

XIV.—NOTE ON MOLARS OF RHINOCEROS LEPTORHINUS (*R. MERCKII*, JÄGER), IN THE MUSEUM AT STUTTGART.

June 18, 1861.

Got casts of the three molars upon which Jäger founded his *R. Merckii* of Kirchberg. Dr. Fraas told me that the real history of the discovery of these specimens is involved in obscurity. They were shown to Jäger by the Prince of —, residing near Kirchberg, and no additional specimens have turned up from that quarter. The two upper teeth are the penultimate and last, evidently of the Grays Thurrock species, *R. leptorhinus* (*R. megarhinus*). The original penultimate is in very fine preservation. [Figures of two of these casts, executed by Mr. Dinkel, will be found in Plate XXXII. figs. 1 and 2.—ED.]

XV.—MEMO. OF RHINOCEROS LEPTORHINUS FROM THE FOREST-BED.

August 25, 1863.

In Mr. Gunn's collection there is a very fine specimen of the last premolar, upper, right, of *R. leptorhinus* (*R. megarhinus*), which shows the characters perfectly and is a certain proof of *R. megarhinus* from the Forest-bed. [The characters are described in detail and are shown to differ from those of *R. Etruscus*. In a letter to M. Lartet, dated June 25, 1863, Dr. F. also remarks:—'The *Rhinoceros leptorhinus* of Grays Thurrock occurs elsewhere in England in a peat-bed, which is *below* the loess, along with *Elephas primigenius*.'—ED.]

XVI.—NOTE ON REMAINS OF RHINOCEROS LEPTORHINUS (*R. MEGARHINUS*), IN DR. SPURRELL'S COLLECTION AT BELVEDERE.

Sept. 30, 1863.

There are four detached upper molars belonging to this species. One is a last true molar (t.m. 3), right side, in the finest preservation, and only slightly advanced in wear. In its transverse diameter from the outer angle to the inner side barrels, it agrees very closely with the Montpellier cast brought for comparison, but the width is considerably less; it shows no indication of any rudimentary basal valley behind. Another specimen of the same species is a penultimate upper left molar, which agrees in the most surprising manner in form, size, stage of wear, and hook of the posterior barrel with the *R. Merckii* cast from Stuttgart, which was brought for comparison with it. Dr. Spurrell and Messrs. Woodward and Prestwich were struck with the identity. With regard to mineral character the four teeth of *R. megarhinus* present a tint which seems to me to differ a little from that shown by the *R. tichorhinus* (see page 401), while the latter have besides a rough and rolled general character which is not so obvious in the former. On the other hand, Prestwich considers that there are three teeth of the *R. tichorhinus*, which, in mineral character, closely resemble the *R. megarhinus*, whilst the slight difference in tint may arise from difference in the facility with which the different species stain! the matrix being in both cases alike—sand with green grains of flint pebbles. He admits, however, that it is a case for inquiry.

XVII.—NOTE ON REMAINS OF RHINOCEROS LEPTORHINUS IN THE MUSEUM OF LE PUY, AUVERGNE.

Sept. 15, 1863.

Examined a fine specimen of left side of lower jaw of *R. megarhinus* from Solilhac (said by M. Robert to have been found along with the bones of the skeleton which I have attributed to *R. Etruscus*!). It has the six molars *en suite*, the last but little worn. The outer side of the angle has the deep rugosities exhibited by Gervais' figure. Length of four last molars, 6.5 in.

In the same Museum there is also a magnificent palate series of *R. megarhinus* (*Merckii* pattern), according to M. Robert, found in 'des fentes à ossements éruptives du collet Polignac.' It contains the six last molars on both sides, all a little worn. Length of six molars, 11 inches.

The teeth are very finely preserved, and exactly like the large Grays Thurrock specimen in the British Museum; they are very fresh and modern looking.

IV. NOTES ON RHINOCEROS ANTIQUITATIS (BLUMB.) *R. TICHORHINUS* (FISCH. AND CUV.).

I.—RHINOCEROS ANTIQUITATIS FROM WOOKEY HOLE, TAUNTON, AND UPHILL CAVERN.

Taunton Museum, April 13, 1858, and Bristol, May 1858.

Examined upper and lower molars of *R. tichorhinus* from Wookey Hole, a lately discovered cave in the Mendip Hills. From the same cave there are molars of *E. primigenius*, a magnificent canine of the Cave Lion, remains of Hyæna, &c.

In the same Museum there is a skull of a *R. tichorhinus*, three-fourths grown, found in digging the foundation of the jail. It contains on either side the five posterior teeth, the penultimate and last in germ, and the last not fully emerged from the alveolus. There are also numerous detached teeth of the same species.

In the Bristol Museum are two lower molars of *R. tichorhinus* from Uphill Cavern, very pronounced by their rugosity.¹

II.—COMPARISON OF MR. BOYD DAWKINS'S SPECIMENS OF RHINOCEROS MOLARS FROM WOOKEY HOLE.

March 25, 1862.²

They consist of two milk molars, probably from the dimensions penultimates (m.m. 3) of the upper jaw, the one (10 D) of the left side, the other (10 A) of the right; 10 A is considerably more advanced in wear than the other. There are three insulated valleys; first, there is a fissure formed by the great transverse valley, the opening of which is blocked up by a much higher step than in the same teeth of *R. hemitachus*, in this respect agreeing with *R. tichorhinus*. There is no basal bourrelet at the inside, but in this case a small and

¹ Dr. Falconer also identified specimens of *R. hemitachus* from Wookey Hole. In a letter to Col. Wood, dated July 8, 1862, he wrote: 'Mr. Dawkins lately got veritable *R. hemitachus* from

Wookey Hole.'—[Ed.]

² In the same year Dr. Falconer identified remains of *R. tichorhinus* in collections from Kent's Hole at Torquay.—[Ed.]

rather pointed tubercle is appended to the posterior barrel. The second valley is formed by the confluence of the combing processes; it is very round and insulated, with vertical walls differing from all Colonel Wood's Gower specimens. The posterior valley is also insulated all round, with rather vertical walls. The vertical furrows upon the outer surface are well pronounced; the enamel surface, especially at the ends, is decidedly rugous; there are three fangs. I have compared it with the drawings of Colonel Wood's specimens of *R. hemitechus*, and with the small 'Long Hole' milk molar, from all of which it is decidedly different. The smoothness and thinness of the enamel in the latter is strongly pronounced. In the form of the fissure, in the roundness of the small valley, and in the enamel surface, it closely agrees with the still more worn milk molar of *R. tichorhinus* from 'Long Hole,' Gower, and I infer it to be of *R. tichorhinus*.

10 D. resembles 10 A. very closely in all its characters, but is considerably less worn, and it shows large fangs. The large transverse valley forms an isolated fissure, with a high step blocking up its opening as in *R. tichorhinus*, but there is no tubercle. The small middle valley is a round ring with vertical walls, but not quite insulated on its inner side, there being a narrow cleft between the combing processes. The posterior fissure forms a deep and rather vertical pit, the edge of which is intact behind. In the characters of enamel surface, and outer vertical furrows, it agrees entirely with 10 A. The posterior fissure in the 'Long Hole' (Gower) specimen is much more gaping and triangular in its marginal outline, and very much more depressed at its hind border. I believe Mr. Dawkins' specimens to be of *R. tichorhinus* and not of any form of *R. leptorhinus*. The *R. megarhinus* has far more combing plates.

III.—MEMORANDUM OF FRAGMENT OF LOWER JAW OF RHINOCEROS TICHORHINUS, WITH MILK DENTITION, FROM WOOKEY HOLE.

December 7, 1862.

Mr. Dawkins' specimen is a fragment of the anterior portion of the left side of the lower jaw, containing the first three milk molars *in situ*, with about one inch of the diastemal and symphyseal portions; the last milk molar (m.m. 4) is wanting. With this exception, the Wookey specimen resembles in the very closest manner the Lawford specimen figured by Owen in the 'Brit. Foss. Mam.', pp. 338 and 363, Cuts 128 and 137. The m.m. 1 is all but intact at the apex of the cusp. The m.m. 2 has the middle cusp and posterior crescent slightly abraded, but the anterior edge is intact; m.m. 3 has both crescents slightly abraded.

M.m. 1 in form is exactly like p. 1 of Cut 137, and m.m. 2 like p. 2, both of natural size and seen from inner side, the latter showing the double cusps of the middle more pronounced.

The diastemal portion, which is shown entire for about .6 of an inch, is very rounded. The enamel is rugous and there is no cement. The jaw is low and the inferior edge is rounded forwards, and very broad and flat. There is not the least appearance of incisors or their pits. There is one large mentary foramen, at about $\frac{3}{4}$ of an inch in front of the anterior (m.m. 1) tooth, at about the middle of the height of the jaw.

The following are the principal dimensions:—

Length of fragment, 4·6 in. Joint length of three milk molars, 3·1 in. Length of m.m. 1, 0·7 in. Ditto of m.m. 2, 1·0 in. Ditto of m.m. 3, 1·3 in. Height of jaw under m.m. 1, inside, 1·6 in. Ditto at hinder end of m.m. 3, 2·0 in. Greatest thickness of ramus below, at section, 1·5 in.

The jaw at hind section is gnawed, but not deeply scored, as if by *Hyæna*.

This specimen confirms my former doubts,¹ that the Lawford specimen has the milk dentition, and not the permanent, as described in the 'Brit. Foss. Mammalia.'

IV.—MEMORANDUM OF SKULLS OF RHINOCEROS ANTIQUITATIS IN THE STUTTGART MUSEUM.

June 18, 1861.

Saw two skulls of *Rhinoceros tichorhinus*, found in the *Lehm*, near Stuttgart; one of them very large but somewhat crushed. The molars, lower jaws, and other bones of this species, are very numerous. Looked over the whole of them, but saw nothing in the slightest degree resembling either *Rhinoceros hemitæchus*, *Rhinoc. leptorhinus*, or *Rhinoc. Etruscus*. (See *antea*, p. 398.)

V.—MOLARS OF RHINOCEROS ANTIQUITATIS IN THE COLLECTION OF DR. F. SPURRELL, BELVEDERE.

September 10, 1863.

Of *Rhinoceros tichorhinus* there are fourteen characteristic and well-marked detached upper molars, including a pair of last (m. 3) of opposite sides. They are all highly characteristic specimens of the species, i.e. the enamel is thick and rough, and the valleys are three and vertical. They are in a ruder state and appear to have been rolled or tumbled about much more, than the *leptorhine* molars in the same collection. Woodward, Prestwich, and myself are agreed upon this. (See *antea*, p. 398.)

VI.—MEMO. OF RHINOCEROS ANTIQUITATIS IN MR. GRANTHAM'S COLLECTION.

September, 1863.

Posterior part of the cranium of *Rhinoc. tichorhinus*, including nearly the whole of the occiput with the left condyle quite entire. The occipital crest is perfect, and on the left side the parietal and temporal regions, with the auditory foramen and the styloid process, are nearly perfect. The skull, *in situ*, was probably entire. There are also several fragments of the upper jaw containing teeth. One left maxillary contains four molars of an adult animal *in situ*. The teeth show distinctly the character of *Rhinoc. tichorhinus*. There are no lower jaw specimens, but several detached lower molars. The only remains of *Rhinoc. leptorhinus* in this collection is one molar, very far advanced in wear and very like Dr. Spurrell's (p. 398).

¹ Expressed in Note-books after examination of the Lawford and Worth Jaws of *R. tichorhinus* in the Oxford Museum in 1858. See also *antea*, p. 348.—[Ed.]

VII.—MEMO. OF JAW AND MOLARS OF RHINOCEROS ANTIQUITATIS IN THE MUSEUM OF LE PUY.

September, 1863.

Examined a lower jaw, left side, broken in front and behind, of *Rhinoceros tichorhinus*, and two detached upper and three lower molars of same species, labelled *Rhinoc. Mesotropus*, by Aymard, in his handwriting. The jaw is youngish and contains the last five molars *in situ*, the last not quite emerged. There is also a block of plaster of Paris containing four molars, not consecutive, of upper jaw, right side (*i.e.* two true molars and two premolars), named *R. Mesotropus* in Aymard's handwriting. According to Aymard, both *R. megarhinus* and *R. tichorhinus* belong to his *R. Mesotropus*. The specimens are from 'Attérissements de Paradis près Espaly.'

VIII.—NOTE ON SPECIMENS OF *R. ANTIQUITATIS* IN MAIDSTONE MUSEUM.

September 28, 1863.

In this collection I found five upper molars of *Rhinoc. tichorhinus*, from Stroud; six upper molars, including two fine last upper, from the brick-earth at Thornhill, at back of Maidstone Jail, one of which is very remarkable and ought to be figured; the lower end of a right humerus from Burham; and the fragment of a tooth, far advanced in wear, from the railway cutting near St. Peter's Church.

NOTES ON DENTITION OF LIVING SPECIES OF RHINOCEROS.

I.—NOTE ON RHINOCEROS KEITLOA.

Saffron Walden, October 8, 1861.

The Saffron Walden Museum contains a beautifully perfect skeleton of an adult Rhinoceros, got at the same time as the Elephant from Algoa Bay (see *antea*, p. 265), but the ticket indicating South Africa. It bears the name of *Rhinoceros camus* or *R. simus* of Burchell.

In the upper jaw there are seven molars all protruded, but the last true molar barely touched by wear. There are four premolars and three true molars. The premolars are surrounded by a distinct basal cingulum; but in the progress of wear only two pits have been left, and the form of the crown is exactly that of the two-horned Rhinoceros of Sumatra, and totally different from the *Tichorhinus* pattern. Unfortunately the two intermaxillary bones have been lost or omitted in mounting the skeleton, but it is apparent that there was a short diastemal edge in front of the first premolar.

As regards the lower jaw the dentition is quite complete. There are four premolars and three true molars, all of them affected by wear, except the last. The first premolar has a flattened crown, with a single fang, and is of moderate size, immediately in front of which is the nearly filled up alveolus of an outer incisor which had been shed, and of which the fang-pit is in progress of filling up. Inside of it there is, on either side, and immediately contiguous to it, the pit, nearly eradi-