



Asiatic two-horned Rhinoceros (*R. sumatrensis* Cuv.).



The author's best Asiatic two-horned Rhinoceros (*R. sumatrensis* Cuv.).

RHINOCEROS SHOOTING IN BURMA.

BY

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(With one plate).

Two species of rhinoceros, the Sumatran or double-horned rhinoceros (*Rhinoceros sumatrensis*) and the Javan or single-horned rhinoceros (*Rhinoceros sondaicus*) are said to exist in Burma. *R. sumatrensis* is the smallest known living rhinoceros and the most hairy, whilst its height seldom, if ever, exceeds 4 ft. 8 or 10 in. at the shoulder.

THE JAVAN RHINOCEROS (*R. sondaicus*).

I have shot several *R. sumatrensis* during my wanderings in Burma, but have never come across *R. sondaicus*, nor have I ever met anyone in Burma who had ever shot one. In fact, until a few weeks ago, I was under the impression that this animal had been long since exterminated and that it was not to be found anywhere in Burma at the present time. It seems, however, that I am wrong. We know, however, that it has recently been obtained in Sumatra where it apparently exists in fair numbers. It was formerly thought that only a few specimens existed in Java and the Malay Peninsula, and possibly in parts of Siam and Burma. This species was, however, originally described from Sumatra, but it has been a matter of doubt whether it still existed in the island.

Mr. G. C. Shortridge in an article entitled 'The Asiatic two-horned Rhinoceros (*R. sumatrensis*)' in the Society's *Journal*, vol. xxiii, No 4, p. 772, dated 25th May 1915, says, 'Besides the rhinoceros I shot (which was an example of *R. sumatrensis*), I have only heard of two other instances of a Rhinoceros being shot near Victoria Point by a European, one of these specimens, of which I have seen the skull, was *sondaicus* obtained some years ago by Captain McCormick, a former planter in the district, etc.' Mr. Shortridge says nothing more about *R. sondaicus*. As Mr. Shortridge was collecting for the Bombay Natural History Society, I take it he is an authority and knew what he was talking about when he identified the skull of the animal shot by Capt. McCormick as belonging to *R. sondaicus*.

Mr. E. H. Peacock, District Conservator of Forests and Game Warden, Burma (retired), in his book, *A Game Book for Burma and Adjoining Territories*, published in 1933, states that the height of a mature specimen of the Javan rhinoceros (*R. sondaicus*) is probably about 5 ft. 6 in. or roughly a foot higher than the Sumatran rhinoceros. Mr. Peacock says, "The best-known grounds used to be the forests of the Victoria Point Subdivision in Mergui District.* * * In this Subdivision the Javan rhinoceros was reported by all local hunters and guides to frequent heavy

evergreen forests on flat or comparatively flat ground. It was supposed never to ascend high into the hills: i.e., into the typical habitat of the Sumatran rhinoceros.

“The forests of Victoria Subdivision undoubtedly held, at one time, a very fair number of Javan rhinoceros, but these have long since been poached out of existence for the sake of the valuable horn and blood which to realize an even greater price than that of the Sumatran rhinoceros.

“There are said to be four specimens of the Javan rhinoceros existing in the Kahilu Game Sanctuary in the Thaton and Salween Forest Divisions. Indeed, this Sanctuary was established mainly for their protection. These specimens are reputed to ascend hills in the manner of the Sumatran rhinoceros and, since they appear never to have been seen by any reliable authority, it is somewhat doubtful whether they are actually Javan rhinoceros or not.” The fact that *R. sondaicus* does exist in the Sanctuary has however been since confirmed. Through the courtesy of Mr. S. F. Hopwood, Chief Conservator of Forests, Rangoon, Burma, and Mr. F. Allsop, Assistant Conservator of Forests, I have received an interesting letter dated 15th February 1935. Mr. Allsop writes that there is no doubt whatever that the rhinoceros inhabiting that area are *R. sondaicus*, Mr. Allsop spent about three weeks in the Kahilu Sanctuary and had the luck of actually seeing one rhinoceros at a distance of about 50 yards. It was in thick vegetation, but he was able to see the animal sufficiently clearly to say that it carried one horn about 9 in. long, set back slightly from the tip of the snout and that it was about 4 ft. 9 in. to 5 ft. at the shoulder. Mr. Allsop adds, that on two occasions within recent years, the dead bodies of female rhinoceros have been found in the Kahilu Sanctuary and that one was definitely identified by the Bombay Natural History Society as *R. sondaicus*. The skeleton of the second one was under examination at the time Mr. Allsop wrote and he has not been informed yet of the result to date i.e. 15th February 1935. Mr. Allsop has come to the conclusion from the tracks he has seen in the reserve that there were not less than six rhinoceros in the area in question, five being adults and one a calf.

Mr. Allsop has concluded from his own observations that the favourite foods of these animals are:—

(1) Leaves and stems of ‘Suyit’, *Acacia* sp. probably *A. pennata*, a climber.

(2) Leaves, stems and fruit of *Zizyphus glabra*, a thorny climber.

(3) Leaves and stems of *Cenocephalus suaveolens*.

(4) Leaves and twigs of *Trema orientalis* a very soft wooded tree common in secondary growth after shifting cultivation.

(5) Fruit of *Dillenia indica* (Bur.: thabyu).

Bamboos and grasses are eaten only to a very small extent, if at all. In addition to the food plants recorded above the same keeper of the Sanctuary states that the animals eat *Cudrenia pubescens*, *C. javanicus* (Bur.: Sinswe Su), *Ficus pomifera* (Bur.: Kaaung), *F. hispida* (Bur.: Kadut), *F. hirta*, *Mallotus albus* (Bur.:

Petwaing), *Erythrina lithosperma* (Bur.: Kathit) and *Homonoia riparia* (Bur.: Momaka).

Mr. Allsop in his letter goes on to say that there are a number of wallows many of them of long standing and that they are situated near the sources of permanent and semipermanent streams in the evergreen forest. The animals seem to visit them somewhat irregularly and capriciously. They appear to prefer to wallow fairly early in the morning, i.e., between 6 and 8 a.m. not in the heat of the day. The fragmentary evidence Mr. Allsop was able to collect indicates that they do not wallow daily but only once in three or four days and that individual wallows fall into disfavour and go out of use for a year or two at a time and are reopened later. No large deposits of dung were noticed, the rhinoceros evacuating almost anywhere with a slight preference for the pools of small streams. They do not return to the same place time after time as some species of rhinoceros are said to do. In view of the statements made by Mr. Shortridge and Mr. Allsop, and the definite identification of a skull by the Bombay Natural History Society there is no alternative but to accept the evidence that *R. sondaicus* does exist in Burma.

SUMATRAN OR TWO-HORNED RHINOCEROS (*R. sumatrensis*).

My experience of the Sumatran rhinoceros over a great number of years, during which I have, I suppose, seen quite fifteen or twenty of these animals at close quarters, has been that they are as active as goats and are really expert hill climbers. They will even negotiate country that neither bison nor elephant could possibly surmount. I have also found them on hills up to 4,500 ft. The Sumatran rhinoceros, although the hills are his proper habitat, occasionally descends to flat country especially towards the end of the rains, and remains there sometimes for long periods, till January and February, when there is still plenty of cover and mud and water to be met with everywhere. By March, as a rule, they are all back in high evergreen forests again. It is very rarely seen in the plains, so far as Arakan is concerned, during the hot weather months i.e. from March to June. Like pigs they sometimes wander about aimlessly for miles. I knew of one animal that descended from the hills and ravaged for several nights in succession a sugar cane plantation situated on the banks of the Kaladan River in Arakan between the Kyauktaw and Kaladan police posts. This happened during October, November and December, when the jungles are denser and damper than at any other time. It was often seen bathing in the Kaladan River by moonlight, by the people going up and down the river in dugouts.

Mr. Shortridge, in the same article referred to above, is mistaken in saying that *R. sumatrensis* 'apparently do not care for clear running streams and are said only to visit the low ground during the hot season when their drinking pools in the hills have dried up'. As a matter of fact, I have found *R. sumatrensis* at the top of the steepest of hills frequently drinking and wallowing in clear hill streams year in and year out at elevations varying

from 1,500-3,000 ft. with not a vestige of mud or muddy water to be found for miles around except on low ground at the foot of the hills near permanent streams. The majority of the clear water hill streams in the Arakan Hill Tracts never seem to dry up.

I would state here once more that for such a clumsy looking animal, the Sumatran rhinoceros is an extremely active animal and a wonderful hill climber. On numerous occasions, when following their tracks I have had to hand over my rifle to a follower and climb up hand over hand steep banks that a Sumatran rhinoceros had ascended. Their tracks in the hills are generally most difficult to follow, especially when the ground is hard, or when it is covered with a thick layer of dead bamboo leaves. Should tracking be interrupted by a heavy shower of rain the bamboo leaves swell out, then the front or centre toenail impressions of the forefeet, which are usually the only marks that are visible on the ground are invariably almost obliterated. All rhinoceros have three toes on the fore and hind feet, unlike the Tapir (*Tapirus indicus*) which has four toes on the front and three on the hind feet.

Of all the wild animals in Burma I should say that the rhinoceros, the tapir and the takin, avoid the presence of man most and are therefore usually found further from villages than any other animal. I understand, however, that in the Kahilu Reserve rhinoceros have been feeding on chillies cultivated by the villagers. There is also the instance of *R. sumatrensis* which was found in Arakan in a sugar cane plantation situated on the banks of the Kaladan River not far from a village. There are always exceptions in every case for there can be no doubt that a rhinoceros is a very shy animal and usually avoids man. The rhinoceros's senses of sight and hearing are very poor, but its sense of smell is very acute. A rhinoceros once it has been disturbed is very difficult to come up with again unless it enters one of the mud wallows or swampy depressions. These wallows are frequented at odd times but especially during the hot weather months from March to June, when the gad or horseflies worry fourfooted animals most. I have watched herds of *Tsaing* (*Bibos banteng birmanicus* Lyd.) trotting along through the jungle during the heat of the day, as if the devil was at their heels, surrounded by clouds of gad flies and shaking their heads from side to side and snorting in their efforts to shake off their relentless tormentors. Most wild animals especially bison and tiger endeavour to lie up in the thickest cover they can find during the heat of the day in order to escape being bitten by these flies whose bites draw blood and cause intense irritation. Rhinoceros do not usually lie up during the day in very dense jungle. *R. sumatrensis* may be found lying asleep during the day either in a mud wallow, or at the foot of some shady tree or bamboo clump in fairly open jungle on top of some ridge, or hill, where he may catch any breeze that may be blowing. Most animals, especially bison, sambar and even elephant, like lying up for the day during the hot weather on some ridge to take advantage of the breeze during the heat of the day. I have, however, found old solitary bull bison, tsaing, elephant and even rhinoceros, seek the densest cover they could find, when their enemy—man—

had been hunting them persistently. The Sumatran Rhinoceros very seldom deposits its dung in the same spot daily. As a matter of fact, they seem to me to only do so when they accidentally cut across their own tracks at a spot where they have previously evacuated. The odour of the droppings, even though not their own, seems to attract the animal's attention and causes it to halt and evacuate on the same spot. It is not a regular habit. *R. sumatrensis* evacuate, sometimes when crossing a stream as do horses and elephants. *R. sumatrensis* change their feeding grounds generally once every ten or fifteen days. Sometimes, if the locality is a quiet one, far from the haunts of man and there are plenty of shrubs for them to browse upon, they remain in one place for nearly a month. I found that they generally fed along steep, well wooded valleys and also along the steep banks of well wooded mountain streams. The majority of these streams, so far as the Arakan Hill Tracts District is concerned, are full of rocks, high waterfalls and dense bamboo and cane jungle. In these rocky hill tracts there are no wallows. I noticed, however, that the animals in such places invariably had their baths in natural pools at the foot of waterfalls. Fine gravel and stones form the beds of these pools but there is no mud whilst there is usually about two or three feet of water in them. When feeding near these mountain torrents Rhinoceros just bathe, where it suits them, i.e., where there is sufficient water to cover their bodies when they roll about in it. The approaches to these mountain pools are very steep and inaccessible. The climbing one has to do when hunting these animals in these places, is really prodigious. One had often to make long detours to get round a succession of precipitous waterfalls, as it was quite impossible to ascend or descend most of the beds of the streams. We invariably carried about 50 yards of stout rope to enable us to surmount these waterfalls and steep ascents. One had also to be in the pink of condition to be able to keep going all day over the most trying country to be found anywhere in the world. These remarks apply more particularly to all the ranges of hills which skirt the Ru, the Lemro and the Peng Rivers in Arakan, where Sumatran rhinoceros are still fairly plentiful and which tracts of country ought, in my opinion, to be entirely reserved as sanctuaries by the Forest Department. The Ru stream is already a reserve, if I mistake not. The only other part of Burma where I found the Sumatran rhinoceros fairly plentiful was in the Yoma range of hills along either side of the watershed running between Arakan and the Thayetmyo District, inland from Kama and Mindon. They were also common along the Shwe-U-Taung range of hills in the Momeik State of the Ruby Mines District, but neither in the hills between Arakan and Thayetmyo or in the Shwe-U-Taung range did I find these animals in such inaccessible places as I found them in Arakan, especially in the steep hills which skirt the Peng and Lemro Rivers near Pengwa. I suppose they had been hunted so persistently and ruthlessly in Arakan by the hill tribes that they were finally driven to occupy these inaccessible places. When I was shooting along the watershed between Arakan and Burma, I noticed that *R. suma-*

trensis invariably made their wallows at the source of streams and in springs as near the top of the watershed as possible. Discarded wallows at lower elevations dry during the hot weather and are used again during the rains. An *R. sumatrensis* may have half a dozen or more wallows which it knows of and which it visits at odd times according to their dry or wet condition but it does not necessarily have a daily mud bath. These wallows are often enlarged by pigs as well as by elephants. A rhinoceros like a pig and a buffalo must have his bath, be it of mud, or of water. I have seen elephants also rolling about in the mud of a wallow to give their bodies a coating of it so as to protect their sensitive skins from the bites of flies and mosquitoes. Rhinoceros in the parts of the country about the Peng and Lemro Rivers often fed on anything green they could get. They must have been hard put to it at times to get anything really succulent to feed upon at all in these steep inhospitable bamboo clad hills. Except for an occasional small patch here and there, all evergreen forest seems to have been destroyed for cultivation purposes by the hill people by their wasteful system of felling timber and burning it. If it were not that the bamboo is a strong healthy shrub there would soon be none left either. Nothing for miles around can be seen but the *Kayinwa* bamboo (*Melocanna bambusoides*). *R. sumatrensis*, like most herbivorous animals, is very fond of the flower and fruit of this bamboo. This bamboo, as is well known, flowers and fruits once in thirty or forty years and then dies. I have seen thousands and thousands of acres of this bamboo laid waste at flowering. Nearly every junglecock for miles around seems to congregate in these areas when the seedlike flowers are on the stems or falling on the ground. There is also a kind of caterpillar at that time on the stems which seems to attract bird life to these areas.

The extraordinary thing is that there were no hens visible, only cocks. Either the caterpillars or the cornlike flowers of the bamboo, or both give them food. Many animals also gathered in these flowering patches of bamboo to gorge on the pearshaped fruit. I have known of village cattle gorging themselves on the fruit to such an extent as to die subsequently from the effects of overeating. After the bamboos wither and die, animal life disperses bamboo and there is an emigration of hordes of field rats. Where the bamboo has flowered and died wild plantain *Musa textilis* spring up everywhere in its place for acres and acres. Where does the seed of this plant come from? Has it been lying dormant all these years? Once the bamboo fruit takes root and springs up again the *Musa textilis* disappears. The strange thing is that this phenomenon is generally followed by epidemics of smallpox, or cholera, especially amongst the hill people. They are deprived at the same time of their food supplies in the tender bamboo shoots and are also unable, owing to the scarcity of bamboos, to make dah handles and mats or rebuild their houses which are usually constructed of bamboo. I could write more on this interesting subject but we are talking about rhinoceros, not bamboos.

R. sumatrensis also feeds on a kind of long, feathery looking

grass called *pyaung-sa* or *kyan-sa*, bamboo leaves and shoots, prickly shrubs and creepers and the leaves of several species of plants with reddish coloured soft hairy leaves and stems found in certain localities in the hills or in the valleys and along the banks of streams. I am afraid I am not a botanist like Mr. Allsop so cannot give any botanical names.

Rhinoceros are generally found feeding very early in the morning and after sunset, and like the Tapir (*Tapirus indicus*), are more or less nocturnal in their habits. A rhinoceros is just like a big pig. He wanders about everywhere, north, south, east and west, as the spirit moves him. Once he has been disturbed or decides to change his feeding grounds, it is almost impossible to overhaul him. He travels at a quick walk for miles over the most abominable country imaginable until he reaches the desired spot. These animals could be easily run down and brought to a standstill with dogs as, in the hot weather, they do not stay very well once you have got them on the run; they invariably pull up every mile or so. I have never used dogs for this purpose of course, but I have almost been able to run down a rhinoceros on foot by keeping steadily on after him at the double mile after mile. It was hard work, but in those days I was as hard as nails and could stay for ever. When rhinoceros are hard pressed and thoroughly alarmed I have heard them utter loud whistling braying sounds in different keys, not unlike the braying of a donkey. At other times when I have followed and come up with an animal, it usually uttered a terrific snort not unlike that uttered by a large boar or gaur (*Bibos gaurus*) before galloping off after being disturbed. Rhinoceros also make a peculiar humming or buzzing sound when submerged in their wallows, especially when they have been chased or are tired and have just finished a long journey. It is partly a sign of exhaustion and partly a sign of satisfaction at being immersed in cool mud and water.

The carcase of a Sumatran rhinoceros is worth, to a Chinaman or Burman, nothing under a thousand rupees. The blood especially, if drawn straight from the heart, is valuable. It is dried slowly in bamboos over a fire and sold for almost its weight in gold. The horn again is more valuable than the blood as it is ground down, mixed with other drugs and used as an aphrodisiac and as a sovereign remedy for all sorts of ills. The Javan and Sumatran rhinoceros are considered of particular value for medical purposes by the Chinese and Burmese. The Chinese seem to know more than any other race about the uses to which the blood and horn of a rhinoceros can be put to. Fortunately the Burma Government have prohibited the shooting of rhinoceros in Burma altogether. There is no doubt that these animals are being slowly and secretly exterminated in the hills of Arakan by the wild tribes who come up and spear them in their wallows during the heat of the day. No one can tell what goes on in the Thayetmyo Yoma hills between Arakan and Burma as the Forest Department are under staffed, but the sooner some one is sent to keep an eye on the rhinoceros in the Arakan Hill Tracts the better.

Burmans can distinguish, as can any sportsman of experience,

between a male and a female rhinoceros when following their tracks by noticing the way the young saplings, creepers or the branches of bushes have been twisted by the animal's horns as it moves along when feeding. A female or male with a short horn, according to the Burmese hunters, cannot do any twisting of branches, twigs and creepers. The more twisted the creepers, bamboos and branches appear, the better the chances of coming across an animal with a good horn. Another way of distinguishing the tracks of a female and male, there being very little difference in their size and appearance, is by carefully noting the positions of their droppings or dung. In the case of a male the ordure and urine will be found on the ground exuded one behind the other, a foot or two apart, whereas in the case of a female they will be found more or less together, or scattered over the bushes in the immediate vicinity at heights of from three to four feet. The urine of a female as seen by me on several occasions was of a pale pinkish colour. The male rhinoceros, when twisting bamboos, young saplings, and creepers, with his horns does so with the object of either cleaning or sharpening them or simply because of the pleasing sensation gained by the scratching. Perhaps it may be done as a challenge or from pure cussedness or sheer *joie de vivre*. Bison and tsaing and ordinary domestic cattle often tear up the ground with their hoofs and horns or rub them on the branches of trees or saplings for no apparent reason as do deer occasionally even when they have no velvet to get rid of, simply I take it, because the rubbing sensation pleases them. It may be of course a sex desire. Burman hunters have often told me that all big game are more restless, on the *qui vive*, and more truculent when the moon is on the increase and nearly full. Many races in India believe that a man is at his best when the moon is fullest.

One rarely comes across a young rhinoceros. During the 49 years I have been in Burma I have never seen either a young rhinoceros or the tracks of one. Burmese hunters say that rhinoceros bends its head to clear its path of obstructing jungle and heaves dead logs etc., over its back as it proceeds. These fall on the youngster following on the heels of its mother, and so kill or maim it. Hence the scarcity of young. This of course is a myth and can hardly be accepted as a true reason. I referred to this subject in the *Indian Field* sporting paper of September 30, 1909, in a long article entitled 'Notes on the Tapir (*Tapirus indicus*) and Rhinoceros (*Rhinoceros sumatrensis*).' The *Indian Field* became defunct a number of years ago. The real reason perhaps why rhinoceros are so scarce is because they have been so systematically and relentlessly hunted now for years past in all parts of the country where they exist. The people are also well aware of the great value of the animal's blood and horns. The result is that the males are shot more frequently for the sake of their horns than the females which have small inferior horns, and as rhinoceros were never prolific breeders at any time, their chances of producing young ones are considerably lessened in consequence.

Rhinoceros get to their feet when disturbed and dash away at a much greater speed than would appear to be possible for such a heavy, clumsy looking animal. With a few exceptions, they, like all the other jungle animals of India and Burma, periodically visit salt licks where the earth and the water are slightly impregnated with salt or potash. The reason for these visits does not appear to have been much commented on by sportsmen generally in any country, for these salt deposits, or animal health resorts are to be found in every country in the world as well as in India and Burma. From an inspection of the tracks leading to and from some of these salt licks there can be no doubt that they are more often visited by the deer tribe than by any other quadruped. In fact these animals seem to visit the licks almost daily. The elephant, gaur or bison (*Bibos gaurus*), and 'tsaing' or banteng (*Bibos banteng birmanicus*) come next, in the order named "with a visit, of perhaps once or twice a week. Then comes the rhinoceros and the tapir with only one or at the most two visits a month. The moon seems to have a lot to do with these visits in the case of the tapir and the rhinoceros for they seem to come at full moon, and at the appearance of the new moon. There are regular beaten tracks leading to nearly all the most frequented salt licks and I have seen these pathways literally churned up into a sea of mud by the hooves of animals coming and going. It should be noted, however, that these salt licks are only popular at certain times of the year. There is a regular season when animals partake more freely of the brackish earth and saline water, while at other times there is a regular falling off in the number of visits paid by all the larger animals such as elephant, rhinoceros, tapir, gaur and tsaing. More visits are apparently paid to such licks between the months of December and June than at any other period. Some salt licks, which are more highly impregnated with salt deposits than others and which are situated in the heart of the jungle far from the haunts of man, are naturally frequented more often than those situated near villages and cultivation. During the monsoon, from July to October, most of the salt licks become inundated with water and then the earth no doubt loses, to a considerable extent, its saline properties and is consequently less palatable.

I am of opinion that animals partake of saline mud and water as an aperient when they wish to free their systems of parasitic worms which are found in the stomachs of both bird and beast the world over, and which, if not expelled before they multiply to any great extent cause great trouble and are also the means of disease breaking out amongst them. On more than one occasion I have observed these parasites among the droppings of elephants which have eaten the saline earth at these deposits. The large quantities of earth which an elephant will put away at one visit is simply astonishing. I once watched, at a distance of only about ten paces, an old tusker elephant pick up and shove, down his throat with his trunk, a quantity of this saline earth weighing quite thirty to thirty-five pounds before departing to drink at a neighbouring stream. At some salt licks only the water is drunk out

of pools which are sufficiently impregnated with saline matter. None of the cat tribe, i.e., tigers, leopards or cats, ever partake of the waters or eat the earth at a salt lick. Bears and pigs also do not visit salt licks. I have however, seen jungle fowl, pheasant and imperial, as well as green pigeon, and also the gibbon monkey sipping water at a saline pool. There is some mysterious fascination about a salt lick that seems to attract animals and birds to it whether they do or do not partake of the waters or salt earth there. Tiger and leopard of course prowl round salt licks on the chance of killing an animal for food.

Sitting up at a salt lick in India or Burma with or without electric contrivances is now strictly forbidden.

A rifle of any of the following calibres is good enough for use upon the Burmese rhinoceros viz. 500, 470, 450, 423 and 12 bore Magnum Explora ball and shot guns. I am of opinion that *R. sumatrensis* are not given to charging even when wounded.

My first experience with the Sumatran rhinoceros, was on the Shwe-U-Taung range of hills between the state of Momeik and the Ruby Mines District of Upper Burma. My hunters and I had struck the tracks of a Sumatran rhinoceros one morning at about 8 a.m. I was armed with a 12 bore hammerless ejector 'Paradox' gun firing a cordite charge and heavy conical bullets. With this weapon in one hand I could, if necessary, sprint several hundred yards after an animal without getting blown. My second weapon, which was meant to act as a stopper in case I should be charged by, say, an elephant or a bison, was an 8 bore rifle burning a charge of 10 drs. of black powder with heavy conical bullets of hardened lead. At 3 p.m., after we had taken many twists and turns through bamboo jungle and tree forests, up and down very steep hills full of giant stinging nettles, my best tracker, Maung Pe, suddenly turned round to me and pointing to some mud smears on the leaves and stems of the surrounding bushes whispered 'Sir, we are not far from a rhinoceros wallow—please keep a careful lookout ahead'.

After striking a match and blowing it out to see which way the smoke travelled, whether the wind was in our favour or not, I took the lead, and after travelling a matter of about 50 yds. or so and going round the base of a large ant hill surrounded by some low bushes, I suddenly heard a splash ahead and found myself within ten yards of a rhinoceros that had risen out of his wallow and was sitting on his hind quarters looking in our direction. Firing both barrels into his head in quick succession I sprang to one side in case he should charge along the path by which I had come. On receiving my shots, he dashed out of the wallow at a great pace, uttering a loud snort, the noises emitted by his feet as he withdrew them from the thick mud sounded like the withdrawing of corks from large champagne bottles. Thinking I had missed him altogether for he never flinched or showed any signs of having been hit, we followed on. After travelling 20 or 30 yds., blood was discovered on either side of his tracks which was a clear indication that one of my bullets had found its mark but, evidently without touching the brain. After going about a

quarter of a mile we came upon him lying down breathing stereorously. I then let him have a right and left with the Paradox as he faced us. I then saw that only one of my bullets had passed through his head. The anterior horn was small—being only about 12 in. in length, whilst the posterior was a mere horny protuberance (see Pl. upper photo). The animal was then cut up and the meat smoked over a large fire being subsequently divided among my men. I found the meat, if properly cooked, quite palatable. It was as good as beef at any rate it not better. It should be mentioned that not a scrap of any animal shot by me has ever been wasted. If my servants, camp followers and coolies did not consume it, villagers from the nearest village usually flocked in and scrambled for the remnants. The entrails, and even the bones and skin were taken away.

On another occasion, in the Ruby Mines District of Upper Burma, my hunter and I were tracking up a solitary tusker elephant which, judging by the measurement of its fore-feet impressions which taped 20 in. from toe to heel, indicated that the weight of ivory carried by the animal must have been in the neighbourhood of 70 or 80 pounds the pair. Unfortunately when we were about a mile to the rear of the animal it walked into a camp of Burmans who were engaged in cutting bamboos, and, after demolishing their huts and nearly catching one or two of the occupants had gone clean away. However, these bamboo cutters gave us the information that they had that morning seen—it was then only about 8 a.m.—the tracks of two rhinoceros which seemed to be travelling together. This was good news and it did not take us long to pick up their trail, and, finally, after following them for some time I suddenly caught sight of them entering a huge mud wallow in the side of a hill. One of the animals must have got a slant of our wind for he suddenly slewed round and cleared out of the wallow at a fast trot. The other, however, after staring about him stupidly for a minute or so, trotted in our direction. I waited till he came abreast of me, and at a distance of about 30 yds., I let him have a shot from the 8 bore. This did not stop him. He seemed to travel faster, if anything. We took up the tracks but could get no sign of blood. 'A clean miss, Sir, I am afraid', said Maung Pe. 'How could you have missed such an easy shot?' There was no doubt about it. I had clearly missed and there was no more to be said about it. I had no excuse to offer except to remark to him that even the most expert marksman occasionally misses. However, we took up the tracks again. It was a long stern chase. The time was about 10-30 a.m. We travelled all day on those tracks until rhinoceros tracks, stones, earth, bamboo clumps, bushes and trees seem to have been indelibly, photographed on the brain and in the retina of my eye. At about 5-30 p.m. I heard a peculiar, deep humming or buzzing sound, akin to the noise of wind passing through the feathers of the Great Hornbill (*Dichoceros bicornis*) as it beats through the air. 'The sound we have just heard', said Maung Pe, 'was made by a tired rhinoceros blowing or breathing in his wallow. There is, no doubt about it. I have heard it too often to be mistaken now.'

Accordingly we pushed on cautiously and in less than 5 minutes we were at another wallow. So close was I standing to the mud hole that I could have easily inserted a ten foot bamboo into the mud beneath me. I could see a heaving mass of mud but could not make out which end was the animal's head and which the tail. Only a little bit of the yellow looking clay covered skin of its body was visible. This seems incredible, but is perfectly true nevertheless. As I was certain there was no possibility of my missing this time, I fired the right barrel of the 12 bore Paradox into what I took to be the centre of the body, it being impossible for me to tell where the animal's head lay, so deeply was it embedded in the mud. On the report it rose out of the mud, and, after spinning rapidly round in circles for a few seconds, dashed out of the wallow, making loud popping sounds with its feet as it pulled them from the mud. I knew there could be no mistake this time and that it was hit. It only travelled a distance of about 500 yards and when I came up with it, it uttered a long drawn out scream and expired. This animal I am sorry to say turned out to be a female. She had a mere stump of a horn.

On examination, I found that my bullet had passed through her lungs. According to Maung Pe, she was the same animal I had fired at that morning, as we found the graze of a bullet on her withers, which had cut the skin but had not drawn any appreciable amount of blood. I must say that her dying scream caused me remorse.

I shot my best *Rhinoceros sumatrensis* (see Pl. lower photo) on a range of hills bordering the Lemro River in Arakan at an elevation of about 3,000 ft. I was travelling up the Lemro River in dugout canoes to visit and inspect an out of the way police outpost situated at a place called Pengwa. A weird looking wild man of the woods from a neighbouring Chin village visited my camp on the river and informed me that he knew of a small pond or pool of water on the top of the range of hills above us which used to be visited frequently by rhinoceros in bygone years.

Next morning we started off at daylight for the top of the range of hills hoping that we might have the luck to come across a rhinoceros with a really good horn. I had been told that the part of the country we were about to visit had not been shot over by any Europeans or even local hunters for many years. I found the going steep enough in all conscience and I was soon bathed in perspiration. The men all carried small muslin bags or pads some five inches square, full of wet powdered tobacco, and whenever a leech got on to their legs they just squeezed a few drops of the juice on to it which immediately caused it to curl up and drop off. Salt or gunpowder is equally efficacious.

We reached the top of the hill at about 1-30 p.m. when down came a heavy shower of rain which drenched us all to the skin. This made things rather unpleasant, for the leeches gathered round us in battalions and attacked *en masse*. At about 3-30 p.m. after much wandering about in our efforts to find the rhinoceros's wallow I caught a glimpse of a small sheet of water through the bamboos. I at once took the lead armed with a single Westley

Richards 500 bore cordite rifle which burnt a charge of 80 grains of cordite.

My guide, the wild man of the woods, then whispered to me that the rain was bound to bring a rhinoceros to the wallow as the sun was shining brightly whilst it was hot, and the gadflies were in evidence everywhere. To cut a long story short I crept to the pool along an elephant path, and sure enough saw, not only a doublehorned Sumatran rhinoceros with a fine posterior horn but also a very fine bull elephant with a very good pair of tusks. The latter was throwing mud and water backwards over his body and between his fore legs to cool himself and to drive away the gadflies. The rhinoceros was standing alongside the pool within ten yards of the elephant which seemed to take absolutely no notice of its presence. A cock silver pheasant (*Gennaecus lineatus*) was also standing beside the pool between the two animals. I could not shoot both the animals, and as the rhinoceros was the bigger prize of the two, I decided to bag it if I could. As the rhinoceros was standing almost broadside on to me with its head turned slightly away, I moved forward to my right to obtain a better position and also to get slightly nearer. We were now only about 25 yards apart and I wanted to be able to deliver a raking shot from a little behind. What would I not have given to have had a camera at that moment? I should have been able to obtain an excellent shot of both animals on the same plate. However, I waited no longer and let the rhinoceros have a raking shot through the small of the ribs in the hope that it would find the lungs if not the heart, hoping at the same time that the elephant would clear out in the opposite direction and not worry us as I did not want to shoot the animal. The rhinoceros lurched forward on receiving the shot and swung quickly round in my direction with his head in the air. Having got my wind, the breeze having veered round, he charged through the pool very quickly, but whether it was an intentional charge or not, I am unable to say. The elephant on hearing the report banged his trunk once on the ground, and after uttering a shrill trumpet, went off in full flight through the bamboos and jungle making a devil of a noise. I had by now taken up a position some fifteen paces from the pool and as the rhinoceros reached the edge of the water on my side, I dropped him with a broken shoulder, and finished him off with a third shot. He had a very fair anterior horn of a length of about $16\frac{1}{2}$ in. The posterior horn was only from about $2\frac{1}{2}$ to 3 in. long. After disembowelling the animal in order to save the meat for my men, the next day, and taking some photographs of it and the pool, as well as several of it being skinned, we hurried back to camp which was reached in inky darkness at about 9 p.m., after a desperate scramble through the jungle and undergrowth, the leeches crawling all over us *en route*. One of my men had a leech in either nostril, whilst another had one fixed on the white of one eye ball. The man with the leeches in his nostrils was able finally to pass them out into his mouth when they had become sufficiently gorged with blood. I had a similar experience some years before, so was able to explain to him how to eject the leeches. There is in fact no

pain but only a slight itchy feeling in the nose, and the only thing to do is to wait until the leech has gorged itself with blood and then to pass it out through the nasal passage into the mouth in the usual way from whence of course it should be ejected at once. It sounds horrible, but necessity knows no law, and this method is sheer necessity. In the case of a dog getting a leech up its nose the only thing to do is to hold a bowl of water under the nose of the animal till the leech longing to reach the water hangs low enough down to enable it to be seized with a pair of pincers or a piece of cloth and pulled out. A solution of salt water can also be injected into the nose. Some people recommend tobacco juice but this may affect the brain or the eyesight and is unsafe.

With regard to my shooting kit, I wore as footgear the brown canvas and rubber hood 'Workshu' with two pairs of socks, and shorts and coat made of green coloured shikar cloth. The inner pair of socks worn were either of strong, thick, closely woven silk or cotton. Over these I wore thick woollen socks. In order not only to prevent the socks from slipping down into the heel of the boot and causing blisters, but also to keep out sand and gravel I wore half a putty wound round the top of the boot which also to some extent prevented leeches from getting at the foot at all through the eyelets or lace holes of the boot. When leeches did happen to worm their way through the lace holes of my boots and get through the thick woollen socks they were quite unable to get through the cotton or silk socks, with the result that as they could not draw blood from anywhere on the foot they were obliged to wriggle out again on to the bare calf or thigh where the tobacco sachet could easily deal with them. Leech bites on the calf or thigh are not nearly so irritable as bites on the instep, ankle, or foot. If a leech bite is scratched by anyone whose blood happens to be out of order, it is apt to turn into a nasty sore which is difficult to heal.

Shorts are the only togs worth shooting in. One cannot climb really steep hills wearing riding breeches and putties or in fact any other kit, if there is to be any hill climbing, owing to the stoppage of the circulation of the blood in the legs. It simply cannot be done.