

NOTES ON *SIMOPITHECUS OSWALDI* ANDREWS  
FROM THE TYPE SITE.

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INTRODUCTION.

In 1916, the late Dr. Andrews of the British Museum published a detailed account of the fossil remains of a new genus of baboon from the fossil beds near Homa Mountain, Kenya. This material had been collected by Dr. Felix Oswald at a site which had been originally discovered by Mr. Milliken. The description was published in 1916, and the new species was given the name of *Simopithecus oswaldi*.

In 1932 and 1935, the writer revisited these fossil beds and identified the actual spot from which Dr. Oswald obtained his original material. Fresh collections were made and among the material collected on those two visits were parts that were later found to fit the broken fragments in the earlier collection.

The collections made in 1932 and 1935, were presented to the Natural History Museum, South Kensington, and in 1936, Dr. Hopwood published a brief preliminary note.

At Christmas time, 1941, the present writer took the opportunity provided by a few days leave from his war-time duties to revisit the Homa fossil beds at Kanjera, and was rewarded by the discovery of the material which is the basis of the present paper. This consists of an almost complete skull of an adult male *Simopithecus*, an incomplete adult female skull and the mandible of a juvenile.

The material on which Dr. Andrews based his original description of the new genus consisted of part of a female skull, a part of the mandible of a female, a small, right, maxilla fragment, two, left, mandibular fragments, and two, isolated, male canine teeth. There were also some fragments of limb bone and other parts of the skeleton.

Among the 1932 and 1935 material was a nearly-complete female skull and much other material; but, so far, only the female skull has been described so far as the writer is aware, and that very briefly (*Loc. cit.*).

The discovery of the almost-complete, male skull in December, 1941, is of special interest, as it shows us for the first time what the male of *Simopithecus* is like, while the fact that the skull is so complete provides excellent material on which to base a better understanding of the affinities of the genus.

The Homa Mountain fossil beds are not confined to one series of exposures nor are they all of one age so that before proceeding to the description of the new material it is necessary to say a few words about the particular beds which have yielded all the *Simopithecus* material.

The site from which Oswald got his original material and from which all the rest has come also, was renamed Kanjera in 1932, to distinguish it from the Kanam and Rawi beds in the same vicinity at the foot of Homa Mountain. The Kanjera beds are of the same age as the Oldoway fossil beds and contain much the same fauna, including *Elephas antiquus*, *Hippopotamus gorgops*, *Hipparion*, *Metridiochoerus*, *Pelorovis*, etc. The Kanjera beds also contain hand-axes of the stage known as Acheulean 4 and they also yielded the fragmentary Kanjera fossil skulls.

The fossil beds are old lake deposits laid down when Lake Victoria was much more extensive than it is to-day during what is called the Kamasian Pluvial, in Middle Pleistocene times.

The material to be described in this paper is in the Palaeontological collections of the Coryndon Museum, Nairobi, Kenya.

ORDER PRIMATES.  
FAMILY CYNOPITHECIDAE.\*  
GENUS SIMOPITHECUS.

*Simopithecus oswaldi* Andrews, 1916.

MATERIAL.

One male skull lacking the mandible and with the basi-occipital region damaged and three incisors missing, otherwise intact.

One fragmentary female skull consisting of the top of the brain case and the greater part of the face, with the dentition complete. The mandible is missing.

One mandible of a juvenile.

DESCRIPTION OF THE MALE SKULL.

The skull is that of a young adult male with the third molars only recently erupted and with the occipital-sphenoid suture not yet closed. The most noticeable features on first examination are the large size and general massiveness, the short face and the extraordinary development of the median crest which is more like that on a carnivore such as a hyena than that on any baboon. The zygomatic arches are very massive and the mandible must have been very large.

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\*NOTE.—Andrews placed the genus *Simopithecus* in the family *Cercopithecidae*, Hopwood places it in the family *Cynopithecidae*, while by Elliot's classification it would be in the *Lasiopygidae*.

The malar-maxillary area beneath the orbits is very wide and lacks the canine fossa that is to be seen in baboons of the *Papio* group and to a less extent in those of the genus *Theropithecus* as well. The nasal bones are very flat and are also short compared to those of *Papio*. The frontal constriction is very extreme and the temporal crests unite to form the massive median crest on the frontal bone itself just in front of the bregma. The occipital crest is so pronounced that it forms a flange of thin bone about 10 mm. wide and 3.5 mm. thick from just behind one mastoid right round the back of the skull to just behind the other mastoid.

The teeth are large, the molars, in particular, being long and narrow when compared with those of *Papio*, and somewhat resembling those of *Theropithecus* in this respect. The upper canines are much shorter than those of either *Papio* or *Theropithecus* of corresponding age and sex.

The following are the detailed measurements of the skull:—

Maximum length (from centre point of occipital crest to alveolar point between central incisors) ... ..	207 mm.
Brain case length (from centre of occipital crest to mid-point of supra-orbital ridge) ... ..	125 mm.
Internal brain case length (length of brain cast) ... ..	93 mm.
Width of brain case (width measured just above the external auditory meatus) ... ..	98.5 mm.
Internal brain case width (width of brain cast) ... ..	67 mm.
Maximum bi-zygomatic breadth ... ..	133 mm.
Width at narrowest part of brain case (post-orbital constriction) ... ..	47.5 mm.
Maximum frontal width (from mid-point of one malar-frontal suture to mid-point of the other) ... ..	86 mm.
Facial length (from nasion to alveolar point) ... ..	107.5 mm.
Length of nasal bones ... ..	58 mm.
Facial breadth (from point where the malar-maxillary suture crosses the inferior margin of the jugal on one side to the same point on the other side) ... ..	77.5 mm.
Maximum width of the muzzle above the canines	50 mm.
Maximum width of muzzle above the third molars	62.5 mm.
Minimum malar-maxillary width ... ..	37 mm.
Length of molar series ... ..	49.5 mm.
Length of molar-pre-molar series ... ..	65.5 mm.
Width of palate at mid-point of second molars ... ..	31 mm.
Width of palate at third pre-molar ... ..	28 mm.
Average height of median crest ... ..	10 mm.

**Measurements of teeth:**

Third pre-molar	...	length 8 mm.,	breadth 9.5 mm.
Fourth pre-molar	...	length 9.5 mm.,	breadth 9.5 mm.
First molar	...	length 14 mm.,	breadth 12.5 mm.
Second molar	...	length 18 mm.,	breadth 13.5 mm.
Third molar	...	length 19 mm.,	breadth 14 mm.

**DESCRIPTION OF THE FEMALE SKULL.**

The skull is that of a young, adult female with the third molars only recently erupted and just coming into wear. When found it was in many fragments; but when these were fitted together it was found that the greater part of the top of the skull, the right side of the face, part of the left malar and zygomatic arch and all the teeth were present. It was, therefore, possible to make a reasonably accurate reconstruction. As, however, there is an almost complete skull of a female in the 1935 collection which is now in the South Kensington Museum of Natural History, this new female skull is not of such great importance as that of the male.

Like the male, the female has a short face and a comparatively long brain-case. The face too lacks a canine fossa, a feature which Andrews also noted in the female on which he based his new genus. The post-orbital constriction is very marked. Unlike the male there is no median crest and the occipital crest is very small.

As this skull is incomplete only a few of the measurements that have been given for the male can be given, they are as follows:—

Maximum length	...	...	...	...	166.5 mm.?
Brain-case length	...	...	...	...	114 mm.
Maximum bi-zygomatic breadth	...	...	...	...	109 mm.
Post-orbital constriction	...	...	...	...	39 mm.
Maximum frontal width	...	...	...	...	73.5 mm.
Facial length	...	...	...	...	76 mm.?
Facial breadth	...	...	...	...	84 mm.?
Minimum malar-maxillary width	...	...	...	...	31 mm.
Length of molar series	...	...	...	...	44 mm.
Length of molar-pre-molar series	...	...	...	...	51.5 mm.

**Measurements of teeth:**

Third pre-molar	...	length 7.5 mm.,	breadth 8.5 mm.
Fourth pre-molar	...	length 7.5 mm.,	breadth 9 mm.
First molar	...	length 13.5 mm.,	breadth 10 mm.
Second molar	...	length 15.5 mm.,	breadth 12 mm.
Third molar	...	length 16.5 mm.,	breadth 12 mm.

In the male the only incisor tooth preserved is the right lateral and as it is somewhat damaged it is not clear whether its apparent very small size is real or due to damage. The incisor teeth of the female are in perfect preservation, however, and with them it is possible to say with certainty that they are very much smaller than the incisors of a female *Papio* of smaller gross size. The relatively small size of the incisors of *Simpithecus* in both sexes would, therefore, seem to be established beyond doubt.

#### DESCRIPTION OF THE JUVENILE MANDIBLE.

This mandible is nearly complete, but lacks the left coronoid and the right condyle and coronoid. There is one deciduous tooth present, the right milk molar which is in process of being displaced by the fourth pre-molar. The permanent first and second molars are present, the latter only just erupted and not yet begun to wear. The third molar on the left side has been removed from its crypt for examination, the right, third molar is still in the crypt. The jaw is clearly that of a young female as the canines are very small.

A remarkable feature is the very narrow anterior region of the mandible, a feature presumably linked with youth. The corpus of the mandible is exceedingly massive, far more so than in a *Papio* of comparable age.

Another remarkable feature of the mandible is one on which Andrews commented in his paper in 1916, namely, the great length of the symphysis which terminates at about the level of the posterior edge of the fourth pre-molars.

The following are the principal measurements of the mandible:—

Length of symphysis	... ..	36 mm.
Length from incisor border to back of condyle	... ..	107 mm.
Depth of horizontal ramus beneath first molar	... ..	21 mm.
Thickness of horizontal ramus at second molar	... ..	16 mm.
Thickness of horizontal ramus at first molar	... ..	12 mm.
Width of mandible at second molars (from outer edge of one second molar to other)	... ..	44 mm.
Width of mandible at canines (from outer edge of socket on one side to other)	... ..	22.5 mm.

#### Measurements of teeth:

Third pre-molar	... ..	length 8 mm., width 6 mm.
Fourth pre-molar	... ..	length 9 mm., width 7 mm.
First molar	... ..	length 13 mm., width 9.5 mm.
Second molar	... ..	length 16 mm., width 11.5 mm.
Third molar	... ..	length 17.5 mm., width 11 mm.

The canines which being of a female are very small, measure 9 mm. long and 5.5 mm. wide measured at the alveolar margin. They are 9.5 mm. high from alveolar margin to top.

The incisors are very small, the breadth of the laterals being only 4.5 mm. and of the centrals 5 mm., compared with measurements of 6 mm. and 7 mm. respectively, in a *Papio* of the same size.

#### CONCLUSIONS.

The new material described above provides ample justification for Andrew's creation of a new genus and it would seem to confirm that *Simopithecus* stands nearer to the genus *Theropithecus* than to *Papio*. In the absence of satisfactory comparative material of *Theropithecus*, it is not proposed to discuss the resemblances and divergencies at this time, that such exist is, however, clear.

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