

## CHAPTER IV.

## NOTES ON THE PREHISTORIC FAUNA.



TO complete our survey of the environments of prehistoric man, a few remarks must now be made on the fauna of the period, especially on the larger animals with which he came in contact in the chase or otherwise. Our knowledge of these animals is derived mainly from the discovery of their bones in marl-pits, peat, and alluvial deposits, and also, but more rarely, associated with human remains on inhabited sites. My labours in this most interesting department of prehistoric archæology have been greatly lightened by the exhaustive monographs of the late Dr John Alexander Smith, nearly all of which have been published in the 'Proceedings of the Society of Antiquaries of Scotland.'

According to our definition of the word "prehistoric," which covers only that portion of man's existence in Scotland prior to Roman times, a distinction ought to be made between it and "post-glacial," which embraces a much longer period of time. Broadly speaking, Neolithic man was in possession of the domestic animals—ox, sheep (?), goat, and dog—and acquainted with the art of cultivating plants

and cereals. Perhaps, therefore, the best principle of classification to follow would be that which associates prehistoric man with the introduction of domestic animals into Britain, as advocated by Professor Boyd-Dawkins at the International Congress of Archæology, held at Norwich in 1868.<sup>1</sup> But as the date of man's immigration into Scotland is unknown, it is evident that we must here act under a kind of roving commission, without assigning any precise limits to the commencement of the prehistoric period. Again, by treating of the remains of the prehistoric fauna, so far as they have been found within the Scottish area only, we are merely touching the fringe of a vast subject which embraces the whole Pleistocene or Quaternary period of Western Europe. It is therefore manifest that independent conclusions of any great value cannot be drawn from the Scottish specimens without, to some extent, correlating them with analogous discoveries over the wider area. Of the post-glacial fauna whose remains have been found in Scotland, some undoubtedly became extinct, or at least disappeared from Britain, before Neolithic man came on the scene; others, again, such as the domestic animals, have been introduced by him. Hence, for chronological purposes, it is almost as important to determine what animals were not contemporary with man, as it is to determine those with which he was actually acquainted.

Excluding the inter- and post-glacial mammalia which were the contemporaries of Palæolithic man—with the exception of the Irish Elk, which is surmised to have touched the horizon of Neolithic man in Ireland—the chief animals which are of archæological interest in the present inquiry are the Reindeer, Elk, *Bos longifrons*, *Bos primigenius*, Beaver, Brown Bear, Wolf, Wild Boar, and the Great Auk. As the limits of

<sup>1</sup> Transactions, 1868, p. 269.

this work are absolutely prohibitory of discussing the remains of these animals on the basis of their geographical and geological distribution, I shall only bring before my readers as much of the collateral details from beyond the Scottish area as will enable them to grasp and appreciate the importance of the palæontological problems raised.

#### REINDEER (*Cervus tarandus*).

Dr Smith was induced to look for horns of the reindeer among Scottish archæological remains in consequence of having his attention directed, through an article by Dr Hibbert,<sup>1</sup> to a passage in the 'Orkneyinga Saga,' to the effect that, in the twelfth century, the Jarls of Orkney were in the habit of crossing the Pentland Firth to chase the roe-deer and the reindeer in the wilds of Caithness.<sup>2</sup> The following tabulated statement of localities which have yielded remains of this animal is compiled mainly from his researches:—

1. On the *Morbhaich Mor*, a sandy flat to the east of Tain, Ross-shire, the Rev. Dr Joass found, at a depth of 4 feet, "the skull of a young ox, several bones of a large deer, one tyne of a palmated stag's horn, and the jaw of a large canine animal. All these bones lay beneath the moss, and on a natural shell-bed in which occurred the *Scaphander lignarius*, believed, from its size and delicacy of structure, to indicate warmer conditions of climate during its existence in such a situation, as well as a considerable subsequent elevation of the sea-bottom. The coast-line is now three miles distant."

<sup>1</sup> Edinburgh Journal of Science, 1831.

<sup>2</sup> Proc. Soc. A. Scot., vol. viii. p. 186: see also Professor Boyd-Dawkins in 'Transactions of International Congress of Prehistoric Archæology,' 1868, p. 287.

Professor Owen subsequently identified the above-mentioned tyme as portion of a reindeer horn.<sup>1</sup>

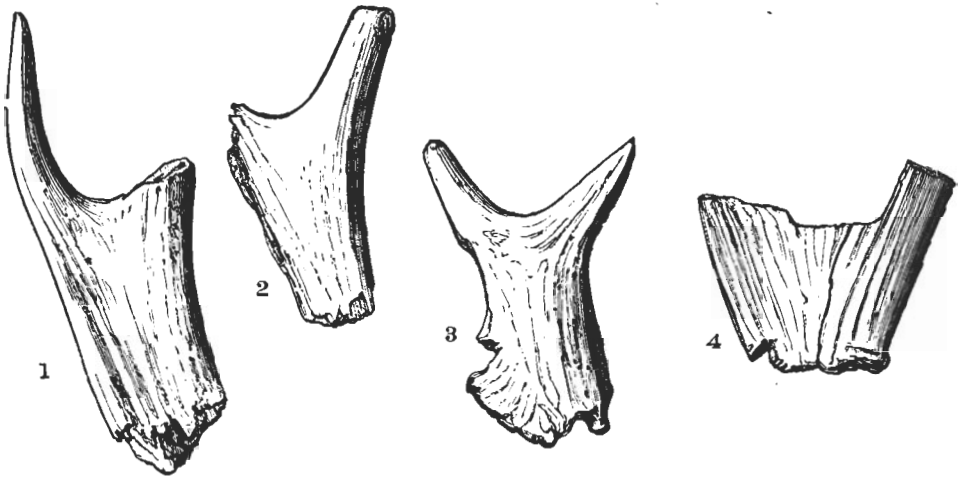


Fig. 24.—Portions of reindeer's horns found at Cill-Trölla Broch, Sutherlandshire ( $\frac{1}{2}$ ).

2. Several pieces of reindeer horns (fig. 24) were found among a collection of bones, shells, and other *débris* of occu-

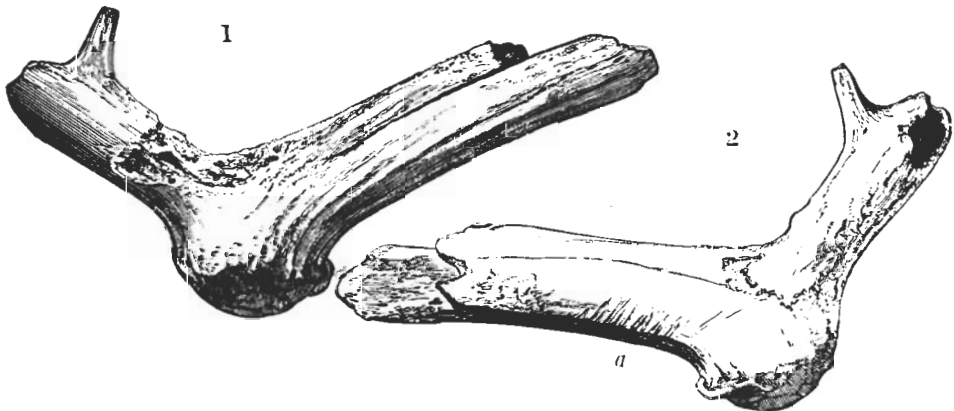


Fig. 25.—Front and back view of a portion of reindeer horn found in a broch at Keiss, Caithness ( $\frac{1}{2}$ ).

pancy, while cleaning out the ruins of *Cill-Trölla Broch*, near Brora, in Sutherlandshire.<sup>2</sup>

<sup>1</sup> Proc. Soc. A. Scot., vol. vi. p. 387, and vol. viii. p. 187.

<sup>2</sup> Ibid., vol. viii. p. 188.

3. In the course of the investigation of the Harbour Mound, Keiss, Caithness, by Mr Samuel Laing, several portions of reindeer horns (figs. 25 and 26, No. 1), some of which had

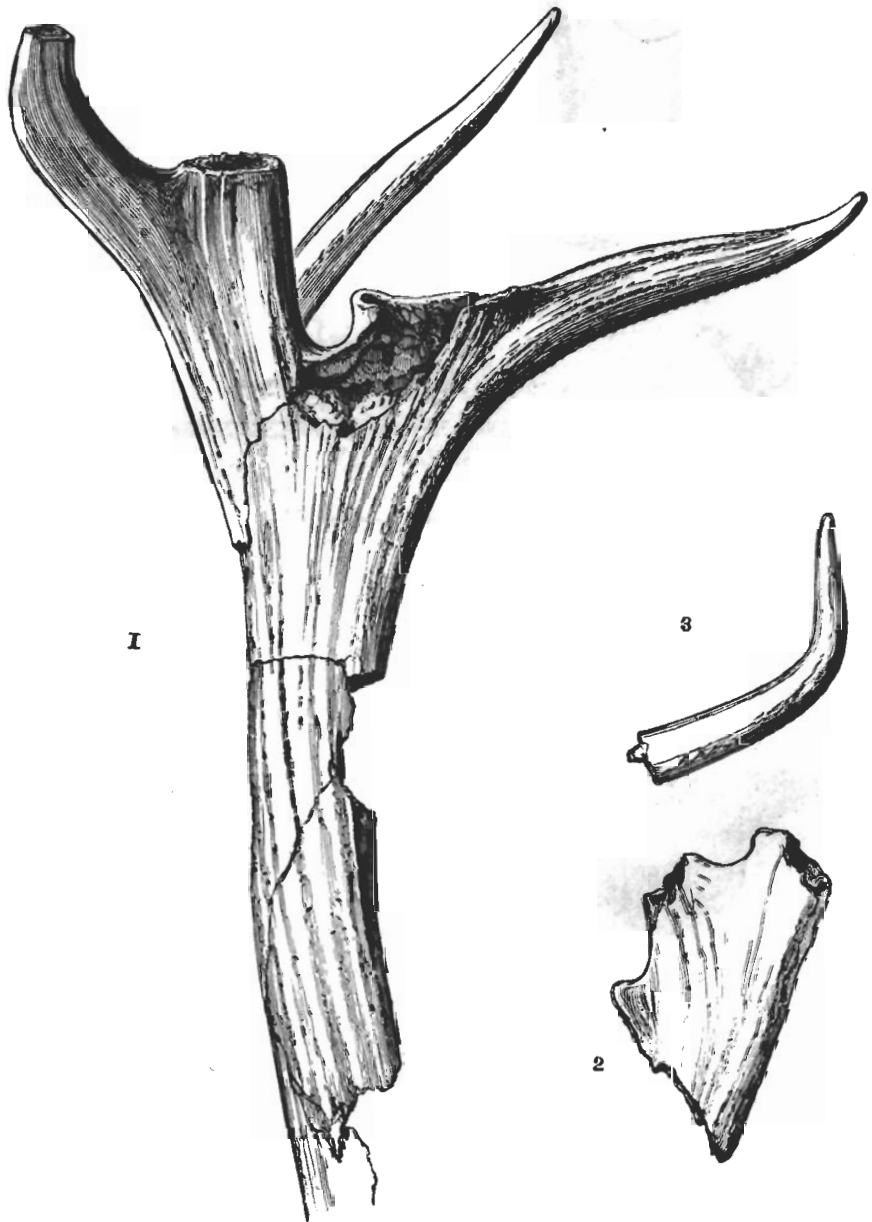


Fig. 26.—Portions of reindeer horns found at Keiss (No. 1), and at Yarhouse (Nos. 2 and 3), Caithness ( $\frac{1}{2}$ ).

been sawn or cut, were disinterred along with numerous relics of man.<sup>1</sup>

4. Two small tynes, and a portion of third tyne showing workmanship (fig. 26, Nos. 2 and 3), were found by Dr Joseph Anderson and Mr J. Shearer in a broch at Yarhouse, associated with the bones of the ox, horse, pig, deer, sheep, and goat, as well as a vast quantity of the ordinary *débris* of human occupancy. This broch was situated on what was formerly an island in the Loch of Yarhouse, and had attached to it a number of outhouses, in one of which the fragments of horn, subsequently identified as those of the reindeer, were found.<sup>2</sup>

5. Pennant states that he was assured by Dr Ramsay, Professor of Natural History at Edinburgh, that the horns of the reindeer "were found fossil in 1775, in a marl-pit, 5 feet below the surface, near Craigton, in the shire of Linlithgow."<sup>3</sup>

6. In 1833 the skull of *Bos primigenius* and fragments of deer-horns were found in beds of laminated clay on the north bank of the river Clyde, below the junction of the Kelvin. These relics were sent to the Glasgow Museum, and afterwards the horns were recognised as those of the reindeer.<sup>4</sup>

7. A fragment of a reindeer horn in the Hunterian Museum, Glasgow, was traced to sub-glacial deposit at Raesgill, Lanarkshire.<sup>5</sup>

8. In one of the marl-pits sunk in the partially drained Loch of Marlee, Perthshire, the skeleton of a beaver was found, and in another the horns of a large species of deer, now supposed to have been those of the reindeer.<sup>6</sup>

<sup>1</sup> Proc. Soc. A. Scot., vol. viii. p. 193.

<sup>2</sup> Ibid., p. 200; also Scotland in Pagan Times, p. 230.

<sup>3</sup> History of Quadrupeds, vol. i. p. 100.

<sup>4</sup> Proc. Soc. A. Scot., vol. viii. p. 207.

<sup>5</sup> Ibid., p. 208.

<sup>6</sup> See Owen's Fossil Mammals, p. 482; Stat. Account, vol. xvii. p. 478; and Mem. Wern. Soc., vol. iii. p. 214.

9. In 1856 a portion of a reindeer horn was found in a railway cutting at Croftamie, Dumbartonshire, embedded in blue clay underneath glacial till; and in its close vicinity arctic shells were detected.<sup>1</sup>

10. Reindeer horns and a mammoth tusk were found while removing alluvium (till) over part of the Woodhill quarry, Kilmaurs, Ayrshire.<sup>2</sup>

11. Sir W. Jardine describes the finding of the horns of a reindeer along with the remains of roe, red-deer, *Bos primigenius*, and the skull of a bear (*Ursus arctos*) under a peat-bog, while digging for marl on the Shaw property, Dumfries.<sup>3</sup>

12. Sir Arthur Mitchell fell in with a large horn of a reindeer nailed above the door of a house in Orkney, which, as he was informed, had been found deep below the surface of a peat-bog in the adjoining island of Rousay.<sup>4</sup>

13. Professor Boyd-Dawkins states that "Sir Philip Egerton met with a small fragment of an antler in the peat-bogs of Ross-shire, which, beyond all doubt, belongs to this animal" (reindeer).<sup>5</sup>

14. Professor Rolleston identified, among the animal remains sent to him from the Lochlee crannog, two fragments of reindeer horns.<sup>6</sup>

15. Mr James Simpson read a paper at the Edinburgh Geological Society (March 18, 1886), "On Reindeer and other Mammalian bones discovered by Mr Macfie of Dreg-horn in a rock-fissure at Green Craig, Pentland Hills." These bones are deposited in the Anatomical Museum of the Edin-

<sup>1</sup> Proc. R. Phy. Soc., vol. i. pp. 163, 247.

<sup>2</sup> Trans. Geo. Soc. Glasgow, vol. i. p. 71.

<sup>3</sup> Proc. Soc. A. Scot., vol. viii. p. 216, and vol. xiii. p. 360.

<sup>4</sup> Ibid., vol. viii. p. 216.

<sup>5</sup> International Cong. Prehistoric Arch., Norwich, p. 276.

<sup>6</sup> Ancient Scottish Lake-Dwellings, p. 142, and Proc. Soc. A. Scot., vol. xiii. p. 244.

burgh University, and the animals represented include the reindeer, horse, dog, and deer.

16. Pieces of reindeer horn have recently been found in a broch excavated by Sir F. T. Barry, M.P., on his estate of Keiss, Caithness. They were associated with painted pebbles, part of the antlers of an elk, and the canine tooth of a bear.<sup>1</sup>

### THE ELK (*Cervus alces*).

The elk, like the reindeer, inhabits northern regions, being at the present time met with in Finland, East Prussia, Lithuania, and some parts of Russia. Essentially a forest animal, its geographical range must at all times have been largely governed by the distribution of the primeval forests. The spread of Neolithic civilisation, which entailed the clearing of woods for tillage, curtailed the haunts of the elk. Partly for this reason, and partly on account of the change in climate, it would appear that in Roman times it had become virtually extinct in Western Europe. Cæsar merely mentions it as one of the three wild beasts peculiar to the Hercynian forest — viz., Reindeer, Elk, and Urus. During the Quaternary period the elk roamed over Europe from the Pyrenees to the Altai Mountains, and from the northern fringe of the forests to the south of France and North Italy.<sup>2</sup>

Its remains have been found on the sites of several of the Swiss lake-dwellings, and in numerous localities throughout the British Isles. The following are the instances of its discovery in Scotland:—

In 1871 Dr J. A. Smith recognised the skull and horns of a reported large species of deer recently found in the Whit-

<sup>1</sup> Proc. Soc. A. Lond., vol. xvii., 2nd series, p. 191.

<sup>2</sup> Hamy, Paléontologie Humaine, p. 151.



rig Bog, Berwickshire, as those of the elk (fig. 27). Whitrig has been an old lake basin of considerable size, but it is now entirely filled up and superficially occupied with a thick deposit of peat.

“Below the peat,” writes Dr Smith, “there is an extensive bed of shell-marl; for 3 feet in thickness you have pure marl, then over a part at least of the bog there is a bed of blue clay about 3 feet in thickness, and below this again there are other 3 feet of marl. Under the marl is a bed of brick clay, averaging 6 feet in thickness, and underneath this clay you come at last to the hard till, or boulder-clay.

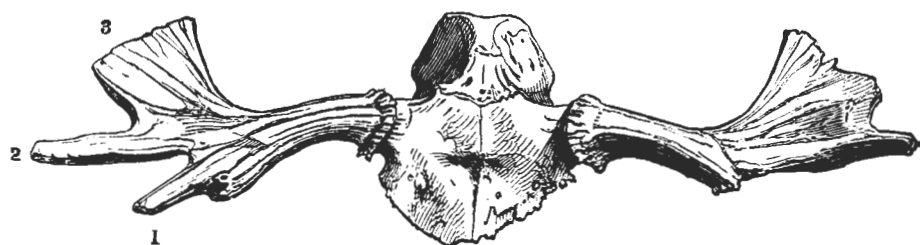


Fig. 27.—Skull of the elk, found in Whitrig Bog, Berwickshire.

“Mr Hogarth told me the elk’s head was found about two months before my visit, at about 150 or 200 yards from the northern margin of the bog. They were cutting peat at the time, and there was a great abundance of water in the peat; the wall of peat, I may mention, is not cut down to its very bottom, to avoid the marl, and Mr Hogarth cut a drain through the bottom or remaining peat and part of the marl, towards the open side of the bog, to let the water escape. It was while cutting this drain in the peat, and before he reached the marl, that the skull was discovered.”<sup>1</sup>

This discovery induced Dr Smith to hunt up all the scattered notices he could find of the remains of this animal

<sup>1</sup>Proc. Soc. A. Scot., vol. ix. p. 298.

throughout the British Isles. Of those recorded in Scotland<sup>1</sup> the following is an epitome :—

1. In a printed list of the first donations made to the Museum of the Society of Antiquaries of Scotland, the horns of the elk are four times included among the gifts, but unfortunately none of them have been preserved. These donations are thus recorded.

(a) By Sir Alexander Dick of Prestonfield (1781). “A quantity of Roman arms, consisting of twenty-three pieces of the heads of the hasta and jaculum; twenty pieces of the blades and nine of the handles of the gladius and pugio; a ring, 3 inches in diameter, fastened to the end of a staple; and a mass of different pieces of these arms, run together by fire, all of brass; skulls and other human bones, together with the horns of animals of the deer and elk species, dragged out of the middle of a bed of shell-marl at the bottom of his loch of Duddingston.” This remarkable hoard of the Bronze Age was presented, at the time, to the Antiquarian Museum.

(b) By Mr James Muirhead (1781). “A skeleton of a palmated head, with very large horns, projecting both before and behind, dug up lately on the farm of Greycrook, near Cramond, occupied by Mr Henry Sawers, and found buried 8 feet below the surface, covered with 5 feet of marl, above which was 3 feet of moss.”

(c) By Mr George Aitkenhead (1783). “The broad upper part of the horn of an elk, dug up anno 1779, 76 feet below the surface of the ground, in Trinity Muir [Brechin], in the heart of a marle bed, which, besides being covered with several strata of earth, clay, and sand, each between 6 and 8 feet in thickness, had over them all a covering of moss to the height of 30 feet.”

(d) By Mr William Mabon, cutler in Dunse (1783). “A

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. pp. 297-345, and vol. xvii. p. 325.

large palmated horn, 27 inches in length, and 9 inches in breadth."

2. A donation to the Royal Society of Edinburgh by the Honourable Lord Dunsinnan, in 1788, is "a painting in oil of the head and horns of an elk, found in a marl-pit, Forfarshire"<sup>1</sup> (fig. 28).

3. In the account to the parish of Kinloch, Perthshire, the Rev. J. Brodie states: "A pair of very large deer's horns

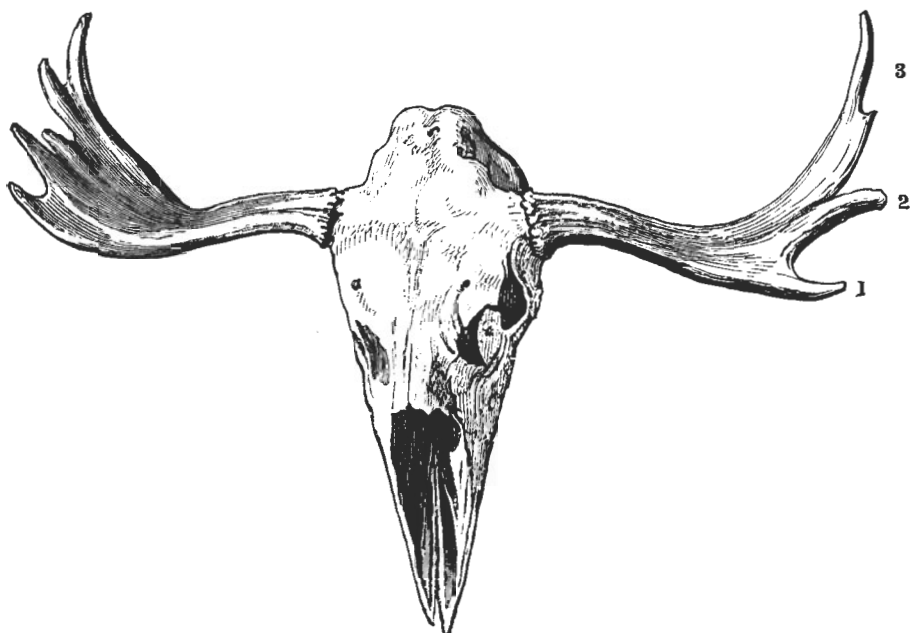


Fig. 28.—From a painting in oil of elk's skull found in Forfarshire.

were found a few years ago, in a bed of marl, in Mr Farquharson's marl-pit at Marlee. From their superior size and palmated form they appear to be the horns of the elk-deer, anciently the stately inhabitant of the Caledonian forests."<sup>2</sup>

4. The circumstances in which a head and horns of the elk from a marl-pit at Airleywight, Perthshire, preserved in the Hunterian Museum, Glasgow, were found, are thus de-

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. p. 315.

<sup>2</sup> Old Stat. Account, vol. xvii. p. 478.

scribed: "They were got in the mossy hollow ground to the north of this house in digging for marl. The first section was moss of from 10 to 12 feet in depth; then 2 or 3 feet of an inferior kind of marl; then a bed of rich plastic red clay of about 1 or 1½ foot in thickness; and last, the rich marl for which the work was done. It was between the moss and inferior marl strata, and partly in both, that the head and

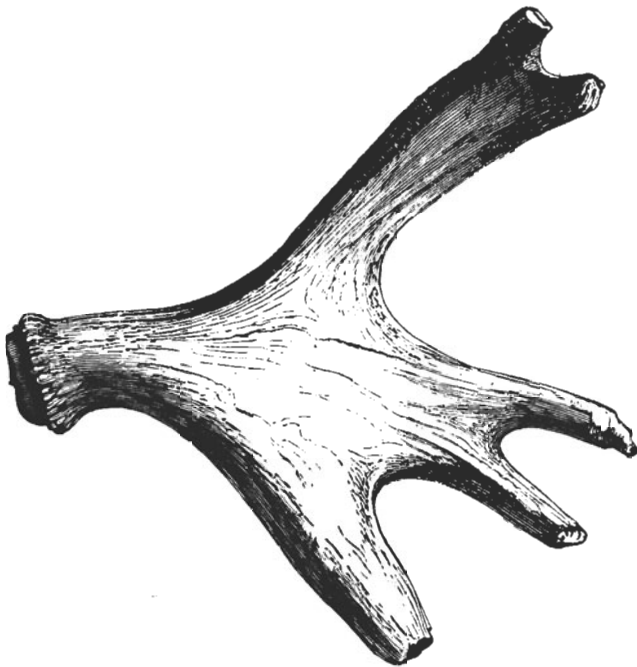


Fig. 29.—Elk's horn found in Strath Halladale, Sutherlandshire.

bones were found. The heads were pretty perfect when got, and the horns almost entire, showing distinctly the species to which each belonged, the one evidently of the elk kind; the other just like our present red-deer heads, but of rather larger size than we now see. The bones found along with the elk's head showed it to have been a very large animal; it must have been, at least, as tall as a good-sized ox."<sup>1</sup>

5. A shed palmated horn (fig. 29) of the left side of

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. p. 320.

the head of an elk "was found about forty years ago in the formation of a cutting made for diverting the course of the river in Strath Halladale (a river valley running north through the eastern part of the country, and opening to the shores of the North Sea at the bay of Melvich), and was preserved by Mr Robert Rutherford, Helmsdale, in whose possession it remained until it was recently presented, through the Rev. Dr Joass, to the Duke of Sutherland's Museum at Dunrobin. . . . The horns of a very large red-deer, *Cervus elaphus*, were also found in the course of the same cuttings, and are now in the museum at Dunrobin; they display no less than some twenty-five or twenty-six points."

On the above discovery Dr Smith makes the following comments: "This horn has almost the look of the horn of a recent elk, having apparently lost little or nothing of its animal or mineral constituents. So that, judging from its appearance, we are led to consider it must either have belonged to a recent elk, or that the elk lived down to a comparatively late period of time in this most northern part of Scotland, and perhaps to a still later period here, than in the more southern localities in which its remains have been discovered." <sup>1</sup>

6. Besides the skull and horns of the elk discovered in Whitrig Bog, already noticed, Dr Smith considers that a portion of a palmated horn, found at Coldingham in Berwickshire—described and figured by the late Mr James Hardy, in the 'Proceedings of the Berwickshire Naturalist's Club for 1860,' as belonging to the Irish elk—has a much closer resemblance to the horns of the elk. Mr Hardy, in a footnote, refers to another instance of the discovery of what he supposed to be the Irish elk in the neighbourhood of North Berwick. In vol. i. of 'Hillside and Border Sketches,' by W. H. Maxwell,

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. p. 324.

London, 1847, at p. 317, it is stated that “a medal of Trajan, a fibula, a patera, and a horn of a moose-deer” were discovered.

7. According to Dr Smith, the finest specimen of the true elk that had yet been discovered in the British islands was found, in 1828, “in a peat on the edge of a small loch called Willie Struther’s Loch, in the valley of the river Slitrig,” in Roxburghshire (fig. 30). Some other bones, including the skull of a *Bos longifrons*, were found in this moss.<sup>1</sup>

8. Another specimen of the cranium of an elk with its

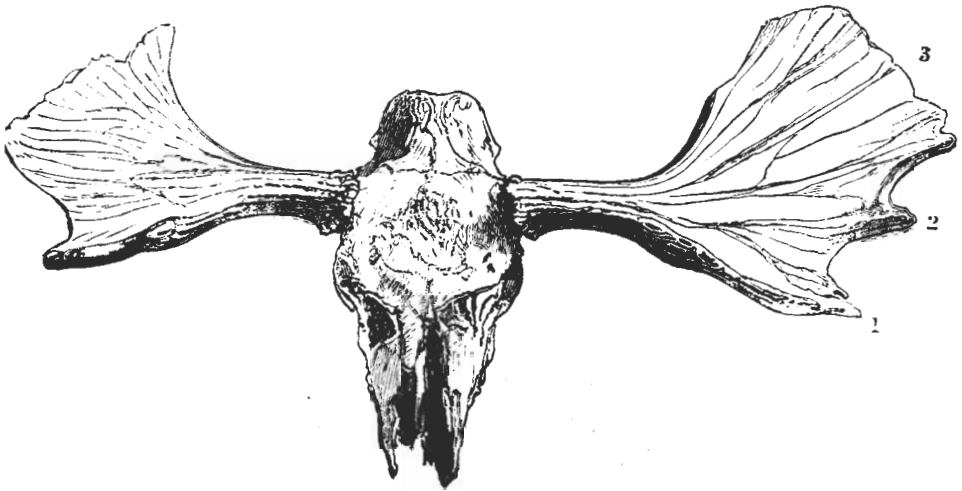


Fig. 30.—Skull of elk found at Willie Struther’s Loch, Roxburghshire.

horns was discovered in a bog at Oakwood, “a few miles up the river Etterick, above the town of Selkirk, and was brought upwards of thirty years ago by the Hon. Francis Scott to Mertoun House, Roxburghshire, where it is still preserved.”<sup>2</sup>

9. In the ‘Edinburgh Encyclopædia’ (1830) the following statement occurs under the description of Selkirkshire: “It is likely that in ancient times the urus had been common, for skulls of that animal have frequently been found in the

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. p. 326.

<sup>2</sup> Ibid., p. 331.

marl mosses along with those of the stag, and another extinct species of deer with palmated antlers, of a size which seems to indicate the bearers to have been as large as a blood horse.” (Probably the same as the deer of Saomme of Cuvier.)

The Rev. James Russell, in his account of the parish of

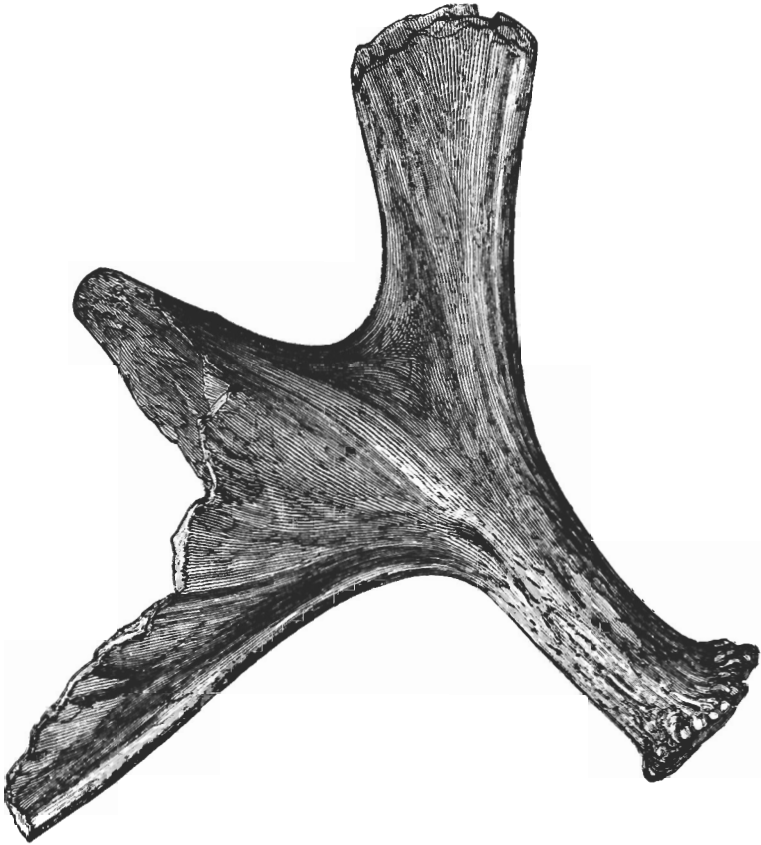


Fig. 31.—Horn of the elk found in the river Cree, Wigtownshire.

Yarrow, states that “the skulls of the urus, described by Cæsar, and an extinct species of deer with large palmated antlers, have been found embedded in the marl mosses.”<sup>1</sup>

10. In the account of the parish of Kirkurd by the Rev.

<sup>1</sup> New Stat. Account of Scotland, Selkirkshire, p. 38.

David Anderson, it is stated that "not long ago, in digging for marl in the Mount bog, several horns of the elk, in a high state of preservation, were found."<sup>1</sup>

11. In 1883 Dr Smith records the finding of the horn of an elk (fig. 31) in Wigtownshire. It and a fragment of a large deer-horn were drawn out of the estuary of the river Cree, "somewhere between Newton-Stewart and Cree-town, in a salmon net," and given to the Rev. George Wilson, of Glenluce, by the man who got them.<sup>2</sup>

12. Part of the antler of an elk (*Cervus alces*) was found recently by Sir F. T. Barry, M.P., in underground buildings attached to a broch at Keiss, excavated by him.<sup>3</sup>

### *England and Ireland.*

The remains of the elk have also been recorded from various localities throughout England and Ireland, among which the following may be mentioned: Chirdon Burn, Northumberland;<sup>4</sup> Walthamstow, Essex;<sup>5</sup> in a Romano-British settlement at Wetton, Staffordshire;<sup>6</sup> Hartlepool, Durham;<sup>7</sup> Thorpe Hall and Carnaby, Yorkshire;<sup>8</sup> Isle of Man;<sup>9</sup> in a cave at Llandebie, Caermarthen;<sup>10</sup> and at Stewartstown, Tyrone, Ireland.<sup>11</sup>

<sup>1</sup> New Stat. Account of Scotland, Peeblesshire, p. 128.

<sup>2</sup> Proc. Soc. A. Scot., vol. xvii. p. 325.

<sup>3</sup> Proc. Soc. A. Lond., vol. xvii., 2nd series, p. 191.

<sup>4</sup> Trans. Tyneside Nat. Field Club, vol. v. p. 111, 1863.

<sup>5</sup> Geo. Mag., vol. vi. p. 389.

<sup>6</sup> Bateman's Ten Years' Digging, &c., 1861, pp. 202, 298.

<sup>7</sup> Trans. Tyneside Nat. Field Club, vol. v. p. 121.

<sup>8</sup> Proc. Geo. and Polytech. Soc. of the West Riding of Yorkshire, 1869.

<sup>9</sup> Proc. Soc. A. Scot., vol. ix. p. 339.

<sup>10</sup> Ibid.

<sup>11</sup> Proc. Zool. Soc., London, part v. p. 52, 1837.



GIGANTIC IRISH DEER (*Megaceros hibernicus*).

The Irish elk (fig. 32) is remarkable, among all the species of deer both living and extinct, for the great proportional size of its horns. Dr Molyneux,<sup>1</sup> to whom we owe the first ac-



Fig. 32.—*Irish elk*.

count of this fossil animal, gives the length, from the extreme tip of the right to that of the left antler, as 10 feet 10 inches; the length of each antler from the burr to the

<sup>1</sup> Phil. Trans., vol. xxx. p. 485.

extreme tip, 5 feet 2 inches; and the breadth of the palmated part 1 foot 10½ inches. From these data he infers the amount of the superiority of the bulk of the animal over ordinary deer. Further discoveries, however, have shown this conclusion to be erroneous, as the osteological modifications necessitated by the vast weight of the head consisted merely in the greater strength of the limbs and neck.

“The first tolerably perfect skeleton of the *Megaceros*,” says Sir R. Owen, writing in 1846,<sup>1</sup> “was found in the Isle of Man, and was presented by the Duke of Athol to the Edinburgh Museum; the figure in the ‘Ossemens Fossiles,’ tom. iv. pl. viii., is taken from an engraving of this skeleton transmitted by Professor Jamieson to Baron Cuvier. Another skeleton was composed and set up by Dr Hart, in the Museum of the Royal Dublin Society, from a collection of bones found at Rathcannon, in Ireland, and this is figured in his ‘Description of the Skeleton of the Fossil Deer of Ireland.’ A third engraving of a fore-shortened view, by Professor Philips, of the skeleton of the *Megaceros*, from Waterford, in the Museum of the Yorkshire Philosophical Society, was published, without description, by Mr Sunter of York; and this exhibits a more natural collocation of the bones than do either of the above-cited figures. Three very complete and well-articulated skeletons have since been added to English collections; one of those is in the British Museum, another in the Woodwardian Museum at Cambridge, and a third in the Hunterian Museum at the Royal College of Surgeons in London.”

Remains of the *Megaceros* are sparingly found in Britain, but so abundantly in Ireland that about one hundred heads have been found, during the last thirty or forty years, in

<sup>1</sup> British Fossil Mammals, p. 447.

the small bog of Ballybetagh alone.<sup>1</sup> Besides Britain and Ireland, it inhabited the largest part of the Continent, where its remains are met with in caverns and Pleistocene deposits. Like the *Bos primigenius*, it is represented in the Cromer forest-bed, so that it existed throughout the entire glacial period. It probably found its way into Scotland during the first great forest growths in post-glacial times. It is maintained by some writers that the *Megaceros* was the contemporary of man in Ireland, on the ground that its remains have been found associated with the works of man in caves and crannogs.<sup>2</sup> Mr Kinahan, in his notice of the crannogs in Loughrea, states that from Shore Island 300 tons of bones were procured, among which "were perfect heads of oxen, sheep, goats, deer, pigs, and what seemed to be large dogs or wolves. There was also exhumed the head of a *Megaceros hibernicus* which measured over 13 feet from tip to tip of its horns."<sup>3</sup> Horns of the animal were also found on the crannog of Cloonfinlough.<sup>4</sup> In the cave of Ballynamintra, County Waterford, explored by Messrs A. Leith Adams, F.R.S., G. H. Kinahan, M.R.I.A., and R. J. Ussher,<sup>5</sup> numerous bones of the Irish elk were found, associated with a number of hammer-stones and pounders, and so broken as to suggest to the authors that it had been done by the hand of man. "Taking, therefore, into consideration," they write, "the oblong and rounded stones, battered and chipped at the ends by blows, also other stone tools bearing traces of man's handiwork, and strewn about among the Irish elk's remains, one can scarcely doubt but that the regularity in the mode of

<sup>1</sup> Geo. Mag., vol. viii. p. 358.

<sup>2</sup> Scientific Transactions of R. Dublin Society, vol. i., 2nd series, p. 222.

<sup>3</sup> Proc. R. I. Acad., vol. viii. p. 424.

<sup>4</sup> Ibid., vol. v. p. 208.

<sup>5</sup> Scientific Transactions of R. Dublin Society, vol. i., 2nd series, p. 200.

fractures was the result of his ingenuity for the extraction of the marrow, and possibly also for other objects.”

It may also be observed that these Irish elk bones were associated with the remains of a Neolithic fauna, among them being the bones of horse, pig, ox (*Bos longifrons*), grizzly bear (*Ursus ferox*), goat, red-deer, badger, wolf, fox, dog, &c. Among the relics of man were human bones, a polished stone celt, various implements of bone, an amber bead, two bone plates of the handle of a knife ornamented with incised concentric circles, charcoal, &c., showing that the cave had been frequented by man up to early medieval times.

The remains of the *Megaceros* hitherto discovered in Scotland are very few. The Rev. George Gray<sup>1</sup> gives an exceedingly interesting notice of a find in the parish of Maybole, Ayrshire, in which the head and horns of the animal were found associated with bones of the ox and the red-deer. In this report he writes as follows :—

“Towards the southern boundary of the parish there are a series of hollows between the undulations of the sandstone, some of them still in the state of lochs, and others of marshes. On draining some of them, it has been found that, after penetrating a bed of soil and moss of about 8 to 10 feet in thickness, great deposits of marl occur, containing an immense number of organic remains. It is to be regretted that at the time the marl was excavated no greater attention than what curiosity prompted was directed towards these interesting relics. Portions of different animals have, however, been preserved ; and for the following notice of the heads of the elk and *Bos* in the possession of Mr Kennedy of Drummellan I am indebted to Dr M'Tyer of Redbrae.

“The fossil head of the *Cervus megaceros* differs from the

<sup>1</sup> New Stat. Account, vol. v. p. 353.

specimen in the Museum of the Royal Society of Dublin in the head being larger and the horns a little less, probably from the Drummellan animal having been aged.' [Then follow the dimensions.]

"The other head appears to have belonged to a variety of *Bos taurus*, the forehead being concave. It measures 10 inches between the horns, and  $13\frac{1}{2}$  inches round the hole of the horn. Horns of the *Cervus elaphus* were also found."

Two portions of the horns of the *Megaceros*, consisting of the left beam of a shed horn of average size, and the brow snag of another horn, were found in a cutting on the Croft-head and Kilmarnock Railway; but geologists differ as to the nature of the deposits, some assigning them to an interglacial period.<sup>1</sup>

In September 1897 an almost complete skeleton of the Irish elk was dug out of a bed of marl at Close-y-Garey, parish of German, Isle of Man. The marl bed lay under 3 feet of disturbed soil and peat, and extended downwards to a depth of about 10 feet. The skeleton was found about 9 feet from the surface, lying "on its right side, the head towards the bank and the legs drawn up to the body." From the interim report of the Committee conducting the investigation, I extract the following notes on this interesting discovery.

"The bones were nearly in juxtaposition, and in a fair state of preservation. Unfortunately, however, the skull was badly decayed, having probably broken, as suggested by Professor Dawkins, under the weight of the antlers, of which the left one had fallen over the lumbar vertebræ, the right dropped down by the cervical vertebræ and shoulder-blades. The latter was in almost perfect preservation; the tines, how-

<sup>1</sup> Trans. Geo. Soc. Glasgow, vol. iv.; Geo. Mag., vol. v. p. 393, vol. vi. p. 390, and vol. vii. p. 137.

ever, dropped off in lifting it out of the marl. The left antler is the larger, measuring across the palm 15 inches, allowing for a small piece of the front edge which has decayed away; the right measures 13 inches. With tines restored, they are respectively  $56\frac{1}{2}$  inches and 53 inches long. Curiously, the beam was missing in both; this would probably have been another 10 inches. They have each six points or tines besides the brow tines which had fallen off, the part of the beam to which they were attached having decayed away.

“The size and shape of the antlers show the animal to have been an adult male; the teeth which remain are in excellent preservation, showing no sign of weakness or decay. The limbs are perfect, all the small bones having been recovered; the vertebræ are sound, but, unfortunately, the atlas is missing, having probably been turned over and reburied in the wet clay without being observed. The right shoulder-blade, which lay beneath the other, is badly decayed, as are many of the ribs and the pelvic bones; but we hope that, with a little piecing out and patching, the bones, when articulated and mounted, will make a perfect skeleton.”

RED-DEER (*Cervus elaphus*) and ROE-DEER (*C. capreolus*).

Red-deer had formerly a wide distribution throughout the temperate regions of Europe and Asia, and they are still to be found in some of the European forests, though in greatly diminished numbers from what they used to be even in early historic times. The great range of this animal in time is attested by numerous discoveries of its antlers, teeth, and bones, throughout England, Scotland, and Ireland, in ossiferous caves, in the newer fresh-water deposits of the Pliocene period, and in intermediate formations up to the

growth of the existing peat-bogs. "The chain of evidence of the existence of this species of deer in Britain," writes Sir R. Owen, "from the Pliocene tertiary period to the present time, seems to be unbroken. This at least is certain, that a deer, undistinguishable by the characters of its enduring remains from the *Cervus elaphus*, coexisted with the Megaceros, the spelæan Hyæna, the tichorhine Rhinoceros, and the Mam-



Fig. 33.—Horns of red-deer found in the Meadows, Edinburgh.

moth, and has survived, as a species, those influences which appear to have caused the extinction of its gigantic associates, as well as of some smaller animals—for example, the *Trogontherium*, the *Lagomys*, and the still more diminutive *Palæospalax*.”<sup>1</sup>

No animal, among the prehistoric fauna of Britain, comes more frequently before the eye of the archæologist than the

<sup>1</sup> British Fossil Mammals, p. 478.

red-deer. Indeed from the very dawn of Neolithic civilisation it was sought after, not only as food, but also for its horns and bones, which were utilised as implements, weapons, and ornaments, &c. The frequency and abundance with which its remains have been found on ancient inhabited sites, such as crannogs, brochs, earth-houses, caves, rock-shelters, &c., is positive evidence that in those times great herds of



Fig. 34.—Horns of red-deer found in a moss, Ashkirk, Roxburghshire.

deer roamed over the country. Although the area of their existence in Britain has now dwindled down to a few protected forests in the north of Scotland, where some herds enjoy a kind of wild life, there is ample historical evidence to show that deer abounded in the south of Scotland in medieval times. Thus, by order of Edward I., dated 18th August 1291, "Simon Fresel (Frazer), Keeper of the forest of Sel-



kirk, is enjoined to bestow upon the venerable fathers, William Frazer, Bishop of St Andrews, thirty stags; Robert (Wishart), Bishop of Glasgow, twenty stags and sixty oak-trees; and the Bishop of Caithness for himself, ten stags; James the Steward of Scotland, twenty stags," &c.<sup>1</sup> For further historical notices of the red-deer, and the specified localities throughout Scotland which have yielded the remains, I would refer my readers to the valuable article of Dr J. Alexander Smith, in the 15th volume of the 'Proceedings of the Society of Antiquaries of Scotland.' I will only further remark that the horns disinterred from marl-pits, and the older turbaries, appear to indicate animals decidedly larger than those of the present day. At any rate, nowhere throughout Europe could we find, at the present time, a stag's head to match with the two here illustrated (figs. 33 and 34), one found in the Meadows, Edinburgh, and the other in a moss at Ashkirk, Roxburghshire.

The history of the roe-deer, as well as its distribution in space and time, may be paralleled with that of the red-deer, and, as obtains at present, at no time was it so numerous as the latter. The antler of the roe-buck requires very little to convert it into a convenient hand-dagger; and I have found weapons or implements of this description in various crannogs.<sup>2</sup>

#### URUS (*Bos primigenius*).

Of the two wild oxen, the Bison and the Urus, stated by Pliny to be, in his time, inhabitants of Germany,<sup>3</sup> the remains of the former have not yet been discovered among the superficial deposits of the prehistoric period in Britain; but its

<sup>1</sup> Quoted in Proc. Soc. A. Scot., vol. xv. p. 61.

<sup>2</sup> See Ancient Scottish Lake-Dwellings, fig. 174.

<sup>3</sup> Nat. Hist., book viii. chap. 15.

presence in earlier times, as a contemporary of the mammoth, tichorhine rhinoceros, and cave hyæna, is unequivocally established. "A characteristic cranium with horn-cores of the *Bison priscus*," says Professor Owen, "obtained by Mr Warburton from the fresh-water newer Pliocene deposits at Walton in Essex, is suspended in the Hall of the Geological Society of London."<sup>1</sup>

In France and Germany its remains are frequently met with, being indeed among the fauna of the lake-dwellings of Robenhausen and Wauwyl; and, in more eastern parts, it is still extant as the auroch of the Lithuanian forest. "Its absence from Britain," says Professor Boyd-Dawkins, "may perhaps be accounted for by our island having been cut off from the mainland of Europe before the commencement of the prehistoric period, and by the animal having been consequently exposed to the craft of the hunter in an area too small for its concealment."<sup>2</sup> On the other hand, the urus continued to live in Britain during the prehistoric period (probably longer in Scotland than elsewhere in the island). The discovery of its remains in marl-pits, in the newer tertiary deposits, and in the Cromer forest-bed, proves that the animal had a wide geological range, embracing the entire glacial period. Cæsar gives a good account of the uri of the great Hercynian forest: "There is a third kind, consisting of those animals called uri. These are a little below the elephant in size, and of the appearance, colour, and shape of a bull. Their strength and speed are extraordinary; they spare neither man nor wild beast which they have espied. These the Germans take with much pains in pits and kill them. The young men harden themselves with this exercise, and practise themselves in this kind of hunting, and those who have slain the

<sup>1</sup> British Fossil Mammals, p. 494.

<sup>2</sup> International Cong. Prehistoric Arch., Norwich, p. 283.

greatest number of them, having produced the horns in public to serve as evidence, receive great praise. But not even when taken very young can they be rendered familiar to men and tamed. The size, shape, and appearance of their horns differ much from the horns of our oxen. These they anxiously seek after, and bind at the tips with silver, and use as cups at their most sumptuous entertainments" (Book vi. chap. 28).

The fossil remains of this great ox have been abundantly found throughout Scotland, as the following records will show:—

1. Five skulls were discovered in a marl-moss at Whitmuirhall, one of which was presented to the Museum of the Society of Antiquaries of Scotland by the Rev. Thomas Robertson, accompanied by a letter, in which the writer says: "Among other curiosities dug out of a marle moss at Whitmuirhall, in this parish, the skull and flints of an ox which I have sent you attracted my attention. You, I know, are fond of anything that tends to throw light upon the ancient state of this country, and therefore I used the freedom to transmit this, not merely on account of its uncommon size, but as a proof of the large breed of cattle with which this country abounded in the last century. I found five skulls, evidently larger, but not so entire. I found also several small axes, resembling those used by coppersmiths, but I did not think it worth while to trouble you with them."<sup>1</sup>

Subsequently, in noticing this discovery,<sup>2</sup> Mr Robertson states that a Roman spear was found along with these skulls.

2. Another fine specimen of the head of the urus, labelled from Selkirkshire, is in the Museum of the Royal College of Surgeons, Edinburgh.

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. p. 643.

<sup>2</sup> Stat. Account of Scotland, vol. ii. p. 434.

3. A fine large skull of *Bos primigenius* is preserved in the Abbotsford collection, said to have been found in a moss near Jedburgh.<sup>1</sup>

Dr J. A. Smith has put on record the fact that during a drive in the valley of the river Ale, near the town of Lilliesleaf, he saw two large skulls impaled one on each of the wooden posts of an old field-gate.<sup>2</sup>

4. In 1826 the bones of a large ox, described as the *Bos primigenius*, were got in the marl of Linton Loch, Roxburghshire, as well as those of deer. A perfect skull of the beaver (*Castor fiber*) was also found "below the peat and on the surface of the marl, now preserved in the Museum of the Tweedside Physical and Antiquarian Society at Kelso."<sup>3</sup>

5. A skull of the urus was presented to the Museum of the Society of Antiquaries of Scotland, in 1782, by Thomas Scott of Hapsburn. Also in the same year another specimen, from a moss in Galloway, by the Rev. David M'Robert.<sup>4</sup>

6. The Rev. G. J. Hamilton states, *inter alia*, that in a marl-moss on the estate of Synton, Ashkirk, "besides the horns of the stag already mentioned, the horns of the urus (*Bos primigenius*) were dug up from the same moss."<sup>5</sup>

7. A portion of the skull of the urus was found by Dr Henderson in the Whitrig Bog, and presented to the Hunterian Museum, Glasgow.<sup>6</sup>

8. Remains of *Bos primigenius* were found in Dumfriesshire associated with the bones of the bear and reindeer, as already described (p. 90).<sup>7</sup>

9. In the British Museum there is a skull, from a turbarry

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. p. 656.

<sup>3</sup> Edin. New Phil. Journal, July 1858.

<sup>4</sup> Proc. Soc. A. Scot., vol. ix. p. 644.

<sup>6</sup> Ibid., vol. ix. p. 658.

<sup>2</sup> Ibid., p. 657.

<sup>5</sup> Ibid., vol. xv. p. 50.

<sup>7</sup> Ibid., vol. viii. p. 216.

in the county of Kirkcudbrightshire, presented by Lord Selkirk in 1859.<sup>1</sup>

10. A skull of the urus is recorded as having been found in a marl-pit near Maybole, associated with remains of various other animals (see p. 104).

11. A portion of the skull with a horn-core was found in a bed of clay in a railway cutting, near Crofthead, Renfrewshire, along with remains of Irish elk and horse.<sup>2</sup>

12. Professor J. Geikie describes the remains of *Bos primigenius* found in the valley of Cowden Burn in clay-beds, which he considers to be interglacial.<sup>3</sup>

13. Mr William Lockhart, in his account of the parish of Lanark, states that, in 1785, while digging a mill-lade, "there was found the skeleton of the *Bison scoticus*, or Urus, described by Cæsar, lib. vi., which has been extinct in Scotland for above 300 years. The cores or flints of the horns are still preserved, one in the College of Glasgow, and another in my possession: the last, though not entire, is 2 feet in length, and next the head measures above 15 inches in circumference."<sup>4</sup>

14. Remains of the urus were found on the north bank of the Clyde, associated with those of the reindeer,<sup>5</sup> and also in an excavation in Greendyke Street, Glasgow.<sup>6</sup>

15. A large skull of a *Bos taurus*, described in Fleming's 'History of British Mammals,' is now preserved in the Museum of the New College, Edinburgh. A label, fixed on it in Dr Fleming's handwriting, is to the effect that it

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. p. 659.

<sup>2</sup> Trans. Glasgow Geo. Mag., vol. iv., and Geo. Mag., vol. vii. p. 137.

<sup>3</sup> Geo. Mag., vol. v. pp. 393, 486, 535; vol. vi. pp. 73, 390; vol. vii. p. 53.

<sup>4</sup> Stat. Account of Scotland, vol. xv. p. 34.

<sup>5</sup> Proc. Soc. A. Scot., vol. viii. p. 207.

<sup>6</sup> Trans. Geo. Soc. Glasgow, vol. ii., 1867.

was found in a marl-pit at Newburgh, Fifeshire (figs. 35, 36, and 37).

16. A large skull from near Athol, now in the British Museum, is figured and described by Professor Owen in his 'British Fossil Mammals,' p. 501. At the end of his description he makes the following remarks, which show that his opinion was against the supposition that any of the domestic

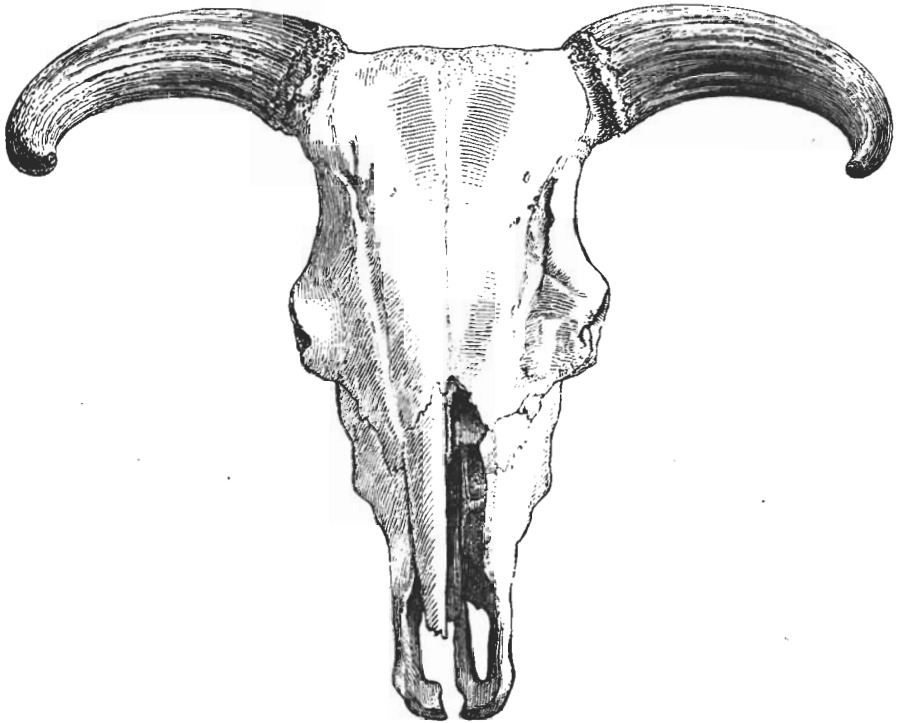


Fig. 35.—Skull of *Bos primigenius* found in Fifeshire (27¾ inches in length).

cattle of Scotland are descendants of the prehistoric wild ox: "In the manuscript catalogue of the British Museum this fine specimen is ascribed to 'the Caledonian Ox, *Bos taurus*, var. *gigantea*.' But the wild white variety with black muzzles, ears, and horns, the 'boves sylvestres' of Leslie, which are identical with the cattle preserved at Chillingham, are of very inferior dimensions, and differ particularly in the smaller proportional size, and finer and more tapering figure

of the horns. The Kyloes of the mountainous regions of Scotland, which are more likely to have been derived from an indigenous wild race than the cattle of the Lowlands, differ

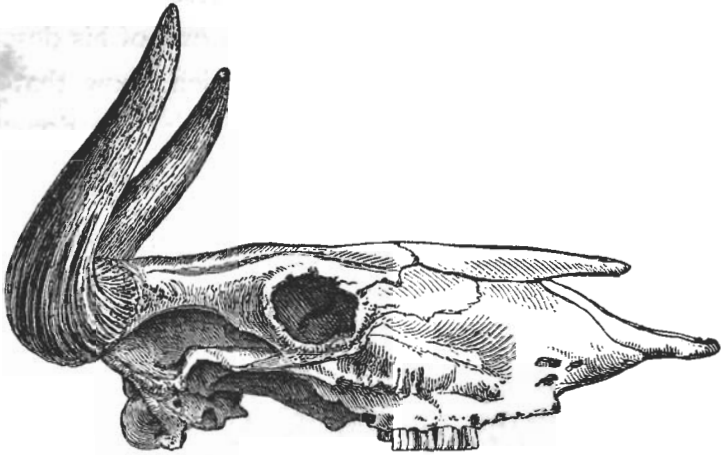


Fig. 36.—Side view of skull in fig. 35.

still more from the *Bos primigenius* than does the Chillingham breed in their diminutive size, and very short horns.”

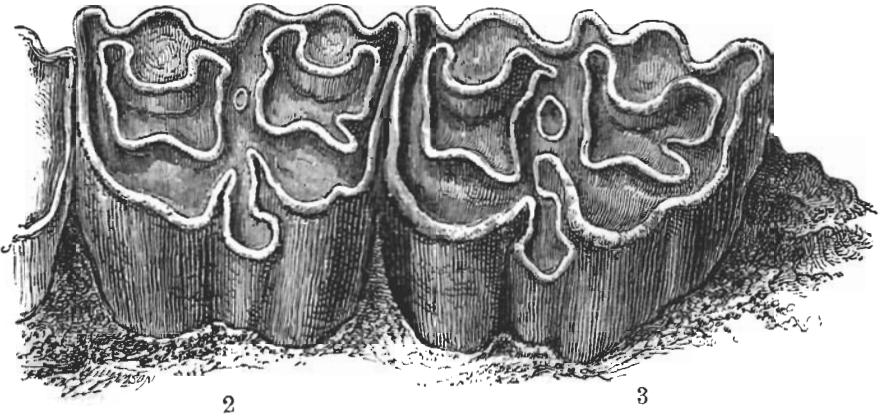


Fig. 37.—Two last maxillary molar teeth of left side of *Bos primigenius* (natural size).

17. Another skull was found in the last century in a marl-pit half a mile from Moulin, Perthshire.<sup>1</sup>

18. The Rev. J. Scott, in his account of the parish of

<sup>1</sup> Stat. Account of Scotland, vol. v. p. 70.

Muthil,<sup>1</sup> writes as follows: "At this time (1793) there are no wild deer, but as the horns of both the elk and forest deer of very large size have of late been found in marl-pits, on both sides of the parish, and as the head and horns of the urus (*Bos ferus* of Linnæus) or mountain bull were lately dug up at the side of a small lake near Drummond Castle, it plainly shows that forest deer, and the other animals now so little known, once frequented this part of the country."

Another specimen, got in a marl-pit in the neighbourhood several years ago (one of several found at the same time), is preserved at Drummond Castle.<sup>2</sup>

19. A skull and bones found in Belhelvie peat-moss, a few miles north of Aberdeen, are now preserved in the Museum of the University of Aberdeen.<sup>3</sup>

20. Rev. Dr Joass found in a ruined broch at Kintradwell remains of the pig, reindeer, and other animals, along with the frontal bone, horn-cores, and other bones of a large animal of the ox tribe.<sup>4</sup>

21. Dr Joseph Anderson discovered in an ancient mound at Keiss the upper part of the skull, with the frontal bone and horn-core, of a large ox—now preserved in the Museum of the Society of Antiquaries of Scotland, which, in Dr Smith's opinion, corresponds more to that of the *Bos primigenius* than to any other species.<sup>5</sup>

22. Another specimen found in the marl of the Loch of Breckigo, along with antlers of the red-deer, was presented to that museum by Bentley Innes, Esq. of Thrumster, in June 1870.<sup>6</sup>

23. Dr Smith records, on the authority of Dr Joseph Anderson, the two following instances of the finding of bones

<sup>1</sup> Stat. Account of Scotland, vol. viii. p. 487.

<sup>2</sup> Proc. Soc. A. Scot., vol. ix. p. 663.

<sup>4</sup> Ibid., p. 665.

<sup>5</sup> Ibid.

<sup>3</sup> Ibid.

<sup>6</sup> Ibid.



of the *Bos primigenius* in bogs: Two heads with the horns entangled, as if the animals had been fighting, were found in a bog in the parish of Bower when digging for marl on the estate of Thura. They were upwards of 3 feet in the ground, and in a high state of preservation. The second instance was also of two heads similarly locked, and buried about the same depth. They were found at Clayock, in the parish of Bower, by Alexander Ross, while digging a drain in the month of October 1840.<sup>1</sup>

24. Mr Samuel Laing recognised the horns of a large ox found in the "Underground House of Skail," Orkney, as those of the *Bos primigenius*.<sup>2</sup>

#### CELTIC SHORTHORN (*Bos longifrons*).

Sir Richard Owen gave the name *longifrons* to a frontlet and horn-core of a small ox, which formed part of the original collection of fossils of John Hunter, recorded as having been obtained "from a bog in Ireland." "Had no other localities," he writes, "for the *Bos longifrons* been known than that of the Hunterian specimen, the species might have been held to be of later date than the *Bos primigenius* and *Bison priscus*, of whose existence, as the contemporaries of the Mammoth and tichorhine Rhinoceros, we have had such satisfactory evidence. I have, however, been so fortunate as to find, in the survey of the collections of Mammalian Fossils in the eastern counties of England, some indubitable specimens of the *Bos longifrons* from fresh-water deposits, which are rich in the remains of *Elephas* and *Rhinoceros*."<sup>3</sup>

Professor Boyd-Dawkins<sup>4</sup> denies the validity of the evi-

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. p. 666.

<sup>2</sup> Ibid., vol. vii. p. 76.

<sup>3</sup> British Fossil Mammals, p. 510.

<sup>4</sup> Transactions of International Congress of Prehistoric Archæology, Norwich, 1868, p. 281.

dence on which the *Bos longifrons* is thus made contemporary with the fauna of the newer Pliocene age. After critically reviewing the reported geological conditions in which the specimens on which Owen based his opinion were found, he comes to the following conclusion: "In fine, all the cases of its reputed occurrence, associated with post-glacial mammalia in Britain, may be resolved either into a mistaken identification of its remains with those of bison, or by the mixture of its remains with those of animals derived from a different formation."

The difference of opinion thus manifested is not yet satisfactorily disposed of, so far as I know; but as it can only be settled by an appeal to further discoverable materials, it would be useless to continue the discussion here.

There are no animal remains, with perhaps the exception of those of the red-deer, which come more frequently before the archæologist than those of *Bos longifrons* (fig. 38). They are constantly met with on the sites of the earlier constructions and habitations of man, such as lake-dwellings, earth-houses, Roman camps and villages, brochs, barrows, caves, and kitchen-middens; also in peat-bogs and alluvium. It is unnecessary to enumerate all the finds recorded; and I shall, therefore, notice only a few of the more instructive circumstances in which the bones of this animal have been found.

*Crannogs*.—On the crannogs in the loch of Dowalton, they were associated with Romano-British industrial relics, as well as with remains of pig and sheep or goat;<sup>1</sup> and on the crannog of Lochlee, with the bones of the horse, tame pig, sheep, red-deer, roe-deer, and reindeer.<sup>2</sup>

*Roman Station*.—On the site of the Roman station at

<sup>1</sup> Proc. Soc. A. Scot., vol. vi. p. 118.

<sup>2</sup> Ancient Scottish Lake-Dwellings, p. 139.

Newstead, in Roxburghshire, several specimens were found along with Roman pottery.<sup>1</sup>

*Brochs.*—In the brochs of Cill Trölla, Kettleburn, Keiss, Yarhouse, &c.<sup>2</sup>

*Caves.*—In the MacArthur Cave at Oban (see p. 50), and in the Borness Cave in Kirkcudbrightshire.<sup>3</sup>



Fig. 38.—Portion of skull and horns of *Bos longifrons* found in a bog in Ireland 25 feet below the surface, and now preserved in the Museum of the New College, Edinburgh.

*Kitchen-middens.*—On the Ghegan Rock (see p. 80), associated with the goat, horse, pig, deer, roe, and dog.<sup>4</sup>

*Forts.*—Mr Hugh W. Young notes the remains of the *Bos longifrons* along with those of the horse, sheep, and pig, at Burghead.<sup>5</sup>

*Alluvium.*—At Kinleith, near Edinburgh, bones of the ox and dog were found in a gravel-bed, formed by the river in

<sup>1</sup> Proc. Soc. A. Scot., vol. ix. p. 588.

<sup>2</sup> Ibid., vol. ix. pp. 631-634.

<sup>3</sup> Ibid., vol. x. p. 502.

<sup>4</sup> Ibid., vol. viii. p. 372.

<sup>5</sup> Ibid., vol. xxvii. p. 91.

ancient times, at a depth of nearly 11 feet from the surface, together with a remarkable bronze razor (fig. 39).<sup>1</sup>

*Peat*.—Near Drem, a skull with horn-cores was found 15 feet under a peat-moss at Balgone; and also in Blair-Drummond Moss its remains were found in several places.<sup>2</sup> At *Morbhaich Mor*, Tain (see p. 86), its remains were associated with those of the reindeer and dog.

Professor Owen states that it has been found under peat in the neighbourhood of Bridgewater, Devon, and in various localities in Ireland “from sub-turbary shell-marl.”<sup>3</sup>

I may observe that on the sites of the Swiss lake-dwellings remains of a small ox are everywhere noted. As *Bos brachyceros* it is recorded among the animal remains found on the great Neolithic settlement of Butmir, in

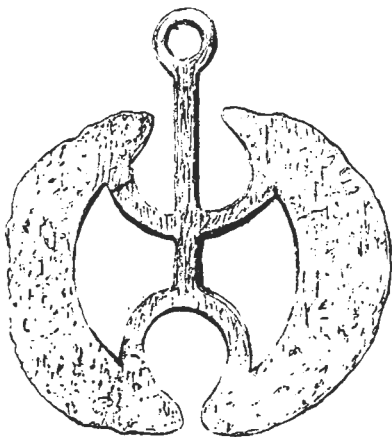


Fig. 39.—Bronze razor found at Kinleith, Mid-Lothian ( $\frac{1}{2}$ ).

Bosnia, including the Urus, and other varieties of *Bos*, as well as the pig, sheep or goat, stag, and roe-deer.<sup>4</sup>

Remains of *Bos longifrons* have also been found in tombs of the Stone and Bronze Ages by numerous explorers, as Canon Greenwell,<sup>5</sup> Mr Bateman,<sup>6</sup> Sir R. Colt Hoare,<sup>7</sup> and Mr Warne.<sup>8</sup>

Sir Richard Owen, in combating the idea that our modern

<sup>1</sup> Proc. Soc. A. Scot., vol. v. p. 84, and vol. ix. p. 625.

<sup>2</sup> Ibid., vol. ix. pp. 627-629. <sup>3</sup> British Fossil Mammals, pp. 511, 512.

<sup>4</sup> Rambles and Studies in Bosnia, &c., p. 108.

<sup>5</sup> British Barrows, pp. 168, 230.

<sup>6</sup> Vestiges, p. 82; and Ten Years' Diggings, pp. 126-129.

<sup>7</sup> Ancient Wilts, vol. i. p. 199.

<sup>8</sup> Celtic Tumuli of Dorset, p. 37.

domestic cattle are descendants of the *Bos primigenius*, regards it as "more probable that the herds of the newly conquered regions would be derived from the already domesticated cattle of the Romans." To this, however, he adds the following: "But, if it should still be contended that the natives of Britain, or any part of them, obtained their cattle by taming a primitive wild race, neither the Bison nor the great Urus are so likely to have furnished the source of their herds as the smaller primitive wild species, or original variety of *Bos*, which is the subject of the present section."<sup>1</sup>

On reviewing the whole circumstances, so far as I can gather the evidence in support of both sides of the question, I am inclined to agree with Professor Boyd-Dawkins that the *Bos longifrons* was part of the indispensable belongings of Neolithic man when he first entered Britain. It was indeed the possession of domestic animals that gave him the mastery over his Palæolithic predecessors in Europe.

I have already quoted Cæsar's statement (p. 5) that the Britons possessed numerous herds of cattle. There can, therefore, be no doubt that the *Bos longifrons* was a domestic animal in the British Isles long before the Romans invaded the country.

#### BEAVER (*Castor europæus*).

According to Sir Richard Owen, remains of the Beaver have been found, both in this country and on the continent of Europe, in Pleistocene fresh-water formations associated with those of the Mammoth, Hippopotamus, Rhinoceros, Hyæna, and other extinct mammalia. They are not, however, found in the bone-caves of this country belonging to that period. The most common situation in which they occur is in the

<sup>1</sup> British Fossil Mammals, p. 509.

sub-turbary deposits and the peat-bogs. At Newbury, Berkshire, bones of the beaver were discovered in a deposit of shell-marl, 20 feet below the surface, associated with those of the "wild boar, roe-buck, goat, deer, and wolf." Also at Hilgay, Norfolk, they were found at a depth of  $8\frac{1}{2}$  feet beneath peat, resting on a stratum of clay and associated with remains of the *Megaceros*.<sup>1</sup>

Among the *débris* of the Swiss lake-dwellings remains of the beaver are almost everywhere to be found. At the station of Laibach, in Carniola, so abundant were they that Dr Karl Deschmann calculated that over 140 individuals were represented.<sup>2</sup> It is not, however, among the animal remains at Polada, and its bones are only sparingly found in the Terremare of Italy.<sup>3</sup> Among the prehistoric remains recently discovered at Sobunar, near Sarajevo in Bosnia, portion of the under jaw of this animal has been identified by Herr Fiala—who also remarks on the frequency with which *Daber* (Beaver) occurs in place-names of the country.<sup>4</sup> In England remains of the beaver have been found in the crannogs explored by Mr Thomas Boynton in the Holderness, Yorkshire;<sup>5</sup> and in the Glastonbury Lake-village they are associated with bones of the ox, goat, sheep, pig, horse, and domestic fowl.<sup>6</sup> Canon Greenwell describes a sharp-pointed implement, made from a beaver's tooth, found in one of the Yorkshire barrows.<sup>7</sup>

Equally unequivocal is the evidence of the prevalence of the beaver in Scotland. On the 16th December 1788, Dr Farquharson presented to the Society of Antiquaries of Scot-

<sup>1</sup> British Fossil Mammals, p. 193.

<sup>2</sup> Lake-Dwellings of Europe, p. 185.

<sup>3</sup> *Ibid.*, p. 274.

<sup>4</sup> Rambles and Studies in Bosnia, &c., p. 321.

<sup>5</sup> Lake-Dwellings of Europe, p. 474.

<sup>6</sup> Brit. Association Report, 1894, p. 433.

<sup>7</sup> British Barrows, p. 138.

land "the fossil skeleton of the head and one of the haunch bones of a beaver" which had been dug up in a marl-pit in Perthshire. The locality was a partially drained loch (Marlee, in the parish of Kinloch), and the marl in which the bones were found was overlaid by a covering of peat-moss 5 or 6 feet thick.<sup>1</sup> Another discovery was in October 1818, on the estate of Kimmerghame, parish of Edrom, near the head of that district of Berwickshire called the Merse. In the drained morass, known as Middlestot's Bog, the skeleton of a beaver was found partly embedded in a deposit of shell-marl over which 7 feet of peat had accumulated.<sup>2</sup> In more recent times its remains have been found by Mr John Smith in a cave and rock-shelter, both in Ayrshire.<sup>3</sup>

Nor must we omit the historical notices of this animal, which show that in Wales and Scotland it continued to live down to about the twelfth century. From the article in the 'Memoirs of the Wernerian Society,' already referred to, it would appear that the earliest written reference to the beaver is contained in a document of the ninth century, published in 'Leges Wallicæ,' or the Laws of Howel the Good (Hywel D'ha), book iii. sects. 11, 12, in which the prices of skins are regulated.

The Marten's skin is valued at . . . . .	24d.
The Otter's (Ddyfrgi, or Lutra) at . . . . .	12d.
The Beaver's (Llostdlydan, or Castor) at . . . . .	120d.

In the 'Itinerarium Cambriæ' of Giraldus de Barri, the beaver is said to be found only in the Teivi: "Inter universos Cambriæ seu etiam Llægrîæ fluvios, solus hic castores habet"; to this he added, "In Albania quippe, ut fertur, fluvio similiter unico habentur, sed rari." But this is not the only his-

<sup>1</sup> Mem. Wern. Soc., vol. iii. p. 207.

<sup>2</sup> Ibid.

<sup>3</sup> See chap. iii. p. 81; and Trans. Geol. Soc. Glasgow, vol. vii. p. 309.

torical evidence of the existence of the beaver in Scotland. Hector Boece (Boethius), at the end of the fifteenth century, states that beavers were in Loch Ness in Scotland. "Ad lacus latera, propter ingenta nemora ferarum ingens copia est, cervorum, equorum indomitorum, capreolorum; ad hæc, marterellæ, fovinæ ut vulgo vocantur, vulpes, mustelæ, *fibri* lutreæque, incomparabile numero, quorum tergora exteræ gentes ad luxum immenso pretio coëmunt."<sup>1</sup>

Bellenden in his translation uses the words: "Mony wyld hors, and among yame ar mony martrikis, bevers, quhitredis, and toddis, the furrings and skynniss of thayme are coft with great price amang uncouth merchandis."<sup>2</sup>

Mr Patrick Neill, the author of the article in the 'Memoirs of the Wernerian Society,' states that Dr Walker, Professor of Natural History in the University of Edinburgh, used to mention in his lectures that the beaver was known among the Highlanders by a peculiar Gaelic name, which name, he ascertained, through Dr Stuart of Luss, to be *Dobran losleathan*—*i.e.*, the broad-tailed otter.<sup>3</sup>

#### WILD BOAR (*Sus scrofa*).

Sir Richard Owen informs us that when Cuvier communicated his memoir on the fossil bones of the hog to the French Academy in 1809, he had met with no specimens from formations less recent than the mosses or turbaries and peat-bogs, and knew not that any had been found in the drift associated with the bones of the elephant. There can, however, now be no doubt that this animal was contemporary with the extinct

<sup>1</sup> Boethius, Scot. Hist.

<sup>2</sup> Bellenden, Croniklis of Scotland.

<sup>3</sup> See also Edinburgh Philosophical Journal, vol. i. p. 177; and Owen's British Fossil Mammals, p. 198.



mammalia of the Quaternary period.<sup>1</sup> Although the present range of the Wild Boar extends over certain portions of Europe, Northern Africa, and Western and Central Asia, it is by no means so abundant as it was in the prehistoric period. Its prevalence throughout the British Islands in pre- and proto-historic times is attested, not only by the discovery of its remains in peat-bogs and occasionally in graves and refuse-heaps associated with relics of Neolithic man, but also by historical evidence that boar-hunting was a favourite pursuit of our ancestors till the animal was exterminated, about the middle of the sixteenth century. As further proof of this statement, we might adduce the fact that the Celtic names, *muc* (pig) and *torc* (boar), enter largely into the composition of place-names, both in Scotland and Ireland: as *Sliabh-na-muic*, *Ceann-tuirc*, *Loch-na-muick*, &c.

The tusks of the wild boar have occasionally been utilised as cutting implements and ornaments, and, accordingly, they are not unfrequently met with among grave-goods in barrows of the Stone and Bronze Ages;<sup>2</sup> but otherwise its remains, neither in the wild nor tame condition, are of much archaeological significance. Among the Gauls the figure of a boar was frequently placed on the helmets of their warriors, probably as an amulet—a practice which, whatever its object may have been, was continued in late Celtic times in Britain. Sir A. Wollaston Franks, in describing the beautiful bronze shield found in the river Witham, says: “The boar, of which the outline occurs on this shield, is a well-recognised Celtic symbol. M. de la Saussaye, in a valuable communication to the ‘Revue Numismatique’ for 1840, p. 91, has shown that this beast is to be found on the coins of every

<sup>1</sup> British Fossil Mammals, pp. 426-431.

<sup>2</sup> British Barrows, p. 389; Ten Years' Diggings, pp. 131, 169, 172.

part of Gaul, as well as on the coins struck by the cognate races of Britain, Spain, Illyria, and Galatia. On English coins it is to be found on gold, silver, and copper; even on the coins of Cunobelin it is to be seen, though there refined and modified according to Roman taste.”<sup>1</sup>

According to Professor Rüttimeyer, the Swiss lake-dwellers of the early Stone Age did not possess the tame pig, but only two races of wild swine, which might be called species—viz., the wild boar (*Sus scrofa ferus*) and the marsh pig (*S. scrofa palustris*). He thinks the marsh pig was first tamed, and afterwards the wild boar. But since the introduction of metals, remains of a domestic breed along with those of the wild species have been found on many of the lacustrine stations. The late Professor Strobel has noted both the wild and tame species among the animal remains on the Terremare, in Italy,<sup>2</sup> those of the latter, however, being far more abundant than the former.

The remains of swine, so frequently found on the sites of crannogs, Romano-British villages, and other early habitations in this country, are those of domestic breeds.

#### THE GREAT AUK (*Alca impennis*).

A few bones of the Great Auk were recognised by Sir R. Owen among a quantity of osseous remains, submitted to him for examination, from a refuse-heap in the “Harbour Mound at Keiss,” in Caithness. Mr Samuel Laing, the explorer of that mound, thus describes the significance of the presence of the Great Auk among the former fauna of Caithness: “The most interesting fact is the discovery of the *Alca impennis*, which is now extinct in Europe, having but lately died out in Iceland, but said to survive in

<sup>1</sup> Horæ Ferales, p. 185.

Lake-Dwellings of Europe, p. 274.

Greenland. Its bones are frequent in the Danish Kjökkenmöddings, where they have been thought to imply great antiquity and a more glacial climate; but it is believed that they have never been found in any tumuli or deposits of a later date than those primeval middens. Hence their discovery in the Caithness middens affords an important link of connection with those of Denmark, and strengthens the evidence of high antiquity drawn from the rudeness of the implements."<sup>1</sup> Remains of this bird have also been notified by Mr Symington Grieve as being among the *débris* of a shell-mound in the island of Oronsay<sup>2</sup> (see p. 56).

The chronological value of these discoveries cannot, however, be very great, seeing that the bird is constantly referred to in the current historical annals down to the end of last century, and that a live specimen was caught, near Lochbroom, as late as 1821.<sup>3</sup> Moreover, the osseous remains of the animals with which these few bones of the Auk were associated (only two or three individuals represented) do not carry us back to the chronological horizon of the people of the Danish Kjökkenmöddings, who, according to the late Professor Steenstrup, possessed only the dog in a state of domestication; whereas in the Keiss mound we find the *Bos longifrons*, horse, red-deer, goat, and pig.

Remains of the Great Auk have been found in considerable abundance both in the north and south of Ireland. Mr R. J. Ussher has recorded the discovery of its bones on the sites of Kitchen-middens on the coast of Co. Waterford in 'The Irish Naturalist' (1897-99). With regard to his later finds, he thus writes: "These were all found strewn about on or

<sup>1</sup> The Prehistoric Remains of Caithness, p. 50.

<sup>2</sup> For a most interesting account of the Great Auk, see Mr Grieve's book, 'The Great Auk or Garefowl: Its History, Archæology, and Remains,' 1885.

<sup>3</sup> Proc. Soc. A. Scot., vol. xiii. pp. 76-105.

near the old surface where this cropped up, among the bones of domestic animals and fowls and of red-deer, of which many pieces of the antlers were also obtained. There were numerous burned stones, and charcoal in layers, and great quantities of shells of edible species, often very large, limpets, oysters, mussels, cockles, &c. I have now seventeen bones of *Alca impennis*, which have either been determined by Dr Gadow or correspond with specimens that he has pronounced upon—eight coracoids, which he assigns to six individuals, five humeri, belonging to three individuals, one tibia, right and left metatarsals, and a portion of the pelvis. A right and a left humerus were found close together. In some of the bones the outer surface is well preserved, but in others it is much worn down, and the bones split from time and exposure. That my superficial searches among the sandhills, where but little of the old surface is now exposed, should have resulted in finding the remains of at least six Great Auks strewn about, suggests that these birds must have been used for food in some numbers. To obtain them, access was probably available to some breeding-place of the species on the neighbouring coast; so that when Professor Newton remarked that the Great Auk obtained near Waterford Harbour in 1834 may have been revisiting the home of its forefathers, he possibly described what took place.”

Mr W. J. Knowles, in the same number of ‘The Irish Naturalist’ (January 1899), records the finding of twenty-four bones of the Great Auk at Whitepark Bay, Co. Antrim. Besides other animal remains Mr Knowles informs us that “there were also associated with them flint-flakes, cores, hammer-stones, and flint-scrapers, together with edible molluscs.”

Another bird, represented among the fauna of the Kjökkenmöddings—viz., the Capercailzie (*Tetrao urogallus*)—but now

long extinct in Denmark, has for similar reasons been sometimes regarded as indicating great antiquity. This bird feeds principally on the buds of the pine, and its presence in Denmark, contemporary with the people of the Kjökkenmöddings, is explained by the existence at that time of extensive pine forests which supplied the bird's natural food. Doubtless its disappearance from the country was synchronous with the decay of the pine forests, which gave way to the subsequent oaks and beeches. But, nevertheless, the capercailzie continued an inhabitant of Scotland up to the beginning of the present century.

Remains of the reindeer are very rarely found in Denmark in the peat, but more frequently in the subjacent deposits.<sup>1</sup> Among the fauna of the Kjökkenmöddings this animal is not represented. Hence it is probable that the reindeer left the country before man pushed his way along the fiords and lowlands of Denmark. But yet the animal survived in Scotland to the twelfth century.

#### GENERAL REMARKS.

Of the other wild animals which were contemporary with prehistoric man in Britain, it is unnecessary to make more than a few passing remarks. The skull of a brown bear (*Ursus arctos*) has already been noticed as having been found in a peat-bog in Dumfriesshire (p. 90). Recently Sir F. T. Barry, M.P., found a bear's tooth in a broch at Keiss.<sup>2</sup> This is a rare find in Scotland, but in the Swiss lake-dwellings perforated bears' teeth are not uncommon—one such from Polada, in Italy, is figured in my 'Lake-Dwellings of Europe' (fig. 68, No. 31). Remains of this animal have also been

<sup>1</sup> Congrès Inter. d'Arch. et d'Anth., 1869, p. 162.

<sup>2</sup> Proc. Soc. A. Lond., vol. xvii., 2nd series, p. 191.

recorded from Roman refuse-heaps at Colchester and in London, from Neolithic caves in North Wales,<sup>1</sup> and from the Cambridgeshire Fens.<sup>2</sup> As proof that the bear existed in Scotland during the Roman occupation of Britain, the following lines of Martial are often quoted:—

“Qualiter in Scythica religatus rupe Prometheus,  
Assiduum nimio pectore pavit avem,  
Nuda Caledonio sic pectora præbuit urso,  
Non falsa pendens in cruce Laureolus.”

According to Pennant, the brown bear infested the mountainous parts of Scotland as late as 1057; but Professor Boyd-Dawkins discredits this statement, finding no documentary evidence in support of it, and believes that the animal became extinct at an earlier period.<sup>3</sup>

Remains of the wolf (*Lupus vulgaris*), the fox (*Vulpes vulgaris*), and several species of dogs, have been found in the Brit-Welsh caves, associated with those of the domestic animals—horse, pig, and Celtic shorthorn.<sup>4</sup> Mr Bateman includes these three animals, and also the fallow-deer, among the fauna of the British Barrows.<sup>5</sup> The last wolf in Britain is said to have been killed by Sir Ewen Cameron in 1680; but in Ireland wolves survived till at least 1710.

Among animals sometimes represented in the accumulations of food-refuse found in caves, which had afforded shelter to man, such as the MacArthur and Borness Caves, may be mentioned the badger (*Meles taxus*) and the otter (*Lutra vulgaris*), both of which still survive in various localities throughout Scotland.

Bones of the whale and seal have also been found among the *débris* of brochs and of other early habitations in the north

<sup>1</sup> Cave-Hunting, pp. 131, 166.

<sup>2</sup> British Fossil Mammals, p. 105.

<sup>3</sup> Cave-Hunting, p. 75.

<sup>4</sup> *Ibid.*, p. 166.

<sup>5</sup> Ten Years' Digging, p. 298.

of Scotland and in the surrounding islands. These were utilised in the manufacture of vessels and implements, and for other purposes in the domestic life of the people.

On the classificatory value of the historic animals, Professor Boyd-Dawkins<sup>1</sup> writes as follows: "The principal changes in the fauna of Great Britain during the historic age are the extinction of the bear, wolf, beaver, reindeer, and wild boar, and the introduction of the domestic fowl, pheasant, fallow-deer, ass, the domestic cat, the larger breed of oxen, and the common rat; and as this took place at different times, it is obvious that these animals enable us to ascertain the approximate date of the deposit in which their remains happen to occur. And for this purpose the following table may be consulted:—

<i>Animals extinct.</i>				A.D.
Brown bear	.	.	.	<i>circa</i> 500-1000
Reindeer	.	.	.	" 1200
Beaver	.	.	.	" 1100-1200
Wolf	.	.	.	" 1680
Wild boar	.	.	.	" 1620

<i>Animals introduced.</i>				B.C.
Domestic fowl	.	.	.	before 55
Fallow-deer	.	.	.	<i>circa</i> 55
Pheasant	.	.	.	" 55

				A.D.
Domestic ox of urus type	.	.	.	<i>circa</i> 449
Ass	.	.	.	" 800- 850
Cat	.	.	.	" 800-1000
Common rat	.	.	.	" 1727-1730.

#### DOMESTIC ANIMALS.

As the ordinary domestic animals—ox, sheep, goat, horse, and dog—were in all probability importations by Neolithic

<sup>1</sup> Cave-Hunting, p. 78.

man into Europe, it is by no means an easy task to ascertain where and when their domestication first originated. In the old-world civilisations of the valleys of the Nile and Euphrates this important step in human progress was, even then, lost in the mists of antiquity.

Whether the domestic breeds of our modern cattle were derived from one or both of the two typical oxen, the *Bos primigenius* and the *B. longifrons*, is a matter of opinion. M. Dupont<sup>1</sup> mentions the remains of a small ox among the fauna represented in the cave of Naulette, in the valley of the Lesse, which also includes those of the mammoth, rhinoceros, &c. If these animals were really contemporary there is some reason for believing, with Sir Richard Owen, that the progenitor of the Celtic shorthorn existed in Europe as a wild animal before Neolithic man found his way thither. Since the very commencement of the Swiss lacustrine settlements their inhabitants were in possession of the small marsh cow; but later on new breeds of cattle were reared.

The domestic races of sheep, according to some authorities, have been derived from a common stock represented by the mouflon—now confined to the islands of Corsica and Sardinia—and the Armenian and Cyprian wild sheep. Others, however, consider it an open question whether they were derived from a single or several wild stocks. As to the origin of the domestic goat, there seems to be a consensus of opinion that it was derived from the Persian wild goat (*Capra agagrus*).

The horse (*Equus caballus*) had a wide range throughout the larger part of Europe, Asia Minor, and the regions around the Caspian Sea, during the Pleistocene period. Its fossilised remains, which indicate a middle-sized animal, have been

<sup>1</sup> L'Homme pendant les Ages de la Pierre, p. 98.



abundantly met with in caves and post-pliocene deposits of Western Europe. Sir Richard Owen, writing in 1846, makes the following statement: "The best authenticated associations of bones of the extremities with jaws and teeth, clearly indicate that the fossil Horse had a larger head than the domesticated races; resembling in this respect the Wild Horses of Asia described by Pallas, and in the same degree approximating the Zebrine and Asinine groups."<sup>1</sup> It is very interesting to note that the drawings of the horse scratched on bones and horns in the reindeer caves of France and Switzerland corroborate in a singular degree the accuracy of this statement. The teeth and bones of the fossil horse are so like those of the existing species that even Cuvier failed to detect any difference, except size, by which he could distinguish the one from the other. The osseous remains of the horse are found in such prodigious numbers on the prehistoric camping-ground at Solutré, in the valley of the Rhone (see chap. xii. p. 462)—estimated at least at 40,000 individuals—that it has been surmised that the animals were kept in a state of domestication. But this opinion is controverted, on the ground that the dog is unrepresented in the osseous remains of this station, and without the assistance of this animal, it would be impossible to keep herds of horses and reindeer (also largely represented at Solutré) together. There seems, therefore, little doubt that the domestic horse was of the same breed as the wild animal which roamed during the Pleistocene period over Europe and Western Asia. But where, or when, its domestication was effected it would be hazardous to state. According to Egyptologists, the horse does not figure in pictorial representations of social life in the Nile valley till the 18th dynasty, which dates, according to the most recent corrections, from 1587 to 1327 B.C.,—

<sup>1</sup> British Fossil Mammals, p. 385.

the general opinion being that it was introduced by the Shepherd Kings.<sup>1</sup>

Canon Greenwell records the finding of remains of the horse in several barrows; but these barrows were either of a late period, or their contents had been so disturbed that no chronological sequence could be drawn from them. Thus, a large barrow in the parish of Kirby Underdale contained Anglo-Saxon remains; <sup>2</sup> another, in the parish of Cowlam, had its contents so much disturbed that Canon Greenwell suggested that the "barrow was an ossuary"; <sup>3</sup> and in a third they were associated with bones of the deer, goat or sheep, domestic dog, domestic pig, and two species of oxen.<sup>4</sup> In a fourth group there were horses and chariots buried together, but from the most indubitable evidence of the associated relics these burials belonged to the "Late Celtic" period.<sup>5</sup>

Professor Rolleston thus comments on the rarity of the horse in the early Neolithic period: "As in the earlier pile-dwellings of Switzerland, so in the Stone-Age barrows of this country, the horse is less frequently found than from what we know of the discovery of its bones in cave-dwellings on the one hand, and in interments of later date than the Stone Age on the other, we should be inclined to expect. I have never found the bones or teeth of a horse in a long barrow, and I would remark that, whilst such bones are very likely to be introduced into such barrows in the way of secondary interments, I have not met with any exact record as to the finding of them in surroundings which left no doubt as to their being contemporaneous with the primary interments."<sup>6</sup>

The general conclusion to which these observations point is that a middle-sized horse was introduced into the British

<sup>1</sup> See Lenormant, 'Les Premières Civilisations,' vol. i. p. 300.

<sup>2</sup> British Barrows, p. 136.

<sup>3</sup> Ibid., p. 220.

<sup>4</sup> Ibid., p. 262.

<sup>5</sup> Ibid., p. 456.

<sup>6</sup> Ibid., p. 736.

Isles by Neolithic man. We have already quoted (p. 9) a passage from Tacitus to the effect that the Caledonians fought from chariots at the battle of Mons Graupius; consequently the horse must have been a domestic animal in North Britain prior to the Roman occupation. Perhaps the Shetland ponies of the present day may be regarded as the direct descendants of this first domesticated horse which, in the course of time, in obedience to the less favourable environments in which they have lived, have become more diminutive.

Although the dog is acknowledged on all hands to be the earliest animal which attached himself to man, there is no evidence to show that this friendly alliance dates further back than the Neolithic period. In Europe the oldest instance of its domestication is furnished by the Kjökkenmøddings of Denmark. This fact was established by the late Professor Steenstrup in a most interesting manner. Observing that all the cartilaginous and succulent portions of the mammalian bones found on the middens had been gnawed by a carnivorous animal, he concluded, from the completeness with which the practice had been carried on, "non seulement dans tous les amas mais dans toutes les parties des amas," that this animal had daily access to the food-refuse. The preponderance of the bones of the dog over those of other carnivorous animals left no doubt that this constant gnawing of the osseous remains was the work of a race of domestic dogs.<sup>1</sup>

Canine skeletons have rarely been found in the British barrows,—a fact which one would hardly expect, considering the warm attachment there has always been between this animal and man. Professor Rolleston, from one instance which came under his cognisance, determined the size of

<sup>1</sup> Congrès International, 1869, p. 141.

the animal to be about that of an ordinary sheep-dog,<sup>1</sup>— a result which harmonises with Professor Rüttimeyer's conclusions with regard to the dog of the Swiss lake-dwellings. As to the origin of this early domestic dog in Europe, whether it was derived from the wolf, fox, or jackal, or from neither of them, naturalists are not yet agreed. Some regard the greyhound as derived from the Kaberu or Abyssinian wolf (*Canis Simensis*), an opinion which derives some support from the fact that the oldest dogs represented on the Egyptian monuments are of this description. On the other hand, an Assyrian monument, dated 640 B.C., shows the figure of a dog like that of a large mastiff.

Mr Darwin, who, as is well known, paid great attention to the domestication of animals, thus expresses his opinion of the descent of our domestic dogs: "Looking to the domestic dogs of the whole world, I have, after a laborious collection of all facts known, come to the conclusion that several wild species of *Canidæ* have been tamed, and that their blood, in some cases mingled together, flows in the veins of our domestic breeds."<sup>2</sup>

Looking back on the concurrent phenomena of man's environments during the short time he has existed, even in such a secluded corner as Scotland, we can distinctly trace periods of growth and decay in the organic world. Coincident with climatic changes and alterations of sea and land, there were continuous modifications going on in the topographical features of the country, to all of which prehistoric man had to adapt himself. Yet, in these ever-changing scenes, few points can be fastened on as bringing any part of his career within the category of positive chronology. Beyond an occasional intermingling of his works with those of nature, such as was disclosed in the Oban cave and in

<sup>1</sup> British Barrows, p. 736.

<sup>2</sup> Origin of Species, p. 14.

the Carse of Stirling, we have rarely the means of correlating contemporary events. Should, however, the actual age of any such points of contact be determined by extraneous or collateral circumstances, it would be the key to the solution of many of the subsidiary chronological problems which so frequently disturb the equanimity of archæologists. Nothing has surprised me more, in the course of these investigations, than to find how few of the archæological remains, hitherto discovered on Scottish soil, can be assigned to a time much earlier than the Roman occupation. This remark, as we shall afterwards see, is especially applicable to inhabited sites indicating any kind of constructional features, such as crannogs, brochs, forts, earth-houses, &c.