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Men who Named the African Apes

During the colonial times, many researchers and explorers set out to discover Africat and its flora and fauna. They observed unknown animals and brought home skulls and bones which were subsequently described and analyzed. Some subspecies of the African apes were named after the first caucasians who had come into contact with these animals.

Central chimpanzee (*Pan troglodytes troglodytes* Blumenbach, 1779)
Western chimpanzee (*Pan troglodytes verus* Schwarz, 1934)
Eastern chimpanzee (*Pan troglodytes schweinfurthii* Giglioli, 1872)
Bonobo (*Pan paniscus* Schwarz, 1929)
Western lowland gorilla (*Gorilla gorilla gorilla* Savage and Wyman, 1847)
Mountain gorilla (*Gorilla gorilla beringei* Matschie, 1903)
Eastern lowland or Grauer's gorilla (*Gorilla gorilla graueri* Matschie, 1914)

Johann Friedrich Blumenbach (1752–1840)
He studied in Jena and Göttingen, and in 1776 he became a professor of medicine in Göttingen. His special interests were comparative anatomy, natural history and anthropology, of which he is regarded as the founder. Moreover, he had a solid education in philosophy which also influenced his scientific endeavours. In 1779 he published the first edition of his standard work *Handbuch der Naturgeschichte* (Handbook of Natural History). In this book he also described the chimpanzee in Latin - in the first edition he wrote:

Troglodytes*, der Chimpanse. S. macrocephala, torosa dorso et humeris pilosis, reliquo corpore glabro.* (*Troglodytes*, the chimpanzee. Monkey with large head, muscular back and hairy upper arms, rest of body bald.)

Blumenbach added some remarks about this ape in the sixth edition of his handbook. In translation the chapter about the species reads there:

Troglodytes, the African man of the forest, Chimpanzee, Pongo, Jocko, Barris. Black monkey, large head, muscular, large ears. In the center of Angola, Congo and up-country; like the actual orang-utan as large as an eight-year-old boy.

Why Blumenbach called the ape "Troglodytes", the cave-dweller, is not clear. The present name of the chimpanzee genus, "Pan", is that of the Greek god of herdsmen and hunters.

Ernst Schwarz (1889–1962)
This scientist was born in Frankfurt and studied zoology in Munich. He then worked for the Museum of Natural History in Frankfurt and the Zoological Museum in Berlin. He became a professor of Zoology in Greifswald in 1929 and emigrated to London in 1933, where he received a post at the British Museum of Natural History. Four years later, he moved to the USA and worked as a researcher at several institutions.

Schwarz described many great ape species and subspecies, for example the bonobo as a subspecies *(Pan satyrus paniscus)* of the chimpanzee. This ape was classified as a distinct species in 1933 by Harold Jefferson Coolidge. Schwarz wrote about it:

This is a real dwarf. It has all the characteristics of Pan s. satyrus *found on the right banks of the lower Congo, but retained all characteristics of youth: small body size, protruding forehead, small brow ridges, rounded occiput without any crests and ridges.*

The 1934 description of the western chimpanzee also was published by Schwarz, who at the time still called it *Pan satyrus verus* (a satyr is a sylvan sprite from Greek mythology; "verus" means "true").

Enrico Hillyer Giglioli (1845–1909)
One subspecies of the chimpanzee was described by this Italian zoologist. Giglioli was born in London and studied there. He

graduated with a degree in science at the University of Pisa in 1864 and began teaching zoology in Florence in 1869. Marine vertebrates, as well as invertebrates, were his particular interest. In addition, he dealt with ethnology.

Giglioli and Georg Schweinfurth corresponded regularly, and the Italian zoologist published a detailed investigation of the chimpanzee skulls which Schweinfurth had collected in the region of today's southern Sudan. To honor its discoverer, Giglioli named the species *Troglodytes Schweinfurthii*.

Georg Schweinfurth (1836–1925)

During his school years in Riga, Georg Schweinfurth developed a special interest for Africa and for botany. He decided that he wanted to explore Africa and therefore prepared himself for this task with exhausting walks. Afterwards, he studied science in Heidelberg, Munich and Berlin, and after finishing his doctoral thesis on the flora of the Nile valley, he visited Africa for the first time in 1863. From 1868 to 1871, he ventured upon his big trip to the western tributaries of the Nile. Upon returning to Europe, he brought back an extensive herbar, many drawings and 15 chimpanzee skulls. How he was able to obtain these skulls, he explained as follows:

When I consider the massive amount of chimpanzee skulls and skull fragments that have been accumulated in the hamlets at the Diamvonu, then I feel it is justified to assume that this must be one of the major distribution areas of these strange creatures. Night had already befallen us, ... when a group of men from the neighbouring village joined us. In exchange for copper rings they were prepared to offer me some well-preserved chimpanzee skulls.

In 1874 Schweinfurth published his scientific and ethnic observations under the title *In the Heart of Africa*. Two years later, he settled down as a private scholar in Cairo and undertook many more travels from his new domicile.

Thomas Staughton Savage (1804-1880), Jeffries Wyman (1814–1874)

The American Thomas S. Savage was a Protestant clergyman, missionary, physician and naturalist. In 1833 he received the degree of M. D. at Yale Medical School and then studied at a theological seminary. He was sent as a missionary to Liberia in 1836. While working in Africa, he showed great interest for the fauna of this continent.

Finally, on his way back to America in 1847, he was detained in Gaboon. There he noticed the skull of a large great ape which belonged to the clergyman J. L. Wilson. Savage was able to acquire several more skulls and some bones from this - until then - unknown species. They were referred to as "Engé-ena" by the local people, and together with Jeffries Wyman he described them as *Troglodytes gorilla*. The species name "*gorilla*" they took from the report of the Carthaginian seafarer Hanno (470 B. C.). He had called by this name the hairy "savage people" he had found on the western coast of Africa.

Savage wrote the following about these animals in his publication:

They are exceedingly ferocious, and always offensive in their habits, never running from man as does the Chimpanzée... The killing of an Engé-ena is considered an act of great skill and courage, and brings to the victor signal honor... They are generally eaten, and their flesh, with that of the Chimpanzée, and monkeys at large, occupies a prominent place in their 'bill of fare'... in the much more brutal and ferocious expression of the face... it even surpasses the Orangs of Borneo and Sumatra.

In addition, Savage studied African reptiles and insects. After returning to the USA, he continued to serve his church.

Jeffries Wyman, likewise an American, practiced medicine for three years in Boston after completing his medical studies at Harvard. He subsequently worked as a scientist at several institutions. In 1847 he became a professor of anatomy and physiology at Harvard. In the following years, he founded a museum of anatomy. He became a professor of American archeology and ethnology in 1866, and founded a museum of ethnology. His most famous anatomical studies include those of the gorilla, in particular the first decription of this species.

Paul Matschie (1861–1926)

Matschie never finished his studies in mathematics and science, but instead worked for the Zoological Museum in Berlin from 1883 to 1885 and again from 1887 until his death. He became a professor in 1902. Initially Matschie was interested in ornithology, but later he specialized in large African mammals as well. He described several new orders, genuses and species - including two of the current gorilla subspecies, which he had originally classified as new species.

Robert von Beringe

He was a captain of the German colonial force and became interested in the flora and fauna of eastern Africa while he traveled through that area during the German colonial times (1890–1916). During his second trip in 1902, he traveled north from Bujumbura through Burundi and Rwanda, visiting German posts and African chiefs with the intention of strengthening relations with local rulers, in addition to promoting the reputation and power of the German Government. On 17 October, von Beringe shot two gorillas in the Virunga Volcanoes on a saddle between Mgahinga and Sabinyo. He reported about this experience in the *Deutsches Kolonialblatt*:

At an altitude of about 3,100 m we set up our camp... From here we suddenly noticed a troup of large black monkeys which were attempting to climb to the highest point of the volcano. We were able to shoot two of these monkeys, which hurled down into the gorge of the crater with an incredible rumble. After five hours of strenuous work, we were able to retrieve one of these animals. Unfortunately, I was unable to classify the monkey.

Matschie later found out that it was a gorilla after an examination of the skull and some skeletal parts which had been sent to Berlin.

In 1906, von Beringe asked for a transfer, and from then on served as a captain in a regiment in Pomerania.

Rudolf Grauer (1870–1927)

The Austrian Rudolf Grauer was born to Jewish parents in Troppau. He studied law in Vienna and agriculture in Halle/Saale. Between 1904 and 1906 he made two safaris in Uganda, where he collected various zoological specimens. During subsequent trips to eastern Africa (1907–1911), he concentrated all his efforts on collecting animal specimens. From his last trip for the

Natural History Museum in Vienna, he also brought back the hide and skull of a gorilla which he had shot near Lake Tanganjika. This new gorilla was later described by Matschie and named after Grauer, the collector.

For family reasons, Grauer had to forsake additional expeditions that he had planned. Instead, he settled down in Vienna, took over the family's factory and married. After seven years of suffering from actinomycosis which he had contracted in Africa, he succumbed to the disease in 1927.

Species or Subspecies?

The initial classifications of the ape species and subspecies were based mainly on skull characteristics. Even today, skull measurements play an important role in systematic zoology. But recently, another way of measuring systematic relationships has become more and more important: genetics. In several studies, parts of the mitochondrial DNA of various ape populations (usually extracted from hair follicles) were compared. Two analyses published in 1994 challenge the present classification. According to DNA sequences, the western and eastern gorilla populations differ more than the two chimpanzee species, so that they could be classified as two separate species. The western chimpanzee differs so much from the rest of the chimpanzees, that it could be classified as a separate species. However, a re-classification would require the consideration of additional criteria.

Angela Meder

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Maheshe's Tragic End

Many former visitors of the Kahuzi-Biega National Park will remember the silverback Maheshe. His group was one of the two gorilla families first habituated to people. Until his death, this family was visited by tourists, and it was observed by many scientists and filmed by Alan Root for the film *Gorillas in the Mist*.

In 1971, Michael Casimir observed a group of gorillas in Kahuzi-Biega consisting of 20 animals. Their number had decreased to 18 in 1972. In 1975, the group's leader Kaboko was supplanted by a solitary silverback of about 15 years of age: Maheshe. He was possibly the son of Mushamuka, the leader of another habituated family.

After this change in leadership, emigration caused the number of animals in the group to decrease further, from 19 to 12. From 1978 to 1980, the group comprised 9 animals, and its size further decreased to only 6 individuals in 1982. In 1984/1985 the number of animals increased again to 16. The group had 28 animals in 1987, 25 in 1988, 22 in 1989, 24 in 1990, and 16 shortly before Maheshe died.

In November 1993, Maheshe suddenly disappeared without a trace. Finally, in August 1995, his corpse was located and unearthed after a tip-off from the local population. The head and hands were missing, indicating that Maheshe had been killed for the trophies.

The poachers have been caught and confessed to the killing. They acted on the orders of a local ruler, who sold the trophies for a considerable profit. However, the exact connections still have to be investigated.

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Rain Forests and Gorillas in Gabon

Gabon has the largest percentage of forest cover of any African country: 70 to 85% of its total area is covered with forest. The low overall human population density of 5 to 6 people/km^2 (large areas in central Gabon are actually completely unpopulated) and the difficult accessibility are the main reasons why these forests have not yet been destroyed. About 20 species of primates occur in these forests, among them approximately 30,000 lowland gorillas and 60,000 chimpanzees. In addition, according to estimates that have been published recently, there are approximately 60,000 elephants in Gabon.

Gorillas occur in almost all of the country's forests, with the exception of those in areas that have a high human population density and forest islands surrounded by savanna. In the western part of the country, the forests have been logged intensively since the beginning of the 20th century. Today, there are hardly any virgin forests left in this region. In 1987, Central Gabon was opened up by the completion of a railway linking the capital Libreville with Franceville and thereby traversing almost the whole country from the northwest to the southeast. This railway made the timber transport much easier and thus promoted the exploitation of rain forests in the center of Gabon which, until then, had been generally uneconomical for most timber companies. When work on the railway line started in 1970, logging permits in Central Gabon were issued to assist the financing of the railway line construction. The whole area has now been parcelled up between large (mainly foreign) logging companies. In all, approximately 50 companies are currently working in the country. All operating companies practise selective logging.

Cheap Plywood from Okoumé

From 1987 to 1991, approximately 68% of harvested trees were okoumé *(Aucoumea klaineana)*, which is mainly used for plywood. One to three trees of this species are extracted per hectare (1.5 on average). According to estimates, by 1988 46% of Gabon's forests had been selectively logged at least once. Every year another 2,500 km^2 of primary forest are exploited. Between 5 and 30% of the canopy is destroyed during this selective logging. Only the eastern forests, where okoumé does not occur, have not yet been exploited.

Prior to the discovery of rich off-shore oil reserves in the 1950s, revenues from selected logging represented 90% of Gabon's income. In 1985, it only amounted to 6%. Since the oil price dropped in 1987, timber's share in Gabon's revenues have in-

creased again to 12%.

In 1990, the IUCN reported that there was no evidence that selective logging as currently practised in Gabon is sustainable. Detailed studies were recommended. Creating an alternative timber source by planting okoumé trees in plantations has not been successful. However, this pioneer species grows well in clearings in logged forest and is ready for harvesting after 35 to 40 years. Currently, okoumé is planted only on 10 km^2 per year in Gabon, which is equivalent to the area affected by selective logging in a single day.

In the 1980s, almost 1 million m^3 of okoumé were produced each year. To supply additional revenue, the government required the production of more than twice this volume of timber. As additional stocks of okoumé were not available, companies were forced to exploit additional tree species, which increased the damage levels in the forest. This procedure certainly can not be called sustainable use.

Consequences of Development

As in all other countries, logging in Gabon directly affects the rain forests through the disturbance of ecosystems and the construction of roads. There is also an indirect effect, as logged forests are more easily accessible to hunters and settlers. The employees of the logging companies hunt in the forest using guns and snares. This practice is even continued long after logging. Primates including gorillas and chimpanzees are especially sought after.

The population density of gorillas decreases by 17% under only slight hunting pressure. Under severe hunting pressure, the population may decrease by 72%. Professional hunting has a disastrous effect on populations of duikers and primates. Professional hunters operate mainly in easily accessible forest areas and supply urban areas with bushmeat. Professional hunting poses the greatest threat for Gabon's apes; in some areas they have already been completely wiped out.

Nature Conservation with Limitations

Gabon has gazetted 10 protected areas, but none of them has the status of a national park, and all but the smallest one have been selectively logged. Since 1990, WWF has been developing a conservation management plan for the Gamba complex, which consists of several adjoining protected areas on the south coast. At the same time, WWF has been initiating community development projects, with financial support from the German BMZ (Ministry for Economic Cooperation) and Shell Gabon. Since 1993, WWF has also been supporting the establishment of another large protected area in the northeast of the country.

Research on Apes at Lopé

Lopé is a protected area of 5,000 km^2 in central Gabon. In 1980, Caroline E. G. Tutin and Michel Fernandez started their work on Gabon's apes with a country-wide survey. Together with many other scientists, they have been working on gorilla and chimpanzee ecology and behaviour in this area since 1983. This project has been supported by numerous organizations, mainly CIRMF (Centre International de Recherches Médicales de Franceville), WWF, the *L. S. B. Leakey Foundation*, WSPA *(World Society for the Protection of Animals)* and the *National Geographic Society*.

The observation of gorillas turned out to be much more difficult than in the Virunga Volcanoes. At the end of the 1980s, the researchers had habituated three groups which they called Porthos, St. Exupéry and Petit Prince. These groups tolerated the presence of humans, but only at a distance of at least 25 m. This distance had decreased to 20 m some years later. However, the old leader of the best habituated group, Porthos, died in April 1993 after an altercation with another silverback. The group subsequently dissolved.

The valley of the river Ogooué, one of the borders of the Lopé Reserve, has been settled for about 400,000 years. Before agriculture was established, people obtained a great part of their food from the rain forest, and they therefore competed with the resident apes.

Slash and burn cultivation has been practised for 1,500 years in the Lopé area. This has led to large areas on the middle course of the Ogooué being covered by savannas. The forest will reclaim these areas, however, if the grass is no longer burned. Today, mainly manioc and bananas, which are not indigenous to this region, are cultivated in the fields. These crops were introduced into Gabon in the 15th century at the earliest. Occasionally, gorillas and chimpanzees raid plantations, which contributes to the conflict between people and apes.

Although Lopé is not a national park, the animals there are protected quite well. There is hardly any poaching at present. But even here, two logging companies are harvesting timber, although law decrees that all plants and animals are completely protected. From 1990 to 1992, Lee White conducted a study on the impact of logging on large mammals. He observed that the population density of gorillas was not affected by the activities of logging companies. Chimpanzees, on the other hand, tend to leave logged areas. It may take 15 to 25 years before the animals re-settle these areas.

The EU program ECOFAC (Conservation et Utilisation Rationelle des Ecosystèmes Forestiers en Afrique Centrale - Reasonable Conservation and Use of Forest Ecosystems in Central Africa) started a project in Lopé in 1992. The project's leader, Michel Fernandez, has been training rangers and tourist guides.

Since December 1994, tourists can visit the forest, savannas and archeological sites in groups of 4 to 6 persons. To see a gorilla is a rare event, however. For this reason, tourism will never become as successful in Gabon's rain forest (and in other lowland rain forest areas) as it is in the Virunga Volcanoes and does not represent a viable economic alternative to logging. Caroline Tutin and Michel Fernandez thus consider international aid for Gabon as the only way to protect Gabon's virgin forests.

The Fight for the Bee Forest

It was not until 1984 that Mike Harrison discovered a new guenon species *(Cercopithecus solatus)* in the unpopulated Forêt des Abeilles (Bee Forest), which is an unprotected area adjacent to the Lopé in the east. This monkey has only a small distribution area which extends up to a part of the Lopé Reserve.

Shortly after this discovery, logging started in the Bee Forest. The Bee Forest is one of the last large areas of virgin forest

in Gabon and especially rich in biodiversity. The start of logging activities represents a probable threat to the new guenon species. Despite its protected status, granted by the Gabonese Government in 1994, effective protection of the guenon can only be achieved if the Bee Forest is also totally protected. IUCN had been working towards this goal for several years. Unfortunately, the entire forest has now been partitioned up in logging concessions.

Isoroy, a subsidiary of the German company Glunz AG, is licensed to utilize 2,980 km^2 in this area on a 17-year lease. It is taking out expensive advertisements for its logging activities in the Bee Forest and is applying for the "Eurokoumé" certificate, which would be granted in in 1996. Through this certification, the company hopes to convince consumers that its timber production is based on sustainable use. However, it is not evident from their brochures how their logging policy differs from those of their competitors. Isoroy (which is called Leroy-Gabon in Gabon) intends to utilize only primary forest, because the quality of the timber from secondary forest is apparently not as good. This may in itself indicate that the company does not use the forest in a sustainable way.

Sustainable Use?

From 1990 to 1994, François Lasserre and Annie Gautier-Hion conducted a study on behalf of Isoroy on the impact of the company's activities in one of its concessions in the Bee Forest. They calculated that about 2% of the area had been cleared completely for construction of roads, loading areas etc. For every extracted okoumé log, an average of 8.5 trees with a DBH (diameter at breast height) of 10 cm or more will be destroyed, amounting to 6% of all trees in the area. This does not include trees that are damaged and may die later.

In all, about 20% of the rain forest within the concession is destroyed through logging activities. The canopy of 14% of the area will remain open two years after logging, and 6% of the ground is left completely bare. From their study, the researchers concluded that the degree of damage done to the forest is considerably smaller than commonly occurs in South American and in Southeast Asian forests (in many cases nearly 50% of the forest is destroyed there). However, this does not mean that the biodiversity is conserved or that the exploitation is sustainable in the surveyed Isoroy concession.

The French biologists Annie Gautier-Hion and Jean-Pierre Gautier have been working in various regions of Gabon since the 1960s. Since 1993 they have been working together with an international team of scientists in the research station at Makandé in the Bee Forest. The station is funded mainly by the EU and the French Ministry for the Environment and led by the institute BIOFAC (Biodiversité Forestière en Afrique Centrale - Forest Biodiversity in Central Africa). Scientists at the station have been collecting data for research projects on various species of forest animals and plants and the impact of logging activities, but most studies are still ongoing.

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