L189

WHATCOMBE,
BLANDFORD.

Aug 29. 1886

My dear General Pitt-Rivers

If my Balance-Sheet is of any use to you I hope you will keep it as I have another. I am looking over an old Geological Journal containing a paper by Mr O Fisher on Glacial origin of denudation & what he says "About Tollard Royal & the Chalk downs north of Tisbury some of the combs are very deep & their sides steeper than will allow the Chalk as it disintegrates to lie upon them. I presume a talus at the bottom. The

statesmen seem to be up to the mark. If Lord Salisbury had been more large hearted toward the land question the Admin would not have had a leg to stand upon.

I regret to say Harry still remains in the same critical & anxious state. Thank you very much from both my wife & myself for your kind wishes.

We both unite in kind remembrances to Mrs Pitt-Rivers & believe me

yours very truly

J. C. Mansel-Pleydell

points to an agency which
has left nearly perpendicular
walls upon the sides of the
Combs, an effect which
glaciers would produce"
One objection to this theory is
that the Great Glacial ice-sheet
never appears to have
reached so far South as
Dorsetshire & I rather think
it was at that period
submerged - however it is
possible the oscillations
which the globe was
subject to during the whole
time were more than one
emergence might have
taken place - It would not

have required much energy
to scoop out a little comb
such as those in Tollard
down therefore - very
interesting!

Every thing just now has a
fearful aspect - ruin and
disaster threatening every
one excepting those who
have nothing to lose. "Men's
hearts are failing them for
fear and for looking after those
things which are coming on
the earth" The nation is
to be guided by rebels armed
with dynamite & knives
I hope Gladstone will not
cave in. None of the leading

PRESIDENTIAL ADDRESS

AT THE

Annual Meeting of the Dorset County Museum, January 13th, 1886.

[Reprinted from the *Dorset County Chronicle and Somersetshire Gazette* of January 14th, 1886.]

Mr. J. C. MANSEL-PLEYDELL read the following interesting address :—The County Museum has made considerable progress during the past year, valuable additions having been made both to its archæological and natural history departments by gifts, purchases, and loans. One wall case, one standard case, and two table cases have been added to the furniture of the Museum, the special gifts of five members. We hope in due course of time, through the generosity of others, to have sufficient appliances for a systematic and instructive display of our collections, such as to enable the scientist and student to go at once to the object which he desires to see instead of having to look for it at haphazard. It is the intention of the Council to separate the Dorset collections from those which are derived from localities outside the county border. Our downs and hill ranges abound with proofs of man's occupation during prehistoric times. Mr. Warne's and Mr. Cunnington's collections, which are kept distinct, contain a rich series of the records of the remote past. We have various proofs in several parts of the county of the higher civilisation of Italy, introduced by the Romans, and of a subsequent Roman-British occupation, so grandly exhibited at Woodcuts, in the neighbourhood of Rushmore, through the disinterment of a village of that period by General Pitt-Rivers, the spoils of which are deposited in his museum at Farnham. The towns and villages of Dorset vie with other counties in mediæval architecture, of which may be named Corfe Castle, the Abbey Churches of Milton, Sherborne, and Cerne, Ford Abbey, Wimborne Minster, St. Catherine's Chapel (Abbotsbury), Bere Regis and Studland Churches, the mansions of Melbury, Hanford, Athelhampton, and Wolfeton. The present age is one of preservation and renovation, not destruction as of yore. Antiquity is venerated, and a disposition fostered to place in safe keeping, like that of a public museum, an object on which the possessor places some value (such as a collection of his own formation), and is desirous of its preservation after he has passed away. It frequently happens that a collector's heir or successor, with no concurrent taste, or careless of his newly acquired possession, will either allow it to remain in neglectful obscurity or to be scattered to the winds, a loss both to science and to the country. It is incontrovertible that England offers less favourable means for the acquirement of technical and scientific knowledge than our Continental neighbours offer to their youth, owing perhaps in some measure to the earlier period of the consolidation of England into one kingdom at the close of the Heptarchy, the capital towns of the previous petty kingdoms being then nothing more than fortresses and strongholds of tyranny and cruelty, whereas the consolidation of France occurred towards the close of the Middle Ages, when every capital provincial town had its faculties of law, theology, medicine, and science, many of which survive to the present day. The County Museum is doing something in this direction under the inspiration of our gifted curator, Mr. Moule, whose sketching and geological classes are familiarising the young people of the town with the objective beauties of its environs, and with the subjective mysteries of some of the earth's history, of which no other English district can give more instructive illustrations. I refer especially to the great Ridgway fault which is well exposed in the railway cutting between Dorchester and Weymouth, and is so clearly illustrated by Mr. Osmond Fisher's model in this room. Palæontology is not only the handmaid to the stratographical geologist, but is an important factor in the demonstration of the successions of life, showing the changes our globe has experienced with regard to climate, alteration of currents, of altitude or of sea depths, and during the period of deposition their combined influence on the distribution of animals and plants. Our well filled cases give us some idea of life as it was in the old sea-beds, divested of its environment, from which a good idea may be obtained of what is going on at the present day and its connection with the past, also the relation of ancient forms of living beings with those which exist now. Masses of facts are being daily accumulated which, when sifted and tabulated, will help to show that physical laws govern the succession and distribution of life as much at the present day as it did in the earliest stages of the earth's history. We have an almost perfect series of fossils obtained from the county, from the superficial gravels of the quaternary period down to the Liassic, which with all the intermediate beds are well exposed along the coast from Bournemouth to Lyme Regis, and in the quarries, escarpments, and railway cuttings inland. The clay beds of Lyme Regis, Kimmeridge, and Gillingham furnish us with the grand Saurian remains exhibited in our cases and on our walls. The freshwater beds of Swanage furnish the Goniopholis or Swanage crocodile, also a small dwarf crocodile adapted for the diminutive mammalia upon which it preyed—a remarkable provision which was recognised by Sir Richard Owen, K.C.B., F.R.S., in 1871. These same beds supplied the fine series of turtle and fish remains in one of our cases, which will well repay a careful examination. There is evidence that the sea twice invaded this great Purbeckian estuary, and established itself sufficiently long for the introduction of a marine fauna, amongst which was our Echinoderm, and one only, *Cidaris Purbeckensis*; it occurs in a very narrow band which divides two beds of oysters, called in their aggregate the cinder-bed. It is my good fortune to be able to place one of these rare and beautifully mammillated little urchins in the Purbeck case of the Museum. There are two fossils in one of the Tertiary cases, which deserve to be mentioned. The formation to which they belong does not come to the surface in this county, its nearest outcrop being in the neighbourhood of Lyndhurst. They were found by a well digger at a depth of 70 feet at Holt, near Wimborne. Two valuable collections have been added during the past year to the geological department by the purchase of the late Mr. Summers' collection, which includes fossils from the chalk, through the lower cretaceous formation and the underlying Kimmeridge clays of Stoke and Melcombe Park, to the Coral Rags of Hazelbury Bryan, and of our fellow member's, Mr. Maggs' collection, which was obtained from the cephalopoda beds and sands of the Inferior Oolites of Sherborne and the neighbourhood. Both were acquired through the loyal generosity of friends by subscription. The most valuable and important acquisition of the year is that of the *Warne Collection*, the munificent gift of the veteran Dorset antiquarian and archæologist, Charles Warne, Esq. It is impossible to speak too highly of its value, especially as the greatest portion of it was obtained from this county. A perusal of Mr. Warne's various works in connection with the antiquities of the county, of which his "Ancient Dorset" stands pre-eminent, will induce a thorough appreciation of the value of this collection. The members are also deeply indebted to Mr. E. Cunnington, who walks in the path of his veteran fellow worker, for the magnificent collection in the three cases which are furnished at his own expense and are standing in the centre of the room. They contain pre-historic British and Saxon relics of great value, and obtained by the indefatigable antiquary after much labour and expense. We are indebted, too, to a considerable number of donors and friends. Thanks will be given to each individually in the course of a few days. In future the committee hope to arrange for a prompt acknowledgment of thanks to the donors instead of the long interval between the annual meetings. In conclusion I will repeat the congratulatory terms I ventured to utter at the commencement of this short address, with the addition that it is my firm conviction that very much of our present popularity and success is due to the ability, energy, and industry of our curator (Mr. Moule), aided by similar devotion on the part of our sub-curator (Mr. Voss).

Until recently the Amphibia were not distinguished from the Reptilia. Brongniart, in 1799, pointed out the wide differences which separate the frogs and salamanders from the rest of the Reptiles. Like Fish, they have bronchiæ or gills, adapted for breathing air, dissolved in water in their larval tadpole state—but in the adult state they differ in invariably possessing true lungs, and the limbs, in never being converted into fins. They made their appearance at a much earlier date than the Reptiles in the Silurian age, which is about the middle of the Palæozoics, the total thickness of which, including the two extremes, Archæan and Coal periods, amounts to 70,000 feet, while the depth of all the subsequent deposits together is not more than 14,000. It is probable during the early period of the earth's history there were enormous tides, causing great destruction of land, and formations of sediment. Previous to the appearance of the Silurian Amphibia there were no land plants. Towards the end of the Palæozoic age these became very abundant, as well as Vertebrate fish. The Amphibia are divided into four Orders, Ohpiomorpha, fish-shaped ; Urodela, with tails, Anura, without tails; and labyrinthedonts, an extinct order mostly of gigantic dimensions. The teeth are deeply plaited and fitted so as to give rise to a complicated labyrinthine pattern in the transverse section of the tooth. The true Reptiles which appeared for the first time in the Mesozoic age are distinguished from the Amphibia in being, during the whole period of life, air breathers, and having the attachment of the skull to the vertebral column by one condyle instead of two. The blood is cold and nucleated, the heart has two auricles and one ventricle, so that the body is supplied with venous and arterial blood in place of pure arterial blood, as is the case with warm-blooded animals. The class Reptilia is divided into the following ten Orders, of which the first four are represented by living forms; the remaining six are extinct. The living forms are (1) Chelonia, tortoises and turtles ; (2) Ophidia, snakes ; (3) Lacertilia, lizards ; (4) Crocodilia, crocodiles and alligators. The extinct forms are (5) Ichthyopterygia ; (6) Sauropterygia ; (7) Anomodontia ; (8) Pterosauria ; (9) Deinosauria ; (10) Theriodontia. The Mesozoic, or secondary geological age, has been rightly designated the age of Reptiles ; whole orders rose, grew, and became extinct during its continuance. Their advent had been previously foreshadowed, as I have already said, by a large assemblage of Amphibia during the Palæozoic age, notably towards its close. The huge and varied Amphibia fulfilled the *rôle* Nature had allotted them ; their reptilian successors in their turn had to make way for the Mammalia of the Tertiary age. Peculiarities of structure and form among fossil reptiles denote habits equally peculiar, the study of their skeletons is one of very great interest, which is intensely increased when extended to the classification of the characteristic features of these ancient forms. Reptiles approach the Fish and Amphibia in being cold-blooded, and the bird in having a quadrate bone which unites the lower jaw to the skull instead of articulating with it directly. The Order Chelonia is divided into four natural families, Testudinæ, land tortoises ; (2) Emydidæ, freshwater tortoises ; (3) Cheloniidæ, sea-turtles ; (4) Trionycidæ, freshwater turtles ; of these two only are represented in Dorsetshire, six Emydidæ and two Cheloniidæ. The first five are from the Purbeck beds of Swanage, the other from the Kimmeridge clay beds of Weymouth. Of the Chelonia one is from the Middle Purbeck beds of Swanage, the other from the Portland sands of Portland. The Order Lacertilia is represented in this county by Nuthetes, Saurillus, Macellodon, and Echinodon, all from the Middle Purbecks, Durleston Bay. The Order Crocodilia is well represented in the county. Professor Huxley divides it into three families according to the position of the aperture of the inside posterior nose, which in the most ancient Crocodilian types is near the end of the snout and moves backwards in the ascending series ; in the Nilotic crocodile it nearly reaches the occipital condyle. The order is divided into Teleosaurus, Steneosaurus, Goniopholis, Brachydectes, Petrosuchus, and two very small crocodiles, Nannosuchus and Theriosuchus, found in the Feather-bed of the Middle Purbecks, Swanage, which contains remains also of a series of small mammalia (marsupials), and apparently a suitable prey for these diminutive crocodiles. Of the twelve Dorsetshire crocodiles one comes from the Cornbrash, three from Kimmeridge Clay, seven from the Purbeck beds, and one from the the Cretaceous. Of these Steneosaurus Stephani is interesting to the members of the Club, as it was recovered from a heap of stones near Closworth from a neighbouring Cornbrash quarry for the repair of the road, through the vigilance of our fellow member, Mr. Darrell Stephens, who submitted it to me for examination. A description of it with a plate may be seen in the first volume of "The Proceedings." This is now supposed to be the only true Steneosaurus which has hitherto been found in England, for although Steneosaurus Manselii (Hulke) from the Kimmeridge clays of Kimmeridge is provisionally admitted into the Steneosaurian family, there are divergencies from the type, which may make it necessary to remove it and place it under a new genus—Plesiosachus, as proposed by Sir Richard Owen. Of the ten Ichthyisaur species, seven are from the Lias of Lyme and the remaining three from the Kimmeridge clays of Kimmeridge and Weymouth. I was able to add Ich-enthekiodon named and described by J. W. Hulke, Esq., F.R.S., from Kimmeridge Bay as a new species to this large and interesting family, also two others of the Plesiosauris—Plesiosaurus Manselii and Plesiosaurus brachystospondylus from the Kimmeridge clays of Kimmeridge. Of this family no less than 13 species have been found in the county, the majority from the Lias The Pilosaurus, which is closely allied to Plesiosaurus, differs in its enormous head and extremely short neck ; it has a very limited extension in Great Britain. The magnificent paddle and cast of a perfect tooth from the tip of the crown to the bottom of the root, a foot in length, and other remains make Pliosaurus grandis familiar to the frequenters of the Museum. There is another Kimmeridgian species, Pl-trochanterius, and one from Portland—Pl-Portlandicus. We now come to the Pterosauria, which combine many peculiarities ; it had the power of flight, the centra of the vertebræ were concave in front ; it had a keeled breast-bone ; the jaws, which are armed with teeth, appear to have had a horny covering like a bird's beak. The apparatus for flight is similar to that of the bat. Most of the bones are hollow, and capable of being filled with air for buoyancy. This order comprises Pterodactylus. Doratorhynchus, and Dimorphodon; the former has a short tail, the latter a very long one ; as the wing membrane was attached to its extremity, its area when the wing was expanded must have been very great, allowing a considerable power of flight. The last of this long reptilian series is the Deinosaur, which comprises a group of extinct forms, and are in some respects intermediate between the cursorial birds *(Ostrich Emeu)* and the typical Reptiles. They were for the most part of gigantic size, attaining in some species the length of 40ft. Like birds and mammals, the sacrum consists of from four to six vertebræ ; the pelvic bones resemble those of birds. The Iguanodon was known only through many isolated remains distributed through th length and breadth of the Wealden area, but not sufficient to form an opinion of its structure until within a few years, when the bed of an ancient Wealden river, which had cut its way through the Coalfields of Bernissart, in Belgium, was reached by the miners, who disinterred thirteen entire skeletons, two of which, Iguanodon Bernissartensis and Ig. Mantelii, have been set up and greet the visitor as he enters the Brussels Royal Museum, the largest of which stands erect, upwards of 14ft. feet high. Its massive tail was not only used to aid its progress through the water, but also to aid it to walk upright, not so much as a support as a compensatory balance to structural hindrances to progression on land. It did not jump kangaroo-like, but used each foot alternately. Its footprints have been frequently noticed in the Wealden beds of Sussex, the Isle of Wight, and Swanage. Mr. Beckles described them as long ago as 1854, supposing them to be caused by birds under the name of Ornithoidichnites, always in pairs, one in advance of the other, and uniform in direction, at an interval of about 3ft. 4in. from each other. Dissociated remains of the Iguanodon have been found in the Wealden Beds of Swanage and Warbarrow. Megalosaurus, like Steneosaurus Stephani, is of some interest to the members of the Club, as it was observed by a fellow member, Mr. Cleminshaw, in the year 1882, in a heap of building stone at Sherborne from a neighbouring inferior oolite quarry, and proved to be portions of the upper and lower jaws of Megalosaurus Bucklandi, described by Sir R. Owen in the Quarterly Journal of the Geological Society, 1883. The third Dorsetshire Deinosaur—Scelidosaurus—was brought to light by Sir Richard Owen from the Lias beds of Lyme Regis ; it is about twelve feet in length. It has a peculiar construction of the jaws, which work obliquely, scissor-like, one with the other, the fifth toe of the hind foot abortive, the first proportionally short, shewing a tendency to the tridactyle type of the hind foot, and which is completed in its Wealden successor, the Iguanodon. Cetiosaurus, another Deinosaur, was found for the first time in England in the Inferior Oolite of Oxfordshire ; other portions of its remains have been met with in various beds as high up as the Wealden. A humerus was found in the Kimmeridge Clay of Weymouth. Ischyosaurus (Hulke) : I found a humerus of this genus in the Kimmeridge Clay of Kimmeridge, of gigantic size, its length being two feet and seven inches, and its girth near the middle of the shaft thirteen inches. This concludes the long list of Dorset fossil reptiles, comprising 27 genera and 61 species. All are from beds ranging from the Lower Lias to the Greensand. Although no Reptiles have as yet been met with in our Tertiaries, the neighbouring Eocene Beds of Hordwell, Hants, have yielded several, including some true Crocodiles, the Eusuchian section of the Order as proposed by Prof. Huxley.