

Natural History Essays

BY

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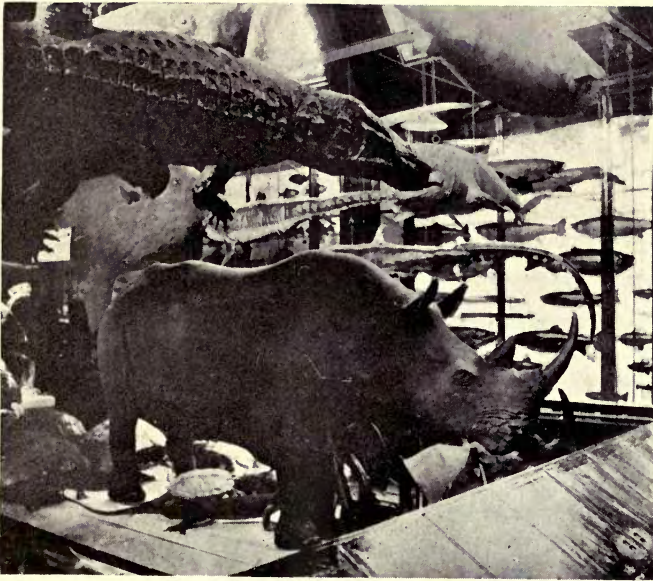
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THE WHITE RHINOCEROS.

“Solitudinem faciunt, pacem appellant.” So wrote Tacitus centuries ago : but while the methods practised by the ancients were crude enough, unhappily in later times also men have made a wilderness, and called it peace. To the naturalist the story of the development of South Africa by Europeans, as narrated in countless volumes of history and travel, of colonisation and sport, reveals so dire a transformation from a paradise to a (zoologically) dead world, that it may be interesting to consider briefly the history of this change.

The early colonists found South Africa teeming with a magnificent profusion of great game animals, abundant even in the colony itself, whilst the far interior was tenanted by a countless mammalian population of marvellous diversity and interest. The lion abounded everywhere, preying on giraffe and buffalo, quagga and zebra ; the leopard, stealthy, yet daring, carried off the settlers' dogs ; the cheetah frequented the cracked mud-flats of the great Karroo, which it shared with bright-coloured troops of blesbok and squadrons of quagga and black wildebeest ; in the rivers floated the slate-coloured forms of countless hippopotami, which made the air resound with their bellowings, whilst similar unwieldy monsters crashed heavily



By permission of the Hon. Walter Rothschild, M.P.

WHITE RHINOCEROS IN THE TRING MUSEUM.

through the tangled vegetation on the banks, making wide lines in their repeated passage. The noble family of antelopes exhibited in bewildering profusion its splendid series of animal types—eland and kudu, gemsbok and hartebeest, springbok and duiker: the mountain ranges were ornamented by the savage beauty of the Cape zebra, and by the chamois-like grace of the little klipspringer. In the forest land browsed troops of stately giraffes, whose variegated hides were scarcely distinguishable from the mottled trunks amongst which they wandered; whilst the imposing presence of great herds of elephants, their huge ivory tusks gleaming in the hot sunshine, and their great ears flapping to and fro, completed a picture of wild life which in recent times has had no rival, either on the North American prairies, once teeming with countless bison, or on the South American pampas, the home of jaguar and puma, of tapir and peccary, of huanaco and rhea. Not only so, but even if one could bring to life that marvellous assemblage of antediluvian animals which the genius of Cuvier and Buckland, of Marsh and Cope has reconstructed from the fossilized relics of bygone ages, till one saw again the long-extinct pterodactyl sailing through the groves of pterophyllum on its parachute-like membranes, or beheld the terrible sabre-toothed tiger (*machairodus*) stealing like a shadow after the three-toed horses on the

uplands of Pliocene France—could one exchange the mammalia of to-day for their prehistoric ancestors, substituting the mastodon for the elephant, the tinoceras for the hippopotamus, the brontops for the rhinoceros, the helladotherium for the giraffe, the hipparion for the zebra, and the sabre-toothed tiger for the African lion—even then the animals thus conjured up by so preposterous a transformation, would hardly exceed in interest and variety the magnificent fauna of South Africa as it appeared to the astonished gaze of the early settlers.

During the decline and fall of this splendid fauna (caused by the introduction of firearms), the same ruin fell alike on all the larger game animals. Rarity became a mere prelude to extinction, either local or general: and since the same miserable history applies in varying degree to each of the larger species, we may, on the principle of *ex pede Herclem*, select for special study one animal to stand for all the others. For this purpose we proceed to consider an eminently typical form—the great white rhinoceros.

The white, square-mouthed, or Burchell's rhinoceros (*Rhinoceros simus*)—wit rhenoster of the Boers—chuckuroo and mohohu of the Bechuanas and Matabele—is, after the elephant, the largest of all terrestrial mammals, standing six feet high at the shoulder, and attaining a length of sixteen

feet, measured from the base of the anterior horn to the tip of the two foot tail: the maximum weight of this rhinoceros has been estimated at five thousand pounds (Andersson). The white rhinoceros is a larger animal than the black species, from which it may at once be differentiated by the square, rubber-like and non-prehensile upper lip. Other distinguishing characters of *Rhinoceros simus* are the slit-like nostrils, the characteristic position of the eye behind the line of the second horn, the semi-tubular ears, and the great length of the shapeless head—these points amply justifying the refusal of the late Joseph Wolf to depict the white rhinoceros as resembling its black congener in all respects, save for the square upper lip. He said that surely other important differences existed, and indeed, when closely compared, the two animals are really very unlike each other, as may be seen from the following table:—

<i>White Rhinoceros.</i> (<i>Rhinoceros simus</i>).	<i>Black Rhinoceros.</i> (<i>Rhinoceros bicornis</i>). ¹
1. Upper lip square, non-prehensile, and adapted for grazing.	Upper lip pointed, prehensile, and adapted for browsing.
2. Nostrils slit-like, elongated, and narrow.	Nostrils small and rounded.
3. Eye situated entirely behind line of second horn.	Eye situated behind <i>axis</i> of second horn.
4. Ears semi-tubular and scantily tufted.	Ears open: fringed on upper edge.
5. Head much elongated.	Head less elongated.
6. Feet broad, leaving a wide spoor or footmark about 36in. circumference. (Kirby).	Feet smaller: spoor about 27in. circumference. (Kirby).
7. Size of animal very large, 6ft. at shoulder.	Size smaller up to 5ft. 8in. at shoulder. (Baker).

¹ Some naturalists have recently adopted *Diceros bicornis* as the scientific name of the black rhinoceros.

The white rhinoceros, like its congener, carries two horns, but an examination of a good series of museum specimens will speedily demonstrate that the front one is always flattened anteriorly in the white species, and rounded anteriorly in the black. Moreover, *R. simus* has always the anterior horn extremely bristly at the base, and exhibiting a whitish colour on section. The anterior horn of the white rhinoceros shows great individual differences of curvature: two well marked types may be recognised. The first type (mohohu) is the commoner: the horn is curved backwards. The second type (kabaoba) is directed forwards, so that the anterior surface is often much worn by repeated contact with the ground when its owner grazes: this is well seen in the type kabaoba horn which Col. Steele presented to the British Museum many years ago. The kabaoba was long described as a separate species under the name of *Rhinoceros oswellii*, but this distinction is now abandoned, as intermediate forms between the two have been observed. Maximum recorded length of anterior horn (mohohu) $62\frac{1}{2}$ inches: of anterior horn (kabaoba) $56\frac{1}{2}$ inches. Maximum recorded length of posterior horn two feet. The posterior horn is often little more than a mere dermal excrescence, and it was probably from this cause that the natives in Sir A. Smith's day informed him that a race of one-horned rhinoceroses inhabited South Africa.





INDIAN RHINOCEROS IN MUDHOLE.

Showing how the greyish hide appears black when in shadow and white in full sunlight. This individual was standing in and actually *chewing* the mud when the photograph was taken.

It will be noted that in the above account no reference has been made to *colour* as a distinguishing mark of the white rhinoceros. Structural details only have been touched upon, and these are of course always the most important. As a matter of fact, however, colour plays but little part in differentiating between the so-called "white" and "black" rhinoceroses, since both are of a dull slaty grey. Several explanations of the Boer name "witte rhenoster" (white rhinoceros) may here be considered.

1. The usual explanation is that the first individuals encountered were seen when emerging from their mudbath, and that their caked hides gave them a whitish appearance.

2. A little observation, even in a zoological garden, will amply show that the colour even of a dark animal may vary in intensity, according to the amount of sunlight concentrated upon it. It is now so common for the up-to-date sportsman to be armed with camera as well as with rifle, that most recent works on African hunting are ornamented with excellent engravings from photographs taken on the veldt. Several recently-published photos show that even the *black* species in full sunlight may appear quite white: and Drummond, in the proceedings of the Zoological Society for 1876, has pointed out that the sun shining full on a bull of the white species may

cause it to appear whitish, the same animal on being followed into the shade appearing quite dark. We may thus conclude that *R. simus*, even when not recently emerged from its mud-bath, may appear white owing to the slate-grey hide glistening beneath the fierce rays of the African sun.

3. There appears to be a distinct tendency to true albinism in the white rhinoceros. Individuals have been met which were really white, or at least whitish. Sir Cornwallis Harris, who saw many *simus* during his famous expedition of 1836-7, says of this animal—"His true complexion often approaches to cream colour." Mr. Nicholson, writing to the "Field" in 1894, mentions having shot no less than three examples which were of a yellowish cream hue. According to old tradition, the white rhinoceroses inhabiting South Western Cape Colony were lighter in colour than those found further north: these would naturally be the first individuals encountered by the early expeditions setting out from Cape Town, and thus the name adopted by the old pioneers would come into general use.

4. Another explanation has also been suggested.

The horns of the white rhinoceros are pale-coloured, and those of the black rhinoceros are black, hence since these structures are but agglutinated hair, it may be inferred that if these animals'

bodies were hirsute instead of naked, then would *R. sinus* be truly white, and *R. bicornis* truly black. Any person who has examined a front horn of the white rhinoceros will admit that the pale bristles sprouting from the base of the horn are themselves half way in structure to hair. Further, I have recently examined a front horn of the allied extinct *Rhinoceros antiquitatis*, and this strikingly resembled a white rhinoceros horn in my possession. Both specimens were markedly fibrous in texture, translucent, and had the posterior margin sharply defined. At its base the fossil horn was split up into bristly fibres, just like that of the white rhinoceros of the present day : in section it showed also exactly the hue which is seen in its living congener, so that the horns of the two species agreed remarkably in many ways. We are thus led up to a most interesting speculation : for since Pallas¹ described the frozen carcase of the woolly rhinoceros which was found in December, 1771, on the banks of the Viloui River, as covered with ash-coloured hair, one may retrace the steps of evolution and fancifully picture the living white rhinoceros of recent times clad in a furry robe of silvery grey. Truly, in such a case, would the white rhinoceros well deserve its name!

Although first scientifically described in 1817, *Rhinoceros sinus* had been dimly known to Euro-

¹ Pallas : Commentarii Academiae Petersburgicae.

peans for many years previous to that date, though it was not then recognised as distinct from the black species. Thus we find that Dr. Parsons in 1742-3 figured a rhinoceros horn, which Dr. Gray recognised in 1867 as that of *R. oswellii*—kabaoba form of the white rhinoceros. This horn was originally in Sir Hans Sloane's collection, and along with his other curios was purchased by the Trustees on the foundation of the British Museum in 1753: it appears to be the oldest example of which there is any record, and should, therefore, strictly speaking, be regarded as the type specimen rather than any of Burchell's trophies in the Royal College of Surgeons' Museum. It is, however, so remarkably curved in an S-shape as to be practically deformed (kabaoba type run mad), and is quite different from any other horn—whether kabaoba or mohohu—which I have ever seen. On rising from the base, this horn passes first backward, then gradually sweeps forward to become slightly recurved at the tip. Its contour thus resembles that of a reversed gazelle horn of gigantic size. Science can be little benefited by accepting such very abnormal examples as typical of the species, and to do so would be to worship the fetish of priority at the expense of reason.

In 1812 Dr. Burchell found the white rhinoceros abundant in the Batlapin country, near Letakoo (Kuruman), the species being first met with in 26°

S. latitude. Science is indebted to Burchell for the first definite account of *Rhinoceros simus*: a short description of the animal, which he communicated to de Blainville, appeared in the "Journal de Physique" for August, 1817. The Royal College of Surgeons' Museum still contains an interesting memento of Burchell's expedition in the shape of a pair of *simus* horns, the anterior of which measures twenty inches.

Subsequent investigations have demonstrated that the white rhinoceros was once widely distributed over South Africa, wherever the grasslands were adapted to its habits, extending from the Orange River in the south as far north as the Zambesi. We may conveniently take 1812 as representing the era of prosperity, the open veldt then being dotted with peaceful groups of white rhinoceroses—father, mother, and calf—or with solitary individuals standing motionless, awake but stupid, in soulless meditation. We can readily picture the daily life of these animals as narrated in many volumes of sport and travel: the wallowing in the mud-bath, the noon-tide siesta, the grazing over the vast pasturages, the drinking at the lonely fountain: while during the whole bovine round of sleeping and wallowing, of eating and drinking, these colossi were continually attended by their winged sentinels, the faithful rhinoceros birds (*Buphaga*

africana), ever alert to give their dull-witted hosts notice of approaching danger by their shrill cries, or by thrusting their beaks into their ears. Such a picture of wild life is now seldom to be witnessed in Southern Africa, owing to the ruin which has overtaken the white rhinoceros nation throughout all the vast grass-lands from the Orange River to the Zambesi.

The first definite sign of the decadence of *Rhinoceros simus* which appears on studying the history of the species, is a circumstance related by Sir Andrew Smith. He tells us that when his expedition of 1836 passed into Bechuanaland, the white rhinoceros had already receded further north, owing to continual persecution, and was not found within a hundred miles of Letakoo, where Burchell had met with it in abundance in 1812. For many years afterwards, however, the animal continued plentiful in the far interior. Harris found it extremely abundant in the Cashan mountains (Magaliesberg), the future environs of Pretoria being in 1836 and for long afterwards a vast natural zoological park, replete with great game. Cumming, Andersson, Oswell, and others have left behind records showing that in the middle of the last century *simus* was still plentiful. Several causes, however, were fast contributing to its downfall. In 1850 the north-trekking Boers began systematically to exterminate the splendid

fauna of South Africa, the persecution being continued in season and out of season, without intermission. Giraffe, elephant, buffalo, eland, hartebeest, and a host of other noble forms diminished rapidly under their attacks, and the Boers were aided by a multitude of native gunners which the advance of civilisation had provided with more or less reliable firearms.

Prominent in the host of vanishing creatures stood the great white rhinoceros, whose immense size promised a corresponding amount of meat—and at certain seasons an abundance of fat also—to his destroyers. The very harmlessness of the unfortunate colossus was but an added incitement to the destruction of so meek a quarry. “He was just the very thing for young gunners to try their ’prentice hand on,” said Oswell. These considerations eventually compassed the death of almost every white rhinoceros south of the Zambesi, and so rapidly was the animal shot out, that like the true quagga, the American bison and the northern sea-cow, it had practically vanished before it was even recognised as rare. In 1880 hunters began to notice the great scarcity of *Rhinoceros simus*: it was hardly to be found even by the most diligent search over the very plains once so abundantly enlivened by its burly presence. Scientific naturalists abruptly realised that it had all but vanished from Southern Africa. The

individual shot in 1882 (its head is now in the Cape Town Museum), was for a long time considered to be the last of its race. Since then a few survivors—*rari nantes in gurgite vasto*—have been recorded south of the Zambesi. The following is the scanty list of the appearances of *R. simus* since 1890 :—

1892. Messrs. Eyre and Coryndon, in August, 1892, saw a bull, cow and calf all together : the next day they met a large cow, a half-grown individual, and a calf. The calf died in captivity after a few days.
1893. Two adult bulls were shot in July, in Mashonaland, by Mr. R. C. Coryndon.
1894. Six animals were killed in Zululand by the late Mr. C. R. Varndell and a friend.
1895. A fine bull was shot by Mr. Eyre in North Mashonaland.
1897. The spoor of a bull and a cow were seen in Matawamba by Mr. F. V. Kirby.
1903. Dr. Gunning, of the Pretoria Museum and Zoological Gardens, kindly informs me that four individuals still linger near Lake Ngami : there were eleven before the outbreak of the war in 1899, four in Zululand, and seven near Ngami. These complete the list.¹

¹ According to a more recent estimate, there are, however, about ten white rhinoceroses still in Zululand. In December, 1902, an old bull and a younger one "escaped" into a native reservation, where they were promptly killed with spears. (See *Field* for March 21, 1903).

Thus has the great white rhinoceros practically vanished from South Africa, where once it occurred in a teeming abundance difficult to realise at the present day. One cannot expect that the few survivors (now protected as far as possible) will restore the race, though the belated game regulations are no dead letter. In 1897-8 two Europeans who had killed a pair of *simus* (the female being in calf) were very properly compelled to pay a heavy fine.¹ Such stringent measures at an earlier date might have saved to future generations of South African naturalists—and under proper restrictions, of sportsmen also—this curious behemoth, whose monstrous size and antediluvian appearance constitute it a worthy ally of the hornless amynodon and the huge elasmotherium of Miocene and Pleistocene times.

In captivity the white rhinoceros has proved a most disappointing animal, dying even when taken quite young from no obvious cause. None of the calves which have been captured from time to time have survived long enough to be taken down country, to say nothing of being brought to Europe, so that the animal has never been represented in any zoological garden. This has not been for want of trying, for many efforts have been made to rear young *simus*. Many years ago the thirteenth Earl of Derby sent a thoroughly com-

¹ The animals thus wantonly slaughtered were left lying where they fell.

petent man to obtain the white rhinoceros alive, but although he succeeded in taking several calves, not one lived long, and the costly expedition subsequently fitted out by Mr. Nicholson, of Cape Colony, for this express purpose, was equally unsuccessful, although as many as nine young animals were taken. Probably the last attempt that will ever be made in South Africa was that of Messrs. Eyre and Coryndon, who captured a calf in 1892. This youngster was vigorous and sturdy, and indeed inconveniently so—since it was only taken with considerable difficulty—yet though eating well and provided with water, the little rhinoceros died on the eighth day after capture. It is interesting to remember that there are some animals which do not thrive in captivity from some unknown cause, such as the great kudu for example : nevertheless other rhinoceroses as a rule do very well in captivity. The black *R. bicornis* brought into Cassala (purchased in 1868 by the Zoological Society of London) did not die till 1891, when it succumbed to cancer and not to old age, whilst an Indian rhinoceros lived in the Gardens from 1843 till 1849, and another example—also Indian—was purchased in 1850, and died in 1874. Specimens of the white rhinoceros are unfortunately very rare in museums, so that the following census may be interesting. The specimens are as follows :—

1. A calf obtained in 1836 by Sir Andrew Smith's expedition. This animal was mounted by the celebrated taxidermist, Jules Verreaux, under Sir Andrew's personal superintendence, and added to the South African Museum at Capetown. Subsequently it was either sold to or received in exchange by the British Museum trustees, as the animal figures in the British Museum Catalogue of 1843. This specimen is now at the Natural History Museum, South Kensington. Dr. Gray called it a "half-grown calf." It appears to be about three years old. The anterior horn measures $3\frac{3}{4}$ inches, the posterior one inch. As mounted, the animal's hide is dull black, paling to brownish black beneath. The existence of this specimen is emphasised, as in the various articles which have been from time to time written on *R. simus*, it has almost invariably been overlooked. This is *not* the animal figured on plate XIX. of Smith's "Illustrations of South African Zoology," as will be seen from the horns and from the measurements given in the book: these belong to an older animal. The young specimen will, however, be found figured under the title of "African Rhinoceros" as fig. 377, in the "Museum of Animated Nature"—the square lip, slit-like nostrils, position of eye, and the semi-tubular ears all being correctly given, whilst the older animal—a fine example—is also depicted as fig. 388 of the same work, under the ambiguous title of "two-horned rhinoceros."

2. A young adult bull, shot by Mr. Coryndon in July, 1893, is now mounted in the Tring Museum. Published measurements—height at shoulder, 6 ft. 9 in. : base of anterior horn to tip of tail, 16 ft. : anterior horn, 1 ft. 11 in. : posterior horn, 8 in. I am indebted to the Hon. Walter Rothschild, M. P., for permission to photograph this specimen.

2A. The skeleton of the above individual was sold to the University of Cambridge for £2,000, and is now in the Cambridge Museum.

3. A young adult bull obtained at the same time as No. 2, is now in the Natural History Museum at South Kensington. Published measurements—height at shoulder, 6 ft. 6 in. : base of horn to top of tail, 14 ft, 6 in. : anterior horn, 1 ft. 7 in. : posterior horn, 7 in.

3A. The skeleton of the preceding animal is now mounted in the Fossil Mammal Gallery of the Natural History Museum.

4. An adult cow *Rhinoceros simus*, obtained many years ago in the interior of Cape Colony, is now in the Leyden Museum. It does not show any tendency whatever to albinism, as some of the Colony *simus* were said to do. The folds of skin on the neck, mentioned by Smith and Harris as occurring in this species, have been reproduced by the taxidermist.

4. Dr. Jentink kindly informs me that the Leyden

Museum has also another adult specimen of the white rhinoceros ; locality unknown.

6. A fine head of this species, obtained many years ago by Mr. Burke for Lord Derby, is now in the Liverpool Museum, where the skull (6A) of the same individual is also preserved. Measurements of horns : anterior 25in., posterior 12in.

7. A young white rhinoceros, taken from a mother of the kabaoba type (so-called *R. oswellii*) on June 3rd, 1862, by Mr. Baines, and by him presented to the Royal College of Surgeons, is still in the Museum of that institution. It is about six inches long ; although only labelled " Rhinoceros "—the rarity and value of the specimen being apparently unknown to the authorities—it is unmistakably *R. simus*, the characteristic square lip being well defined, whilst the slit-like nostrils and elongated head are also clearly recognisable. The site of the anterior horn is only indicated by a very slight greyish, flat-topped elevation, hardly differentiated from the rest of the head : in the middle of this elevation are seen two small parallel areas of a purplish-brown tint, apparently indicating nuclei of horny material. There is no sign whatever of a posterior horn, nor of any hair or pigment. *It is probably the only spirit specimen of Rhinoceros simus in any Museum.*

8. The South African Museum, Cape Town, possesses the head of the bull shot in Mashonaland

by Mr. Selous in 1882, and then supposed to be the last of its race. It was brought to England to be mounted, and was exhibited at a meeting of the Zoological Society in 1886, before being sent back to Africa. The skull of the same individual (8A) is also in the South African Museum.

9. The fine bull white rhinoceros, shot by Mr. Eyre in Mashonaland in 1895, was purchased by Mr. Rhodes, who presented it to the Cape Town Museum, where it is now mounted. The skeleton (9A) of this same animal is also in the Museum.

10. The specimen shot in 1894 by the late Mr. C. R. Varndell was sent to London to be mounted. It was subsequently purchased by Mr. Carl Jeppe, who presented it to the Pretoria Museum, where it still remains. It is said to have a good anterior horn 3 ft. long.

11. A fine skeleton of a cow *Rhinoceros simus* is now exhibited in the new Gallery of Comparative Anatomy, at the Jardin des Plantes, Paris. It was obtained from the Cape, and the label bears the inscription "Ed. Verreaux, 1846."¹

In addition to the foregoing, there are various other odd specimens of skulls and horns in various

¹ There does not appear to be any stuffed specimen corresponding to this skeleton in the Jardin des Plantes collection. The rhinoceros with long forehorn sweeping backwards which the casual visitor sees mounted in the stuffed series is not *Rhinoceros simus* but a very fine specimen of the Indian species. This individual lived in the menagerie of Versailles and was dissected in 1793 by Vieq d'Azyr and Mertrud.

12. Another Bull mounted in
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museums, many being without any history attached. Of these the finest skull appears to be that of the aged individual brought home by Gordon Cumming, and now in the Royal College of Surgeons' Museum. The record anterior horn ($62\frac{1}{2}$ inches) was also obtained by Cumming, and is now in the possession of his relative, Col. W. Gordon Cumming. Some interest attaches to the series of *simus* horns in the National Collection, which includes Sir H. Sloane's kabaoba specimen already referred to, and also the pair of kabaoba trophies on which the so-called *R. oswellii* was founded. The latter are of course remarkable for the forward inclination of the anterior horn, and were obtained by Andersson. He presented them to Col. T. Steele, who gave them to the British Museum previous to 1843. They are figured in Andersson's "Lake Ngami"; the front horn measures 31 inches, and the posterior one 11 inches. The student will find a very fine anterior horn of the mohohu type displayed in the Index Collection of the Natural History Museum.

Finally, I may mention my own specimen, brought home a year or two back from South Africa by Mr. Penfold, an engineer working on the railway near Buluwayo. It is an anterior horn of the mohohu type, said to have been picked up amongst the sedges of a river. One may reasonably conclude that it had dropped out of some

hunter's waggon in fording the stream, and that it was obtained much further up country than the locality where it was found. In spite of its history, the horn is in good preservation, and but little defaced, though the base has apparently been gnawed by rats. It is longer than the anterior horns borne by the mounted specimens either at Tring or South Kensington, tapering exactly 2 feet; the circumference at the base is $17\frac{1}{2}$ inches.¹

A few years ago this census would have practically completed our knowledge of the white rhinoceros, which would have been regarded as a well-nigh lost species, being almost exterminated south of the Zambesi, and utterly unknown north of that river. But an astonishing sequel remains.

The white rhinoceros, harassed out of existence throughout *South* Africa, has been re-discovered further north. It has risen, phœnix-like, from its ashes; the naturalist need no longer mourn it as an extinct animal!

¹ It would be interesting to know if the white rhinoceros head brought to England by the Rev. John Campbell, about 1815, is still in existence. It appears to have been preserved as late as 1867 in the Museum of the London Missionary Society at Finsbury, but there seems to be no mention of it during recent years in zoological literature. In a figure now before me the artist has absurdly furnished the open jaws with an imaginary series of perfectly regular pseudo-molar teeth: the square mouth has been distorted to resemble the prehensile lip of the black species, though the slit-like nostrils, position of eye and semi-tubular ears are delineated with fair correctness. The anterior horn of this individual is said to have been 3 ft. long: and, *as figured*, from its slenderness recalls Col. Hamilton Smith's description of the mysterious horn, brought from Africa, from which he sought to deduce the existence of a true unicorn in the interior of that Continent.

The skull and horns of an undoubted white rhinoceros, shot by Major Gibbons at Lado, on the Upper Nile, were exhibited at a meeting of the Zoological Society, held on December 18th, 1900. Other corroborative evidence, were it needed, is also forthcoming, showing incontestably that *Rhinoceros simus* yet wanders over a considerable portion of the African continent. Dr. Gregory, in his work on the Great Rift Valley, mentions having seen in Leikipia three rhinoceroses, which he believed to be of this species, though unfortunately none of the three were obtained: Sir H. H. Johnston, in his work on British Central Africa, states that a pair of horns, resembling those of the white rhinoceros, and obtained near the Ruo River, were sent home in 1895. The anterior horn was very long, slender, and directed forwards (kabaoba?).¹ A number of long slender horns were sent some years ago by the late Mr. F. Holmwood and assigned to a hypothetical *Rhinoceros holmwoodi*. They have not only been supposed to indicate a species allied to the white rhinoceros but the *holmwoodi* horn now exhibited in the mammal gallery of the Natural History Museum certainly recalls the

¹ The forward inclination of the anterior horn is not however confined to the white rhinoceros. The example of the *black* species in the Berlin Zoological Gardens has the front horn pointing forwards at an angle of 45°. On the other hand the black rhinoceros which died in London in 1891 had the anterior horn vertical; one thus has "mohohu" and "kabaoba" forms in *both* species.

long anterior horn of the veritable *simus* figured in Campbell's Travels.

Attempts have been made to associate *R. holmwoodi* with the *black* rhinoceros, but they seem to have been initiated prior to Major Gibbons' discovery in 1900, before which date *simus* was unknown in East and North East Africa. Mr. Rowland Ward, writing to the "Field," on November 17th, 1894, stated that he had seen a horn of the white rhinoceros which had been brought from what is now British East African territory, and many miles from any known haunt of the species; Count Teleki mentions a white rhinoceros amongst the animals shot by his party during his Lake Rudolph expedition of 1887-88. Although this constitutes a considerable mass of evidence, it is by no means all, for on examining the records of the past, one finds many obscure hints of the presence of this species *north of the Zambesi*. Strange to say, these records appear to have been utterly ignored by naturalists, though they have long been published to the world; the facts are here restated as follows:

1. The earliest evidence of the existence of *R. simus* north of the Zambesi is probably that of Mr. Salt, the Abyssinian traveller, who on his return in 1811 presented a trophy (consisting of anterior and posterior horns) to the Royal College

of Surgeons' Museum. These horns are almost certainly those of the white rhinoceros.¹ In the absence of any data, however, they cannot be absolutely proved to have come from the countries through which Mr. Salt travelled, though the presumption that such is the case is strong indeed. Locality and not identity is here the debatable point ; as confirmatory of other evidence, we may conveniently insert mention of them here.

2. When Denham and Clapperton returned home from their Central African expedition of 1822-24, they presented to the British Museum two remarkable *light-coloured and semi-transparent horns*. It is interesting to remember that the horns of the white rhinoceros are pale-coloured on section, and that Sir A. Smith (who had practical experience of *R. simus* in Southern Africa) himself suggested that if not those of young *simus*, they must belong to some unknown species of rhinoceros. "The horns of *Rh. simus*," said Sir Andrew, "possess more of the above characters than any others yet known."

3. Speke has stated that his party in 1864 shot several of the "white two-horned rhinoceros" in Karagweh, East Africa, and *expressly* says that

¹ In the Catalogue of the Royal College of Surgeons' Museum, Mr. Salt's trophies are *doubtfully* assigned to the white rhinoceros : however, these interesting specimens agree perfectly with undoubted *simus* horns.

the species killed was *larger* than the black rhinoceros.

4. Stanley claims to have shot *R. simus* in Karagweh.

The above evidence, both recent and remote, thus proves the distribution of the white rhinoceros to be far wider than was formerly supposed. A great portion of the newly-discovered home of *R. simus* lies within the boundaries of a British Protectorate — Uganda. It is therefore to be hoped that this sorely-persecuted species may at last receive efficient protection. Already it is evident that the era of slaughter is passing away from Africa, and that preservation and not persecution will be the order of the day. The most recent accounts of the various game reserves established by British Administrators show that much may yet be done to protect the noblest fauna the world has ever seen ; and the naturalist, on reading the reports of the increasing zebra and waterbuck herds on the Shiré River, and of the flourishing state of the protected game animals along the course of the Uganda Railway, may reasonably hope that the persecuted white rhinoceros, so harassed in the past, may find an abiding sanctuary under the ægis of the *pax Britannica*. Protection *vice* persecution, increase *vice* decrease, stringent guardianship *vice* irresponsible indif-

ference, may yet preserve to future generations much of the zoological wonderland of Africa ; and that such may be the issue will be the wish of every naturalist, of every traveller, and of every true sportsman.

Inveniat dies !