

pressing even feelings so violent as pain, fear, anger, and solicitude for their young. But that the feeling exists at times in all I am pretty sure, even in so melancholy a creature as the Heron.

Probably the concert-screaming of Foxes and Monkeys and many other animals, the pretty "showing-off" of Jacanas and other birds, and the aerial vagaries of Snipes, accompanied by peculiar sounds called "bleating" or "drumming," and a hundred more strange performances are due to the same cause.

5. On the African Rhinoceroses.

By the Hon. W. H. DRUMMOND.

[Received December 20, 1875.]

I believe that at present naturalists have arrived at no decided conclusions as to the number of species of Rhinoceros inhabiting Africa; and as I have had some practical experience on the subject I beg leave to offer these few remarks for their consideration.

As far as my own experience and the inquiries I have made of natives well acquainted with the facts, and of European travellers and hunters who were equally qualified to offer an opinion, have gone, I believe, in accordance with the recorded opinions of most travellers and sportsmen who have given any attention to the subject, that there are four distinct species; while if *R. oswellii* be not merely a variety of *R. simus*, as I am inclined to think it is, it would follow that there was one more. These I would class as follows:—*R. simus*, the "Mohohu" of the Bechuanas, and the "Umkave" or "Umkombewoquobo" of the Amazulu, Amatabili, and Ama Tonga tribes; *R. keitloa*, the Keitloa of the west, and Umkombe Tovote of the east; *R. bicornis major*, the greater black species, known as the Kulumane on the eastern side, while in South Central Africa (I mean the country north of the Transvaal Republic, and south of the Zambesi) it is, I believe, known as the "Borele;" and *R. bicornis minor*, the small black species, known up to the Limpopo as the "Upetyane," and among the Dutch republics to the north as the "Klin rhinaster." To these must, I suppose, be added *R. oswelli*, or the "Kabaoba," until we are in a position to prove conclusively that it is merely a variety, as I think, for reasons hereafter to be stated, will ultimately prove to be the case.

Of the above, *R. simus* and *R. oswellii* are those generally known as the "white," while *R. keitloa*, *R. bicornis major*, and *R. bicornis minor* are called the "black;" and before proceeding further I should like to say a few words about the nomenclature I have made use of, and which (with the exception of the introduction of what I believe to be a distinct species, which for want of a better name I have called *R. bicornis minor*, the Small Black Rhinoceros or Upetyane) is the nomenclature I believe to be in general use. The distinction, however, of black and white seems to me misleading and misapplied, all Rhinoceroses being of the same colour, namely a peculiar shade

of brown, or, if any difference does exist, it being in *R. bicornis minor* possessing a tinge of red. That to different observers, and in different localities, they do appear to be of different colours (Baldwin mentions a blue kind) is undoubted; but, except any slight variation that may locally exist, from the animal, as in Darwin's theory of protective resemblance, conforming to the prevailing colour of the district it inhabits, all such cases may be referred to outward circumstances, such as the position of the sun, or the kind of mud they may have been rolling in last, and partly, no doubt, to the age and sex of the animal. In exemplification of this, I may mention that I have watched a bull of *R. simus* trotting past me in the full glare of the midday sun, and it has appeared to me almost white; while after following the same animal up, and finding it feeding with the long shadows of evening on it, its colour has then seemed to be, as it really is, a deep brown. It may also be worthy of notice that no system seems to have been pursued in giving the scientific names under which these species are known. *R. simus*, the snub- or square-nosed Rhinoceros, is appropriate enough, as referring to one of its most distinctive points, while *R. oswelli* is named after the gentleman who discovered it; but the term *bicornis*, though no doubt applicable, would be equally so to every one of the five species, and would be most especially so to *R. keitloa*, in which the two horns are of almost equal length, while its present name, *keitloa*, being merely a native and local designation, conveys nothing to those unacquainted with the language.

R. simus, the common white Rhinoceros, requires but little description from me, being, as we all know, a well-recognized species. It is the greatest in size, and is remarkable for the length the front horn grows to, as well as its gentle and inoffensive disposition. Its food is, as far as my experience goes, solely grass. The country over which I can personally speak as to its existence, extends from Zululand up to the Limpopo; from there it incontrovertibly reaches the Zambesi; while Speke mentions it in Karagweh, and Andersson between Walwich Bay and Lake Ngami and in Ovampoland. Sir Samuel Baker tells me that he saw at Khartoum a horn "immensely thick at the base, and about $2\frac{1}{2}$ feet long, which came from the countries west of the Nile;" and though for some reason which he did not state he thinks it was not the horn of a "White Rhinoceros," yet, unless we conclude that a species exists of which we have hitherto heard nothing, it is justifiable to believe it to be a specimen of either *R. simus* or *R. oswelli*; and as the habitat of the latter is distinctly circumscribed, the balance of evidence lies on the side of its having been the former. It may therefore be generally stated, subject to correction, that *R. simus* is common to the south of the Zambesi; and while undoubtedly it exists to the north of it, though not I think in large numbers, it has never been seen in any part of Northern Africa. It is, however, worthy of remembrance that the value of its horn in those parts of Africa where it is rare or not found is great; while to the south, where it is plentiful, the value is comparatively small.

R. keitloa is another well-recognized species ; but for the sake of comparison with those killed in other parts of Africa I will mention the average measurements I have noted, and the peculiarities of structure.

	ft.	in.
Length from nose to base of tail, about	11	0
Height at the shoulder about	5	0
Circumference about	9	0
Average length of the anterior horn. .	1	8
Average length of the posterior horn. .	1	6

In some few cases the posterior horn is a trifle the longer, and in others 4 or 5 inches the shorter. The head is of the same type as that of *R. bicornis major* and *R. bicornis minor* ; and the peculiar snout and long prehensile upper lip which characterizes these three species is more marked than in the former, while less so than in the latter. Its food is chiefly, if not solely, the young and tender shoots of various kinds of thorns. In disposition it is decidedly morose and ill-tempered ; but it seldom charges without provocation. Its habitat is a very extended one, though it does not seem to be plentiful anywhere, more than two or three being seldom seen together, and then only at long intervals. I have found it from the Black Umfolosi river in Zululand up to the Limpopo, and the black crosses seen on the map now before us in the country south of the Zambesi show the approximate spots where, to my knowledge, it has been killed. Andersson seems to have met with it to the west ; and it most undoubtedly exists in Abyssinia, specimens which I have examined from that country being now in the British Museum, and a very perfect one in the possession of Mr. Gerrard ; while from the measurements of a pair of horns from a Rhinoceros cow killed by Sir Samuel Baker (the front horn 23 inches, the back $17\frac{1}{4}$ inches) I should be inclined to believe that it also must have been *R. keitloa*, $17\frac{1}{4}$ inches being an extremely unusual length for the posterior horn of any other species.

I will next speak of *R. oswelli*, about which, however, much remains to be learned. In conformation, habits, disposition, and food it in no way differs from *R. simus*, except in its horns. This singularity, as is well known, consists in the front horn, which is straight, and even in comparison with *R. simus* unusually long, pointing forward at an acute angle instead of standing erect from the snout, though this angle is very various in different animals, some possessing the peculiarity in the most modified form, while in others it is very marked. The red marks on the map show where I know it to have been met with or killed ; and I have found specimens high up on the east coast, though not exhibiting their characteristic to any great degree. It is, however, by far the most local of any of the species, so much so as to induce me to believe that it is merely local variety, some bull or cow (probably the former) having either from injury or accident of birth possessed a horn similar to that which we now find among its descendants. The fact of the peculiarity varying so greatly in different individuals is, it seems to me,

in favour of this view, and of the interbreeding of *R. simus* and *R. oswelli*; while it is worthy of note that Livingstone mentions having seen somewhere near the Zambesi a "black" Rhinoceros with a horn like that of *R. oswelli*—a statement which proves the possibility of the accidental occurrence of such a peculiarity as the interbreeding of *R. oswelli* and any of the species known as the "black" is too incredible to be taken into serious consideration. It is, however, not possible to settle this point until it can be proved whether *R. simus* and *R. oswelli* do or do not interbreed; and I may therefore pass on to the next species.

I may first observe that in using the word *R. bicornis* for this in common with the next species, I do so under correction, and for the reason that while unable to say with certainty which has been hitherto referred to by different travellers under that name, I think it very probable that both have been so, though they differ so greatly that I cannot but wonder at this being the case, and can only account for it by the fact, which I have myself noticed, that where the one species is rare the other is common, and *vice versa*. I will commence by describing the larger of the two, the one known on the east as the Kulumane, and up to the Zambesi as the Common Black Rhinoceros. This animal does not, I am inclined to believe, on an average exceed *R. keitloa* in size, though I have killed individual specimens larger than any I have seen of the latter; it, however, differs from it in its horns, which, though following the conformation of *R. simus*, never attain to the same size. Their average length in bulls is about 18 inches for the anterior, and 8 inches for the posterior, the circumference of the base of the larger horn being about 18 inches; while in cows, which in all the species have longer and more slender horns, the front one measures 22 inches, and about 16 inches at the base, the back one being about 12 inches in length. It is also worthy of note that the length of the horn in all the black species seldom varies in adults more than 3 or 4 inches, while in both the white a difference of a foot may not uncommonly be found. I have already mentioned when speaking of *R. keitloa* that the species now under discussion possesses, though in a less marked degree, the peculiar snout and upper lip characteristic of the three "black" species; and this leads me to the cause of such a provision of nature. *R. bicornis minor* and *R. keitloa* live, so far as my experience goes, entirely on the leaves and branches of trees; and this remarkable lip acts much in the same manner as the trunk of an Elephant in drawing their food towards their mouths. *R. bicornis major*, however, though living partly (and I should say chiefly) on the same, also consumes, like *R. simus*, large quantities of grass; and therefore its snout possesses the characteristics of both. I have frequently seen them browsing on the grass; but the possession for a few days of a young calf of this species afforded me an unusually good opportunity of studying their habits and favourite food. Its mother had been killed on the banks of the Pongolo by one of my hunters; and the calf had, as is often the case, remained by the carcass during the following night, where we captured it next morning, and after con-

siderable difficulty conveyed it to our camp. The bottom in which it was tethered contained abundance of the rich grass which forms the chief food of *R. simus*; but it did not eat much of it, though even on the first evening it consumed a large quantity of the young shoots and tender leaves of the thorn-branches provided for it, and seemed to be most fond of the hack, or waitabit thorn, turning over the other kinds with its snout and tasting them, and then passing them by to search for the former. On the second evening, however, I noticed it, after returning from water, commence to eat the surrounding grass; and though it did not show so great a relish for it as it did for the thorn-shoots, it ate it, both then and afterwards, in such large quantities as proved that it naturally forms a by no means inconsiderable portion of its food.

In disposition this species much resembles *R. keitloa*—neither often charging without provocation, though they will puff and snort and show a disposition to do so; and it may also be said to be the more gregarious as well as the most common, herds of from five to fifteen being sometimes seen in unusually favoured localities. It undoubtedly exists in all the country S.E. of the Zambesi, being especially plentiful in some parts of Zululand. Whether it or the species I shall next describe under the name of *R. bicornis minor* is the one spoken of by Andersson on the west, I am unable to say, as he gives no measurements, though the head and horns depicted in one of his plates resemble those of the latter. Travellers in Central and Northern Africa speak of *R. bicornis* as existing without giving any details by which it can be identified; and though, for reasons to be hereafter given, I imagine the smaller species is alluded to in Northern Africa, I cannot of course be in any way certain.

The distinctive characteristics of *R. bicornis minor* are very marked. Its average measurements are as follows:—

	ft.	in.
Length from nose to base of tail	10	4
Height at the shoulder about	4	6
Circumference about	8	0
Average length of the anterior horn	0	10
Average length of the posterior horn	0	5

Sometimes specimens are found with the front horn 13 or 14 inches in length, and the posterior in proportion; but they are uncommon. The head is smaller in proportion than that of any other species, while the upper lip protrudes to a greater degree, and the eye is unusually small. Its foot is also smaller in proportion to its body than that of any of the others. Its food is, as I have before said, solely the leaves and branches of thorns; and it is scarcely ever found out of thorn-jungle, though *R. bicornis major* is often found in other coverts. Its disposition is savage and morose to the very last degree. It continually attacks without other provocation than the mere sight of a human being affords; and it will follow the scent of the human foot for some distance. When seen without the observer's proximity being suspected, it is generally heard grumbling and grunting out its

ill temper; and in following its spoor the furrows ploughed up in the ground, and which are more or less made by all the different species, are so common as, when the ground is too hard to enable more than a faint mark to be seen, to prove to the hunter the species he is following. I have never seen more than three (a bull, a cow, and a calf) together. I have found them in considerable numbers from the Black Umfolosi river in Zululand all along the Ubombo range up towards the Limpopo, though as they near that river they become scarce, and I only know of one instance of their being found near the Zambesi. I have, however, no doubt that they existed at one time all over the thorn-country south of the Zambesi, as oral traditions of their ferocity are common among the Dutch hunters; and no doubt their own ill-temper accounts for their being now partially extinct in that district, self-defence on the hunter's part having caused their destruction; while lower down to the south-eastward, where no doubt they were originally more common, they are disappearing more rapidly than any other species. I have seen a considerable number of horns from Abyssinia, and they appear to me to resemble in size and shape those of this species, though perhaps a trifle longer; but until some one will describe the animal to which they belong, it is useless to make guesses which are not founded on sufficient data.

It will be seen from the above remarks how very limited my knowledge of the subject under discussion really is; nor should I have ventured to make them before you this evening had I not felt that it is only by each traveller describing what has actually come within his own observation that such questions as the number of species of any animal on so large a continent as Africa can ultimately be set at rest; and this must be my excuse should you feel that from my slender acquaintance with my subject I have been to any extent occupying your time to-night under false pretences.

6. List of Birds met with in North-eastern Queensland, chiefly at Rockingham Bay. By E. PIERSON RAMSAY, C.M.Z.S.—Part II.*

[Received December 28, 1875.]

174. *PTILINOPUS SWAINSONII* †.

This species is somewhat rare in the Rockingham-Bay district; a few only were obtained.

175. *LAMPROTRERON SUPERBUS*.

I found this, one of our most beautiful species, tolerably abundant in all the scrub lands of the Herbert river and coast-range. Their note is a broken "coo," prolonged into a rolling guttural sound at the end; they may be heard at least half a mile off. But, owing to the dense nature of the scrubs, the birds are at all times difficult to

* Continued from P. Z. S. 1875, p. 603.

† Where no references are given, the names are taken from Gould's 'Hand-book.'