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An Existing Ground-Sloth in Patagonia¹

MANY times I have heard allusions to a mysterious quadruped which is said to exist in the interior of the territory of Santa Cruz, living in burrows hollowed out in the soil, and usually only coming out at night. According to the reports of the Indians, it is a strange creature, with long claws and a terrifying appearance, impossible to kill because it has a body impenetrable alike to fire-arms and missiles.

It is several years since the late Ramon Lista, a traveller and geographer well known to the world of science, told both myself, my brother Charles, and several other persons—and had, I believe, even printed the statement in one of his works—that he had seen the mysterious quadruped in question. He came across it one day during one of his journeys in the interior of the territory of Santa Cruz, but in spite of all his efforts he was unable to capture it. Several shots failed to stop the animal, which soon disappeared in the brushwood; all search for its recovery being useless.

Lista retained a perfect recollection of the impression this encounter made upon him. According to him the animal was a pangolin (*Manis*), almost the same as the Indian one, both in size and in general aspect, except that in place of scales, it showed the body to be covered with a reddish grey hair. He was sure that if it were not a pangolin, it was certainly an edentate nearly allied to it.

In spite of the authority of Lista, who, besides being a learned traveller, was also a skilled observer, I have always considered that he was mistaken, the victim of an illusion. Still, although I have several times tried to find out what animal might have given him the illusion of the pangolin, I was never able to guess.

It was not an illusion. Although extremely rare and almost extinct, the mysterious animal exists, with the sole difference, that instead of being a pangolin, it is the last representative of a group

¹ Translated from a pamphlet entitled "Première Notice sur le *Neomylodon listai*, un Représentant vivant des anciens Edentés Gravigrades fossiles de l'Argentine," by Florentino Ameghino, separately published by the author in the city of La Plata, Argentine Republic, August 1898. We have already noticed this important discovery (p. 288), but it is one of so much interest to zoologists that no apology is needed for directing further attention to the subject by reproducing the complete article.

which was believed to be quite extinct, a gravigrade edentate related to *Myloodon* and *Pseudolestodon*.

The gravigrade edentates are reckoned among the oldest mammals which appeared upon the earth. The most ancient traces of them have been observed below the Guaranian Formation, with gigantic Dinosaurs, in the variegated sandstones of Patagonia, which are referred to the Lower Cretaceous. They become more numerous in the *Pyrotherium* beds of the Guaranian, develop gradually, and attain their greatest diversity during the Upper Eocene (Santa Cruz Formation). Thenceforward their variety decreases, but their size gradually increases, until in the Pampean they are represented by a certain number of gigantic forms, such as *Megatherium*, *Lestodon*, *Myloodon*, etc. Rare fragments in a bad state of preservation have been found even in the Post-Pampean deposits, but no one had supposed that they still had living representatives.

Some of the Pampean genera show a very curious character: the body was protected on all sides by an incredible number of small irregular ossicles, which it is supposed were developed in the thickness of the skin, and thus became covered with a horny or scaly epidermis. The genera showing this peculiarity are *Myloodon*, *Pseudolestodon*, and *Glossotherium*. The other genera, such as *Megatherium*, *Lestodon*, and *Scelidotherium*, do not show any trace of it. Besides in the Pampean Formation these ossicles are met with in the Araucanian Formation of Monte Hermoso and Catamarca, and also in the Entrerios Formation; but no trace of them has been found in the Santacruzian, where the gravigrade edentates are so abundant, or in the earlier formations. We conclude from this that the character in question is not primitive, but acquired secondarily at a relatively modern period.

These ossicles, comparable to large coffee berries, differ slightly in shape and size according to the genera. In *Glossotherium* they are large and flattened; in *Myloodon* they are smaller, irregular, elliptical, trapezoidal, or rhomboidal, with one side more convex or keeled, their diameter varying from one to two centimetres, though sometimes less. Their surface, more especially on the flattest side, shows some tiny depressions and perforations, and reticular tracery well seen under the magnifying glass. Their aspect is so characteristic that when one has once seen them they are recognised immediately without any danger of being mistaken.

Lately, several little ossicles have been brought to me from Southern Patagonia, and I have been asked to what animal they could belong. What was my surprise on seeing in my hand these ossicles in a fresh state, and, notwithstanding that, absolutely similar to the fossil dermal ossicles of the genus *Myloodon*, except only that they are of smaller size, varying from 9 to 13 or 14 mm.

across. I have carefully studied these little bones from every point of view without being able to discern any essential difference from those found in a fossil state.

These ossicles were taken from a skin which was unfortunately incomplete, and without any trace of the extremities. The skin, which was found on the surface of the ground, and showed signs of being exposed for several months to the action of the air, is in part discoloured. It has a thickness of about 2 centimetres, and is so tough that it is necessary to employ an axe or a saw in order to cut it. The thickest part of the skin is filled by the little ossicles referred to, pressed one against the other, presenting on the inner surface of the skin an arrangement similar to the pavement of a street. The exterior surface shows a continuous epidermis, not scaly, covered with coarse hair, hard and stiff, having a length of 4 to 5 centimetres and a reddish tint turning towards grey.

The skin indeed belongs to the pangolin which Lista saw living. This unfortunate traveller lost his life, like Crévaux, in his attempt to explore the Pilcomayo, and until the present time he is the only civilised person who has seen the mysterious edentate of Southern Patagonia alive; and to attach his name appropriately to the discovery, I call this surviving representative of the family Mylodontidae *Neomylodon listai*.

Now that there are certain proofs of its existence, we hope that the hunt for it will not be delayed, and that before long we may be able to present to the scientific world a detailed description of this last representative of a group which has of old played a preponderating part in the terrestrial faunas which have succeeded each other on South American soil.

FLORENTINO AMEGHINO.

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NEWS

THE following appointments have recently been made :—Leopold Adametz as veterinary professor at the High School for Agronomy at Vienna ; Prof. W. P. Blake, of Tucson, Arizona, as State Geologist of Arizona ; Dr Carl Brick as assistant in the Hamburg Botanic Garden ; Rudolf Beyer as honorary professor of botany in Berlin ; Friedrich Blochmann, of Rostock, as professor of zoology at Tübingen University ; Friedrich Moritz Brauer as director of the zoological collections in the Hof-Museum, Vienna ; Dr W. T. Brigham as director of the Berenice Panahi Bishop Museum at Honolulu ; Dr Frederick E. Clements as reader in botany in the University of Nebraska ; Hermann Dingler as professor of botany at the Institute of Forestry at Aschaffenburg ; Dr O. V. Darbishire as demonstrator in Botany at Owens College, Manchester ; Benj. M. Duggar and Dr Elias I. Durand as readers in botany at Cornell University ; Dr Adrian Fiori as private docent in botany, Padua University ; Albert Heischmann, of Erlangen, as professor of zoology at the University there, in the room of Dr Selenka ; Dr Karl Fritsch as director of the botanical museum at the University of Vienna, in the room of the late Kerner von Marilaun ; G. T. Hastings as assistant in botany at Cornell University ; Dr Franz Hoffmann as private docent for physiology in the University of Heidelberg ; Dr J. Jablonowski, of Berlin, as assistant in anthropology at the Dresden Museum ; Ludwig Katharina as professor of zoology and comparative anatomy in Freiburg University ; George Klebs, of Basle, as professor of botany at Halle University ; Dr Hans Lenk as professor of mineralogy and geology at Erlangen University ; Ludwig Kerschner as professor of histology at the University of Innsbrück ; H. J. Monson and Andrew Linton as senior and junior professors of agriculture to the School of Agriculture at Ghizeh ; W. A. Murrill as assistant in botany at Cornell University ; Lubomir Niederle as professor of archaeology and ethnography in the Bohemian University of Prague ; Dr C. C. O'Hara as professor of geology and mineralogy in the South Dakota School of Mines ; Dr Ph. Pocta as professor of palaeontology at the Ceske Museum, Prague ; Mr Gifford Pinchot, as chief of the Division of Forestry in the U.S. Department of Agriculture, in the room of Dr B. E. Fernow, who becomes the head of the New York School of Forestry ; Dr Aladar Richter as chief of the botanical department of the Hungarian National Museum, and Paul Kuckuck, of Heligoland, to be keeper of botany there ; Dr Ludwig Reh as zoological assistant at the Concilium Bibliographicum, Zürich ; Dr F. J. V. Skiff, of the Field Columbian Museum, as director of mining and mineralogy at the Paris Exposition of 1900 ; C. F. Myers-Ward as lecturer in physiology at the Owens College, Manchester ; Dr A. Weberbauer as private docent for botany in Breslau University ; Dr Zograf, extraordinary professor of zoology, and Dr Mrensblie, extraordinary professor of comparative anatomy in Moscow University.

LORD PEEL has been appointed a trustee of the British Museum in the place of the late Mr Spencer Walpole.

DR C. H. HITCHCOCK of Dartmouth, U.S., has left for a year's geological exploration in the Hawaiian Islands. His address will be Honolulu.

WE regret that we entirely overlooked the fact that the Government made a substantial grant from the Royal Bounty of £150 to Mr Joseph Wright of Belfast

for his long and valuable researches into the palaeontology of the rocks of Ireland. We were quite aware that this had been a possibility for some years past, and hasten to congratulate Mr Wright on his well-deserved distinction.

THE monument to Charcot will be formally unveiled on October 23rd, in the Salpêtrière, Paris.

A LIFE of William Turner of Cambridge, 1507-1568, one of, if not the earliest British zoologist, has been contributed to the *Zoologist* for August, by the Rev. H. N. Macpherson.

A MEMOIR of Fritz Müller, the Brazilian naturalist, is to be undertaken by Dr A. Möller, of Eberswalde. Dr Möller begs the loan of letters or material that will help him in his task.

THE following grants have been made by the Berlin Academy :—2000 marks to Prof. Engler, for East African plants; 600 marks to Prof. Graebner, for the study of German Heaths; 500 marks to Dr Loesner, to complete his monograph on the Aquifoliaceae.

MR A. J. HERBERTSON, lecturer on geography in the Heriot-Watt College, Edinburgh, has obtained the degree of Ph.D. *multa cum laude* in geography at the University of Freiburg, in Baden. Dr Herbertson's thesis was on the "Distribution of rainfall over the earth's surface," a subject which he has investigated while compiling the rainfall maps for the physical atlas about to be published by Bartholomew.

THE Hon. John Macgregor has presented a cheque for £500 to the fund for the endowment of a chair of Forestry in the University of Edinburgh. It will be remembered that the Royal Scottish Arboricultural Society has asked the Government for a grant for the establishment of a State Forest near Edinburgh for research in forestry.

THE Swiney Lectures on Geology, under the direction of the Trustees of the British Museum, will be delivered by Dr R. H. Traquair on Mondays, Wednesdays, and Fridays at 5 P.M., beginning Monday, October 3. They will be on the Palaeontology of Great Britain, and will be given in the Lecture Theatre of the South Kensington Museum.

THE New Whale Gallery at the British Museum is the subject of an illustrated article by Mr Lydekker in *Knowledge* for September 1. Owing to the difficulty of position, however, the photograph does not give one a proper idea of the gallery, which is well worthy a visit even from those not specially interested in zoology.

WE learn from *Science* that the Lacoe collection of fossil insects contains the types of about two-thirds of those described from North America. Besides these there are 3500 specimens from the Oeningen Tertiaries, and a large collection from Florissant, Colorado. The United States National Museum has now perhaps a collection of fossil insects second to none, in any case it has a collection of the first importance.

THE late Professor Victor Lemoine bequeathed his palaeontological collection to the Paris Museum. In order that the collection may be further supplemented Madame Lemoine has handed over the land at Cornay, near Rheims, whence the fossils were obtained, to the same institution.

THE South African Museum has so far advanced as to issue "Annals of the South African Museum," a handsome octavo serial, well illustrated by lithographic plates, and printed and published in London by West, Newman & Co. It will appear at irregular intervals, as matter for publication is available, and will

be devoted to the researches of the museum staff. The first part, which is dated June 1898, contains papers on Scorpions by Purcell, Mutillidae by Péringuey, Reptiles by Selater, and Hispinae by Péringuey. The Trustees report that the whole work of transferring the collections from the Old Museum to the New Museum Building was accomplished in a month, with practically no damage or loss, at a cost of approximately £90.

THE American Museum of Natural History, Central Park, New York, is rapidly progressing with its new buildings. These consist of a corner to the west wing and a lecture hall, the latter of which may be ready for occupancy this year, and the former ready for cases and fittings during 1899. Among the excellent work done by this Museum is the fitting out of expeditions for special objects: thus Dr Carl Lumholtz has returned after four years spent among the tribes in Mexico with a large and valuable collection; Dr Adolf Bandalier has continued his researches in Bolivia and Peru; Mr Ernest Volk has been employed for the whole year exploring near Trenton, N.J., for the purpose of careful investigation of the question which has arisen relative to the antiquity of man in the Delaware Valley; while Mr A. J. Stone begins this year, and will continue till 1900, collecting vertebrate Zoology from Montana to Bering Strait. Two great dinosaurs in a remarkable state of preservation have been secured from Wyoming, and a complete skeleton of the three-toed horse has also been obtained for the collection. The Library grows rapidly, and many scarce works on Zoology have been added to the shelves, while the Duke of Loubat has been a generous donor in the department of Mexican and other ethnology.

THE National Herbarium of the United States has received from Dr W. H. Forwood his collection of plants of Western Wyoming, collected in 1881 and 1882. *The Plant World* states that the collection forms the basis of two scarce reports published by the War Department. Many of them are also referred to in Tweedy's *Flora of the Yellowstone*.

THE Report of the Keeper of the Manchester Museum refers to the installation of electric light, which has been rendered possible by the generosity of Mr Reuben Spencer, who contributed £500 to the expense. The Museum is at present in the hands of the painters, and it is to be hoped that the committee will sanction the general whitening of the ceilings asked for by Mr Hoyle, in order that the electric light may have a good start. Prof. Hickson has been doing good work on the plankton of Lake Bassenthwaite, and some of the rarer forms will shortly be placed on exhibition. Miss Nördlinger, the keeper's efficient secretary, receives due eulogies, and we are glad to hear that she has taken entire charge of the library and hope she will be able to open the proper purse-strings for much needed additions. The committee have undertaken the printing of Mr Sherborn's index to the 10th and 12th editions of the "Systema Naturae" of Linnaeus, which should prove of value to zoologists, as these books form the starting-point of zoological nomenclature. A series of lectures will be delivered by Prof. Boyd Dawkins on certain Saturdays and Sundays between October and June, other lectures to be delivered by the staff as usual. Mr Hoyle closes his Report with an eloquent appeal for more funds, and it really does seem singular that Manchester can only afford an expenditure of £2785 a year on its Museum, while Liverpool spends £5700. Manchester must wake up.

A USEFUL part of Mr Hoyle's Report referred to above is his account of the twenty-five museums visited by him while travelling in the United States and Canada in 1897; the list, however, is too long to quote here.

THE Keswick Museum, which was founded in 1873 in connection with the Keswick Literary and Scientific Society, was removed early this year to Fitz Park,

Keswick, and is now known as the Fitz Park Museum. It owes its origin to the late James Clifton Ward, whose valuable geological work in the lake district is well known. The present curator is Mr James Postlethwaite. The collections are restricted entirely to objects illustrative of the local natural history, and although some of the sections are still far from complete, considerable energy is being displayed to make it exhaustive. A catalogue was issued in 1888, and this, we hope, will soon be followed by a new edition.

SOME 3000 members attended the meeting of the British Association at Bristol, September 7-14, under the presidency of Prof. Sir William Crookes. Lectures were delivered in the evenings by Prof. Sollas on "Funafuti, the study of a Coral Island," and by Mr Herbert Jackson on "Phosphorescence," while Prof. Poulton delivered the Working Man's Lecture on "The ways in which animals warn their enemies and signal to their friends." A special biological exhibit was arranged in the Zoological Gardens, consisting of living hybrid trout, specimens of cross-breeding in animals, and hybrid and crossed varieties of flowers, ferns, orchids, and other plants. The First Lord of the Admiralty stationed, by request, four Battleships in Kingroad, Avonmouth, for the edification and protection of the visitors. An excellent series of excursions took place, those most interesting to our readers being Austeliff on Sept. 10 to see the Rhaetic beds, and to Tortworth on Sept. 15 to see the new exposure of Silurian beds recently re-opened by Lord Ducie. This proves to be a thin band of Wenlock bordering the exposure of Upper Llandovery, and is crowded with *Coenites*. A long excursion of five days was taken from Sept. 16-20 to Exeter, Torquay, Dartmouth, Plymouth, and Dartmoor. In a comprehensive pocket handbook which was issued, Prof. Morgan gave a sketch of the geology of the district, Mr J. W. White of the botany, Mr A. E. Hudd of the insects, and Messrs Morgan and Charbonnier of the vertebrata, with the exception of the birds which were dealt with by Mr H. C. Playne.

THE Royal Society of Victoria has had a shock not uncommon to societies in the Australian continent, viz., the reduction of its Government grant. We echo the hope of the Council in their last report that "with a return of more prosperous times the vote may be increased so as to enable the Society to publish the papers presented to it." There is a steady growth of the library as indicated by an additional 200 feet of shelving erected during the year.

THE Manchester Microscopical Society has issued a satisfactory report for 1897. There is a loss of two members, but that no doubt will be regained next year. The library and the collection of slides are both increasing, and the latter is carefully listed out at the end of the current transactions.

THE Edinburgh meeting of the British Medical Association was commemorated by the *Scottish Medical and Surgical Journal* in a special number, issued as volume iii., No. 2, for August, price two shillings. This is well illustrated with photographs of the Presidents, University old and new buildings, M'Ewan Hall, Royal Infirmary, and many Scottish Spas. Among other interesting articles are Medical Institutions in Edinburgh, Medical Student Life in Edinburgh, Edinburgh Medical Clubs, their Songs and Song-Writers, the Edinburgh Royal Infirmary Old Residents' Club, and a general account of Scottish Spas and their mineral waters. A photograph of the Residency table at the Royal Infirmary, covered with names of past residents, will awaken many memories.

THE roll of the Field Naturalists' Club of Victoria is 129 members, a slight decrease on that of last year. Its journal, the *Victorian Naturalist*, has commenced its sixteenth year and is edited by Mr F. G. A. Barnard. One of the chief works of the year has been the protection of the albatrosses on Albatross

Island, the result of a deputation to the Premier of Tasmania. They are now safe all the year round for five years. Mr C. French was again elected president.

THE Council of the Royal Geological Society of Cornwall in its 84th Report expresses its satisfaction over the new geological survey of the county at the hands of Mr J. B. Hill. Application to the Government was made as the result of the Annual Joint Meeting of the Scientific Societies of Cornwall, at Falmouth, in August 1896, and Mr Hill was told off by the Survey to examine the sections of the south coast last autumn. The Council also reports the complete and detailed examination of the St Erth pliocene, and has under its consideration the preservation of the plans and sections of abandoned mines. Mr Howard Fox has been awarded the Bolitho gold medal, and Mr J. H. Collins has been made an honorary member.

FROM the Annual Report of the Yorkshire Geological and Polytechnic Society we learn that the roll of members is 164. This is the highest since 1893, and it is satisfactory to learn that all these members are in active association with their Society. The editors have dated their *Proceedings* with the proper year of issue, instead of one year earlier as heretofore. Next year we hope they will improve on this and add the month, for we note that the future bibliographer will not be able to say whether Mr Woodward's paper on the Yorkshire fossil fishes was published in January or December 1898. The *Proceedings* contain a paper on Filey Bay and Brigg by Mr Fox-Strangeways, which is illustrated by eight beautiful photographs by Mr Godfrey Bingley. There are also portraits and obituaries of Thomas Tate and John Stanley Tute.

THE Selborne Society in the September number of *Nature Notes* desire to wipe off a printer's debt. The Society is now sufficiently flourishing to show but a small deficit in its balance sheet, but hopes to raise three hundred pounds during the next three years to clear itself of debt.

IN June last we called attention to an application for subscriptions to erect a suitable monument to the late Baron Ferdinand von Mueller. This was set on foot by the executors. We now note that a second committee has been formed by Mr W. Wiesbaden, Professor Baldwin Spencer, and others, who are desirous of founding some National Memorial which shall worthily perpetuate his name. Whilst nominally the Government Botanist of Victoria, it is well known that the Baron von Mueller's assistance was sought by and always freely given not only to public bodies but to private individuals in all parts of Australia. Apart from his purely scientific work, upon the value of which it is unnecessary to dwell, Von Mueller devoted himself to the development of the more practical side of various branches of work, such as those connected with Forestry, Agriculture, Horticulture, Pharmacy and, not least, Geographical Exploration. His own explorations in early days, both in Northern Australia as botanist in the expedition under Mr A. C. Gregory, and when, subsequently, he traversed alone the then little known wilds of Gippsland, were of considerable importance, and his deep interest in and the practical assistance which he rendered to the explorations of others are well known. Not only did he spend his whole life in the furtherance of the work in which, from the nature of his position, he was most deeply interested, but he devoted practically the whole of his income to the assistance of those who were engaged in work the object of which was to increase our knowledge of the nature and products of Australasian lands. It is on these grounds, therefore, that the committee hope that sufficient funds will be forthcoming to provide for (1) the erection of some form of statue, and (2) the endowment of a Medal, Prize or Scholarship, to be associated with Von Mueller's name and to be awarded from time to time in recognition of distinguished work in the special branches in which he was most deeply interested, and which

shall be open to workers throughout the Australasian colonies. Subscriptions to the Fund may be sent to the Hon. Treasurer, addressed to the College of Pharmacy, Swanston Street, Melbourne.

THE Report of the Botanic Gardens and Domains of New South Wales for 1897, by Mr J. H. Maiden, has recently appeared, and contains full accounts of the Botanic Gardens, Government Domains, Garden Palace Grounds, Centennial Park, State Nursery at Campbelltown, &c. Mr Hugh Dixson has placed his collection of Australasian orchids at the disposal of the Botanic Gardens, and suitable accommodation is to be speedily provided for their reception. Parliament has also voted a sum of money for the erection of a building to house the Herbarium; the Library shows a steady progress. Altogether a very favourable and hopeful report, and the first of a new series, which is to be continued annually. The last report appeared in 1878.

WE learn from the *Echo* that 100 tuns of beer and 18,000 cups of coffee were consumed at the Berlin Zoological Gardens on Whitsun Day. We are not responsible for the statement, but, if true, it shows that zoology as an interest is not likely to die out in Berlin.

"NATURE" for August 25 has an interesting article on "The Marine Fauna in Lake Tanganyika and the advisability of further exploration in the great African lakes," by J. E. S. Moore. Mr Moore prints a list of empty shells and fishes previously known and also a list of the entire mollusca and fishes obtained during his expedition.

THE Swiss Society Rambertia has laid out an Alpine Garden at Montreux, at an elevation of 6000 feet, where the characteristic trees and flowers of the country are to be cultivated.

At the moment of going to press we learn that Dr Florentino Ameghino has made a remarkable discovery. Details of a nocturnal quadruped have been brought to him from time to time by Indians, and a few years ago the late Ramon Lista actually saw and shot at a mysterious creature in the interior of Santa Cruz. Apparently bullet-proof, it disappeared into the brushwood, and all search for it proved futile. Lista described the creature as a pangolin, without scales, and covered with reddish hair. Despite the fact that Lista was known to be a good observer, Dr Ameghino could not help feeling that he was deceived. Lista, however, has now been proved correct, for Ameghino received recently from South Patagonia some fresh bony ossicles and a partially destroyed skin. The ossicles were comparable to those of *Myiodon*, but smaller, and they were embedded in the skin, like "paving stones in a street." The skin itself is two cm. thick, and of such toughness that it could only be cut with a hatchet. The surface of the skin itself shows an epidermis, not scaly at all, but covered with coarse hair, four to five cm. in length, and of a reddish grey shade. This Ameghino considers was the animal described by Lista, and as that naturalist has unfortunately lost his life while exploring Pilcomayo, and was the only civilised man who had seen it in the flesh, he names it *Neomyiodon listai*. The importance of the discovery need not be emphasised here.

NOTICE

TO CONTRIBUTORS.—All Communications to be addressed to the EDITOR of NATURAL SCIENCE, at 29 and 30 Bedford Street, London, W.C. Correspondence and Notes intended for any particular month should be sent in not later than the 10th of the preceding month.