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THE CASE OF THE PYGMY GORILLA: A CAUTIONARY TALE FOR CRYPTOZOOLOGY

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ABSTRACT: The pygmy gorilla is a concept derived from confusions and misunderstandings originating in the early years of this century. The specimens on which the concept of a pygmy gorilla (*Gorilla mayéma, Pseudogorilla mayéma,* or *Gorilla* [*Pseudogorilla*] *elliotti*) were based are all perfectly normal gorillas. In one case, failure to appreciate the nature of age-changes in the skull were responsible for the erection of a taxon. A misreading of *mayema* for *manyema* gave the pygmy gorilla a habitat in eastern Zaire. Such confusions must be disentangled before well-founded cryptozoological research is undertaken.

INTRODUCTION

One of the essential precursors to genuine cryptozoological research is the clearing away of dead wood. Searching for a species which, though it stands in the literature, does not exist and has no basis in reality, is a waste of time and distracts attention from more promising and more soundly based research.

In this paper, I will examine the basis of the belief that there is a pygmy gorilla waiting to be rediscovered after being lost for nearly three-quarters of a century. It has been cited as being "still controversial" (Heuvelmans 1984), and, indeed, has been the object of a special expedition to search for it (Raper 1945). Nonetheless, its initial description was entirely a product of the style of animal taxonomy prevalent in the early two decades of the present century: a combination of a species-splitting tradition and a basic biological ignorance whose character and all-pervasiveness is difficult to realize at this distance in time.

In the early 1960's, I amassed an enormous amount of data on cranial variation in the gorilla, measuring in the process 745 skulls of adult gorillas, of both sexes, as well as comparative subadult samples. I was able to examine and measure all type specimens in the genus with the exception of two (*Gorilla beringei* and *Gorilla gorilla schwarzi*), which are no longer present in their original collections and are said to have been destroyed during World War II.

By means of multivariate analysis, I determined (Groves 1970) that all gorillas belong to one species, *Gorilla gorilla,* with three well-defined subspecies. Aside from multivariate analysis, a series of univariate analyses were performed to determine expected ranges of variation in different characteristics.

It should be specified, finally, that to say that two geographically-based samples belong to one subspecies is not to say that they are identical. Strong average differences between geographic samples within at least two of the three subspecies are apparent: subspecies are merely those samples between which such strong differences exist that a majority of specimens can be correctly allocated.

Alix and Bouvier's Pygmy Gorilla

From the time of its first scientific description (1847) until the early 1870's, all gorillas whose remains found their way to scientific institutions (in the U.S.A., U.K., France and Australia) were from a restricted area in Central Africa, around the Gabon Estuary as far north as the present-day Rio Muni and as far south as Fernan Vaz. In 1877, a gorilla from much farther south, "the village of King Mayéma, on the banks of the Quilo at 4°35′ South," was described by E. Alix and A. Bouvier as a new species, which they named after the king of the country of origin, *Gorilla mayéma* (Alix and Bouvier 1877).

The specimen, an aged female, was described as being smaller than the known gorilla from the Gabon, with various skull differences, less developed spines to the first three cervical vertebrae, shorter clavicle, more slender and less muscularly marked forearm, hand, lower leg and foot bones, and long-haired back.

Later, Famerlart (1883) corrected the type locality of *Gorilla mayéma* to Condé, near Landana, and reported that he himself possessed a living youngster of the same species.

Hartmann (1885) gave further notes on *Gorilla mayéma.* The small hands and slender limbs, in his opinion, pointed to a youthful, not an aged specimen; the rest of the skeletal features described by Alix and Bouvier were variable, both individually and sexually; the hair on the back is sometimes worn away, sometimes not. So, just eight years after its original description, the whole basis for the species was fairly conclusively explained away.

A skull in the Laboratoire d'Anatomie Comparée, Paris, number 9772, is labelled "Gorilla mayéma: Rode, 1944." It is unclear whether this means that Rode had discovered this to be the type of the species, or whether he had merely identified it with the putative species. It is, in fact, consistent with the type, and, considering that *Gorilla mayéma* is not a species which appears in Rode's published writings, the former explanation could actually be correct. It is truly a very small specimen, only 206 mm in total length (prosthion to inion). Other female skulls from this southerly district (Mayombe, Cabinda, southern Gabon) average 236.5 mm, with a standard deviation of 10.08 (n = 4), and the mean for the whole Gabon region, south to the mouth of the Congo, is 227 mm (S.D. 8.69, n = 27). The next smallest skull is 213 mm long. A skull of length 206 mm is therefore to be expected in such a sample, being somewhat over 2 standard deviations from the mean.

Elliot's Pygmy Gorilla

The publication of the third, final volume of Daniel Giraud Elliot's epoch-making, much maligned *Review of the Primates,* occurred at the start of World War I (Elliot 1914). By this time, the "opening up of Africa" had revealed a host of previously undescribed mammal species, most of them procured in the first instance by the big-game hunters who followed hot on the heels of the missionaries and colonial administrators (or even, in some cases, preceded them). The relatively sudden influx of new specimens into museums, in Britain, Germany, and the United States in particular, was more than some of the mammalogists could handle. Used to comparing one specimen of species A with two of species B, they tended to think in terms of taxonomic variation rather than individual, age-dependent or sexual variation; this resulted in a host of spuriously "new" species being described along with the more modest list of genuinely new ones.

In his monograph, Elliot (1914) both suffered from and contributed to this prolixity. He found it difficult to make sense of many of the species described by his contemporaries, and his attempts to divide them up into genera and species-groups were, in the main, disastrous. His text is replete with remarks displaying admirable caution, which he would then, all too often, fail to live up to. In the case of gorillas, he had to wrestle with the problems created by Paul Matschie, of Berlin, perhaps the most reckless splitter of species of them all; he had a theory about the regularity of distribution patterns among mammals, and new species or subspecies would miraculously appear in his works in answer to the *a priori* need for a special local form. So it was that Elliot expressed skepticism about the gorilla species and subspecies that Matschie had described, and was still in the process of describing; but he then proceeded to burden the literature with a far more baleful error than any of Matschie's, and one whose insidious effects are still with us today.

Having searched for the type of *Gorilla mayéma* Alix and Bouvier in the Paris Museum, and having failed to find it, Elliot applied the name, giving no justification for his action, to a collection of three specimens (male, female, and young) in the Senckenberg Museum, Frankfurt. But he went further. Being under the impression that the skulls were intermediate between gorillas and chimpanzees, he removed the name *mayéma* from the genus *Gorilla* and erected a new genus, *Pseudogorilla,* for it. At the same time, he did admit that there was no real guarantee that his *Pseudogorilla mayéma* was in actuality the same species as Alix and Bouvier's *Gorilla mayéma*; anyone thinking they were different would, he noted, be at liberty to rename his (Elliot's) species.

The description of the new genus is, in essence, as follows: size small, but somewhat larger than the adult chimpanzee; braincase similar to the chimpanzee's, being large, full and rounded, sagittal and occipital crests wanting; forehead prominently rising above orbital ridge; a rather broad, flat expansion from occipital region to root of zygoma; face in profile having a slant of 45° from orbital ridge, rostral portion protuberant, narrow, lengthened; anterior portion of zygomatic arch at its root only reaches the anterior edge of first molar; lower horizontal line of mandible rounded, not straight. Distribution of hairy covering like *Gorilla.*

Elliot remarked that the prominent forehead and absence of crests is very much like in the chimpanzee, but the rest of the cranium is gorilla-like: shape of occiput, narrow face, form of mandible, and so on. The position of the zygomatic root is, however, also chimpanzee-like. The colors of the mounted skins are gorilla-like. The male skin is 1,350 mm high, and the male skull 220 mm long.

One of the most useful aspects of Elliot's monograph is the quite excellent black-and-white photographic plates of skulls, representing all genera. A glance at the photo of the male *Pseudogorilla mayéma* shows that it is not fully mature: all the teeth are erupted, but the third molars are unworn and the basilar suture is unfused. Examination of the actual specimen, still in the Senckenberg Museum, confirms this. At such an age in male gorilla skulls, the sagittal crest has not even begun to form. As the third molars come into wear, the temporal muscles continue to increase in size, and the temporal lines on the braincase (marking the upper limit of the origin of the temporal muscle) become more and more prominent and move higher and higher, until—at about the time that the basilar suture begins to fuse—the ridges meet along the midline of the top of the braincase and begin to form the sagittal crest. The temporal lines move not only upward but backward as well, until they meet the nuchal lines (upper limit of attachment of the muscles of posture at the back of the head), and another compound crest, the nuchal crest (Elliot's "occipital crest"), is formed. A very few male gorillas never develop a crest at all; of the 469 make skulls in my study, four did not have a crest.

So, is Elliot's male *Pseudogorilla* merely a young male of an ordinary gorilla? There is absolutely no doubt of it. Elliot's skull length measurement was taken between uprights; my measurement, direct from prosthion (anterior point, betwen the upper central incisors) to opisthocranion (furthest back point), is 243 mm. The normal skull length of adult male gorillas is 280–330 mm; that of young adults with a crest in process of forming is 268 to 316; of young adults with an incipient crest, 259–280; of young adults with no crest, i.e., in the growth stage of the male *Pseudogorilla,* 222–275 mm. Elliot's male specimen is thus right in the middle of the normal range.

Elliot did not state exactly how he held the skull to estimate the position of the root of the zygomatic arch; I held it with the alveolar margin of the toothrow horizontal and dropped a perpendicular from the infraorbital foramen (about at the position of the zygomatic root), which fell at the midpoint of the second premolar. This position is seen in many gorilla skulls, of all ages.

It is easy to ask how Elliot could have made such an elementary error. The only reasonable explanation must be that he was unfamiliar with growth patterns, and, indeed, the material available to him might not have included any other skulls of that age at all. It is even unclear whether he was aware that sagittal and nuchal crests are mechanical responses to muscular development, rather than genetic properties of particular species. Nor is there any indication in his text that he was aware that the skull in question actually was young, or that he knew about the basilar suture criterion.

What, then, of the female? Female gorillas, or 70% of them, lack sagittal crests, and have, at most, poorly raised nuchal crests. The skull length of the *Pseudogorilla* female is 220 mm, which, as was shown in the previous section, is normal for an adult female western gorilla—which is what it is.

There is no reason to disagree with Miller (1915: 6), who stated only a year after Elliot had written: "The genus *Pseudogorilla* was based on two specimens of true *Gorilla,* an immature male with all the teeth in place but with the basal suture open and the temporal ridges separate (l.c.pl.32), and a mature female with the basal suture closed and the temporal ridges joined (l.c.pl.33)."

Elliot gave us the locality for his new taxon "Upper Congo"; but the labels on the skulls clearly say "Fernan Vaz." This is a town halfway down the Gabon coast, and, for what it is worth, about midway between the type localities of *Gorilla gorilla* and *Gorilla mayéma.*

In view of subsequent events, it is sad that Miller's remarks were not more widely noticed. Frechkop (1943), normally the most cautious of zoologists, did exactly what Elliot had anticipated: Elliot's taxon was not the same as Alix and Bouvier's, so the name *mayéma* was not applicable to it, and it needed a new name. Regarding *Pseudogorilla* as valid only subgenerically, Frechkop therefore felt obliged to propose "pour le gorille-nain" a new name, *Gorilla (Pseudogorilla) ellioti.* It goes without saying that, as a replacement name for *Pseudogorilla mayéma* of Elliot, this name too falls as a synonym of *Gorilla gorilla gorilla,* the western lowland gorilla.

Pygmy Gorillas in Eastern Zaire?

There have been a few other mentions of *Gorilla mayéma* in the literature, and these too have contributed to the confusion. Rothschild (1905) stated boldly: "The *Gorilla manyema* [sic] of Alix and Bouvier I believe to be a very large ape of the group of *Simia vellerosus* Gray, and not a gorilla at all." (Chimpanzees, like gorillas, had been split up by Matschie and others

into a number of different species; *Simia vellerosus,* a mid-19th Century creation, had been revived to take its place among all the other "new" chimpanzees.) There are two points of special interest in this flat claim: first, Rothschild thought the Alix and Bouvier species was a chimpanzee, not a gorilla; secondly, he misspelt the name. Manyema (or Maniema) was a district of the then Belgian Congo, now Zaire, east of the Lualaba River: evidently, Rothschild had carelessly misread *mayéma* as *manyema,* jumped to conclusions as to where the type locality must be, and ascribed it, being described as small in size, to a chimpanzee. Chimpanzees were at that time already known from the Lualaba district; gorillas were not.

Three years later, Rothschild had changed his mind (Rothschild 1908). He had since received specimens of "Alix and Bouvier's *Gorilla manyema*" [sic!], and he then saw that this was not a chimpanzee after all, but must be the gorilla race of the "South Congo." What he meant by South Congo is ambiguous, but from his consistent use of the lapsus "*manyema,*" it is probable that Maniema is meant; indeed, there is in the British Museum (Natural History), in London, a skull from the Rothschild collection, no.1939.945, on which is written "*G. g. manyema.* Upper Congo." It is a specimen of the so-called eastern lowland gorilla, *Gorilla gorilla graueri,* which does indeed live in the present-day Maniema National Park.

So, Alix and Bouvier's little gorilla had changed both its name and its habitat. It had changed its size, too, for Rothchild's specimen is a perfectly normal-sized adult male. And this additional confusion was confounded further in 1945, when an expedition was mounted to look for it.

In his report on the search, Raper (1945) spoke of *Gorilla manyema,* an ape living in the Manyema district north of Lake Tanganyika, "of which there is a specimen in the Frankfurt Museum." It was said to be the same animal as that described by Livingstone as "Soko." These apes, said Raper, were recorded in 1942, north of Kigoma, twenty miles east of Lake Tanganyika, but turned out to be chimpanzees (just as was Soko, incidentally). Raper's group found no dwarf gorillas there: it would therefore seem to have disappeared, or else it is sitting somewhere inaccessible, laughing at people's attempts to find it.

Conclusions

This paper has, I hope, been more than just the sinking of a redundant name into synonymy. Strictly speaking, such an action was in any case unnecessary, having already been accomplished (if in some obscurity) by Hartmann (1885) and by Miller (1915). I have tried to show something of the complexity of a spurious concept that will not die: how an ordinary error of taxonomic judgement in the 1870's changed its meaning, twice, independently, in the early 20th Century, and how the two altered conceptions came together again to create a creature that never existed. I have tried to show, too, how we should view our predecessors' taxonomic work. In the last century, they had few specimens, and could not form proper judgements about the limits of individual variation; in the early years of the present century, they had too much material, all at once, but no framework in which to fit it—no real notions of distribution patterns or field biology, and little or no idea of what to expect about growth patterns. They were competent zoologists in their way: Matschie's writings, in particular, often contain startling insights, and are always full of interesting, if off-beat, ideas. But the early 20th Century was a watershed between two eras: Elliot carried with him the baggage of the 19th Century; Miller—just as much of a taxonomic splitter in his way—was able to cut through the untamed prolixity and see the biological reality behind the traditional taxonomic formalities.

That the confusion surrounding the "pygmy gorilla" concept had cryptozoological consequences is, really, no surprise. A genuine science of cryptozoology will first try to clear away such confusion, and see if there is any reality behind it all. In the case of the pygmy gorilla, I regret to state that there is none.

Though Heuvelmans (1984) has accused me of "overt hostility towards cryptozoology," which I hope the present article demonstrates to be in error, he has also paid me a spectacular compliment. I can do no less than return the compliment. In his book, *On the Track of Unknown Animals* (Heuvelmans 1958) (I cannot speak for the original French version, which I gather is not quite the same), Heuvelmans employs much the same technique as I have here, and which I have somewhat conceitedly referred to above as the "genuine science of cryptozoology." Chapter 17 of Heuvelmans' book, on the Nandi Bear, is a particularly fine example: Heuvelmans analyzes the reports, reaches behind them to the reality, and disentangles the different strands. Like the Nandi Bear, the "East African Proteus," the "pygmy gorilla" changed its shape continuously until it acquired its own bogus individuality.

Summary

The pygmy gorilla was based on *Gorilla mayéma,* a supposedly small-sized kind of gorilla described in the 1870's by Alix and Bouvier. It was redescribed in 1914, on a different set of specimens, and placed in a new genus. The 1877 animal was simply a rather small female; the 1914 ones were a normal young male and an adult female, the former misinterpreted as adult. Independently, the name began to be written *manyema,* and the pygmy gorilla was thus unconsciously relocated from Gabon to the Manyema district, eastern Zaire. It was searched for without success in that region in 1945. The sorry tale of confusion can be traced to early taxonomists' failure to appreciate individual, age, and sex variation in natural populations. Cryptozoology must always take into account the background of reports of un-

known or poorly known animals, tracing such reports back to their origins in order to rid the field of confusion which may well have subsequently muddied the water.

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