

prising; for the position of Blackdown, near the end of a narrow inland bay, would have been, of all others, the most favourable one for the increase of mollusca.—I am, Sir, yours, etc.,

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*Elephas Texianus v. Columbi.*

SIR,—Reference has already been made by me to the above subject in the pages of the 'Geologist.\* The nomenclature which I have used, and the inferences which I have drawn, having been impugned in an elaborate paper by Dr. Falconer,† a few lines in their justification may be permitted.

When, in February, 1858, the tooth in question was shown to me by my friend Mr. Bollaert, the most casual observation was sufficient to demonstrate that it was of a different species to the Mammoth (*E. primigenius*). In the dearth of published information on the subject I consulted the works of Cuvier,‡ Humboldt,§ Leidy,|| De Blainville,¶ Carpenter,\*\* Lartet,†† and others, and especially the memoir of Dr. Falconer,‡‡ I endeavoured in the paper on the Texan Elephant to acknowledge the benefits to proboscidean science derived from his "most complete, elaborate, and philosophical conspectus."

Upon attempting, with the "Bollaert molar" in my hand, to discover in this memoir any specific description of this form, my efforts resulted in disappointment. Dr. Falconer, in the above-cited memoir, divided his subgenus *Euelephas* into four divisions. The first he characterizes as having "*Colliculi subremoti, adamante crassiusculo.*" The solitary species belonging to it is the Miocene *E. Hysudricus*. The second division (*Colliculi approximati, medio leviter dilatati, macheridibus undulatis*) includes *E. antiquus* and *E. Namadicus*. The third division (*Colliculi approximati, macheridibus valde undulatis*) includes *E. Columbi*, *E. Indicus*, and *E. Armeniacus*. The fourth division (*Colliculi confertissimi, adamante valde attenuato, macheridibus vix undulatis*), has for its solitary representative the mammoth (*E. primigenius*).

The name *E. Columbi* has the following notes added to it in Dr. Falconer's Synoptical Table:—

<i>Geological Age.</i>	<i>Country.</i>	<i>Remarks.</i>
Post-pliocene?	Mexico.	An syn. <i>E. Jacksoni</i> ?
	Georgia.	Sillim. Journ., 1838,
	Alabama.	vol. xxxiv. p. 363.

In the second part of his paper, which was read before the Geological Society on June 3, 1857,§§ Dr. Falconer concluded with a few remarks on the non-existence of *E. primigenius* south of the Alps, and its restric-

\* Geologist, vol. iv. p. 470; vol. v. pp. 57 and 323.

† 'On the American Fossil Elephant of the Regions bordering on the Gulf of Mexico (*E. Columbi*, Falconer), with General Observations on the Living and Extinct Species.' Natural History Review, January, 1863.

‡ Ossemens Fossiles, ed. 1834, vol. iv. p. 145.

§ Cosmos, vol. i. p. 280.

|| Nebraska Fauna, p. 9.

¶ Ostéographie, Eléphants, p. 157.

\*\* Silliman's Journal, second series, vol. i. p. 244.

†† Bull. Geol. 1859, p. 469.

‡‡ Quarterly Journal Geol. Soc., 1857, p. 319; 1858, p. 81.

§§ Quarterly Journal Geol. Soc., vol. xiv., 1858, p. 81.

tion in the United States of America to the Northern and Central States. "In the Southern States and Mexico, a distinct fossil species, *E. (Euelephas) Columbi*, hitherto undescribed, occurs along with remains of *Mastodon*, *Mytodon*, *Megatherium*, horse, etc."

Dr. Falconer tells us,\* that by the above description "the leading points of the dental characters and the precise place in the natural series occupied by the species were distinctly indicated, together with its range of habitat, along a stretch of nearly 20° of longitude in the regions bordering the Gulf of Mexico."

Apart from the incongruity of the assertion that Georgia is included in the "regions bordering the Gulf of Mexico," I cannot perceive in Dr. Falconer's group-characters, "*Colliculi approximati, macheridibus valde undulatis*," such a definition of the specific signification of *E. Columbi* as is imperatively demanded at the hands of the founder of a new species. The mere insertion of the above notice in a catalogue, I have already ventured to suggest, was not a valid definition. Still less was it so, when in the column of remarks the following bewildering announcement was inserted, "An Syn. *E. Jacksoni*? Silliman's Journal, 1838, vol. xxxiv. p. 363." The worthlessness of the representations here contained has been already commented on by me, and Dr. Falconer admits that the only published drawing possibly attributable to *E. Columbi*, to which he was able to refer at the time of his memoir in 1857, was "too imperfect to be reliable for more than a conjecture."†

Dr. Falconer, criticizing my specific definition of *E. Texianus (dentium molarium* (m. 6), *colliculi undulati, magis remoti quam in E. Indico*), says that he fails "to detect a single term or character which is not either expressed, embodied, or implied, in his Synoptical Table above referred to." I, however, have searched this table most carefully for any hint that the "*colliculi*, or constituent ridges of the unworn teeth," in *E. Columbi* are further apart (*magis remoti*) than in the Indian elephant, and do not discover any such implication. Dr. Falconer, in his later memoir, subsequently to the publication of my paper,‡ speaking of the Mexican molar in the College of Surgeons, says: "The disks of wear are wide and open, wider than in the ordinary varieties of the existing Indian elephant, and approaching the width commonly presented by *E. antiquus*. But they differ from those of the latter species in showing no angular expansion in the middle of the disks, and no outlying loop at the angles. In this respect they correspond more with the disks of the existing Indian elephant."

In the quotation from my published paper to which Dr. Falconer refers on page 48 of his memoir, a grave orthographical blunder has been inserted, which is not found in the original, as may be seen by those who compare Dr. Falconer's version with page 58 of the 'Geologist' for 1862. I have there said that "as it is not clear whether *E. Columbi* is named in honour of Columbus, or because it is found in Colombia (Venezuela y Nueva Granada), I trust that this name will not be accepted." In the passage, which purports to be a faithful and literal quotation of my words, the word Colombia has been altered to Columbia, and my meaning has been rendered open to misconstruction on the part of those who might consider me guilty of the orthographical solecism which Dr. Falconer has attributed to me.

But Dr. Falconer goes on to say, that Columbia (meaning Colombia) was "nowhere in question as a habitat of the species." I confess I am a little surprised at this statement, seeing that the frequent presence of *Mastodon* remains in the plateaux of New Granada has been discussed;

\* Nat. Hist. Review, vol. iii. p. 45.

† Id. p. 57.

‡ Page 50.

that in September, 1858, Professor Owen had speculated on the possibility of evidences of proboscidean life "at the expense of the still more luxuriant vegetation watered by the Oronoko, the Essequibo," etc. ;\* that in districts even more remote than Colombia, Dr. Falconer, on the testimony of M. Lartet, † has arrived at the conclusion that it is possible that *E. Columbi* may have even reached so far south-east as Cayenne, in latitude 4° 56' N., and longitude 52° 8' W., and that a doubtful evidence of true elephantine remains was discovered by Humboldt in the province of Quito.

With respect to the "jactitation" and "accommodating arrangements" which Dr. Falconer presumes to exist between Professor Owen and myself, respecting the synonymy, the simple fact to which I alluded in my paper—that I had examined the tooth in February, 1858, and when I had arrived at a definite opinion as to its position in the Elephantine series, Professor Owen, in his address to the British Association, thought fit to adopt my name—affords a satisfactory explanation of the alleged discrepancy.

I was necessarily ignorant of the private information placed at Dr. Falconer's disposal at various periods of time, ranging from the year 1846 to the present year, by Sir Charles Lyell, M. Humbert, Messrs. Norton, Guild, and others, when my memoir was published. I however made due reference to the milk-molar brought by M. Le Clerc from Texas, now in the Paris Museum, as possibly belonging to the same species as *E. Terianus*. Two of the specimens from the Huff collection in the British Museum, which I had been inclined to refer to *E. primigenius*, are considered by Dr. Falconer to belong to *E. Columbi*. The other colossal remains are admitted by him to be indistinguishable from *E. primigenius*. The specimen No. 741A, in the Museum of the Royal College of Surgeons, I have examined carefully since the publication of Dr. Falconer's paper, and I have no hesitation in recognizing it as referable to *E. Terianus*.

When speaking of the "Bollaert molar," Dr. Falconer states that "some of the plates show a considerable amount of undulation in the general sweep of the *mæcherides*, but there is no tendency to the mesial expansion, or outlying loop, seen in *Elephas antiquus*." ‡ The degree of mesial expansion in *E. antiquus* (*medio leviter dilatati*, Syn. Table) seems to be scarcely defined. According to Lartet, § who describes *E. meridionalis* as a separate species, "leur émail, irrégulièrement festonné, offre le plus souvent une expansion médiane simple ou double, qui rappelle, jusqu'à un certain point, les figures rhomboïdales que la détritition produit sur les molaires de l'éléphant d'Afrique." Lartet, describing the *E. antiquus*, says, "émail moins épais et plus régulièrement festonné, avec ou sans expansion médiane." With due respect to Dr. Falconer's elaborate description of this "magnificent morceau," I can detect in the fourth and fifth ridges of the tooth, or the second and third of the seven ridges which are "bounded by highly crimped and thick plates of enamel," evident traces of a mesial expansion, which may be considered *pro tanto* homologous with that of *E. antiquus*, so far as the definition of a "mesial expansion" in that species is capable of comprehension. A slight mesial expansion may also be seen in the seventh ridge of the Mexican molar in the College of Surgeons.

Dr. Falconer's criticisms on the vagueness of the geographical name which

\* Owen, 'Address to the British Association at Leeds,' p. 39.

† Falconer, Nat. Hist. Review, p. 60.

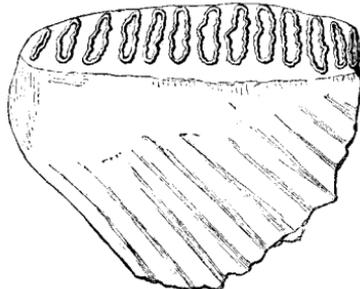
‡ *Loc. cit.* p. 52.

§ "Sur la dentition des proboscidiens fossiles, et sur la distribution géographique et stratigraphique de leurs débris en Europe." Bull. Geol. 1859, p. 469.

I proposed for the Texan elephant are, to a certain extent, neutralized by the fact that in his Synoptical Table, such "geographical names" are retained and put forth into circulation, as *Ohioticus*, Blum.; *Pyrenaicus*, Lartet; *Andium*, Cuvier; *Perimensis*, Falc.; *Arvernensis*, Croizet and Jobert; *Sivalensis*, Falc.; *meridionalis*, Nesti; *Africanus*, Blum.; *Hysudricus*, Falc.; *Indicus*, Linn.; *Armeniacus*, Falconer. It there appears that out of the twenty-eight species of *Elephas* and *Mastodon* known, at least eleven have names given founded on their regional habitats, for four of which names Dr. Falconer is individually responsible. In the same memoir in which he tells us "the distinctive characters of species are commonly founded on something more intrinsic and tangible," he actually proposes to add another "geographical name" to the list, to denote the pigmy elephant of Malta (*E. Melitensis*, Falconer).

Other original observers have alluded to the diversity of species in the American elephants. "It appears that the Mammoth (*E. primigenius*) ranged quite as far north in America as it did in Europe at one time, and indeed much further south (Sir Charles Lyell's 'Travels in North America,' vol. ii. p. 58), if the identification of its remains by the American geologists be a correct one, and there be no other species there corresponding to the *Elephas antiquus* or *priscus* of Europe."\* In the 'Geologist' for April, 1861, a note appears, by Mr. G. E. Roberts, on the occurrence of a large elephantine beast in Texas, at the junction of the rivers Guadalupe and Comal.

In the recently-published geological text-book of Prof. Dana, it is stated:† "The American elephant ranged from Georgia, Texas, and Mexico on the south, to Canada on the north, and Oregon and California on the west. A tooth was found in ancient alluvium near the Colorado, 114½° W. and 35¾° N. (Newberry). Parts of one skeleton were dug up in Vermont, at Mount Holly, 1415 feet above tide level. The species appears to have been most abundant to the south, in the Mississippi valley, it preferring a warmer climate than that of *E. primigenius*. Fig. 837 [labelled *E. Americanus*] represents one of the teeth found in the state of Ohio. . . . The elephant in northern North America, in the British possessions, is supposed to have been the Siberian species." Dana states elsewhere,‡ that the *Elephas primigenius* seems not to have gone far south of the parallel of 40°. Dana's figure is copied from a manuscript Palæontological Report of Warren's Expedition to the Upper Missouri, by Meek and Hayden. The tooth exhibits twelve, or perhaps thirteen, enamel disks, of which the sixth and seventh show evident traces of the "expansion médiane" on which Dr. Falconer lays so much stress. I am, however, very doubtful to what species this can be referred. Lartet has already told us:—"Les dernières publications de M. le professeur Leidy, de Philadelphie, viennent de nous révéler l'existence dans l'Amérique du nord d'une faune pliocène, où figurent une nouvelle espèce de mastodonte (*M. mirificus*) et un très-grand éléphant (*E. impe-*



*Elephas Americanus*. From Dana's  
'Manual of Geology.'

\* Jukes, 'Student's Manual of Geology,' 2nd ed., 8vo, Edinburgh, 1862.

† Dana, 'Manual of Geology,' 8vo, Philadelphia, 1863, p. 562.

‡ *Loc. cit.* p. 560.

rator). Trois autres proboscidiens ont vécu dans l'Amérique du nord pendant la période post-pliocène ou quaternaire ; ce sont l'*Elephas Americanus*, que M. Leidy considère comme étant distinct de l'*E. primigenius*, l'*E. Columbi*, Falc., des Etats du Sud et du Mexique, et le *Mastodon Ohioticus*, que quelques auteurs supposent avoir été contemporain des premiers hommes qui se sont établis dans cette région du globe." Whilst, however, I decline to offer any opinion whether the tooth figured by Meek may be referable to the *E. imperator* of Leidy, from Niobrara, I copy Dana's woodcut in the margin.

I have previously and frequently expressed the utmost deference to the palæontological authority of Dr. Falconer, whose constant study of the fossil specimens, thorough knowledge of the habits and food of the existing Indian elephant, and exhaustive acquaintance with proboscidean bibliography, must command respect amongst comparative anatomists. The foregoing remarks have, however, been called for to re-assert my title to be the first who directed attention to the "Bollaert molar," and to claim the undoubted privilege of every scientific man to describe any species of which no full, complete, and accurate definition has been previously promulgated.

Yours truly,

C. CARTER BLAKE.

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### Obituary Notice.

LUCAS BARRETT, F.G.S.,

DIRECTOR OF THE GEOLOGICAL SURVEY OF THE BRITISH WEST INDIES.

THE last West India mail brought letters and papers announcing the premature loss of this amiable and accomplished naturalist, so lately among us taking an active part in the proceedings of the British Association at Cambridge.

He left England on the 17th of October last, and returned to Jamaica, accompanied by Mr. W. P. Colchester, eldest son of the gentleman who has for some years been the contractor for all the fossil phosphates of the Crag district and Cambridgeshire. He had formerly made a few very promising dredgings on the coast, at considerable depths; and being anxious to explore those portions of the sea-bed (between low-water and the limit of coral—perhaps about 15 fathoms) which are inaccessible to the dredge, he took out with him a diver's dress and pumping apparatus of the most approved construction, such as Mr. Heinke has supplied to all the stations of the Peninsular and Oriental Company, and which has been so successfully employed in recovering the wrecks of the 'Malabar,' 'Colombo,' and 'Royal Charter.' Dr. Bowerbank, of Kingston, writes word that he met Mr. Barrett on the 18th December last, in the House of Assembly, where he had gone to give evidence before a committee. He then told Dr. B. that he had been down the day before (in his diving-dress) in shallow water, and had succeeded well, and intended trying deeper water for the purpose of examining the coral reefs. Dr. Bowerbank begged him to wait till he could go with him; but he replied that "he would see." Other friends also warned him not to go, and offered to accompany him if he would defer it for a day; but he went, attended only by the boat's crew of negroes and his (negro) servants. Mr. Colchester happened to be away at the time, at the Pedro Keys. He says that "according to the evidence given by the men, Mr. Barrett went direct