Ans'd Jan. 3/95

LH38

WHATCOMBE,
BLANDFORD.
—AND TELEGRAPH—

Dec. 31. 1894

My dear General Pitt Rivers

I will not go to bed to night without wishing you and Mrs Pitt Rivers a very happy 1895 and that you might be permitted to carry on your archaeological work with equal success as that of this and previous years. As far as I can make out your District came out comparatively well in spite of Pike & Hell-cock who failed equally in these parts to arouse class-hatred. The only difficulty

the discovery the most important is that no remains or trace of Iguanodon have yet been discovered to my knowledge between the Kimmeridge clay & Wealden. Hitherto the intermediate Portland & Purbeck series have yielded none. The footprints are those of a gigantic Reptile & as the Iguanodon hind-feet were furnished with 3 toes. These prints correspond in number & size to that gigantic Saurian. I will let you know more about them I have got more information

I had our whitebreast
mainly owing to the
indifference or cowardice
of the Clergyman & Farmers
However I have got I
think a manageable
Council which consists
of our Tradesmen & Small
holders of land & 6 Labourers
2 of whom I can certainly
control & probably 3. As
the Chairman I have the
casting vote. I shall
be master of the Situation
at the 2 Melbournes. Wrighton
& Hemton I had no trouble
all were most tractable
and did all I wished —
I shall not call a meeting

until the time for the
Statutory one arrives: &
as that is some time hence
we shall hear nothing
about land grabbing until
then. I am now in
a most exciting enquiry
about casts of two
Reptilian foot-prints I
spotted on the day I
went to Charminster
in the County Museum at
two Slabs of Purbeck rock
Swanage which have
been given over with other
things from the Capture
Museum — What makes

L1138

WHATCOMBE,
BLANDFORD.
—AND TELEGRAPH—

I regret to say all the good results of my Bath visit have vanished and there is scarcely any difference in my powers of getting about than in September last. This is rather disappointing but I console myself with the reflection that I can enjoy myself in-doors & as yet find the days too short for what I have to do. With kindest regards I remain yours ever truly

J. C. Mansel-Pleydell

On the Castoridæ, with Special Reference to Castor Fiber.

Reprinted from the *Dorset County Chronicle* of Thursday, December 27th, 1894.

The family Castoridæ, Order Rodentia, is represented by the European Beaver, *Castor fiber*. It is found fossil in England in the Red Crag Nodule Bed, passes through the Forest Bed to the Pleistocene, and is living at the present day. The gigantic *Trogontherium Cuvieri* occurs from the Pleiocenes on the borders of the Sea of Azov, Ostend, Belgium, in the Red Crag Nodule Beds and the Forest Bed. It probably succumbed to the rigour of the climate which succeeded the Red. Crag Nodule Bed age or from some other cause, while its more hardy congener, *Castor fiber*, was able to hold its own through those trying periods. This very large beaver, now extinct, is found fossil in the Pleiocenes and Pleistocenes of Europe and the Pleocenes of N. America, distinguished from *Castor fiber* by the enamel folds of the Molar, as well as by its size, being one-fourth larger. A smaller species, *T. minus*, occurs in the Red Crag Nodule Bed at Felixstowe, Suffolk, at a lower horizon to that of *T. Cuvieri*. *Castor veterior*, Lankester, also occurs in the Red Crag Nodule Bed of Suffolk; it has not been met with elsewhere, and is restricted to that geological period. The European beaver, *Castor fiber*, was at one time an inhabitant of the British Isles. It is now found but rarely on the banks of the Rhone, the Weser, and Elbe, also in Russia and Poland, and in the streams of the Ural Mountains. They are not so constructive in their dams and habitations as the American species *castor canadensis*, which scarcely differs from *castor fiber*, except it is a little larger. The distribution of *Castor Canadensis* once extended from the Arctic Circle to the Tropic of Cancer. Now it is on the verge of extinction. The European beaver extends back to the Pliocene of Norfolk and is associated with the *Trogontherium* in the Forest Bed of Cromer. Another extinct species, *Protocastor*, is an allied genus. A smaller form, Chalicomys (*Steneofiber*), occurs in the Middle and Lower Miocenes of Europe and of the United States, which is distinguished from all existing rodents by the humerus being perforated and the molars more distinctly rooted. It appears to be scarcely generically distinct from *Castor fiber*. A large beaver-like rodent, *Castoroides*, with the dimensions of a bear, from the Pleistocenes of the United States, whose cranial characters are similar to those of Castoridæ. This animal attained a length of 5 feet. This completes the list of the beaver tribe. The beaver was apparently abundant in Europe; a few colonies yet remain in the remote wilds of Scandinavia and Russia, and skins are still sent from the Obi to the fur markets. In a German charter dated 1103 the right of hunting beavers was conferred along with other "huntings and fishings," and by a Bull of Lucius III, 1182, property in the beavers was bestowed on a monastery which were taken within its boundaries. There are records of beaver-remains in Poland in the 16th century. A Prussian edict dated July 30th, 1764, refers to the beaver on the Elbe; another edict dated Berlin, March 24th, 1725, demanded the protection of the beaver under the penalty of a fine of £40. Pennant, 1781, quoting Buffon, says the beaver inhabits Europe from Lapland and Languedoc. It is in great plenty in the north; a few are yet found in the Rhone, the Gardon, the Danube, the Rhine, and the Vistula. Two old and six young were taken in 1742 at Gornichem, in Holland; one in 1757 in the Yessel in Guelderland; and one in 1772 in the Maas near the Village Hedel. The last weighed 40 pounds. Pennant adds "It abounds in the affluents of the Obi in Asiatic Russia and in the chain of mountains which border on Siberia, but not in Kamschatka owing to the absence of woods." In an Act dated 1424, c 22, "On the custom of Furringes" mertricks (martins), fowmartes (polecats), otters, and tods (foxes) are specified, but not a word about the beaver; had they existed then they would have been mentioned, being more valuable than the above mentioned not only for the fur, but also for the castorium. It might, however, have been so scarce at the beginning of the 15th century as not to be worth mentioning. It has certainly lived in the higher watersheds of Scotland and Wales since historic times. The earliest notice of it in our national records is in a code of Welsh laws, A.D. 940, reserving the value of the skins of beavers, martens, and erminss for the king. The rarity of the beaver even at that time is shown by its relative value compared with the martens, which was 120 pence for the one and 24 pence for the other, and 8d for a wolf or otter. Two hundred and fifty years afterwards Giraldus in his account of a journey through Wales in 1188 says "The beaver is found in the river Teive in Cardiganshire," and gives an account of its habits, apparently partly derived from his own observation. We are told in a subsequent record that "The Teivi" claims the beaver to be peculiarly its own. On another occasion Giraldus says the beaver is said to be found in the Scotch rivers, but very scarce. Dr. Walker, Professor of Natural History, Edinburgh, in his lectures used to mention that the Scotch Highlands still retain by tradition a peculiar name for the beaver, *Losleathan*, derived from *los*, tail, or end of a thing, and *leathan*, broad. All British records subsequent to 1524, go to show that its extinction was imminent. Bathins, writing in 1526, speaks with confidence of the "Fiber" *beaver* on Loch Ness and that its fur was exported towards the end of the 15th century. Mr. Harting in his "Extinct Animals within Historic Times," from which the above is an extract, says that Dr. R. Browne thought Giraldus through a natural pride of country wrongly considered the beaver to have frequented Loch Ness in the 15th century, as there is no mention of it in an Act of Parliament dated June, 1424, though martens, polecats, otters, and toads, are specified. It is possible that beavers were then so scarce as to be scarcely worth mentioning. The last home of the American beaver may now be considered to be along the watershed between Hudson Bay and the St. Lawrence and the range of the Rocky Mountains. It passed from all British records after 1524, and the extinction of its American cousin, is now a question of time. The watersheds between the Hudson Bay and the St. Lawrence and the Rocky Mountains range may be considered to be the last homes of this species. The earliest notice of its fossil remains in this country is by Dr. Collett, Bishop of Ossory, in the Phil. Transl., 1757, from a peat-pit near Newbury, Berkshire, which yielded jaws and teeth of beaver, associated with wild boar, roe, deer, and wolf. In 1728 Dr. Farquharson found the head and feumr of a beaver in a marl-pit at Kinloch, Perthshire, on the margin of Loch Marlee, under a covering of peat-moss five or six feet thick, and in 1848 its remains were found in Berwickshire and in the same year near Chatham. In 1874 Lord Bute turned out four beavers, *Castor Canadensis*, which he procured from Canada and enclosed them in four cases of wood, through which a stream flowed. This first attempt was unsuccessful and he subsequently put in seven others. Shortly after their arrival this fresh importation set vigorously to work and commenced the construction of an embankment across the stream, which ran through the enclosure, also of a hut composed of trees, branches, grass, weeds, and a few stones for its stability. Lord Bute's gamekeeper, Mr. J. N. Blake in his account "How the Marquis of Bute's Beavers have succeeded in the Isle of Bute." Journal of Forestry, February, 1888, says that at that date the embankment had reached in the course of 13 years, the dimensions of 70 feet in length an average of eight feet in breadth at the top, 20 feet at the base at its greatest depth, and erected outwards towards the stream. Mr. Blake also says that the beaver conveys the materials with the aid of mouth and fore feet, which are formed more like hands than feet; it does not make use of its tail for the construction of the dams; this it does with the fore feet only, with which they carefully stow away the mud among the sticks. They use shavings for their beds. After appropriating the bark for food they place the sticks on end, holding them with their fore feet, and then with their teeth pare them down into fine shavings. Their favourite food is the bark of the willow and poplar. In the summer their food is bracken grass and young shoots; in the autumn they grub up the roots, at the same time cutting down a tree occasionally and feeding on the bark. The tree-felling is done at night. In the 13 years they had cut down 187 trees from five feet in circumference; they were all forest trees. Before cutting down a tree they mark it all round at the height to which they wish to cut it and begin at the opposite side they wish the tree to fall, so that the top may be in the direction of the stream. When cutting the trees they use their teeth on the same principle as the woodman uses his axe, keeping plenty of open space, so that they may be able to cut farther in than the centre on one side before beginning the other. Towards the end of the autumn they commence to cut down trees for winter food, and when done they strip off the branches, cutting them in lengths and then drag them away and store them in different places near their homes; what is left of the trees which they cannot carry away they eat the bark of at their leisure. European beavers through a long period of unfavourable circumstances, partly perhaps through diminished numbers, have lost many of their characteristic habits. The construction of the dams and huts requiring the united energy of a whole colony a single family is unable to accomplish it. The beaver produce its young in April and May, which are supposed by some naturalists to be born blind, but of this there some uncertainty. At two months old they are able to take care of themselves, but they do not reach adult age until they are three years old. Their habits are nocturnal, and the entrance to their holes is said to be made under the surface of the streams. The incisors in each jaw of the beaver have sharp edges, which they maintain throughout life; they have an outer layer of enamel and an inner layer of cement, which is more quickly worn away, leaving the enamel in sharp ridges. There is a continuous growth at the base of the teeth to replace the constant loss at the cutting end. The enamel is exceedingly hard and used by the Morth American Indians for polishing their flint instruments; one of these chisels is in the British Museum. There is a cavity in the month and cheeks of the living animal, which shows a peculiar provision for the special work of cutting. The space between the incisors and molars being destitute of teeth (canines and premolars) is covered with a dark-coloured thick skin, and the cheeks are furnished with a lining of coarse hair sufficient to prevent any particle of the chip passing through to the palate, cheek, or tongue. Like all diving animals and birds, the beaver has a provision for suspended respiration by an enlargement of the inferior *vena cava*, by which a considerable quantity of blood can be temporarily aerated. Beavers swim by their hind feet, which are webbed up to the claws. In swimming they keep their fore feet close to the body, which, although webbed, are not used, but for building these dams and huts, for burrowing, and conveying food to their mouths. The powerful hind feet of the beaver are a perfect model specially adapted for its peculiar mode of life. The broad heel-pad and strong claws enable them when on land to stand firmly upright, which is their usual position when at work. The second toe is furnished with a remarkable double claw, which is apparently used for combining the fur. The tail is nearly flat, broad, and straight, covered with strong horny scales. Its primary use seems to be to elevate and depress the head while swimming, and by a diagonal movement from one side to the other to use it as an oar to assist the animal in diving or turning quickly; it is capable of a diagonal movement from one side to the other, similar to what in nautical language is termed sculling. The muscles of the jaw are more developed than other rodents for grinding their hard woody fibrous food. The secretion from the glands of the beaver termed *Castorium* is one of the most distinctive characters of the genus. This waxy substance, the use of which is not at all clear, is contained in two large pockets or sacs situated near the base of the tail, enveloped in muscles fitted for the discharge of any portion of it at will. Beavers' remains have been found in the Norwich Crag at Sizewell; Forest Bed at Happisburgh, Barton, Kessingland, Mundesley, West Renton; Pleistocene, Prehistoric, and Historic, at Bearwell Fen, Berwick, Chatteris, Ditton Fen, East Coast (dredgel), Grays, Ilford, Isleham, Walthamstow, Watcham Fen, Beverly, Kirmingham, Henloch, Linton, Roxburgshire, Kent's Cave, Devonshire. The beaver has been found in the earlier Quaternary and Drift Bed deposit such as Kent's have (in part), associated with woolly rhinoceros, wild boar, horse, red deer, reindeer, Irish deer, urus, musk-ox, mammoth, otter, wolf, fox, stoat, cave-lion, wild cat, sword-toothed tiger, spotted hyena. In the later deposits of the age of Wookey Hole, Somerset, the beaver on the Continent (not in England) it is associated with sculptured and engraved bones, Reindeer, Saiga-Antelope, glutton, &c. The remains of the Dorset beaver were found in the Stour Valley a few hundred yards north of Keynston Mill about 20 feet from the base of a chalk bluff or cliff, at the foot of which the river once flowed when at a higher level. The hole in which the bones lay did not appear to have any communication with the surface above; higher up there were several rabbit holes. Slight as is this evidence I am inclined to think that the animal entered its home under water With the exception of the skull most of the characteristic bones have been preserved, including the lower jaw, which is fully furnished with teeth—one incisor and four molars (the absence of canines and premolars has been already noticed), tibia, humerus, ulna, radius, palvic-girdle, including three lumbar vertebræ, dorsal vertebræ, astragalus, tarsal, and metatarsal bones, and one phalauge. The neck of the femur is slender and compressed from before backward in an upward direction. The trochanter major is a high three-sided process with a deep fossa; below is a low ridge extending towards the trochanter minor which has a considerable development. The third trochanter is a ridge continued from the outer part of the base of trochanter major which subsides into the plane of the shaft. The distal end of the femur is much expanded, with a deep depression betw the condyles.