Notes on the prior existence of the castor fiber in Scotland, with its ancient and present distribution in Europe, and on the use of castoreum / by Charles Wilson, M.D.

NOTES

ON THE

PRIOR EXISTENCE OF THE CASTOR FIBER IN SCOTLAND,

WITH ITS

ANCIENT AND PRESENT DISTRIBUTION IN EUROPE, AND ON THE USE OF CASTOREUM.

THE Castor Fiber or Beaver, long an animal of great interest to the physician and the naturalist, is evidently fast disappearing from the countries of Europe. Yielding to the progress of that civilization, to which it is obnoxious from its habits, while valuable for its spoils, it has already seceded wholly from many tracts which it formerly inhabited; and now only finds refuge in a few remote and secluded haunts, where it still seeks to shelter itself in a precarious and always decreasing security. Before it be finally lost from among us, it must be interesting to consider where were formerly its principal homes, whether in our own or in foreign lands, as in what spots it yet lingers. The castoreum which it supplies to medicine, a drug dignified by a celebrity of more than two thousand years, and highly valued even at the present day by many continental physicians, is also vanishing rapidly from among the approved resources of practice in this country, and must, in all probability, speedily become beyond attainment elsewhere. A few notices of its former and present relations to pharmacology and medicine cannot be out of place, at a time which thus marks an era, if not the near close, of its history, along with that of its source. Even in Asia, we need hardly add, or in its comparatively

recently disturbed haunts in the New Continent, the beaver, though still surviving in large numbers, seems already threatened with a similar extirpation, for whatever period it may protract its existence.

That the beaver was at one time indigenous in Scotland has been long known, and has, especially, already been noted by Dr Neill of Edinburgh, in an interesting paper* read in 1819 before the Wernerian Natural History Society. Dr Neill adduces two then known examples of the occurrence of the remains of the animal. The record of the first instance is derived from the Minutes of the Society of Antiquaries of Scotland, dated in December 1788; where it appears that Dr Farquharson presented to the Society the skeleton of the head and one of the haunch-bones of a beaver, found on the margin of the Loch of Marlee, a small lake in the parish of Kinloch, in Perthshire, near the foot of the Grampian Mountains. The lake had been partially drained for the sake of the marl which it contained; and, in the process of excavation, under a bed of peat-moss between five and six feet thick, the beaver's skeleton was discovered. In a neighbouring marl-pit, a pair of deer's horns, branched, and of large dimensions, were found nearly at the same time; and, along with these, two bones, which our eminent anatomist Dr Barclay suggested to have been probably the metatarsal bones of a large species of deer, contemporary with the beaver, but now, like it, extinct in our country. The relics of this beaver are still preserved in the Museum of the Royal Antiquarian Society in this city, where, like Dr Neill, I have myself examined them. They appear to be those of an animal which had reached maturity. The back part of the cranium is gone, and the left zygomatic arch is broken; but the "haunch-bone," or left os innominatum, is entire. A part of one side of the lower jaw-bone is also broken, and here only some remains of the very characteristic incisors still exist. The bones are dyed of a deep chocolate colour, the natural result of their long contact with the peaty substance.

The second instance adduced by Dr Neill occured in Octo-

* Memoirs of the Wernerian Natural History Society, vol. iii. (1821), p. 207.

ber 1818, on the estate of Kimmerghame, in the parish of Edrom, near the head of that district of Berwickshire called the Merse. In the process of draining a morass called Middlestots Bog, there was found, at the depth of seven feet from the surface, under a layer of peat-moss of that thickness, what appeared to have been the complete skeleton of a beaver, dispersed, however, in rather a promiscuous manner, as if through the gradual separation of the parts by unequal subsidence. The remains lay upon a surface of marl, in which they were partly imbedded, and partly in a whitish layer of mossy substance immediately superjacent. Only the denser bones of the cranium and face, and the jaw-bones, retained sufficient firmness to fit them for being removed and preserved in a dry state. Several of the long bones and the vertebræ, though they seemed perfect while lying *in situ*, crumbled under the touch, or after exposure. Near the same spot were found a pair of horns, of great size, and with fine antlers, belonging to the large species of deer already mentioned; and, among the vegetable remains in the peat, were the shells of filberts, with the wood of birch and alder, and that of oak in less abundance. The skull and lower jaw-bone are now in the museum of our university. Both, as described by Dr Neill, were entire, with all the incisors perfect, their cutting edges sharp, and the peculiar coloured enamel, found alike in the recent beaver, still subsisting on the outer convexity, though deepened to an almost jet-black. The molars were also complete. This is still the condition, with the exception that the right zygomatic arch is now imperfect. The animal, as in the preceding instance, appears to have been of mature, though not of advanced age. It is proper to add here, that, on the testimony* of the writer of the Statistical Account of the parish, several other heads of the beaver were then found in the same deposit, but in less perfect preservation. We have thus approximative evidence of the ancient existence of a colony in the locality.

Of a third instance of the discovery of the remains of the beaver in Scotland, a verbal report was given by me, in 1843, at a meeting of the Berwickshire Naturalists' Club, and is

* The Statistical Account of Scotland: County of Berwick (1841), p. 267.

noticed* in the late esteemed Dr Johnston's sketch of its proceedings for that year. On the verge of the parish of Linton, in Roxburghshire, there is a remnant of what has evidently once been a far more extensive loch, which had skirted for some distance the outer range of the Cheviot Hills, but which, from some alteration of the levels, has now, for the most part, gradually drained itself off to the westward. Into this loch had flowed the waters of the Cheviots, entering it, as the little river Kail, by a narrow gorge towards the eastern extremity: and it is doubtless through the agency of this often impetuous current, that those alterations have chiefly been effected which have diverted the stream from what is now the narrow limits of Linton Loch; and left it contracted to a few stagnant pools, imbedded in a deep but not extensive morass, from which, however, still flows a considerable body of water by an artificially constructed channel. The near vicinity of the loch presents many localities of interest, as well in legendary lore as from later associations. The hollow at Wormington, still known as the "worm's hole," marks, according to the familiar story, the ancient haunt of a monstrous serpent or dragon, the destruction of which, by William de Somerville, obtained for him the gift of the surrounding barony from William the Lion. The little knoll, consisting wholly of fine sand, on which the church of Linton is built, has seemed to the peasant to justify the tradition, that its elevation was the work of two sisters, who sifted the heap as a voluntary penance, to expiate in a brother the crime of murder. The traces of the foundations of the neighbouring fortalice, still lurking under their covering of green sward, recal the memory of more than one of the scarcely less stirring, while more authentic scenes of border warfare; and closer to the loch, perched above its southern margin, we have the little possession of Wideopen, the inheritance of the poet Thomson, who is said to have gathered here, among the storms of the hills, many of the materials for the admirable descriptions in his poem of Winter. Through the adjoining tract of the Cheviots, spreads that range of which it could be said, as in the ballad of the Battle of Otterbourne :—

* History of the Berwickshire Naturalists' Club, vol. ii., p. 48.

"The deer runs wild on hill and dale,
The birds fly wild frae tree to tree."

Few places, therefore, could be more appropriate for the discovery of any remains which were to aid in giving body to our traditions, as in forming a link between remote and existing states of civilization.

The moss, which constitutes the body of the Linton morass, is variable in depth, and covers a very extensive deposit of marl, to obtain which, for agricultural purposes, operations on a considerable scale were undertaken by the tenant, Mr Purves, by whom the relic of the interesting animal, found in the course of these, was placed in my hands, and to whose intelligent observation I am chiefly indebted for the particulars of its discovery. In digging about twenty yards from the margin, and after penetrating a thickness of moss of about eight feet, the marl was reached, and upon its surface was found a skull, in excellent preservation,* easily recognised by me, on examining it, as that of a beaver. Either no other parts of the skeleton had remained preserved in its contiguity, or they had failed to attract the attention of the workmen; the probability being that, from the slighter texture of most of the other bones, they had been less able to resist entire disintegration, or had crumbled on exposure. The remains of deer and other animals were also discovered on the surface of the marl, at about the same distance from the margin; but, at other places, the horns and bones of deer, and among these a lower maxilla, were found fourteen feet beneath the marl itself, yet still within its layers, or at about an aggregate depth of twenty-two feet. Among the remains preserved and placed before me were horns of the red-deer, with metatarsal bones, evidently also of animals of the deer species, all betokening individuals of once stately dimension; while the left tibia of an ox, doubtless the *Bos primigenius*, which was found imbedded at a depth of seven feet within the

* The skull is now placed in the Museum of the Tweedside Physical and Antiquarian Society at Kelso; a remarkable collection, considering its position in a small country town, but which would have fulfilled a better design, and one more worth adopting elsewhere, had it been restricted, as originally planned, to the illustration exclusively of the Natural History and Antiquities of the immediately surrounding district.

marl, I computed must have belonged to an animal measuring at least six feet, or, with the hoof and soft parts entire, fully half a foot more to the summit of the shoulder. The moss, at the part covering these remains, might be viewed as divided into three layers. The upper of these, approaching to about three feet in thickness, consisted of the traces of comparatively fresh vegetation: the second layer, measuring about two feet, had a less firm consistence, and changed its colour of a greenish brown, when moist and newly exposed, to almost a white when dry: the third layer extended to about four feet, but in some places to a much greater thickness, and was almost black, holding imbedded, in various grades of preservation, many and not mean remains of the primeval forests, such as trunks of trees, for the most part hazel and birch, with an intermingling of oak, some measuring from two to even four feet in diameter; and, along with these, large quantities of hazel nuts, heaped into masses, as if gathered and swept from the upper woodlands by the mountain freshets. In some places gravel was found deposited above the moss, bearing testimony to the action of similar currents.

The stratum of marl varied from two, to almost eighteen feet in thickness, and consisted of the usual fresh-water shells, but mainly of *Planorbis* and *Limnæa;* the greater part being of almost microscopic dimensions, yet often in the most entire preservation. Where the relic of the beaver had been deposited, the marl, however, to judge from portions taken from within the skull, seems to have been largely, if not entirely, composed of infusoria. On the application of an acid, after a smart effervescence, with the disappearance of a considerable bulk of the material, there remained amorphous, ferruginous-like masses, and, abundantly interspersed with these, the silicious coverings of the animalcules, if they be really animal organisms. Among them I distinguished *Epithemia Argus, sorex, turgida,* and *longicornis; Cyclotella operculata; Gomphonema constrictum; Nitzschia sigmoidea; Surirella craticula; Cymbella helvetica; Navicula lanceolata;* and, probably most abundant of all, *Himantidium arcus.* The remains of the mammals found in contact with the peat, including the skull of the beaver itself, were of the usual dark

tint acquired from that substance: those deposited in the marl preserved more nearly their natural colour. Near the margin of the loch, and about seven feet deep in the moss, were found an arrow-head, and two or three iron horse-shoes; the latter of small dimensions. Could we regard these horse-shoes, and this individual beaver, thus found at nearly the same depth in the moss, as having reached their position there coëtaneously, as, perhaps, approximatively we may, the furthest limit to which our archæological experience would entitle us to go back for this would probably be the Anglo-Saxon period; but our surmise as to the era would still be a rude one, and within it, or even possibly long after it, though scarcely before, we must be prepared to allow a wide range.

To these proofs of the prior existence of the beaver in Scotland, derived from the actual discovery of its remains, it is easy to add others of a similar description from various countries, in which it has evidently also been once indigenous, but in which it has alike ceased to exist. An early instance, in England, is that in 1757, by Dr Collet,* who mentions the heads of beavers as having been found, along with bones of other animals, in a peat-pit near Newbury, in Berkshire. Similar discoveries of remains, as quoted by Professor Owen,† have been made at Hilgay, in Norfolk, where they were found associated with those of the great Irish deer. A lower jaw, found in 1818 near Chatteris, is recorded in the Proceedings of the Cambridge Philosophical Society. In at least three other instances, all referred to by Professor Owen, the remains of the beaver have been found in the peat-mosses of Berkshire, and in the Cambridge fens; while other discoveries, at Mundesley, Bacton, Southwold, and Happisburg in Norfolk, and at Thorpe in Suffolk, appear under relations which seem to carry the antiquity of the beaver in England farther back into the tertiary period, and ought probably to be referred to a different, yet closely allied species. In Denmark, we learn from a highly interesting communication by Professor Steenstrup‡, that a lower jaw, with the greater part of the extremities of a beaver,

* Philosophical Transactions for 1757, p. 112.

† History of British Fossil Mammals and Birds, pp. 184, 190.

‡ Oversigt over det Kgl. danske Videnskabernes Selskabs Forhandlinger, 1855, p. 381.

evidently belonging to an individual animal, was discovered in the moss of Christiansholm ; and that a tooth has also been found in Fyen, all the other traces hitherto of its former existence within the Danish territories having been limited to Sjælland. Specimens of stems, evidently gnawed by the beaver's teeth, were taken from Mariendals moss, the special locality being regarded by the Professor as probably occupying the former bed of a stream, which had been once its habitat. Similar stems, from two to four inches thick, with beaver marks, were seen in Brönsholm moss, in great quantity, and laid with remarkable regularity ; while a like deposit, at a depth of about three feet, occurred in a moss near Lyngsbye.* In these interesting facts, we appear to recognise distinctly the remains of the dams of the beaver, and the familiar evidences of its singular constructive faculties. Perhaps we may further refer to a period not remote from that of these relics in the mosses, the location of three beaver's teeth, in a greatly damaged condition, at the side of a human skeleton, which was found in a tomb of an ancient Lap, opened recently† at Mortensnæs, on the Varangerfjord, in the extreme north-east of Norway. A stone hammer, bearing marks of use, lay in the same grave.

When we turn from these sufficiently decisive indications of the ancient resorts of the beaver, and seek for other evidences of a historical, topographical, or documentary character in relation to its former existence in Britain, if these are not presented to us in any marked abundance, neither are they wholly wanting, or devoid of curiosity and interest. We have no earlier, and can scarcely have any more authentic, notices of this description than such as are derivable from the names of places, which our ancestors often rendered commemorative of some leading feature or specialty of the site. Thus, in the nomenclature of the Anglo-Saxons, as exhibited in the "Codex Diplomaticus Ævi Saxonici," we find the names, *Beferburne, Beferige, Beferic, and Beferluc.*‡ In the Glossary of Ælfric,

* Oversigt over det Kgl. danske Videnskabernes Selskabs Fordhandlinger, 1855, pp. 2, 382.

† Forhandlinger af danske Videnskab. Selsk. : Illustreret Nyhedsblad, (Christiania, 1856), pp. 97, 104.

‡ Leo, Local Nomenclature of the Anglo-Saxons, p. 14.

the Anglo-Saxon Archbishop of Canterbury near the close of the tenth century, appended to his "Grammatica Latino-Saxonica," we have the *Befer* rendered as the *Fiber* or *Castor Ponticus*. The annex in each name: *burne* (brook), *ige* and *ic*, or *icg* (island), and *luc* (inclosed space, fence), is entirely apposite, and suggests to us so perfectly the ordinary habitat of the animal, or the construction of its dam, as to establish at once the certainty of its having existed at the individual place in the Anglo-Saxon period. Again, in an ordinance of Edward I. for the government of Scotland, dated in 1305, we find William of *Bevercotes* named as chancellor of the kingdom; and here we are reminded of the huts (Anglo-Saxon *cote*), of the beaver, a cluster of which had evidently led to the territorial designation of this dignitary. There is a "Bevere Island," which lies about three miles north of the city of Worcester, which is popularly understood to have been so denominated from its having been frequented by beavers:* and doubtless it might be easy to glean elsewhere many similar local designations. Leland, for example, writing prior to the middle of the sixteenth century, mentions the town of Beverley, in Yorkshire, as having for its insignia, on its public seal, the animal "quod vocatur Bever;" and, in a subsequent passage, on what purports to be the authority of an uncertain writer of a life of St John of Beverley, he introduces the name of the place as, "Deirewald, locus nemorosus, id est, sylva Deirorum, postea Beverlac, quasi locus, vel lacus castorum, dictus à castoribus quibus Hulla aqua vicina abundabat."† While we give due weight to this, as advanced unquestioningly by one of Leland's habits of investigation, writing at his time, yet while citing one of an age far anterior, it appears evident, nevertheless, that not only was the beaver then utterly extinct in the country, but that, at no long period after the Anglo-Saxon era, it had already ceased to be familiarly known in England.

We have proof of a more direct nature of the actual existence of the beaver in Wales, at this early period of the civil history of our country, but nearly expiring period of the his-

* Allies, Antiquities of Worcestershire, pp. 151, 152.

† Leland, Collectanea de rebus Britannicis, tom. iv., pp. 34, 100.

tory of the English beaver.* In the code of Hywel Dda, framed towards the commencement of the tenth century, and therefore considerably before the time of Ælfric, we find† the animal valued at 120 pence; and, as in the following section we find the skin (*croen Llosdlydan*) appreciated alone at precisely the same amount, we infer that the latter merely was regarded, and that neither the carcass as food, nor the castoreum as medicine, was then held in esteem by the Welsh. But to show how highly the skin was prized, and of course as a fur, we may contrast this valuation with that of the ox and deer, each of which is rated at eightpence; while that of the goat or sheep is rated at only a penny. An oak tree was as precious to the mountaineers; for, if sound, it was valued also at 120 pence. Among the tolls licensed to be levied at Newcastle-upon-Tyne, in the time of Henry I., we find the *tymbra beveriorum* fixed at fourpence; and this, it is important to note, appears to have been an export duty.‡ At least half-a-century after the period of Henry, and more than two centuries after that of Hywel Dda, we have the evidence of a witness of remarkable intelligence, that the beaver still survived as indigenous in Wales. Silvester Giraldus, travelling in that country in 1188 with Archbishop Baldwin of Canterbury, who preached there that crusade in which he afterwards followed Richard Cœur de Lion to the Holy Land, and perished at Acre, tells us, in speaking of the river Teivi, that it retained a special notability: "inter universos namque Cambriæ seu etiam Loegriæ fluvios, solus hic castores habet." He then proceeds to give an account of the habitat of the animal at some deep and still recess of the stream; describes its dams and huts, and its methods of construction, with considerable minuteness; and records the dangers to which it is liable on the score of its skin, which is coveted in the west, and the

* Of a more remote but wholly uncertain antiquity, yet worth mentioning, is the circumstance that the beaver seems to have occupied a prominent place in the old Druidical mythology of Wales, especially in relation to the tradition of a general deluge. It is said to have been even an object of worship in ancient Persia.

† Leges Wallicæ, curante Wotton, lib. iii., cap. v., sect. xi. 40; sect. xii. 10, De pretiis animalium ferorum et cicurium.

‡ Acts of Parliament of Scotland, vol. i.; preface, p. 34.

medicinal part of its body, which is coveted in the east: while he adds, though with evident scruple as to the orthodoxy of the practice, that in Germany, and the northern regions, great and religious persons "tempore jejuniorum," eat the tail of the fish-like creature, as having both the taste and colour of fish. Giraldus informs us further, that beavers were then reported to exist also in Scotland, but likewise only in a single river, and in scanty numbers.*

Dr Neill, who refers to Giraldus, takes an opportunity of stating,† in allusion to this concluding observation, that no mention of beavers occurs in any of the public records of Scotland, now extant. To this, however, there is at least one exception. In the *Assisa Regis David de Tolloneis*, cap. ii., supposed to date towards the middle of the twelfth century, but evidently founded on the English Act of Henry I., the export duty is fixed, "of a tymmyr of skynnis of toddis quhytredys martrikis cattis *beveris* sable firrettis or swylk uthyr of ilk tymmyr at ye outpassing iiij^{d}.‡" If we note here that the duty is one upon exportation, "ad exitum," or "outpassing," we can scarcely conclude otherwise than that the beaver was then met with in the country, and apparently even in considerable numbers, so that its fur was an ordinarily recognised article of commerce, of native produce. To judge, however, from the language of the Scottish rendering of the Latin original of the Assize of the first David, which we have here purposely adduced, we must regard its regulations as having remained in force till a much later era; and probably till that of the second king of the name, or till about the middle of the fourteenth century. But the animal which was already reported as rare in the time of Giraldus Cambrensis, yet which seems to have been held entitled to continue as furnishing an article

* Silvester Giraldus Cambrensis, Itinerarium Cambriæ, seu laboriosæ Baldvini Cantuarensis Archiepiscopi per Walliam legationis accurata descriptio, lib. ii., cap. 3.

† Mem. of Wern. Nat. Hist. Society, vol. iii., p. 211.

‡ Acts of Parliament of Scotland, vol. i., p. 303. The *timmer* still denotes in Sweden a bundle of forty skins. From a citation in Ducange (Gloss. Med. and Inf. Latin. V. Timbrium), the timber in France, in the year 1351, contained sixty skins. The term in this country appears to have usually denoted the number of forty.

of impost more than two centuries after, appears, in still another century, to have shrunk into such narrowly limited numbers, that it was at last no longer deemed necessary to retain for it a place in a fiscal enactment. In 1424, at the first parliament of the first James, the martin, polecat, fox, and other skins, are still named as articles bearing an export duty, but the beaver is omitted.* Yet, at even a later period, when we find Hector Boethius reporting, after the lapse of almost another century, that the wild region of Loch Ness contained then, not only a great abundance of wild animals such as stags, horses, and roes, but "ad hæc Marterillæ, Fovinæ ut vulgo vocantur, Vulpes, Mustellæ, *Fibri*, Lutræque in incomparabili numero, quorum tergora exteræ gentes ad luxum immenso precio coemunt,"† it is with the inclination, led on by the Assize of David, and by the narrative of Giraldus, with both resting securely on the discoveries in our mosses, still to extend to him a more entire confidence than has been customarily conceded by others. Bellenden, in translating this passage, while he omits the stags, roe-deer, and otters, preserves the "mony martrikis, *bevers*, quhitredis, and toddis," with the intimation that "the furringis and skinnis of thaim are coft with gret price amang uncouth marchandis."‡ The very license which Bellenden appears to have allowed himself in his translation, seems to me here to lend weight to the authority of the original statement. He may have omitted the kinds of deer, and the otter, as animals too notoriously abundant everywhere to require remark: but, whatever was his motive, that he should have excluded the one, and retained the other, showed the probability of some grounds for a selection; and seems to give greater authenticity to that which he left thus, in a more marked manner, with the support of a conjunct testimony. As to the "incomparable number," this must be held to apply to the animals in the aggregate, and not to the beaver in particular; and the rarity of this was certainly not the less likely to enhance its price, that it had annulled its importance as a source of revenue. Upon the

* Laws and Acts of Parliament of Scotland (1682), part i., p. 6.

† Hector Boethius, Scotor. Hist.; Regni descrip. (1527), F. ix.

‡ Boece, translated by Bellenden (1536), cap. viii., F. xxxiii.

whole, it seems thus fairly admissible, that the existence of the beaver in Scotland may be authentically traced as far down as to the beginning of the sixteenth century, though doubtless for long in extremely limited numbers, and, naturally, only in deeply secluded localities. Sibbald, writing towards the close of the century which follows,* adduces merely the statement of Boece, and, without rejecting it, professes his ignorance as to whether the animal was still indigenous. It may be noted incidentally here, that the Gaelic Dictionary of the Highland Society of Scotland contains the *dobhran-leas-leathan* as the designation of the beaver; while we remark, at the same time, the close analogy of this term to the *llosdlydan* (the broad-tailed animal) of the code of Hywel Dda. Reverting to Wales, the celebrated Camden† speaks of the Teivi as "olim castoribus, nunc salmonibus abundans." In the later edition by Gough, it is added,‡ that in the Conway there is a deep, wide, still water, called to this day by a name denoting the beaver's pool. Ray,§ followed by Pennant,‖ each referring to Giraldus, names also other places in Wales which are reputed to have been the former haunts of the animal, as we have shown that similar spots are recognisable in England.

If we proceed now to the history and distribution of the beaver in the other countries of Europe, we find that the facts, scanty and dim, and mingled with error at first, slowly mass themselves into greater copiousness, and acquire greater precision. If the fable of the beaver (ὁ κάστωρ) be really the production of Æsop, and that writer have lived, as we have reason to believe, five centuries and a half before the Christian era, the popular notion or fiction embodied in it, that the animal when chased, knowing the object of the hunter, usually itself performed the operation of castration, and resigned the spoils for which it was pursued, that it might be allowed to escape in safety otherwise, gives us a very reverend antiquity to show, not

* Scotia Illustrata (1684), part ii., lib. iii., p. 10.

† Britannia (Lond. 1600), p. 586.

‡ Gough's Camden, vol. ii., p. 560.

§ Synopsis Methodica Animalium (1693), p. 213.

‖ British Zoology (ed. 1812), vol. i., p. 122.

only for the figment itself, but for the value which already, at so remote a period, may be inferred to have attached itself to the uses of castoreum in medicine. Æsop, who merely speaks of the animal besides as a quadruped living in stagnant places,* points his moral, that a prudent man will thus always be ready to sacrifice his wealth for his safety: while further, if we are to credit Horapollo, a writer at an early period of the Christian era, it was this popular notion also which had obtained for the beaver a place among the Egyptian hieroglyphics, but here as the symbol of an unfortunate man,† though a diligent investigator of this department of archæology assures me that the emblem does not now occur in any of our known collections. Herodotus,‡ writing little more than a century after Æsop, reports the beaver as inhabiting a large lake in the country of the Budini, who are understood to have been a tribe in Scythia, to the east of the Don, and within the limits of Europe. Aristotle adds nothing to our information as to the geographical range of the animal, almost nothing as to its manners, and little as to the special nature and locality of its habitat, beyond that it haunts lakes and rivers generally.§ It is a comic poet, Plautus, about two centuries before Christ, that, in a fragment from one of his lost plays,‖ appears to give us the first special indication of a favourite food of the beaver, in the line: "Sic me subes cotidie, quasi fiber salicem." No habitat in Europe is assigned to the beaver by Pliny, and even he adds nothing to the details as to its manners, unless that he refers to its custom of cutting down trees with its chisel-like teeth: "arbores juxta flumina, ut ferro, cædit."** The great encyclopedist mentions that the best castoreum was brought from Pontus (whence the animal was known as the *Fiber Ponticus*), and from Galatia,†† both in Asia Minor; and, possibly we may now conjecture, chiefly from the river Halys, the modern Kisil-Yrmak, or Red River, in

* Æsopi Phrygis Fabulæ (ed. 1541), p. 133.

† Hieroglyphica Horapollinis; *fide Cod. Aug. corr.* (1595), lib. ii., sec. 65, p. 100.

‡ Historia; Melpomene iv., sec. 109.

§ De Historia Animalium, lib. viii., cap. v.

‖ Comœdiæ, *ex rec.* Gronov. (1669), p. 1214.

** Historia Naturalis, lib. viii., cap. xxx.

†† Ibid., lib. xxxii., cap. iii.

which the beaver is still known to be abundant. The next quality of the castoreum, Pliny reports as coming from Africa; thus in so far warranting the testimony of Horapollo, that the animal was known to the Egyptians; though it appears probable that it really never inhabited any of the African countries, and that the drug was brought thither, in all likelihood from Persia, through the usual channels of traffic, of which the Egyptian cities were for long important centres.

Strabo, in so far as I have observed, is the first after Herodotus who explicitly names the beaver as a native of Europe, mentioning it as found in the rivers of Spain,* with the sole remark that its castoreum was inferior to that of Pontus. Dioscorides contributes nothing as to the history of the animal, unless that he adds his support to the correction of the popular error upon which the fable of Æsop was founded,† which had already been exposed however by Pliny, on the authority of Sextius; and which indeed remarkably enough, considering the other singular characteristics truly belonging to the animal, seems to have constituted, along with the castoreum itself, its great claim to notice with the poets of antiquity, among whom it is referred to by Lucretius, Juvenal, Ovid, and Virgil, as, among the prose writers, by Cicero. Advancing to the time of Oppian, all is still nearly barren with regard to the geographical distribution, and the true, leading, and peculiar features in the habits and instincts of the beaver; this author only presenting the superstitious delusion, that the call of the animal heard by a man portended his death,‡ thus rendering it worth noting, that even to this day the Polish and Bohemian peasants assign to the beaver a cry of intense plaintiveness. At a still later period, Ælian§ adds nothing to the meagre details of his predecessors. We thus see that, beyond the early notice of Herodotus with reference to the Budini, and that of Strabo, long afterwards, in relation to Spain, we have in none of the principal classical writers, whether Greek or Roman, any notice of the

* Strabonis Geographia (ed. 1571), lib. iii., p. 172.

† Dioscorides, De Mat. Medica; Interp. Marc. Vergilio Florentino (1529), p. 185.

‡ Halieutica, lib. i., v. 397.

§ De Natura Animalium, lib. vi., cap. xxxiv.

existence of the beaver within the European countries; and, still less, any allusion to those peculiar instincts, whether of building or colonizing, which have since conferred upon the animal so wide a notoriety. It would be unwarrantable, of course, to infer from this silence, singular because on points so apparently notable and interesting, that the beaver was really then unknown as indigenous in Italy, or in the other countries within the bounds of Europe, visited or occuped by these great masters of ancient civilization. All our persuasions, on the contrary, and scarcely any one more than that derived from the allusion of Plautus to its attacks upon the willow, lead us to an opposite conclusion, however defective our evidence: and we must remember that we find this restricted information as to habits also in those among the writers whose opportunities ought to have been scarcely questionable; Æsop, Dioscorides, and Oppian having been natives of Asia Minor, where the animal was notoriously abundant, where it was therefore open to observation, and where even a recent traveller* informs us that such numbers still exist that the Kisil-Yrmak alone might yield a supply of from 1000 to 2000 skins annually.

If we have this almost total silence, as to the manners and habitats of the beaver, among the esteemed writers of the best ages of antiquity, and with reference to their own countries, we can scarcely expect any more extended or specific information from the few authors who appeared in the darker ages that followed. We must descend to the thirteenth century, in order to encounter at last an observer on the continent, in various respects a man of remarkable learning and genius, whose notices are of a more direct and precise nature. Albert von Böllstadt, or Albertus Magnus, Bishop of Ratisbon, in one† of his many voluminous treatises, refers to the beaver, and grounds part of his statements on his own local experience: "sicut frequenter in partibus nostris est compertum." The "partibus nostris" may apply to the Danube, where Albertus had held his episcopate; or to the Rhine, the scene of his retirement, and where most of his works were composed. Like

* Brandt, Mém. de l'Acad. Imp. des Sciences de Saint-Peterbourg, 6me série; Sciences Naturelles, tom. vii. (1855), p. 81.

† Opera Universa, tom. vi.; De Animalibus, tract. ii., cap. i., p. 584.

our Giraldus, at even an earlier period, he describes the building instincts of the animal; and speaks of its cutting down trees with its teeth, in considerable quantities, and constructing huts on the banks of the rivers, as well as burrows, which it inhabited. The huts had sometimes two, or even three apartments, and these were on different stories, so that the beavers might be provided with a higher or a lower residence, according to the varying height of the river. In the fifteenth century, Cuba* speaks of the beaver as living gregariously. George Agricola, the celebrated metallurgist, mentions it long afterwards, in a treatise bearing internal evidence of having been written in 1547,† as hunted in Germany, in his time, for the sake of its tail which was eaten, the skin which was used for dress, and the castoreum which was employed in medicine; and he repeats, with considerable circumstantiality, the accounts of the skill and perseverance of the animal in the preparation and adaptation of the materials for its constructions. Bruyerin also‡ mentions it as occurring in multitudes in various tracts of Germany. Olaus Magnus, the Archbishop of Upsala in the sixteenth century, records some particulars as to the existence of the beaver in the Scandinavian countries,§ where he describes it as found in the greatest abundance, and as constructing its two and three chambered houses with wonderful art: and far later, in the middle of the eighteenth century, we have the testimony of Pontoppidan,‖ that in Norway they were still numerous, there being then a considerable trade in their skins, and in castoreum, at the fair of Elverum; while he names, as particular localities where they were found, Solloer, Osterdalen, and Jemteland. Linnæus,¶ in his Fauna of Sweden, includes the beaver as inhabiting lakes and rivers, especially in Lapland.

Belon, whose early death by assassination, in the Bois de Boulogne at Paris, was regretted as a loss to the science of

* Ortus Sanitatis: Tractatus de Animalibus (1491), cap. xxxi.

† De Animantibus subterraneis: Opera (1556), p. 484.

‡ De re Cibaria, lib. xiii., cap. xxxii.

§ Historia de Gentibus Septentrionalibus (1555), lib. xvii., cap. v., p. 604.

‖ Natural History of Norway, part ii., p. 26.

¶ Fauna Suecica (1746), p. 9.

natural history, which he had cultivated with a success and discrimination beyond his period, speaks of the beaver* as "vulgo noster *Beverus, un Bieure.*" Thus familiarly denoting its residence in France, he describes it further as an animal abounding elsewhere in Europe, and as frequently kept tame among the Burgundians, Lorrainers, and Austrians. Rondelet, who mentions it as found in the Rhone, and gives an interesting notice of two tame individuals kept by the Bishop of Montpellier,† was the first to present a true description of the follicles containing the castoreum, hitherto erroneously believed, and, in the fashion of the early writers, universally reiterated, to be the testes of the animal. Bruyerin‡ reports the beaver to have been frequently met with in the Saône. Saumaise, in a work§ of immense and diffuse learning, speaks of it also for France, as "nostrum *bièvre.*" Pomet,‖ writing in the seventeenth century, mentions it in the Rhone, the Lisère, and the Oise; says that great numbers were taken along the Elbe; and extends its range further, though it does not appear upon what authority, to Spain, Savoy, and Italy. In Switzerland, we are told by Conrad Gesner,¶ beavers were abundant "circa Arulam flumen, Ursam, et Limagum nostrum (the Aar, Reuss, and Lint);" and he adverts to an example, newly captured, which he had an opportunity of examining while he was occupied in writing on the subject. In another treatise** he says they live only by rivers, or, as some think, lakes, preferring the still parts or bays of the former. Gesner assigns also a habitat to the beaver in Italy, near the mouth of the Po: but of this we find no direct confirmation, or even of their having been positively at any time indigenous anywhere in that country, unless in the fact that its molar teeth are reported to have been found in the Valdarno;†† a notice, regarding which the Italian translators of the Diction-

* De Aquatilibus (1553), p. 28.

† De Amphibiis (1554), p. 237.

‡ De re Cibaria, lib. xiii., cap. xxxii.

§ Plinianæ exercitationes in Caii Iulii Solini Polyhistora, vol. i., p. 186.

‖ Complete History of Drugs, vol. ii., p. 244.

¶ Historia Animalium: De Quadrupedibus, lib. i., p. 337.

** De Aquatilibus, p. 222.

†† Dizionario delle Scienze Naturali (Firenze, 1833), vol. v., p. 403.

naire des Sciences Naturelles offer no further illustration. Dante, as little as his great precursors, the poets of Rome, does not recognise it as a native of Italy, but refers to its presence in the Danube :—

> " E come là tra li Tedeschi lurchi
> Lo bivero si assetta a far sua guerra."*

Marcellus Vergilius, an Italian translator of Dioscorides, when occupied with the castoreum, takes no opportunity of hinting that the beaver was known as indigenous ;† and Matthioli, in his commentaries on the same Greek author, published at Venice,‡ while he assigns to it a wide distribution throughout Upper Germany, along the course of the Rhine, and in the provinces watered by the Drave and the Save, is alike silent with reference to Italy. Matthioli had an opportunity of dissecting two beavers, presented to him by an Austrian archduke. " A Rondeletio edoctus," he confirms the views of the French physician with regard to the castor-sacs ; and speaks of the wonderful artifice of the animal in the construction of its huts, built of several stories. The noted Scaliger mentions the beaver as existing in France and Germany,§ but does not claim it for his own country ; and, stating that he never saw one tame, asks, not very pertinently with regard to experience elsewhere : " semipiscis enim qui cicuretur ?" Aldrovandi,‖ a better and more special authority, was not aware of its existence near the Po, as Gesner had asserted.

As to Spain, we have not been more successful in our search for later information, to confirm the statement of Strabo. It is true that some Arabian writers are said to indicate the fact of the beaver being a native of that country ; but, excluded from these, I have seen nothing to corroborate the assertion in the works of the Spanish physicians whom I have been able to consult. The learned Laguna,¶ in a note appended to his trans-

* Inferno, cant. xvii., v. 21.

† Dioscorides, De Mat. Medica : Interp. Marc. Vergilio Florentino (1529), p. 185.

‡ Commentarii in sex libros Dioscoridis (1570), p. 248.

§ De Subtilitate : Exercit. 210, 211 ; p. 678.

‖ De Quadruped. Digit. Vivip., lib. ii., cap. xii., p. 282.

¶ Dioscorides, Acerca de la Materia Medica, traduzido en el vulgar Castellana por el Doctor Andres de Laguna (1555), p. 138.

lation of Dioscorides, says that it is found at every step (*à cado passo*) along the whole course of the Danube, but principally in Austria; while he adds no allusion to its existence, either then or before, within the limits of his own country. Velez de Arciniega,* too, in a work specially devoted to the animals used in medicine, and treating, among these, of the beaver, gives no indication of its having been found in Spain: but it must be admitted that, both in description and history, the accounts in this author are very meagre; and we need only accept from him here, as doubtless a good Catholic, his confirmation of the statement, that the tail was eaten as fish in Lent, but the carcass, he says, is flesh. In a recent Spanish Pharmacopœia,† it is the Russian castor that is directed. Admitting, however, the testimony of Strabo, with the unquestionable evidence of the fossil teeth in the Valdarno, as sufficient for Spain and Italy, we have already accumulated proofs, besides, of the former existence of the beaver in Great Britain, France, Switzerland, Germany, Austria, Russia, Norway, Sweden, and Denmark. When we join to these the fact, that remains of the animal have been found by M. Morren in the peat of Flanders, we have adduced distinct evidence of its distribution, and often in great numbers, over nearly the whole expanse of Europe. It is of less importance here, to point further to the discovery of their remains in those countries where they are still not entirely extinct, though rapidly disappearing. It may be enough, as to these, to note merely, as additional localities, that their bones, according to M. Gervais, have been found in mosses in the valley of the Somme in France, as well as near Paris, at the confluence of the Seine and Marne; and in the department of the Aube, in the cave of Lunelviel, and other situations.‡ They are also reported§ to have been observed among the lignites in Switzerland.

From this so extensive distribution of the beaver over the fields mainly occupied by the Indo-Germanic races, we might

* Historia de los Animales mas recibidos en el uso de Medicina (1613), p. 108.

† Pharmacopœa Hispana (1827), p. 3.

‡ Chenu, Encyc. d'Histoire Naturelle (1854); Rongeurs et Pachydermes, p. 67.

§ Pouchet, Zoologie Classique (1841), t. i., p. 123.

expect a great similarity in the name of the animal throughout their kindred languages, whether in Europe or in Asia; and this accordingly occurs in a remarkable degree. Eastern scholars inform us, that in the Sanscrit the name is *babhru;* in the Pehlevi branch of the Persian, it appears, in the religious manual of the Bundehesch, as the *baovara;* and, in the others which follow, it is easy to recognise an identical root, under a customary order of mutations. Thus, in the Sclavonic, it is *bobr* and *baber*, and in the Lithuanian division it is *bebru* and *bebris:* in the Icelandic we have *bifr*, and, in the affiliated languages of Denmark and Sweden, *bæver* and *bäfver:* in the more strictly Teutonic branch, the old German is *bibar*; the Anglo-Saxon *befor*, *befer*, *beber*, or *beofor;* the German *biber;* and the Dutch *bever:* in the Græco-Latin branch the Latin *fiber* becomes, with some of the later writers and scholiasts, *bebrus*, *bever*, or *biverus*; in Italian it is *bivaro* or *bevero*; in Spanish *bibaro;* in Provençal *vibre;* and in French *bièvre*; while, on the other hand, we have a singular divarication in the Greek κάστωρ. In some instances, in the Celtic tongues, we have a like marked divergence, reminding us of the opinion of several philologists, that these languages were not entitled to rank among the Indo-Germanic family: but in others the resemblance is striking; while in most, as the diverging names assume a descriptive character, their origin acquires a natural independence. Lhuyd* assigns, as the Welsh equivalent, *avangk* or *adhangk;* but he also gives *lhostlydan*, which we know signifies the *broad-tailed animal*, and is therefore aptly characteristic: in the Irish he gives *beavar*, *kastar;* and again a descriptive name, *davaran loisleathan:* in the Gaelic Dictionary of the Highland Society, we have seen, the near analogue of the last is *dobhran-leas-leathan;* thus manifestly representing, like the Irish, the *lhostlydan* of the closely allied language of Wales. With the classical ancients the animal was sometimes known as the Parthian, and sometimes as the Pontic dog.

The names of localities and of individuals have risen as naturally, in foreign countries as among ourselves, from the presence of the beaver. If the ancient Bebriacum, between

* Archæologia Britannica: tit. ii., Comparative Vocabulary; v. Castor.

Cremona and Verona, and near the Po, have thus, as has been imagined, derived its name, we have a confirmation of the statement of Gesner that it had formerly frequented this river; while we may surmise a still more probable derivation in the name of the river Fibrenus, a tributary of the Liris in Latium, an islet in which is so pleasingly described as a favourite resort by Cicero.* Biberach or Biberbach, in Suabia, Merian† writes, had its designation from the beavers which had their colonies in a brook or stream in its vicinity. This town was an old *Reichs-stadt*, and, like our Beverley, had long carried the beaver in its armorial insignia. The animal, we are told, was first borne *azure*, with a crown *gules*, on a field *argent;* but, in 1487, in consideration of an important service rendered to the Archduke Maximilian, afterwards the Emperor Maximilian I., the citizens acquired the right to have the field *azure*, and the beaver and crown *or:* a guerdon which we must suppose them to have considered adequate, as they obtained it on petition. There is besides a Bieberach on the Kinzig, a tributary of the Rhine; and on the Rhine itself we have Biebrich, probably the analogue of our *Beferige*, whence our patronymic *Beveridge*. The brothers Grimm, in their elaborate Dictionary (V. *Biber*), give besides Biberaha, Biber, Bebra, Beberbeke and Bever, as names of places occurring throughout all districts of Germany, and as easily resolvable into indications of the old haunts of the beaver. Petersen‡ derives the ancient name of Byauærskogshæreth, in Denmark, from a like source, and alludes to the introduction of the animal into the known legend of King Snjo, in the Chronicle of Eric of Pomerania. We remark also, in Silesia and Lithuania, the Sclavonic name Bober, as that of a river; as well as in France the little river Bièvre, noted in sanitary disquisition from the Memoirs of Hallé and Parent-Duchatelet, which passes by Arcueil and Gentilly to reach the Seine at Paris. Of surnames of individuals, we have the Russian *Bobroff*, the Polish *Bobrowski*§, the German *Bibra* and *Bieber*, and

* De legibus, lib. ii., cap. 1. 3.

† Topographia Sveviæ (1643), pp. 15, 16.

‡ Nordisk Tidsskrift for Oldkyndighed, B. ii., p. 94.

§ Pott, Die Personennamen (1853), p. 668.

the French *De Bièvre.* As to the latter, perhaps if a man were to be styled a beaver from his sagacity, as a fox from his cunning, the Marèchal de Bièvre, a famous punster, and the author of the reputed best pun extant, would, by at least one order of wits, have been considered well entitled to his designation. In England we have the surnames Beaver, Beever, and Beevor; Beavers and Beevers; with, besides Beveridge, Beaverstock, and Beverley.

It is interesting to remark that, independent of the more remote evidence produced by Professor Steenstrup from the peat-mosses of Denmark, we have, in the testimony of Giraldus and Albertus Magnus, though not in the classical writers, proofs of an acquaintance with the gregarious habits and constructive instincts of the beaver, at a time long anterior to the discovery of America, and to the more widely diffused knowledge which followed gradually upon the narratives of the voyagers to the New Continent. It is surprising that Buffon, whose elegance of style so rarely appears as an excuse for carelessness and inerudition, should not only have overlooked this fact, but the evidence of all the more recent authorities we have quoted, as well as of others to a like purport occurring in his own day. The beavers of Europe, says this eminent writer, never assemble in colonies, and never construct, but merely burrow;* although he admits, what is not nearly enough, that in Norway, and other parts of the extreme north, their huts have been reported to be found within the last centuries. Cuvier appears to have followed Buffon, in assuming that the European beavers, at least in later ages, never build; and states the difficulty he has had in attempting to determine, whether those which now have their burrows along the Rhône, the Danube, the Weser, and other rivers, are originally different from the American species, or whether they are identical, and are hindered from building solely by their position in the nearer vicinity of man.† Desmoulins, also,‡ denies that societies of beavers have ever been seen in Germany. While grateful that the eloquence of Buf-

* Histoire Naturelle (1760), t. viii., pp. 286, 301.

† Règne Animal; Mammiféres, p. 250.

* Dictionnaire Classique d'Histoire Naturelle, t. iii., p. 264.

fon, and the comprehensiveness and precision of Cuvier, have given a charm and a solidity to natural history unknown to it before, it is to wonder the more that it should have been easy for us to supplement their inquiries, on this curious point, from sources so readily accessible. To approach even our own times, Bechstein,* writing so recently as 1801, tells us that on the Elbe, near Kähnert, the property of the Prussian minister, Schulenberg, there were then many beavers, which constructed dams on the side channels, or arms of the river, where there was calm water. Near Wittenberg also, they lived in societies, and formed dams. In the vicinity of Hettinghausen, on the Lippe, they built their dams, and were found in considerable numbers; as well as higher up the river, in the territory of Paderborn. In these localities, their constructions are stated to have been so skilful as to rival those of Canada, though the colonies were less numerous. The trees they cut down were willows and poplars. Oken† mentions a beaver-hut on the Yesil, in the duchy of Cleves, which stood six feet high, with two chambers over each other, the upper having three, and the under four cells; and he refers to a paper by Meyerink, in the Berlin Natural History Transactions for 1829, describing a colony settled for upwards of a century on the little river Nuthe, half a league above its confluence with the Elbe, in a sequestrated canton of the district of Magdeburg. In 1822, it contained from fifteen to twenty individuals: they had burrows; built huts eight or ten feet high, using trunks and branches of trees, along with earth; and constructed a dyke. Martius, writing in 1837,‡ speaks of colonies on the Ammer, which were still tended as objects of forestry, or huntsman's craft. An authority, at the close of the last century,§ assigns to them many localities in Germany: as in the Mark, especially in the Altmark and Priegnitz, and in the Middle Mark; and in the rivers Spree and Havel, in the vicinities of Berlin, Potsdam, Oranienberg, Liebenwalde, Trebbin, Nauen, and Königshorst.

* Naturgeschichte Deutschlands, B. i., pp. 915, 916.

† Allegemeine Naturgeschichte (1838), B. vii., abth. ii., p. 742.

‡ Lehrbuch der pharmaceutischen Zoologie, p. 15.

§ Krünitz, Oekonomische Encyklop. (Berlin, 1783), B. iv., p. 392.

Even close to the present day, the beaver, though scanty in its relative numbers, has a wider distribution in Europe than is usually imagined. Wagner, writing in 1846, mentions it* as still not only in the Danube, but in the Amber, Isar, Iller, and Salzach, tributaries of that river; as well as in the Elbe and Oder; while in other rivers it has only recently disappeared. In Norway, Sweden, and Poland, he reports them as in greater numbers, and as distributed over Russia. Schmarda† mentions them as occurring in Transylvania; and Oken says they exist in the Traun in Austria, besides specifying for North Russia the Dwina and Petschora. Blasius‡ reports that a specimen was taken in Brunswick, in the Schunter, at the close of last century: but that a few years ago they were observed in the Lippe in Westphalia; and that they are still found on the Elbe, between Magdeburg and Wittenberg, though the colonies, since 1848, have been greatly reduced. He adds, that they have been recently observed in the Havel and Oder in the Altmark, in the Vistula, within East Prussia, and in Silesia; and, more abundantly, in Lithuania and Poland, and in North Russia. In North-Western Germany it was found, at least formerly, in the Moselle and the Maas. Chenu§ mentions it as tolerably abundant in the southern part of the Rhône. They have been killed near Arles, Beaucaire, Tarascon, and even Avignon; and still subsist in such numbers as to elicit his surprise, that some authors should have asserted their extinction in France. Of two which Fr. Cuvier had alive, one was from the Danube, and the other from the Gardon, in Dauphiny. In the Norwegian Pharmacopœia of 1854, the Norwegian castoreum holds its place beside that of Russia and of Canada.‖ Wylie, in the Russian Military Pharmacopœia,¶ mentions the animal as common in Russia and Siberia, and more rare in Livonia and Poland.

* Abhandl. der Math. Phys. Classe der k. Bayer. Akad. der Wissenschaften (Munich, 1846); Die geographische Verbreitung der Säugthiere, p. 35.

† Die geographische Verbreitung der Thiere (Wien, 1853); II. Abth., p. 232.

‡ Fauna der Wirbelthiere Deutschlands (1857), p. 407.

§ Encyc. d'Histoire Naturelle (1854); Rongeurs et Pachydermes, p. 65.

‖ Pharmacopœa Norvegica, p. 24.

¶ Pharmacopœia Castrensis Ruthenica (1840), p. 79.

In South Russia, Demidoff* says that they are somewhat scarce on the Danube, but that they are more common in the region towards the Caucasus, and that many have been recently killed in the districts watered by the Natanebi and the Tereck. To the river habitats already noted, Moleschott adds† the Inn, the Lech, the Upper Rhine, the Weser, and the Bug, as each still presenting rare examples. Upon the whole, the beaver still appears to be encountered, seldom or never plentifully, always in greatly diminished numbers, and generally with an extreme and constantly increasing rarity, in the Austrian and Prussian States, Bavaria, Russia, Sweden, Norway, Lapland, France, and perhaps Switzerland. Among countries, again, in which we have proofs that it was formerly known, it has become extinct in England and Scotland, in Italy, Spain, Denmark, the Netherlands, and many tracts of Germany.

While it is natural that an animal of the magnitude of the beaver, offering various temptations by its spoils, and provoking destruction on the part of the forester by its devastations, should give way before the extension of a population which has intruded besides on the privacy it loved for its haunts, it has been, nevertheless, not without some efforts for its preservation and retention that it has gradually receded before the presence of man. Like other objects of the chase, it was held, from a very early period, as a *regale;* and an officer called the *Beverarius*,‡ appointed for its cognizance, was among the retinue of the palace of the Frankish Sovereigns. It was pursued with all the usual appliances of spear, net, and hound.§ In the laws of the Bavarians, of the time of King Dagobert I., or the beginning of the seventh century, we find a fine of six solidi imposed upon whomsoever should kill the dog, "quem *bibarhunt* vocant,"‖ along with the restitution of a similar animal. This *beaver-hound* still appears in the best and most recent Swedish Dictionary, that of Dalin, as the

* Voyage dans la Russie Méridionale (1840), t. iii., p. 26.

† Physiologie der Voedingsmiddelen (Amst., 1850), p. 238.

‡ Du Cange, Gloss. Med. et Inf. Latin; V. Beverarii.

§ Georgica Curiosa, t. ii., p. 461.

‖ Lindenbrog, Codex Legum Antiquarum; Lex Baivvariorum, tit. xix., §. 4.

"*bäfverhund*," "a dog trained for the chace of the beaver," though probably few are now thus exercised; while possibly, with the ancient Greeks, the καστόριαι, considered by Xenophon to have been thus named from the Castor of mythology, were dogs reared for a like purpose. In a German charter, dated in 1103, the right of hunting beavers is conferred along with other huntings and fishings; and a Bull of Pope Lucius III., in the year 1182, bestows upon a monastery the property in the beavers within their bounds. In comparatively recent times, Mylius cites a Prussian royal edict, regarding the beaver in the Elbe, dated 20th January 1714; with a subsequent one, insisting upon its protection under a penalty of no less than 200 dollars, issued at Berlin on the 24th March 1725. It was doubtless under a similar policy, that Frederick II. is reported to have gathered together a large colony of beavers, that he might turn them to economic uses: but with so little success, says Zimmermann,* that they became afterwards dispersed throughout Brandenburg, and were soon rarely encountered.

Among the uses to which the beaver was applied, we have seen that its flesh was employed as an article of diet. Streso, a Dutch writer, states† that the animal was used as food in Holland, in the time of the Crusades; and he repeats the common notice, that its tail and paws were eaten as fish, with a safe conscience, during the religious fasts. But the monks of a convent of Chartreux, at Villeneuve-les-Avignon, seem to have carried this indulgent notion farther, and to have accounted their entire carcass among the "*mets maigres*;" preparing from it large quantities of sausages, which were sold, and highly prized, in the adjoining country. Albertus Magnus, however, says‡ that their whole flesh was abominable, except the tail. Gesner§ describes the mode in which it was rendered savoury by the Swiss, he himself relishing the choicer portions as sweet and tender, "jure croceo conditos." Be-

* Specimen Zoologiæ Geographicæ (1777), p. 297.

† Over de Levenswijze en Gewoonten onzer voorvaderen (Haarlem, 1814), p. 69.

‡ Opera Universa, tom. vi., p. 584.

§ De Quadrupedibus, lib. i., p. 339.

lon also tells us* that its tail, which, he says, sometimes weighs 4 lb., was in his day used in Lorraine during Lent, and accounted a great delicacy, having a close resemblance in flavour to a nicely-dressed eel. The northern nations, according to Olaus Magnus,† agreed with the rest in considering the tail and paws as highly delicate morsels. Archæology finds everywhere the elucidation of its researches, and nowhere more naturally meets an illustration of the diet of the primitive people of the North than in their old kitchen heaps, which have lately attracted attention in Denmark. In these, among the shells of oysters, and other edible fish, the split bones of animals, stone implements, and layers of ashes, have been found the relics of the now extinct beaver and urox.‡ Professor A. Retzius communicates to the Swedish Royal Academy of Sciences § a similar notice, relative to several of these kitchen heaps observed for the first time on the coast of Sweden, where it is said, though without specifying the beaver, that the fragmentary bones bore the greatest resemblance to those found in Denmark ; while the shells were chiefly those of *Tritonium antiquum* and *undatum*, still abundant in the neighbouring sea, with, here and there, *Cyprina islandica*. There is an analogous heap of shells which I have seen near the monastery of Holy Island, the site of the ancient foundation of the see, and afterwards an appendage of the Benedictine Abbey, of Durham, a complete examination of which might contribute something to repay the attention of a native antiquary.

The skin of the beaver, we know, has been long prized in Europe as a fur, and applied to various purposes in dress and manufacture. It is an early notice of this description which we find in Herodotus,‖ who tells us that the Budini employed it as a trimming to their cloaks. Beckman¶ cites several in-

* De Aquatilibus, p. 28.

† Historia de Gentibus Septentrionalibus, lib. xviii., cap. v., p. 604.

‡ Worsaa, Beretning om de paa de danske Kyster forefundne saakaldte Kjökkenmöddinger (Naturförskermödet i Christiania, 1856) ; Illustreret Nyhedsblad, B. iv., p. 116.

§ Öfversigt af Kongl. Vetenskaps-Akad. Förhandlingar. Tolfte Årgången (Stockholm, 1856), pp. 231–2.

‖ Historia ; Melpomene iv., § 109.

¶ History of Inventions, vol. ii. (ed. iv.), p. 318.

stances of its use in the earlier portions of the Christian era. We have seen the peculiar value which was attached to it in Wales, in the time of Hywel Dda; but this value, like that of other objects of fashion, appears to have been fluctuating. Adam of Bremen, in the eleventh century, reckons the "pelles castorum" among the objects of vanity, the admiration of which crazed his cotemporaries: but Albertus Magnus,* in the thirteenth century, says that they were formerly precious, yet were then of little value; while Olaus Magnus, so recently as the sixteenth, states that they were esteemed as "vestitus satis preciosus"† among the Northern magnates. Belon mentions‡ that his countrymen were accustomed to make cloaks and gloves of the fur against the inclemency of the weather; and Boece we have already quoted as reporting that it was sought in this country by foreigners, at a great cost. Even now, a beaver skin of the finer description, from Kamtschatka, is said to sell in Russia‖ for from 100 to 150 rubles: yet in England, in 1836, the price of the skin of the old beaver, from Canada, at the Hudson Bay Company's sales, was only L.1, 12s. 6d.; and three years later we notice that 26 skins were imported hither from the north of Europe, independent of the American supply. During later centuries, the chief interest in the fur of the beaver lay in its employment for the manufacture of beaver hats, now also disappearing from among us. At what time these were first introduced into England appears doubtful. The process of felting has itself been judged more ancient than that of weaving, and seems to have been originally introduced from Asia into Europe, where it was known, even in the time of Homer and of Hesiod, as applied to the formation of coverings for the head. Nor was the process forgotten or disused during the middle ages. The Anglo-Saxon Glossary of Archbishop Ælfric gives *felt* as *lana coactilis*. A Bull of Gregory IX., or prior to the middle of the thirteenth century, speaks of hats made "ex filtris, et coactis lanis." A "chapel de bièvre," therefore, for the

* Opera Universa, tom. vi., p. 584.

† Hist. de Gent. Sept., lib. xviii, cap. 6.

‡ De Aquatilibus, p. 28.

§ Klemm, Die menschliche Kleidung, Culturgeschichtliche Skizze (1854), p. 7.

king of France in 1351, mentioned by Du Cange,* may have been, and, I suspect from the context, really was, a hat felted from the fur of the beaver. Bruyerin, who probably wrote before 1530, and certainly not more than thirty years later, states that the Germans made hats from this fur, "quos, inversis literis, *bifros* pro *fibros* appellitant."† The method of felting was now probably greatly improved. Yet beaver hats do not appear to have been made in England up to the close of the sixteenth century; for, in Stubbe's curious "Anatomie of Abuses," published in 1583, we find them still noticed as a foreign importation: "And as the fashions," he says, "bee rare and straunge, so is the stuffe whereof their hattes be made divers also; for some are of silke, some of velvet, some of taffetie, some of wooll, and, which is more curious, some of a certaine kinde of fine haire; these they call bever hats, of xx, xxx, or xl shillinges price, fetched from beyonde the seas, from whence a great sorte of other vanities doe come besides." Pennant‡ assigns to the time of Charles I. the commencement of their ordinary manufacture in this country. As it was now, however, the fur of the American animal which was all but universally and necessarily adopted, the interest, as connected with the scope of these notes, naturally ceases. Still, it may be worth mentioning that, superseded as it is of late in the making of hats, the skin of the beaver, notwithstanding its increasing scarcity, would have sunk to even a lower than its present value, had it not been that a new process has been contrived in which the surface is cut by an ingenious machine, with the result of producing a fur of a higher beauty, exported to various parts of Europe and the East. The rich white wool, it may be added, from the under part of the beaver, seems still to find a ready market in France.

The attention which the history of the European beaver demands from the physician, when considered with reference to its economic and hygienic uses, whether as producing an article of diet in its flesh, or of clothing in its fur, is of course widely subordinate to that which belongs to it as the source of various

* Glossar. Med. et Inf. Latin; V. Capellus.

† De re cibaria, lib. xiii., cap. 32.

‡ Arctic Zoology, vol. i., p. 104.

remedial applications, and, above all, of the for long greatly esteemed castoreum. The fable of Æsop, we have seen, already instructs us that, in the sixth century before Christ, or twenty-four hundred years ago, the beaver was recognised as an object of quest on the score of this drug. Herodotus also, not long after, tells us that it was used by the Budini in uterine diseases. We are prepared, then, from these merely popular notices, to find that Hippocrates, the cotemporary of Herodotus, introduces, though chiefly in treatises that are of questionable authenticity,* the recommendation of its employment, as if of a substance already familar, in the same class of diseases. Its appearance, subsequently, in the exclusively literary writings of several of the eminent authors of antiquity, shows that it continued extensively enough known to give scope and propriety to the use, as an illustration, of the extravagant tradition as to the circumstances of its acquisition. Pliny presents us with a detailed account of the value and extent of its uses in medicine; nor is it difficult to recognise afterwards, through all the middle ages, the special impress of the testimony of the Roman naturalist, or of the sources from which he derived it. The castoreum, according to Pliny,† externally used acted as an errhine, or, rubbed upon the head, induced sleep. Taken internally, and usually in doses of two drachms, it was beneficial in mania, in epilepsy, in amenorrhœa, and against multiform descriptions of poison. Whether used externally or internally, it was serviceable in vertigo, tetanus, tremors, spasms, nervous complaints, sciatica, dyspepsia, hiccup, and palsy. Adapted as a fumigation, it removed lethargy; as a suppository, or medicated pessary, it was beneficial in affections of the uterus; as a collyrium, it gave clearness to the eye-sight; and mixed with oil, and dropped into the ear, it cured aches in that organ and in the teeth. Dioscorides‡ recommends the castoreum as facilitating childbirth; and this appears also among its accredited virtues in many subsequent writers. We need only add, with reference to the writers of the classical period, that

* Opera Omnia (ed. Foes.): De superfœtatione, sect. iii., p. 47; De Natura Muliebri, sect. v., p. 136.

† Historia Naturalis, lib. xxxii., cap. iii.

‡ De Materia Medica, lib. iii., cap. xxvi.

with Celsus* it also ranked as an approved remedy; that Aretæus† bestowed upon it his confidence, especially in nervous diseases; and that Galen‡ styles it a celebrated medicine, and much in use, so that, he continues, Archigenes wrote a whole book regarding it. This weight of authority, and chiefly that of Galen, whose great genius, as well as admirable ingenuity and boldness of hypothetical statement, is so well known to have long kept the world of medicine at his feet, was as fitted to maintain for the castoreum its credit in the science of the times, as to secure its transmission to an unchallenged place in the art of the middle ages.

To trace carefully the progress of a remedy so extensively employed, and so highly lauded in a wide range of diseases, through all the darker ages of learning, down to its revival, and so onwards to the present day, would be a needless, though not an uninteresting, or even altogether an unprofitable task. With only a little ingenuity, such a history might be rendered that of the human intelligence in relation to medicine: and as hypothesis thrust away hypothesis, and superstition trod on the heels of superstition; or as men bent themselves before the influence of authority, and credulity usurped the place of inquiry, standing, as it ever stands, more boldly on its assumptions than reason on its proofs, we see the rarely unprominent remedy adapting itself to every phase of opinion, and still intertwining itself firmly with medical practice, now under one explanation of its qualities, and now under another, until better methods of induction and inference assigned to it finally a truer, if not yet a wholly fixed position, among our therapeutic resources. Ushered in under the auspices we have recorded, the appreciation of the high efficacy of castoreum received a new impulse in Europe, in and after the eleventh century, through the diffusion of the writings of Avicenna. The Persian Galen recommended it in a wide range of morbid conditions; but, through the Eastern haze of his phraseology, with a less distinct and precise application to individual ailments than occurs in the older

* De Re Medica, lib. iii., cap. xx. xxiii. xxiv.

† Opera Omnia; De Curatione Acutorum Morborum, lib. i., cap. ii.

‡ Opera Omnia; De Simple. Medic. Temperamentis ac Facultatibus, lib. xi., cap i., § 15.

writers, and especially in Pliny. Following and intensifying the peculiar views and modes of expression of Galen, he tells us,* that, while the medicine was warm at the end of the third, and up to the fourth or highest degree, it was dry in the second, and hence he deduces the fitting occasions for its employment. Notices of its importance continue to appear everywhere in subsequent writers. Albertus Magnus, in the treatise already quoted, repeats that it was given in large doses, to facilitate childbirth. Our countryman, John of Gaddesden,† was familiar with its use, especially in the diseases of women. Cardan,‡ with all the gigantic faith of our predecessors, assigns an authority for stating that the genuine drug, which, however, was rarely seen, because of the avarice of the traders, was so subtle and powerful in odour when fresh, that it produced epistaxis in four men who smelled it successively. With a like spirit, Baptista Porta, in the singular treatise in which he demonstrates, from outward inspection, the hidden qualities of things,§ gravely assures us, that it is because the castor-sac has a somewhat large head, that the castoreum, when rubbed in, relieves headache; while in another passage‖ we learn as rationally, that, as the beaver wanders abroad at night, we have hence an obvious explanation of the great use of the drug in obscurity of vision. Among other medical uses with his northern countrymen, Olaus Magnus records that of its relieving the sufferings of labour, when taken to the bulk of a walnut, mixed with ale.

But it is in the treatise of Marius,¶ as published and augmented by Francus,** to which I refer as it is embodied in the ponderous compilation of Manget,†† that we find the fullest record of the uses in medicine of the various spoils of the beaver. Besides the diseases we have mentioned as bene-

* Canon Medicinæ, lib. ii., cap. 125.

† Rosa Anglica (1492), car. 103.

‡ De Subtilitate; lib. x. (De Animalib. perfect.), p. 414.

§ Phytognomonia, lib. iii., cap. xxxviii.

‖ Ibid., lib. v., cap. xxvi.

¶ Johann Mayer practised in Ulm and Augsburg, and died in the latter city in 1644.

** Johann Francke, who died at Ulm in 1728. The "Castorologia" was published in 1685.

†† Bibliotheca Pharmaceutico-Medica (1703), tom. i., p. 489.

fited by its virtues, according to the testimony of the ancient writers, these German authors name gastralgia, dysentery, worms, retention of urine, induration of liver and spleen, pleurisy, with other pectoral complaints, gout, hysteria, hemicrania, and loss of memory, in which last it acted "stupenda cum admiratione." But it had virtues even beyond these; and was potent, for example, in destroying vermin, after a fashion in which it might now be difficult to find the opportunities for displaying its qualities: "Certe," says Marius, speaking of the castoreum of his own district, "multa pediculorum millia castoreo nostro enecavi." And it was not the castoreum only that was thus widely serviceable, but the animal, in all its parts, seems to have ranked with our predecessors as a complete armoury of physic. Its oil, an unctuous matter found in the two smaller follicles contiguous to the castor-sacs, when applied warm, cured lethargy, apoplexy, spasm, and convulsions; gave freedom and strength of action to rigid tendons; relieved hysteralgia, nephralgia, and rheumatism; and was of wonderful efficacy in vertigo, toothache, asthma, nausea, vomiting, colic, tenesmus, and dysentery. Its tail, as food, to revert for an instant to the authority of Olaus Magnus, was valuable for its healing quality in wounds of the intestines. The blood, too, was beneficial in epilepsy: and the teeth, hung from the neck, promoted dentition; or, in adults, as Jonston* informs us, served as an amulet to preserve from casualties. The gall, we learn from Rondelet,† cured affections of the eyes; and the fur arrested epistaxis and hæmorrhage from wounds, of course after the fashion of any other flossy material: an old reputation which has retained its recent traces, no recourse having been more familiar, even in our own day, so long as beaver hats were customarily worn, than to scrape a little down from their inner surface, and apply it to stop bleeding from a leech-bite or a superficial incision. The skin, besides, made into slippers, stockings, and gloves, was advantageously worn by the gouty; and, when newly stripped from the animal, and still retaining its natural heat, as our authorities could find opportunities of employing it, its appli-

* Historia Naturalis: lib. i., De Quadrupedibus (1657), p. 104.

† De Amphibiis, cap. viii.

cation was judged most serviceable in colic and hysteralgia, and even in mania. In a case of the latter, seen by Marius in Wirtemberg, the fresh skin was thus applied to the shaven scalp: a remedy under which it is gratefully acknowledged that amendment, through the Divine favour, gradually ensued. Adapted to the ailing part, a similar application was also excellent in spasm, weakness of stomach, atrophy of children, and in bed-sores. Further, the worthy Johannes Marius certainly does not avouch, but neither does he reject, what he had heard from a Jew, as no less than a tradition from King Solomon, that to wear a beaver hat, rub the head and spine with oil of castoreum, and swallow the weight of a gold piece of its substance twice a-year, made the memory so retentive that it lost nothing. When it is added, that even this copious summary does not exhaust the catalogue of ailments for which the beaver is thus held to provide a trustworthy remedy, and that the averments are all sustained by an accumulation of illustrative cases, extending over more than twenty folio pages, we can readily conceive what must have been the importance of the subject in the estimation of the older physicians; to the generality of whom the praises of Marius and Francus, whose treatise was in unquestionable repute, were nothing more than the expression of a prevailing conviction. So believing, well might our Quincy* say of castoreum: "Certainly it is a most noble drug."

Gradually during the last century, yet slowly, and in few countries entirely, the reputation of the castoreum as a remedy has been declining throughout Europe. Still, in every national pharmacopœia, and in most of the approved formularies constructed by individual skill, it continues to hold its place. If, in this country, it has recently fallen into almost complete discredit or neglect, and, in the United States also, practitioners, as we are informed,† rarely resort to it, in France it still retains at least a portion of its former reputation. H. Cloquet, at a late period, has spoken of it‡ as a medicine actually in use among many distinguished practitioners, and

* Compleat Dispensatory (1718), p. 93.

† United States Dispensatory, *v.* Castoreum.

‡ Dictionnaire de Médecine, t. iv., p. 341.

chiefly in convulsions, palpitation of the heart, hiccup, hysteria, hypochondriasis, and asthma; and he further avouches its possessing considerable virtues as an emmenagogue. He assigns its dose as from ten grains to two drachms or more, given once or several times daily; and he considers its powers actively stimulant, with a special faculty of modifying the actions of the nervous system, through which it ranks as an antispasmodic. He cites the experience of Thouvenel, on his own person, that in quantities of one or two drachms it gives frequency and development to the pulse, and stimulates the vital forces; but this we may contrast with what we learn elsewhere from Professor Jörg, who maintained that, even in the larger of these doses, it produced no other effect than troublesome eructations. Jourdan,* still more recently, refers to it as greatly used in hysteria and hypochondriasis. In Germany, Geiger and Marquart,† like the other continental authorities, remark the superiority of the European, and especially of the Russian and Bavarian, castoreum over that from America, which has been for long that in ordinary use in this country; and certainly the analysis of Brandes, in his *Archiv für die Pharmacie*, showing a double quantity of ethereal oil, and a quadruple quantity of castoreum-resinoid in the former, with a twenty-fold quantity of earthy carbonates in the latter, points, with other disparities, to a very remarkable difference, which ought not to escape consideration anywhere in estimating the efficacy of the drug. Dulk‡ mentions it as highly prized in hysteria; and Martius§ speaks of its being still a remedy in frequent employment, but costly, and thence liable to adulteration, as we know that it was of old, in the time of Pliny and Dioscorides. Indeed, nothing proves more convincingly the pertinacity with which the European castoreum still retains its reputation, in some quarters, than the extravagance of its price; as there is scarcely anything more certain to give a plea for the rapid curtailment of its use, even before the approaching extinction of the animal has removed

* Pharmacopée Universelle (ed. ii.), t. i., p. 476.

† Pharmaceutische Zoologie (Zweite Auflage), p. 279.

‡ Die Preussische Pharmakopöe übersetzt und erläutert, p. 9.

§ Lehrbuch der Pharmaceutischen Zoologie, pp. 18, 19.

the remedy wholly and conclusively from its long-inherited position in the practice of medicine.

Dörrffurt, writing in 1801,* describes the European variety, with the exception of the Swedish which seems generally less prized, as valued by the German apothecaries at from twelve to sixteen times the cost of that from Canada. But we find a better indication of what is its actual value in Austria, in a notice before the Imperial Society of Physicians of Vienna,† of an animal recently captured in Transylvania, whose castoreum-pouch weighed 7¼ oz.,‡ and was bought by Herr Haubner, the druggist who exhibited it on the occasion, for no less a sum than 362 florins, or L.36 sterling. The castoreum, we learn from the same authority, is sold in the Austrian capital at 45 kreuzers, or 1s. 6d. per grain; which would give L.261 as the proceeds of this individual pouch. To prescribe it in two-drachm doses, therefore, thrice a-day, would entail a charge upon the patient of L.27 sterling daily; or, in other words, the full use of the remedy, as formerly exhibited, becomes an impossibility, unless where there coincides a wealth and a reliance which can be only rarely encountered: and it can be no wonder that Professor Pleischl recommends the promotion and maintenance in the Danube of the breed of an animal, thus at once evinced to be so rare, and producing so precious a material. As a proof how vastly the cost of the drug has been enhanced in Austria, since the close of the last century, we refer to the authorized price-list,§ issued for the provinces in 1795, where we find the Russian, or reputed best quality, rated at 2 fl. 40 kr. the *loth*, or half-ounce; or at equivalent to little more than a farthing per grain. In a similar price-list, lately authorized for Norway,‖ the native castoreum, according as it is sold crude or powdered, is rated

* Deutsche Apothekerkunst, Theil i., p. 122.

† Wochenblatt der Zeitschrift der k. k. Gesellschaft der Aerzte zu Wien (1857), p. 126.

‡ The Bavarian castor-pouch has been known to be double this weight, but many weigh only from three to five ounces. Buchner mentions a pair from the Danube which weighed 31 oz. when half dried.

§ Taxa Medicament. in Pharm. Austriaco-Provinciali (1795), p. 9.

‖ Medicinal-Taxt for Norge, gjældende fra 1ste Januar 1856 indtil videre p. 9.

at a price equal to from 6½d. to 9d. a grain; but the Canadian at only from 14d. to 1s. 6d. per drachm, or at a little under and above a farthing a grain: while in the national pharmacopœia* it is directed that the Canadian variety only shall be dispensed, unless the Norwegian or Russian be expressly demanded. The price in this country has a comparatively slight relation to our subject, because, doubtless, here the Canadian castoreum has alone been customarily used. We have, however, an early notice regarding it. In Gordon's curious "Pharmaco-Pinax, or Table and Taxe of the Pryces of all usuall Medicaments, Aberdene, 1625," the castoreum of the "Bedgar, or Beaver Cod," is rated at 4s. a drachm, the prices being "redacted to the lowest of this yeare," and, we conclude, in Scots currency. Our most eminent firm of druggists in this city inform me, that castoreum is still occasionally, but only rarely, required in prescriptions, and exclusively as tincture; and that it is especially within the last quarter of a century that it has glided out of employment. This is consistent with my own more limited opportunities of observation, and accords with the estimate expressed regarding it by the late Dr Duncan junior,† who, in 1822, characterizes it as an excellent antispasmodic, and as given with advantage in typhoid fevers, in spasmodic complaints, and in amenorrhæa. Its retail price may now be stated at about 9d. per drachm. The *axungia castorei*, or oily matter from the smaller follicles, seems now to be nowhere in request, unless it be in Sweden, where Nilsson, in his *Scandinavisk Fauna*, mentions that it is used in rheumatism, and that it is as costly as the castoreum.

These notes are not designed as therapeutical, or as natural-historical, but are simply historical. It is not, therefore, necessary, on the one hand, to enter into any discussion as to the proper position and value of castoreum as a remedy, or to attempt, testing it by modern views, to determine whether, in this country, it may not be as unjustly undervalued now as it was unquestionably over-estimated before. It cannot be merely as a matter derived from the animal kingdom that

* Pharmacopœa norvegica (Christiania, 1854), p. 24.

† Edinburgh New Dispensatory (1822), p. 91.

it has fallen into disrepute, as if through a reflexion of the discredit brought upon this class of remedies by the many instances otherwise of the mingled credulity and grossness of our predecessors; because we possess too many proofs of the singular power over the living system of matters so derived, to permit us to question their energy, whether for good or for evil; and none of a more admirable nature, though with no pretence of suggestion of an analogy, than that by which the vaccine virus not only produces a directly resulting effect upon the constitution, but more or less enduringly modifies its susceptibilities afterwards. I am aware, on the other hand, that, with the demonstration of an identity of habits between the beavers of the Old and the New Continents, the question of an identity of species is not definitively settled: and that several writers, among whom are Neill, Frederic Cuvier, Owen, and especially, and with the largest opportunities of observation, Brandt,* have sought, more or less determinately, to establish a more certain distinction between them; the differences marked having been chiefly of a craniological description, and resting principally on the evidently greater breadth, in the fossil and European specimens, of the intermaxillary bones and of the fore-teeth; on the further extension backwards of the nasal bones; and on the larger cavity in the basilar process of the occipital bone, a depression there for containing a peculiar sac designed to furnish a secretion for the lubrication of the pharynx. Other naturalists, again, incline to the view of a complete identity, or, at the most, of only a variation, and not a specific difference between them. It may be merely permitted to remark, that these craniological distinctions, which hold good in as far as my limited opportunities have permitted me to examine them, may be, nevertheless, truly dependent on the gradually developed force of a single accidental circumstance, or form of acclimatization, rather than upon any originally specific and essential difference. Thus, if we assign, as we justifiably may, a denser woody texture to those trees of Europe which constitute the habitual food or material for building of the beaver, than to their congeners in America, we have, along with the demand for a

* Beiträge zur nähern Kentniss der Gattung Castor: Mém. de l'Acad. Imp. des Sciences de Saint-Peterbourg; Sciences Naturelles, tome vii. (1855), p. 45.

more abundant lubricating fluid to promote deglutition, the necessity for an adaptation of stronger incisors for their division, and hence for an expansion of the intermaxillaries for the reception of these, with the consequent interposition of a greater space between the maxillaries, to be filled up by larger ossa nasi. These questions, however, I merely indicate, but without desiring to encroach upon their nearer investigation. My object has been, keeping mainly in view the relations of the European beaver to hygienics and medicine, to trace comprehensively and broadly its history as it was, and not as it might be regarded with reference to others.

Probably it may be considered that I have devoted an attention to this subject beyond what its importance warranted. Yet such subjects may be easily constituted, by those who do not choose to narrow their life to its own term, into real landmarks in the domain of knowledge: or rather, they furnish successions of epochs in the history of science and civilization, around which gather and assimilate more or less closely, not only the ideas and dogmas, but even the social conditions of the time; and thus they convey lessons, more important than may at first appear, both as to what was and what is. A cursory reader may find merely interesting, while another will consider tedious, the details which I have eliminated, condensed, and grouped from not a few far apart fields of literature; a process which I have striven to render accurate, and during which I have occasionally found opportunity of silently making use of one authority to correct an error rendered current by another. To those whom a natural suggestiveness leads to penetrate more deeply, they will have, were it only on this score, a still higher value. A record, thus apparently closing after a lapse of more than twenty-four centuries, may well invite us to consider, which of our matters of faith in doctrine or reputation, unquestionable as has been our general progress, is more firmly grounded, or likely to have as lasting an endurance:

> "—— quum rupta situ Messalæ saxa jacebunt,
> Altaque quum Licini marmora pulvis erunt."