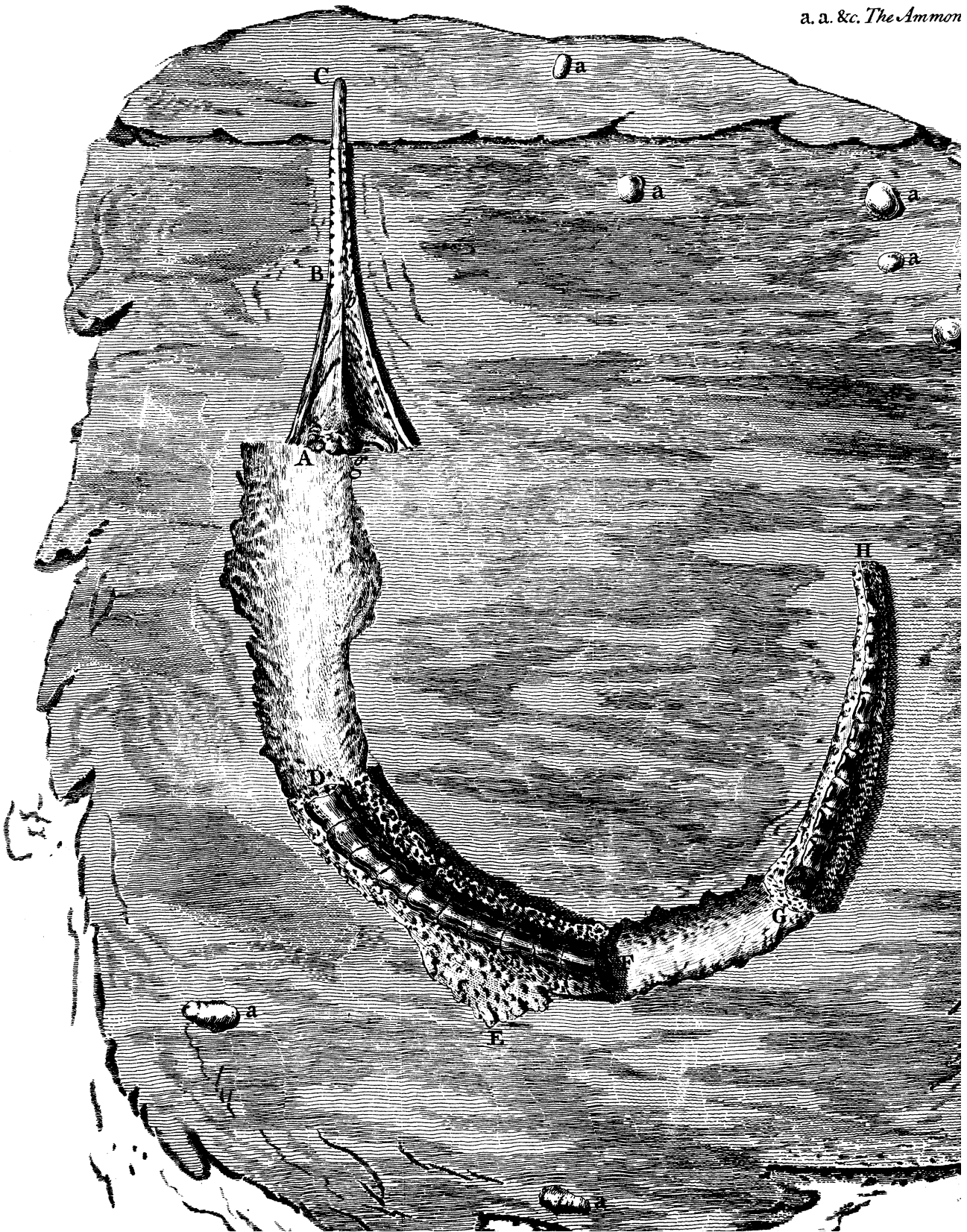
Read Nov. 23. 1758.

IT is in this rock, that the Ammonitæ, or Snake-ſtones, as they are commonly called, are found, which have undoubtedly been formed in the *exuviæ* of fiſhes of that ſhape; and though none of that ſpecies are now to be met with in the ſeas thereabouts, yet they in many particulars reſemble the Nautilus, which is well known. The internal ſubſtance of thoſe ſtones, upon a ſection thereof, appears to be a ſtony concretion, or muddy ſparr. Stones of the ſame matter or ſubſtance, in the ſhape of muſcles, cockles, &c. of various ſizes, are alſo found therein, and now and then pieces of wood hardened and cruſted over with a ſtony ſubſtance are likewiſe found in it.

Many naturaliſts have already obſerved, that among the vaſt variety of extraneous ſubſtances found at ſeveral

Part of the Fossil Skeleton of an Animal as it appeared on a
united to the Allom Rock near Whitby, *Jan. 3. 1758.*

a. a. &c. *The Ammon*



d on and

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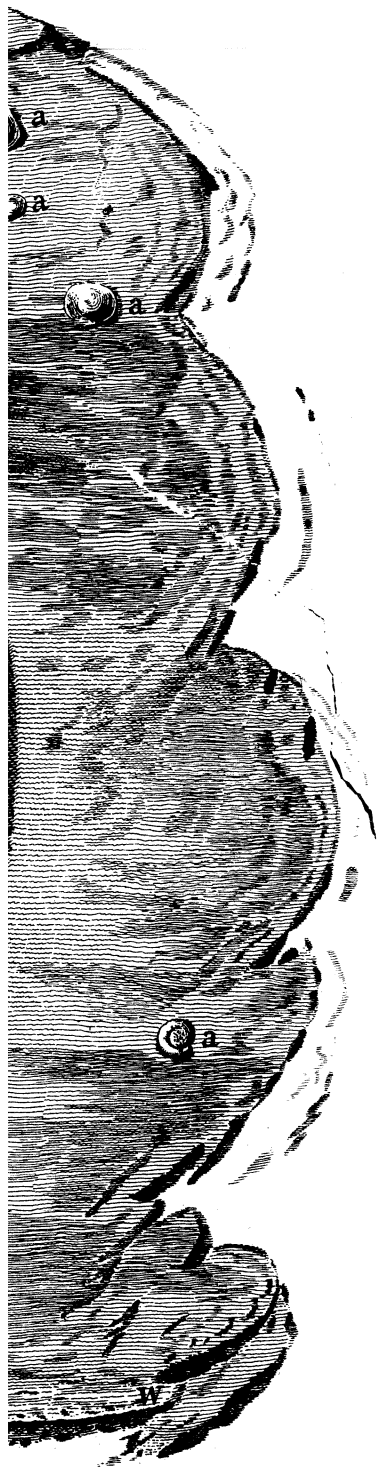
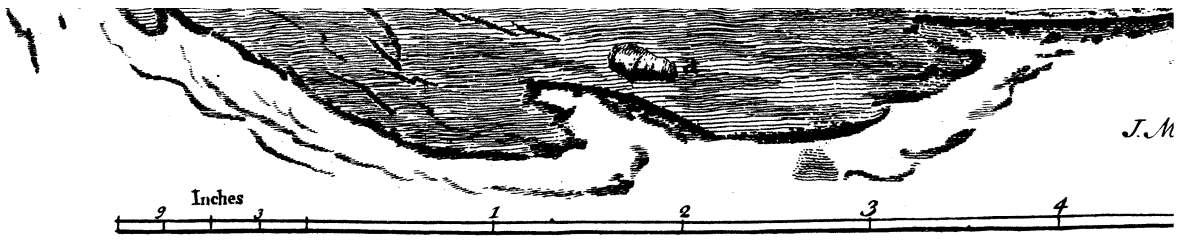
Ammonite or Snake Stones.




J.M
Inches
0
1
2
3
4

J. Mynde. fc.

5 Feet.

veral depths in the earth, where it is impoſſible they ſhould have been bred, there are not ſo many productions of the earth as of the ſea; and it appears by the accounts of authors both ancient and modern, that bones, teeth, and ſometimes entire ſkeletons of men and animals, have been dug up or diſcovered in all ages, and the moſt remarkable for ſize commonly the moſt taken notice of. In the firſt particular this ſkeleton will moſt probably appear to have belonged to an animal of the lizard kind, quadruped and amphibious; and as to its ſize, much larger than any thing of that kind ever met with or found in this part of the world; though, from the accounts of travellers, ſomething ſimilar is ſtill to be met with in many of the rivers, lakes, &c. of the other three.

When the annexed drawing thereof was taken January 5, 1758. [*See* TAB. XXX.] there remained no more of the *vertebræ* than is therein expreſſed; that is, 10 between D and F, and 12 between G and H: but when it was firſt diſcovered, about 10 years ago, they were compleat; and there was beſides the appearance of what was then thought to have been fins, near the back part of the head at A, the ſame as appeared further backward at E, when this deſign was made. The *vertebræ*, &c. now wanting having been either dug up by curious perſons, or waſhed away by the violence of the waves at high water, and the accidental beating about of ſtones, ſand, &c. during that time; the water covering this ſkeleton ſeveral feet at high water in ſpring tides; the cavities in the rock ſtill remaining as in the deſign.

The ſubſtance of the bones, with their *perioſtium*, on the covered or under ſide, in moſt parts remains

intire, and their native colour in ſome places in a good meaſure preſerved, and the teeth with their ſmooth poliſh plainly to be diſcovered. Part of the mandible near the extremity was covered with a ſhelf of the rock about three inches thick; which being cut away and removed, both the mandibles appeared under it compleat, with the teeth of the upper and under one, plainly locking or paſſing by each other. Theſe appeared to be of the *dentes exerti* or fang kind, as well as all the others in the narrow part of the mandible, and further backwards they were not obſerved. From this ledge or ſhelf the mandible towards B is ſingle, and appears to be the upper one of the living animal; and from the head not being exactly in the line of the body, that part has been inverted, or quite turned over, and the body itſelf, as appears from the tranſverſe proceſſes of the *vertebræ*, lies on the right ſide. There appears one row of teeth only on each ſide of the mandible, and they are about $\frac{3}{4}$ of an inch aſunder.

The mandible B A, the *cranium g h*, and the *vertebræ* from D to F, were attempted to be taken up whole; but the bones being rendered extremely brittle, and the rock in which they were fixed being a brittle blackiſh ſlate, with joints or fiſſures running in every direction, would not hold together: the whole therefore fell in many pieces, the *vertebræ* in the joints only, which makes them eaſy to join together again, and beſides ſhows very plainly the tranſverſe and ſpinal proceſſes thereof, with the foramen in the latter for the ſpinal marrow. It was now that a piece of the *os femoris*, about four inches long, ſhewed itſelf in the ſparry concreted ſubſtance at E, together with a piece

a piece of the *os innominatum*, to which it had been articulated or joined. This, with what has been before remarked, will ſufficiently prove this to have been an animal of the quadruped, and probably, from the ſhape of the cranium peculiar to fiſhes, of the amphibious kind. At the ſame time many pieces of the *coſtæ* or ribs, as broke and cruſhed up againſt the *vertebræ*, were plainly viſible. The cavities of all the bones were filled with a ſubſtance, which appeared the ſame as the rock itſelf; and the ſubſtance on each ſide the *vertebræ*, as they laid, was a mixture of ſparry concreted matter with that of the rock itſelf, which is a blackiſh ſlate. The animal, when living, muſt have been at leaſt 12 or 14 feet long. And the dimenſions of the whole, or particular parts of the ſkeleton, may be meaſured from the ſcale annexed thereto.

This ſkeleton lay about ſix yards from the foot of the cliff, which is about ſixty yards in perpendicular height, and muſt have been covered by it probably not much more than a century ago. The cliff there is compoſed of various *ſtrata*, beginning from the top, of earth, clay, marle, ſtones both hard and ſoft, of various thickneſſes, and intermixed with each other, till it comes down to the black ſlate or alum rock, and about 10 or 12 feet deep in this rock, this ſkeleton laid horizontally, and exactly as deſigned. The probability, that this cliff has formerly covered this animal, and extended much more into the ſea, is not in the leaſt doubted of by thoſe that know it. The various *ſtrata*, of which it is compoſed, are daily mouldering and falling down; and the bottom, being the ſlaty alum rock, is alſo daily beat, waſhed, and

wore

wore away, and the upper parts undermined, whence many thouſand tuns often tumble down together. Many antient perſons now living, whoſe teſtimony can be no way doubted of, remember this very cliff extending in ſome places twenty yards further out than it does at preſent. In ſhort there is ſufficient evidence, that at the beginning it muſt have extended near a mile further down to the ſea than it does at preſent; and ſo much the ſea has there gained of the land.

Theſe are the principal facts and circumſtances attending the ſituation and diſcovery of this ſkeleton; which from the condition it is in, and from the particular diſpoſition of the *ſtrata* above the place where it is found, ſeem clearly to eſtabliſh the opinion, and almoſt to a demonſtration, that the animal itſelf muſt have been antediluvian, and that it could not have been buried or brought there any otherwiſe than by the force of the waters of the univerſal deluge. The different *ſtrata* above this ſkeleton never could have been broken through at any time, in order to bury it, to ſo great a depth as upwards of 180 feet; and conſequently it muſt have been lodged there, if not before, at leaſt at the time when thoſe *ſtrata* were formed, which will not admit of a later date than that above-mentioned.

P. S. In the xlixth vol. page 639, of the *Philoſophical Tranſactions*, an animal is deſcribed by Mr. Edwards, which was brought from the Ganges, and reſembles this in every reſpect. He calls it *Lacerta (crocodilus) ventre marſupio donato, faucibus Merganſeris roſtrum æmulantibus.*

CIX.

Part of the Fossil Skeleton of an Animal as it appeared on and united to the Allom Rock near Whitby, *Jan. 3. 1758.*

a. a. &c. *The Ammonitæ or Snake Stones.*