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A DESCRIPTION

OF TWO ADDITIONAL

CRANIA OF THE ENGÉ-ENA,

(Troglodytes gorilla, Savage,) from Gaboon, Africa.

BY

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The evidence now existing of a second and gigantic African species of man-like ape, as appears from published reports, consists of the following remains:—1. Four crania in the United States, two males and two females, of a large portion of a male skeleton, and of the pelvis and of some of the bones of a female. These were the first remains of this animal which had been brought to the notice of naturalists, and were described in the Boston Journal of Natural History.*—2. Three other crania subsequently discovered exist in England and have been made the subject of an elaborate memoir by Prof. Owen, in the Transactions of the Zoological Society of London.†—3. Quite recently, Dr. George A. Perkins, for many years an able and devoted laborer in the Missionary enterprise at Cape Palmas, W. Africa, has brought to the United States, two additional crania, one of which is deposited in the Museum of this Society, and the other in that of the

* See Proceedings of the Boston Soc. Nat. Hist., Aug. 18, 1847; also a description of characters and habits of Troglodytes gorilla, by Thomas S. Savage, M.D., Corresp. Memb. Bost. Soc. Nat. Hist., and of the Osteology of the same by Jeffries Wyman, M.D., Boston Journ. Nat. Hist., Vol. v, p. 417, 1847.

† Osteological Contributions to the Natural History of the Chimpanzées, (*Troglodytes*, Geoff.,) including the description of the skull of a large species, (*T. gorilla*, Savage,) discovered by Thomas S. Savage, M.D., in the Gaboon country, West Africa, by Prof. Owen, F.R.S., F.Z.S., &c. Read Feb. 22, 1848. Trans. Zoolog. Society of London, Vol. iii, p. 381, 1849.

Essex Institute in Salem. Both of these have been referred to me for the purposes of description, and it is the object of this communication to notice the more important anatomical features of this the largest of African Quadrumana, with regard to which additional information is desired.

Cranium I. Male.—This belonged to an adult Engé-ena,* as is evident from the fact that the teeth are all perfectly developed; yet not to an old one, as appears from the circumstances that the points of the molars are but very slightly worn, and the crests on the top of the head and occiput are but imperfectly formed. Its size as well as that of all the other crania of this species which have been measured, when compared with that of *T. niger* (Chimpanzée) and a well marked Negro head, may be learned from an inspection of the following table.

Table I.—Measurements of the crania of *T. gorilla*, of *T. niger* and of the cranium of a native African in inches and tenths.—Nos. 2, 6, 7 and 8 are in inches and lines.

	Troglodytes gorilla.						T. niger		Man
	Males.				Females.		Male	Female.	
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
Length of head from occiput to edge of incisive alveolus,	11·2	11·4	11·0	10·2	9·10	9·0	8·0	7·9	9·6
Greatest breadth across post-auditory ridges,	6·1	6·10	6·4	5·9	5·2	5·6	5·0	4·6	5·4
Smallest diameter behind orbits,	2·5	3·3	2·9	2·7	2·5	2·4	2·6	2 8	3·4
Diameter of face across zygomatic arches,	6·5	6·6	7·0	6·4	5·5	5·3	5·0	4·8	5·7
Diameter of face outside the middle of the orbits,	4·9	6·0	5·8	5·7	4·3	4·8	4·3	4·0	4·9
From occiput to most prominent part of supra-orbitar ridge,	7·3	..	7·6	6·5	6·5	6·1	5·4	5·3	7·2
From sup. orb. ridge to edge of incisive alveolus,	4·8	..	5·7	6·0	..	..	4·0	4·4	3·5
Breadth of zygomatic fossa,	1·7	1·8	1·9	1·8	1·4	1·5	1·3	1·1½	1·1
Inter-orbitar space,	1·1	1·3	1·2	1·1	1·0	1·1	0·8	0·7	1·2
Transverse diameter of orbits,	1·5	1·9	1·8	1·6	1·4	1·6	1·5	1·6	1·6
Vertical " "	1·6	1·7	1·6	1·6	1·4	1·7	1·3	1·3	1·3
Length of bony palate from outer edge of incisive alveolus,	3·7	4·1	..	4·3	3·4	3·3	..	..	1·7
From anterior edge of foramen magnum to outer edge of incisive alveolus,	7·2	..	..	7·4	3·5	..	..	..	..

(Crania I. and V. were the ones brought by Dr. Savage to this country—II, VI, VII. and VIII. are the crania described by Prof. Owen; III. and IV. are the crania which were obtained by Dr. Perkins—IX. the cranium of a Negro born in Africa in whom the characteristics of the race were well marked, and which belongs to the Cabinet of the Boston Soc. for Med. Improvement. See Catalogue of Society's Cabinet, Specimen No. 61.)

This cranium does not agree with that figured by Prof. Owen in his memoir (Pl. lxi.) in the exclusion of the orbits from view

* Prof. Owen designates *T. gorilla* as the "Great Chimpanzée." The Mpongwes (natives inhabiting the banks of the Gaboon) call this species the Engé-ena, a more desirable name, as the term Chimpanzée has been always associated with the black or smaller species.

by the prominent malar bones when the skull is seen in profile, but as was the case in those discovered by Dr. Savage, the nasal bones are wholly, and the orbit in part brought into view. In none of them is it more excluded than in the first figures of our memoir. The great ridges above the orbits, which are so widely developed in *T. niger*, are still more so in the present species, and in the specimen now under consideration sustain the former statements with regard to them. Prof. Owen remarks in connection with them, "the prominence of the whole supra-orbitar ridge reaches its maximum in the present species and forms the most marked distinction in the comparison of its skull with that of man." (Memoir, p. 405.)

Sutures.—I have shown in a former communication from an examination of several crania of the Chimpanzée, that nearly all the sutures are completely obliterated early during the adult period.* From a careful examination of the six crania of the Engéena to which I have had access, there is every reason to believe that an early coösification takes place in them also. In the skull now under consideration, which it is to be remembered, has not long passed the adult period, the frontal, the sagittal, the coronal, the squamous portion of the temporal sutures, all those in the temporal fossa as well as the transverse portion of the lambdoidal are no longer persistent. The crania which have been examined by Prof. Owen, or some of them at least, indicate an opposite state of things. To ascertain, therefore, the value of cranial sutures as specific signs, it is quite obvious, that a large number of crania of different ages must be critically examined.

Inter-maxillaries.—These bones so important as zoological indications are completely coössified with the maxillaries and with each other. No indication of a suture exists between them and the last mentioned bones either on the external surface below the nasal openings, or in the roof of the mouth. I was not able to find any indications of the ascending portion of the intermaxillary bone which articulates with the nasals, until led by Prof. Owen's description to make a more careful search. Although externally there was no mark which would lead an anatomist to infer its existence, yet within the nasal cavity at a short distance from its margin, the edge of the process was easily detected, it not having become coössified in that region with the adjoining bone.

The extension of the intermaxillary upwards as far as the ossa nasi, so as to form the lateral walls of the external nasal orifice, as was indicated in a specimen of Chimpanzée, examined by Prof. Owen, is still obvious in a young skull of the same species in my possession, where it reaches the nasals by a slender and

* Boston Journal of Natural History, April, 1843.

pointed process. The enlargement of this process in the Engé-ena,* so as to form an extensive articulation with the nasal bones, inasmuch as it is a repetition of what exists in the lower quadrumana and nearly all the mammalia, must be regarded as an index of degradation.

Ossa Nasi.—Prof. Owen, in his memoir† on the Engé-ena, in speaking of the sutures between the nasal maxillary and intermaxillary bones, says, "it is remarkable indeed since these sutures remain so distinct in the adult female skull and the two adult male skulls, in the Bristol Museum, that no trace of them should have been detected in either of the four skulls taken to America by Dr. Savage, in which the ossa nasi are described as being firmly coössified with each other and the surrounding bones," (the concluding words of the above sentence he does not quote, viz., "but their outline is sufficiently distinct.") In the cranium brought by Dr. Perkins, the consolidation of these bones is equally complete and their outline is but indistinctly traceable.

In the crania formerly described, the ossa nasi form, on the median line, a sharp elevation or crest; in the specimen figured by Prof. Owen, (Pl. lxii,) this is represented by a more rounded and convex ridge, "and thus offering a feature of approximation to the human structure which is very faintly indicated, if at all, in the skull of the *T. niger.*"‡ In the cranium now under consideration, when compared with the Plate above referred to, the convexity is still more remarkable, and will bear a more favorable comparison with the "bridge" of the nose in some of the human races.

The expansion of the nasals above, where they are interposed between the frontals, as described by Prof. Owen, was overlooked in my former description, only very faint indications of sutures remaining. On a more careful examination, the outline of the portion of bone interposed between the orbitar process of the frontals is indistinctly traceable in the male skull discovered by Dr. Savage, and in both of the crania brought to this country by Dr. Perkins; and in all of them, on a line with the upper extremity of the ascending process of the superior maxillary bone, at the point where the nasal bones become the most contracted, there exists an equally strong indication of a transverse suture, which separates the portion marked 15′ in Prof. Owen's figure from the true nasals, and equally distinct indications of this suture exist in his figure just referred to. Thus we have strong ground for the supposition that the part marked 15′ by Prof. O. may not be the expanded portion of the nasals but an additional osseous element intercalated between the frontals. In this event my orig-

* This is very distinctly shown in Pl. lxii. of Prof. Owen's Memoir.
† Op. cit., p. 420. ‡ Op. cit., p. 393.

inal description of the ossa nasi, "as having a more triangular form than in the Chimpanzée, the apex being more acute," still holds good. If, however, the bone referred to prove to be a portion of the nasals, we shall have in this another index of inferiority to the Chimpanzée, as it is a repetition of what is met with in the lower quadrumana.

Teeth.—The molars alone remain, the incisors and canines having been lost. The length of the grinding surface of the molar teeth is 2·9 inches, the two rows being nearly parallel to each other. This is true of the alveoli, though the crowns slightly diverge from each other posteriorly in consequence of an inclination outwards. Nearly all of the cusps of the teeth are perfect, those of the first molar being the most worn, as would naturally be expected, it being the first which is protruded. The inner cusps of this tooth are worn nearly to the base; the outer are but slightly abraded, and the same is the case with the inner cusps of the second molar; with these exceptions the points of the different crowns of the molars and premolars are entire.

In comparing their grinding surface with that of the human jaw, one cannot but be struck with its greater extent, with the much greater development of the outer row of cusps, and the high ridge which on all three of the molars connects the outer row of cusps with the anterior inner cusp. In these respects as well as in having the third molar, or the "dens sapientiæ," of equal size with the others, the Engé-ena recedes from the Chimpanzée and still farther from man.

In the left upper jaw and on the level with the lower extremity or the pterygoid process, a supernumerary molar existed, still buried in its bony cavity, the roots not having as yet been developed. In the configuration of its grinding surface it did not conform with either of the other teeth.

Bony Palate.—By reference to the table of measurements, it will be seen that the space between the incisive alveoli and the edge of the hard palate is much greater proportionally than in the Chimpanzée. The median suture has disappeared and only slight indications remain of a former suture between the maxillaries and the ossa palati. The emargination on the middle of the edge of the palate is much less distinct than in either of the other specimens which I have examined, or than in that figured by Prof. Owen.

The *Vomer* has the same thin and delicate structure as in the other crania and does not meet the ossa palati at the posterior edge.

Cranial capacity.—In studying the anatomical characters of this and the allied quadrumana with reference to their zoological position, nothing can be more desirable than to have accurate knowledge with regard to the structure and dimensions of the brain, for this may be regarded as one of the most important of all

the tests of elevation or degradation. The bodies of the adult anthropoid animals so seldom fall into the hands of the anatomist, that it becomes extremely difficult to accumulate observations on the actual condition of this organ. In the comparative study of human crania with reference to national peculiarities, much light has been derived from accurate measurements of their internal capacity. These may be readily obtained and form a very important substitute for the actual dimensions of the brain itself. In the subjoined tables I have given the results of the measurements of all the crania both of Engé-enas and Chimpanzées to which I have had access while writing these remarks, and as they have been repeated in each case several times over, they may be regarded as nearly accurate. The capacity of the third cranium is alone doubtful; a portion of the occiput having been destroyed, rendered exact measurement impracticable, though it is believed that the result can differ but little from the truth.

Table II.—Cranial capacity of adult Engé-enas.

	Cubic inches.
I. Male from Dr. Perkins,	34·5
II. Male from Dr. Savage,	28·3
III. Male from Dr. Perkins,	28 0?
IV. Female from Dr. Savage,	25·0
Mean of the four crania,	28·9½

Table III.—Cranial capacity of adult Chimpanzées.

	Cubic inches.
I. Female,	26·0
II. Female,	24·0
III. Female,	22·0
Mean capacity of three skulls,	24·0

Cranial capacity of young Chimpanzées.

IV. First dentition complete,	20 0
V. First dentition complete but the sutures obliterated to a less extent than in the preceding,	18·0

The above results clearly indicate that there exists a wide range in the cranial capacity of the Engé-enas, amounting to nine cubic inches, when both sexes are included in the observation. While it would be desirable to have the measurements of a much larger number, we still have evidence for concluding, that in the Engé-ena, as in man,* the capacity of the cranium of the male is

* "Although many female brains exceed in weight particular male brains, the general fact is sufficiently shown, that the adult male encephalon is heavier than that of the female. the average difference being from 5 to 6 oz." From the examination of 278 male brains and of 191 females, "an average weight is deduced of 49½ oz. for the male and of 44 oz. for the female." Quain and Sharpey's, Quain's Anatomy; edited by Joseph Leidy, M.D., vol. ii, p. 185. Philadelphia, 1849.

larger than that of the female; the smallest male skull of the Engé-ena measuring twenty-eight cubic inches, and the female only twenty-five cubic inches.

In Table III, the three adults are females, and it is quite worthy of notice, that the internal capacity of these differs so little from that of the female Engé-ena, while at the same time the body of the Chimpanzée is so much smaller than that of the other species. By comparing the measurements given of the corresponding portions of the skeleton of the Engé-ena and Chimpanzée, it will be seen that a much wider difference exists between them, than exists between the dimensions of their respective brains.*

It is interesting to contrast the measurements of the cranial capacity of these members of the Quadrumanous group with that of some of the more prominent of the human races. The following table which is extracted from the general summary of the measurements of a vast number of crania, by Dr. S. G. Morton of Philadelphia, gives in cubic inches the average cranial capacity of the different races or groups there mentioned.†

Table IV.

Races.	No. of skulls measured.	Largest capacity.	Smallest capacity.	Mean.	Mean.
Teutonic Race of Caucasians.					
Germans,	18	114	70	90	90
English,	5	105	91	96	
Anglo-Americans,	7	97	82	90	
Malay Group.					
Malayan family,	20	97	68	86	85
Polynesian family,	3	84	82	83	
American Group.					
Toltecan Family.					
Peruvians,	155	101	58	75	87
Mexicans,	22	92	67	79	
Barbarous Tribes,	1961	104	70	874	
Negro Group.					
Native African Family,	62	99	65	83	
Hottentots,	3	83	68	75	
Australians,	8	83	63	75	

These results are derived from a table which Dr. Morton has based upon the actual measurements of over 600 skulls. The smallest mean capacity is that derived from the Hottentots and Australians, which equals only seventy-five cubic inches, while that of the Teutonic races amounts to ninety cubic inches. The maximum capacity of the Engé-ena, is therefore considerably less than one half of the mean of the Hottentots and Australians, who give us the minimum average for the human races.

* See Table of comparative measurements. Boston Journal of Natural History, vol. v, p. 417.

† Catalogue of Skulls of Man and the Inferior animals in the collection of Samuel George Morton, M.D., &c. 3d edition. Philadelphia, 1849.

Cranium II. Male.—This cranium belonged to an individual much older than the one described in the preceding pages, the inner row of cusps of all the molars having been worn to their bases. The same obliteration of the sutures had taken place, the malar bones are more tumid, rendering the edge of the lower and outer part of the orbit more rounded. The floor of the nasal orifice slopes gradually from the anterior extremity of the vomer to the edge of the incisive alveoli, and presenting a groove on the median line. In man, the intermaxillary bones form a projecting ridge on the median line both in and below the nasal orifice and at the middle of the border of this opening form the projecting "nasal spine," which is not met with in any of the lower animals, and is therefore *an anatomical character peculiar to man.* With regard to this conformation of the intermaxillary bones, the Engé-ena recedes farther from man than the Chimpanzée. Two infra orbitar foramina exist on each side. The crests are not so well developed as in the cranium just described. The occiput having been in part destroyed, the cavity of the cranium is completely exposed. A groove for the lodgment of the longitudinal sinus is well defined; "digital impressions," formed by the cerebral convolutions, exist, but not well marked, the *crista galli* is merely rudimentary and is represented by a very slight median ridge, the olfactory fossa is quite deep, the cribriform plate being on a level with the middle of the orbit. About five parallel groves for the lodgment of the branches of the dura matral artery exist on each side.

Zoological position of the Engé-ena.

With the knowledge of the anthropoid animals of Asia and Africa which now exist, derived from the critical examinations of their osteology, their dentition, and the comparative size of their brains by various observers, especially Geoffroy, Tiedemann, Vrolik, Cuvier, and Owen, it becomes quite easy to measure with an approximation to accuracy, the hiatus which separates them from the lowest of the human race. The existence of four hands instead of two, the inability to stand erect, consequent on the structure of a skeleton adapted almost exclusively to an arboreal life, the excessive length of the arms, the comparatively short and permanently flexed legs, the protruding face, the position of the occipital condyles in the posterior third of the base of the skull and the consequent preponderance of the head forwards, the small comparative size of the brain, the largely developed canines, the interval between these last and the incisors, the three roots to the bicuspid teeth, the laryngeal pouches, the elongated pelvis and its larger antero-posterior diameter, the flattened and pointed coccyx, the small glutæi, the smaller size of the lower compared with the upper portion of the vertebral column, the

long and straight spinous processes of the neck, these and many other subordinate characters, are peculiarities of the anthropoid animals, and constitute a wide gap between these and the most degraded of the human races, so wide that the greatest difference between these last and the noblest specimen of a Caucasian is inconsiderable in comparison.

Whilst it is thus easy to demonstrate the wide separation between the anthropoid and the human races, to assign a true position to the former among themselves is a more difficult task. Mr. Owen in his earlier memoir, regarded the *T. niger* as making the nearest approach to man, but the more recently discovered T. gorilla, he is now induced to believe approaches still nearer, and regards it as "the most anthropoid of the known brutes."* This inference is derived from the study of crania alone, without any reference to the rest of the skeleton.

After a careful examination of the memoir just referred to, I am forced to the conclusion, that the preponderance of evidence is unequivocally opposed to the opinion there recorded; and after placing side by side the different anatomical peculiarities of the two species, there seems to be no alternative but to regard the Chimpanzée as holding the highest place in the brute creation. The more anthropoid characters of the *T. gorilla* which are re-referred to by Prof. O., are the following.

1. "The coalesced central margins of the nasals are projected forwards, thus offering a feature of approximation to the human structure, which is very faintly indicated, if at all in *T. niger*."† This statement is applicable to all the crania which I have seen, and especially to the two crania described in this paper. Nevertheless the extension of the nasals between the frontals, or the existence of an additional osseous element, is a mark of greater deviation from man.

2. "The inferior or alveolar part of the premaxillaries, on the other hand, is shorter and less prominent in *T. gorilla* than in *T. niger*, and in that respect the larger species deviates less from man."‡ The statement in the first portion of this sentence is certainly correct, but a question may be fairly raised on that in the second. The lower portion of the nasal opening in the Engé-ena is so much depressed, especially in the median line, that the intermaxillary bone becomes almost horizontal, and the sloping of the alveolar portion takes place so gradually that it is difficult to determine where the latter commences and the nasal opening terminates, and in this respect it deviates much farther from man than *T. niger*.

3. "The next character which is also a more anthropoid one, though explicable in relation to the greater weight of the skull

* Op. cit., vol. iii, p. 414. † p. 393. ‡ p. 393.

to be poised on the atlas, is the greater prominence of the mastoid processes in the *T. gorilla*, which are represented only by a rough ridge in the *T. niger*."*

4. The ridge which extends from the ecto-pterygoid along the inner border of the foramen ovale, terminates in *T. gorilla* by an angle or process answering to that called "styliform" or "spinous" in man, but of which there is no trace in *T. niger*.†

5. "The palate is narrower in proportion to the length in the *T. gorilla*, but the premaxillary portion is relatively longer in *T. niger*."‡

These constitute the most important if not the only characters given in Prof. Owen's memoir, which would seem to indicate that the Engé-ena is more anthropoid than the Chimpanzée, and some of these it is seen must be received with some qualification.

If on the other hand we enumerate those conditions in which the Engé-ena recedes farther from the human type than the Chimpanzée, they will be found far more numerous, and by no means less important. The larger ridge over the eyes and the crest on the top of the head and occiput, with the corresponding development of the temporal muscles, form the most striking features. The intermaxillary bones articulating with the nasals, as in the other Quadrumana and most brutes, the expanded portion of the nasals between the frontals,—or an additional osseous element if this prove an independent bone,—the vertically broader and more arched zygomata, contrasting with the more slender and horizontal ones of the Chimpanzée, the more quadrate foramen lacerum of the orbit, the less perfect infra-orbitar canal, the orbits less distinctly defined, the larger and more tumid cheek bones, the more quadrangular orifice with its depressed floor, the greater length of the ossa palati, the more widely expanded tympanic cells, extending not only to the mastoid process, but to the squamous portion of the temporal bones, these would of themselves be sufficient to counterbalance all the anatomical characters stated by Prof. Owen in support of the more anthropoid character of the Engé-ena.

When, however, we add to them the more quadrate outline of the upper jaws, the existence of much larger and more deeply grooved canines, molars with cusps on the outer side longer and more sharply pointed, the dentes sapientiæ of equal size with the other molars, the prominent ridge between the outer posterior, and the anterior inner cusps, the absence of a crista-galli, a cranial cavity almost wholly behind the orbits of the eyes, the less perfectly marked depressions for the cerebral convolutions, and above all, the small cranial capacity in proportion to the size of the body, no reasonable ground for doubt remains, that the Engé-ena occupies a lower position and consequently recedes further from man than the Chimpanzée.

* Op. cit., p. 394. † p. 395. ‡ p. 395.

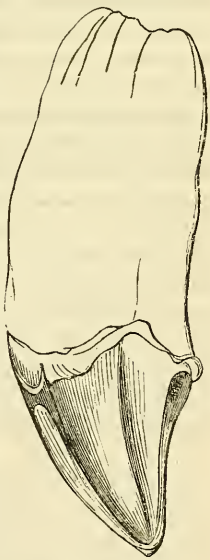
It does not appear that any other bones of the skeleton have as yet fallen into the hands of any European naturalist. A description of some of the more important of them will be found in the memoir above referred to,* in which it will be seen that there are two anthropoid features of some importance, which go to support the view advanced by Prof. Owen, and these are the comparative length of the humerus and ulna, the former being seventeen and the latter only fourteen inches, and in the proportions of the pelvis. This last is of gigantic size, and is a little shorter in proportion to its breadth than in *T. niger*.

While the proportions of the humerus and the ulna are more nearly human than in the Chimpanzée, those of the humerus and femur recede much farther from the human proportions than they do in the Chimpanzée, as will be seen by the following measurements:

	Humerus.	Femur.
Man, . . .	15·0 . . .	18·5
Chimpanzée, . .	10·9 . . .	11·0
Engé-ena, . .	17·0 . . .	14·0

Thus in man the femur is three inches longer than the humerus, in the Chimpanzée, these bones are nearly of the same length, and in the Engé-ena the humerus is three inches longer than the femur, indicating on the part of the Engé-ena a less perfect adaptation to locomotion in the erect position than in the Chimpanzée.

Description of a canine tooth of a male Engé-ena.—In only one of the crania of the male Engé-enas which I have seen were the canines remaining; and these were so much abraded that they had lost to a great extent, their natural outline, and consequently their most striking and distinctive marks. In the females, as in the Chimpanzée and the Quadrumana, generally the canines are much less elongated than in the males. Among the bones first sent to this country by Dr. Savage, was the canine tooth represented in the annexed figure, which I was not able to identify, until an opportunity occurred of comparing it with Prof. Owen's descriptions of more perfect teeth. The crown is laterally compressed, the posterior edge being trenchant and its base provided with a prominent tubercle, which is doubtless rendered more conspicuous by the wearing of the edge beneath it. On its inner surface the crown is impressed with two strongly marked grooves, which extend from the base nearly to



Canine tooth of the Engé-ena—natural size.

* Boston Journal of Nat. History, vol. v, p. 417.

its apex; and include between them a prominent rounded ridge. The following table gives the comparative measurements of two canines from the upper jaw of the Engé-ena, and one from that of the Chimpanzée. The figures in the first column relate to the tooth described above; those in the second and third to the measurements given by Prof. Owen,* the measurements being in inches and lines.

	T. gorilla.		T. niger.
Length, . .	2·8	2·8 . .	2·0
Length of crown,	1·3½	1·3 . .	0·10½
Breadth of base,	1·0	0·10 . .	0 7
Thickness of do.	0·7½	0·7½ . .	0·5½

The following note from Dr. G. A. Perkins to the author, dated Salem, Oct. 15, 1849, confirms the statements made by Dr. Savage, in his description of the habits of the Engé-ena, as to its ferocity and the fact of its attacking human beings.

"The two crania were received from a person on board a vessel trading in the Gaboon and Danger Rivers, W. Africa. They were obtained from the natives on the banks of the latter, by whom they had been preserved as trophies. From the gentleman who gave them to me, I learned that the killing of one of these animals was by no means a common occurrence. He describes the animal as being remarkably ferocious, even attacking the natives when found alone in the forests, and in one instance which fell under his observation, horribly mutilating a man who was out in the woods felling trees to burn. His shouts brought to his aid several other natives, who after a severe contest, succeeded in killing the Engé-ena. The man was afterwards in the habit of exhibiting himself to foreigners who visited the river and of receiving charity from them."

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* Trans. Zoolog. Soc. London, vol. iii, p. 395.