

## LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

## A Letter of Ch. Darwin in Argentina.

ON the occasion of the first national meeting of the Sociedad Argentina de Ciencias Naturales, held towards the end of last year in the city of Tucuman, Señor Juan W. Gez presented the archive of Dr. F. J. Muñiz, together with a biographical narrative. To that archive belongs the subjoined letter from Darwin which I have transcribed. That letter, as can be seen, has not been included in the "Life and Letters of Ch. Darwin," but a Spanish version of it was published by the first biographer and editor of the papers of Dr. Muñiz—Don Domingo F. Sarmiento,<sup>1</sup> ex-President of this Republic (1868-74).

I would first, in a few words, say something concerning the man himself, who is probably little known to the English public. Dr. Francisco Javier Muñiz is considered to be the first Argentine naturalist. He was born in San Isidro in the year 1795. In 1821 he had already graduated in medicine, and was located for four years in Carmen-de-Patagones as a military doctor, at a time when those regions were still inhabited by Indians. From that period dated his inclination and fondness for natural sciences. From the year 1825 he resided in the province of Buenos Aires, where he rendered medical services, eventually coming to be professor, and later dean, of the faculty of medicine of the city of Buenos Aires. At the age of seventy years he continued to serve in his professional capacity as military physician, through the long war which Argentina, together with Brazil and Uruguay, waged against the tyrant Lopez, of Paraguay. In 1871, when the terrible epidemic of yellow fever scourged the city of Buenos Aires, he wished even at his advanced age to lend his professional services, but himself succumbed a victim to the disease on October 8 of the same year, at seventy-six years of age. The city of Buenos Aires has raised a monument to his memory.

The scientific works carried out by Muñiz treated of medicine and natural sciences, as may be seen by Darwin's letter. He was the first one in the Argentine to devote effort to collecting and studying the remains of the fossil mammals, which have since made famous the Pampa regions. As a physician he knew anatomy well, but his attainments in comparative osteology were less solid, because of the lack of works of study, which were exceedingly difficult to obtain at that time in this country.

Dr. Muñiz discovered numerous fossil mammals, and described some of them. Among these was the great fossil tiger of the Pampas, which he called *Felis bonaërensis* (see *La Gaceta Mercantil*, Buenos Aires, October 9, 1845). Not being familiar with the usages of nomenclature, he thought the suggestion of some friends acceptable, and that he should call the fossil *Mufi-felis*, but he only used this name once in the title, while in the description he simply calls it *Felis bonaërensis*, this being a less objectionable denomination. Notwithstanding, had the species been really new, his name should have continued, but it turned out to be, not a *Machærodus*, as Darwin suggested, but a *Smilodon*, distinct from the *S. neogæus*,

Lund, and which should bear the name *S. bonaërensis*, Muñiz, Amegh. With reference to the purpose declared by Darwin of having Dr. Muñiz's description translated and published (a description which was very prolix and detailed), it would seem that this was never carried out.

The reports on the *ñata* cow (a type of short-faced, wide-nostriled cow), to which Darwin refers, are those which are mentioned in his "Journal of Researches" (p. 146, second edition, 1845); but the series of questions to which Muñiz replied, and a copy of which I now find in the above-mentioned archive, contains many other details of interest which Darwin did not utilise, and Sarmiento did not publish save in very fragmentary form. These data have therefore undoubted interest, now that, as one may say, the peculiar *ñata* cow belongs to history.

The collection of fossil bones from the Pampa of which Darwin speaks from references by Owen is probably that which Muñiz gave to General Rosas in 1842, and Rosas gave to some French personage who resided in Buenos Aires, who in his turn presented it to the Paris Museum.

In conclusion, I may say that the projected sale of the rest of his collections, of which Muñiz spoke to Darwin, had not, as some might think, any commercial end in view. Muñiz proposed by this sale to obtain some resources for the sole purpose of being thus able to prosecute his explorations in the search for fossils, as appears from copies of letters preserved in his archive. The last specimens of his collection were presented by him to the Museum of Buenos Aires.

Subjoined is the text of Darwin's letter.

M. DOELLO-JURADO.

Museo Nacional, Buenos Aires, April, 1917.

Down, Farnborough, Kent,

February 26, 1847.

Dr. F. J. MUNIZ, Buenos Aires.

RESPECTED SIR,

Your letter of August 30, with the papers which you were so good as to send me, reached me only a short time since, owing to the protracted illness and absence from London of Mr. Morris, through whom they were sent. I have lately heard from Mr. Morris that you wish to dispose of your fossil remains on some pecuniary arrangement, which I did not fully understand from your own letter to me. I have given Mr. Morris my opinion on this head, so will not here repeat it; but will only say that I conceive the only feasible plan would be to send your fossils here to some agent to dispose of them. No society will purchase anything of the kind without having them inspected, and most societies only receive presents. Your specimen of the *Mufi-felis* must be a noble one; I suspect it will turn out to be a *Machairodus*, of which there are some fragments in the British Museum from the Pampas. I will endeavour to get your paper translated and inserted in some scientific periodical. Your account of the earthquake in the Pampas has surprised me; I never heard of one in any part further east of the Cordillera than at Cordoba. If you will inform me whether you read English I shall be happy to send you a copy (if you will point out some channel) of my "Geological Observations on South America," lately published; I do not think it worth sending them without knowing whether you read English, which I fear is not probable. Your pamphlet on the scarlet fever I will present to the Royal College of Surgeons.

I cannot adequately say how much I admire your continued zeal, situated as you are without means of pursuing your scientific studies and without people to sympathise with you, for the advancement of natural

<sup>1</sup> "Life and Writings of Col. Francisco Javier Muñiz," p. 280 (Spanish) (Buenos Aires, 1885.)

history; I trust that the pleasure of your pursuits affords you some reward for your exertions. Some time since you were so kind as to send me through Mr. E. Lumb some *most curious*, and to me *most valuable*, information regarding the Niata oxen. I should be deeply obliged by any further facts about any of the *domestic* animals of La Plata; on the origin of any "breed" of poultry, pigs, dogs, cattle, etc. I should be much interested by a brief description of the habits and appearance of the pigs, dogs, etc., which have *run wild*, and especially on the habits of these wild breeds, when their young are caught and reared. Will a puppy of one of the run-wild dogs, if brought up carefully, be as tame as a common dog? Any information on *all* such points would be of *real service* to me; and my address, should you find time to write to me, will always be that at the head of this letter. I most sincerely wish you all success in your admirable labours, and if at any time I can be of any service, I shall be happy to be so; but I am sorry to say I am not connected with any mercantile establishment and cannot recommend agents, etc., etc.

With much respect, I beg to remain, Sir,  
Your obliged and obedient servant,

CHARLES DARWIN.

P.S.—I omitted to state that Prof. Owen has heard that a collection of bones from Buenos Aires some time since arrived at Paris.

### Plated Teeth of Sheep.

PLATING of the teeth of sheep with "gold" can scarcely have been a common phenomenon, in Scotland at any rate, for in the few cases mentioned by the older writers it is recorded as something of a marvel.

In 1536 Hector Boece, Bishop of Aberdeen, thus described the sheep of Doundore (Bellenden's translation):—"In Gareoth [Garioch, a district of central Aberdeenshire] is ane hill namit Doundore, that is to say, the Goldin Montane. The scheip that gangis on this montane ar yallo; thair teeth are hewit like gold; thair flesche reid, as it wer litit with safron; thair woll is on the same maner." This locality remained for a couple of hundred years the typical Scottish locality, if one may so call it, for golden-toothed sheep, for it is mentioned by many writers, whose accounts vary mainly in the spelling of the hill-name—Dundore, Dunedere, Dinnedure, etc. It is the prominent conical, ruin-capped hill, still known as Dunnideer, near the railway station of Inch, in central Aberdeenshire.

Martin, in his "Description of the Western Islands of Scotland" (1703), almost suggests that the colouring of the teeth in the Outer Hebrides is due to native gold in the soil:—"The Natives affirm that Gold Dust has been found at *Griminis* on the Western Coast of the Isle of *North Uist*, and at *Copveaul* in *Harries*; in which, as in other parts of the Isles, the teeth of the Sheep which feed there are died yellow."

In these cases it is likely that iron in fair quantity was present in solution in the bogs and streams, for Dunnideer is formed of a cap of coarsely grained syenite lying upon the basic intrusive mass of the district, which possesses a moderate ferro-magnesian content, while the peat-bogs characteristic of the Outer Hebrides rest upon Lewesian gneiss, the ferruginous tendency of which in the area is indicated by the presence of patches of hornblende and garnet. In the Aberdeenshire area, iron pyrites, also, is disseminated throughout the intrusive mass in microscopic crystals.

JAMES RITCHIE.

Edinburgh, June 7.

NO. 2485, VOL. 99]

### The Organisation of Scientific Literature.

IN the current number (June, 1917) of *Scientia* (pp. 530-32) there is a somewhat full account of discussions that took place at the meeting of the Italian Society for the Advancement of Sciences at Milan in April last, which are of great interest to us, particularly at the present time. Prof. Gino Loria spoke about national and international collaboration in publications on science and culture, and Prof. Eugenio Rignano spoke on projected scientific periodicals of the Entente. The praiseworthy scheme of Prof. Rignano was fully described by him in a letter printed in *NATURE* of January 25 of this year, and I may also refer here to an article by myself on the organisation of scientific literature in *Science Progress* for last April. It is necessary that the nations of the Entente should take immediate steps to make themselves less dependent on Germany for the results of organisation of scientific and philosophical literature, if for no other reason than that Germany's powers of production are very much lessened at present, and probably will be even more so in future. Science is, of course, not an affair merely of particular nations or groups of nations; all nations should combine to make the work of advance in science rather easier by organising its literary aids. It seems that we, in particular of all nations, ought not to remain content with the position into which we have fallen in this possibly humble organising duty of science. I may remark that I have been in correspondence with the Government with respect to plans for Government action in this direction, and that, though some outcome of the correspondence does not seem impossible, it is to be feared that the curse of delay will act as a clog on the wheels of progress. One would have thought that by now the evils of inefficiency, slackness, and neglect of science had been sufficiently forced upon us. In France, Italy, and America there have been public expressions of a wish to help in this need for the organisation of the literature of scientific research.

PHILIP E. B. JOURDAIN.

The Bourne, Basingbourne Road,  
Fleet, Hants, June 2.

### The Origin of Flint.

SIR E. RAY LANKESTER (*NATURE*, June 7, p. 283) attributes the black colour of flint to carbon, but has he considered whether ferrosferric oxide may be the cause of the colour?

I have recently observed a similar, almost black colour in specimens of hydrated, colloidal sodium silicate, which contained small quantities of oxide of iron, originally in the ferrous state, but partly oxidised.

It has been pointed out by Hofmann and Resenschek (*Annalen*, 1905, vol. cccxlii., p. 364) that depth of colour in various chemical compounds is connected with the presence within the same molecule of atoms of an element exercising two different valencies. The deep colours of sulphur sesquioxide and uranouranic oxide are examples of this phenomenon, and especially the deep blue colour of ferric ferrocyanide. The dark colour of hydrated, ferrosferric oxide is well seen when white, ferrous hydroxide, precipitated by alkali from ferrous sulphate solution, undergoes atmospheric oxidation, or when a mixed solution of ferrous and ferric salts is similarly precipitated. The greenish-black colour, which cannot possibly be due to a mixture of white, ferrous hydroxide and reddish-brown, ferric hydroxide, is to be attributed to a compound of the two hydrated oxides.

R. M. CAVEN.

University College, Nottingham, June 11.