



DAPHNE SHELDRIK

*The Orphans of
Tsavo*



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COLLINS *and* HARVILL PRESS
LONDON

1966

11. *Higglety and Pickle*

Members of the mongoose family make most engaging pets so, when one evening a ranger appeared carrying what at first glance looked like a rat, but which was in fact a very small banded mongoose, David was delighted. As I was away in Nairobi at the time the task of nurturing the baby for the first few weeks of its life fell to David. The mongoose had been found lying in the bush squeaking pathetically and had obviously suffered a severe head injury for it was unable to stand without toppling over to one side and held its head at an angle. David called him 'Ticky,' a name given to many tame mongooses because of Kipling's famous Ricky Ticky Tavy; later, unaccountably, he came to be known as 'Higglety.'

When the orphan arrived, David was just about to leave on safari into the western portion of the Park; hastily he warmed some milk and gave the little mongoose a feed using an eye-dropper for the purpose. A cosy nest was then made for it in a box which was placed in the Land-Rover and the safari set out.

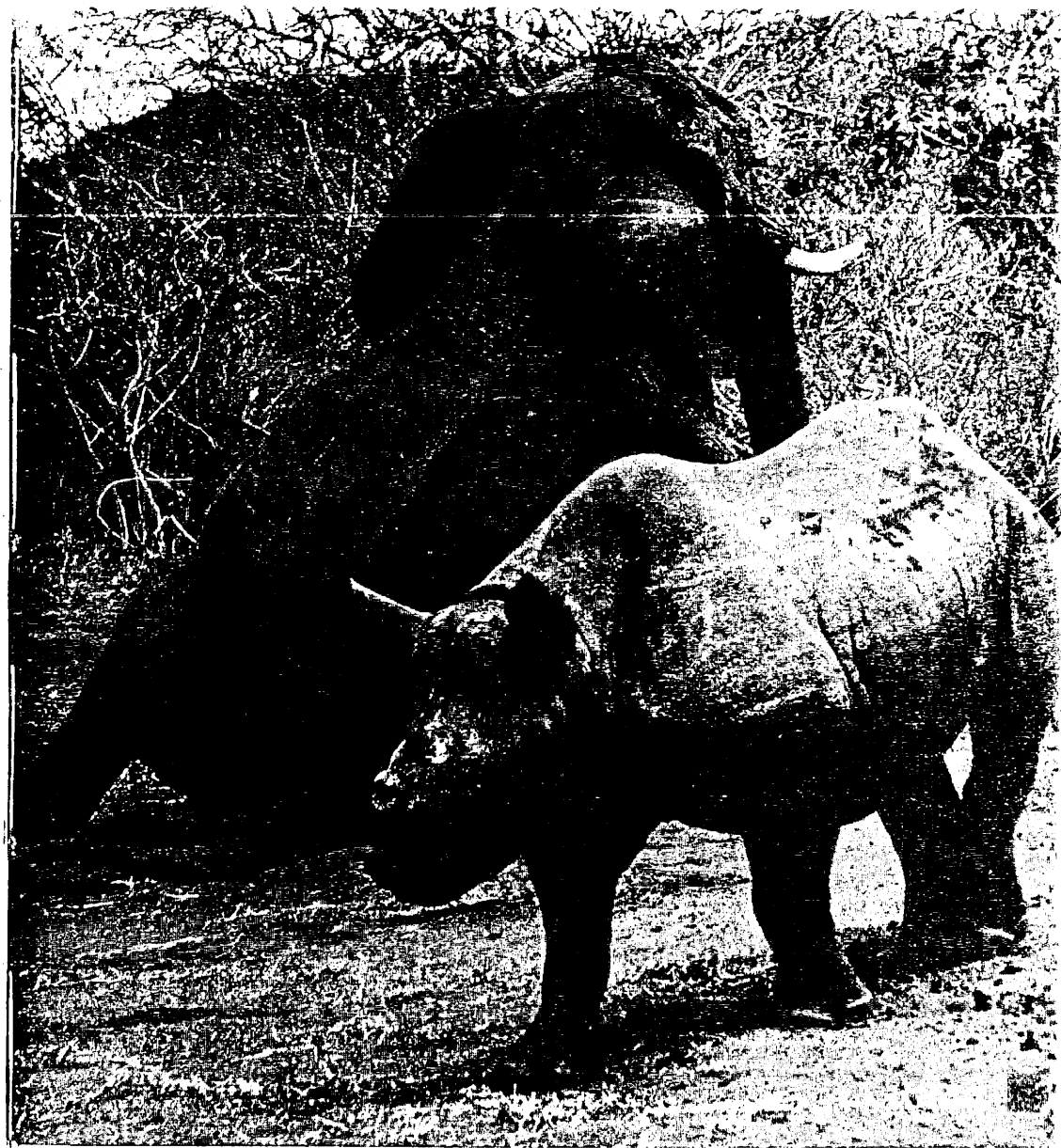
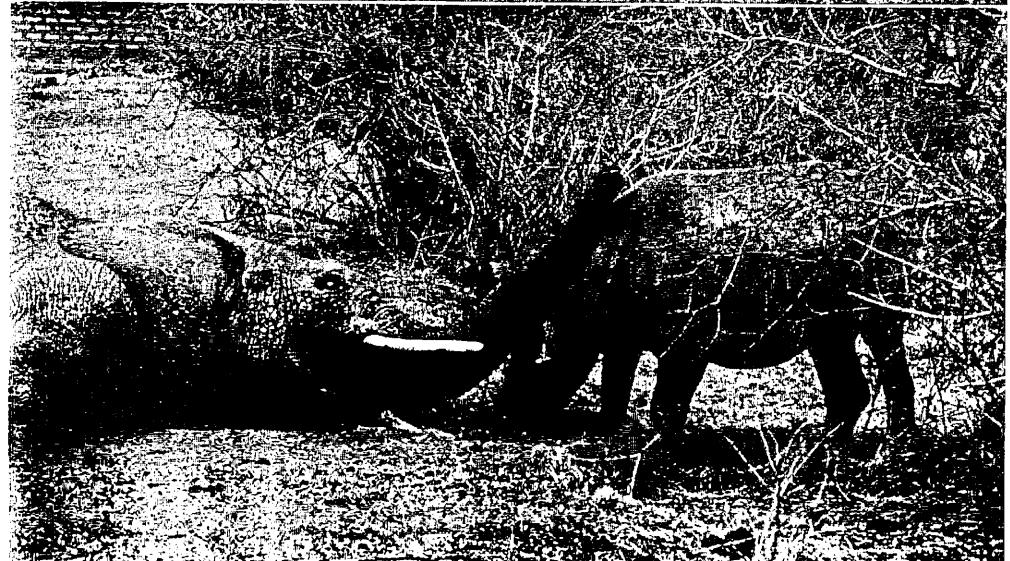
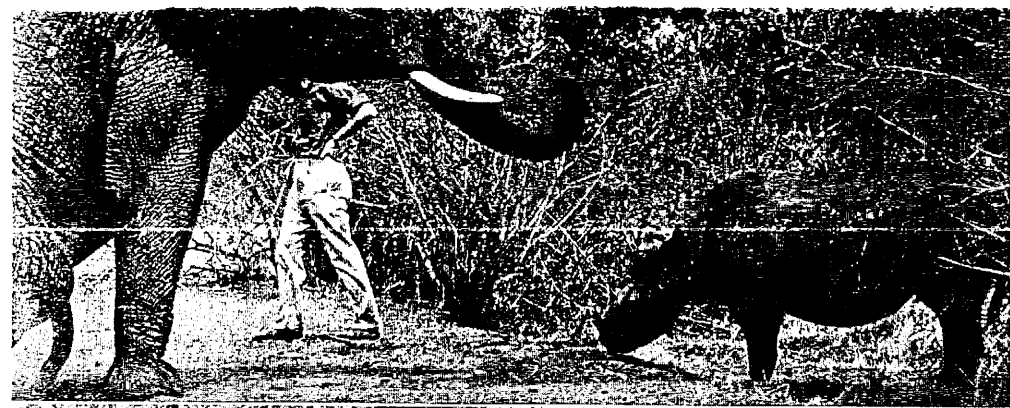
The first night in camp was bitterly cold, the wind sweeping straight down from snow-capped Kilimanjaro, and in the early hours of the morning Higglety complained weakly. David opened the box which was beside his camp bed and, putting his hand inside, felt a trembling little bundle of fur that was as cold as ice. He lifted the little animal out and took it into his bed for warmth and gradually the shivering stopped and Higglety slept cuddled against David's chest.

The next day he was very much better, but it was many weeks before he was able to stand without falling over and his head was always slightly lopsided.

Higglety proved to have a strong personality, he was extremely intelligent and typical of his species in being devoid of any sense of fear. When full-grown he was larger and heavier than a ferret and was covered in thick grizzled fur, predominantly brown with thin black transverse bands over the top of his back. He could erect the hairs on his tail like a bottlebrush;



Aruba 'mothering' Rufus



Particular game played by Samson and Rufus ends with Rufus walking away

this usually signified displeasure. What he possessed in abundance was an insatiable curiosity.

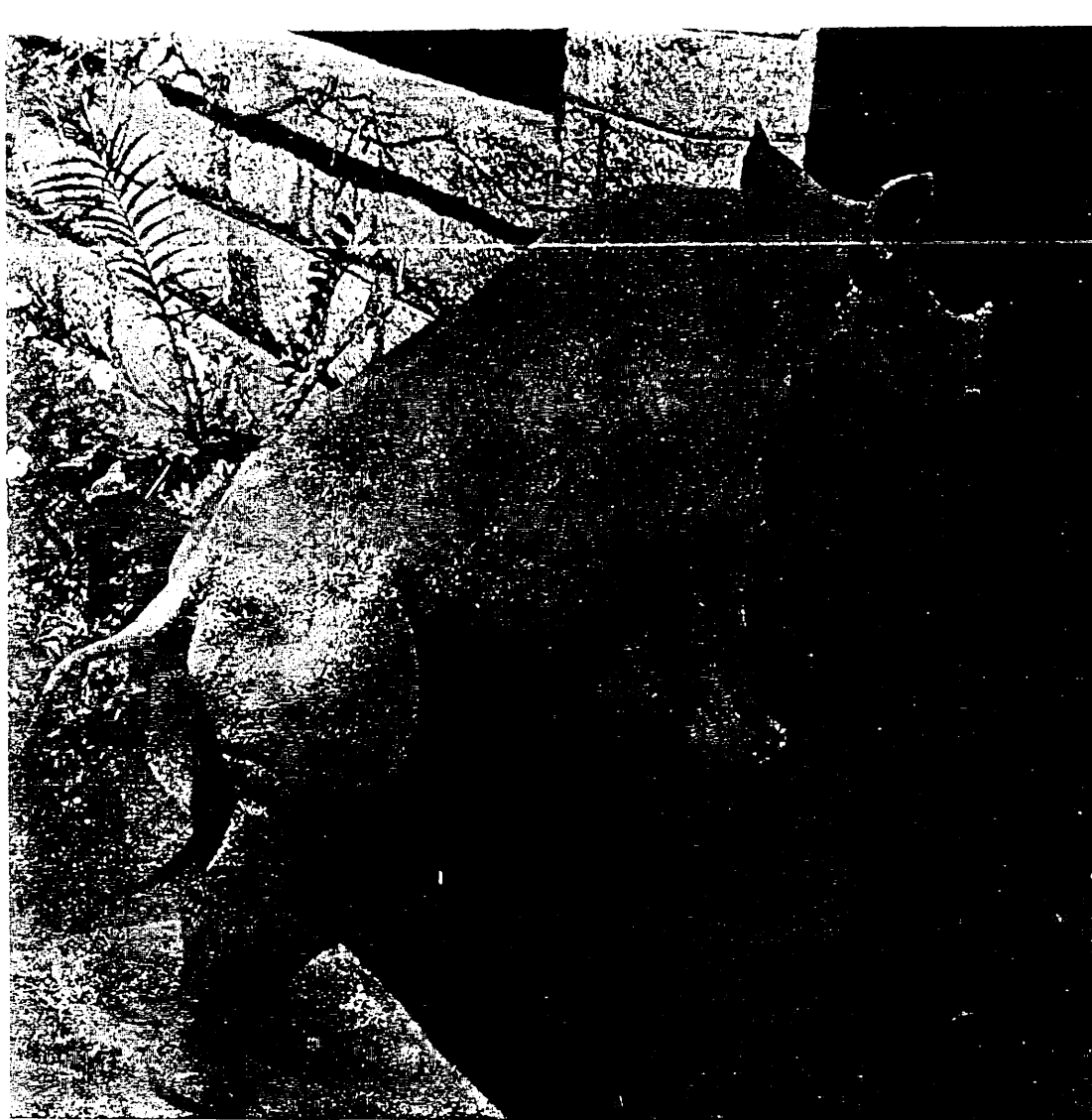
His presence could always be detected by the characteristic birdlike 'peep' of mongooses, which is so difficult to describe. The only time he was silent was when he was asleep.

Higglety was always present at mealtimes and would sit up on his hind legs like a squirrel, his little black nose twitching as he savoured all the delicious smells. He always ended by jumping up on to my lap where he sat with his front paws resting on the table, every now and then forgetting his table manners and stretching out a paw tentatively to hook a morsel off the plate. He was passionately fond of cheese and the mere mention of this word brought him scampering up, squealing and growling in anticipation. He also liked such unlikely things as avacado pear and pawpaw but the greatest treat of all was a whole egg. He would hold it between his front paws, manoeuvre himself into position against a wall and hurl the egg between his back legs to break it. Sometimes, rather unkindly, we gave him a ping pong ball instead and his frustration and fury when it wouldn't break would increase at each frenzied attempt until we felt sorry for him and substituted the real thing.

Every morning he pattered through each room examining every nook and cranny carefully, scrabbling with his front paws at any interesting object. When he had satisfied himself that nothing had escaped his notice, he would hurry outside and explore the garden. An expert at finding grubs in the lawn, he would wander along with his nose to the ground, stop suddenly, dig in the grass with his paws and without fail unearth a grub which he downed with relish.

About this time the Water for Wild Animals Fund was launched, and met with wonderful support from the public. Water is the limiting factor in Tsavo East, for in the dry season the game is forced to concentrate on the few supplies of permanent water with the result that food in the vicinity becomes very scarce. By providing water elsewhere new feeding grounds become available and the pressure along the rivers is relieved. We were, therefore, very glad to hear that Tsavo East had been allocated funds for a borehole at Ndiandaza, for this would open up a vast stretch of country during the dry season.

We set out at once and, of course, Higglety had to come too. The drilling rig had gone on ahead and as we neared our destination, we could hear its 'thump, thump,' and knew that the dream of permanent water at Ndiandaza was nearing reality.



Rufus climbing up verandah steps

I sat down in the bush and sobbed. After a while I became aware of something rubbing itself against my back. It was Higglety, with an apologetic look on his face.

Pickle's tragic death haunted me for days. I hoped that it had been swift. Higglety too was very subdued for a time and he had obviously had a good fright, for he stayed at home and kept one eye directed skywards wherever he went. However, slowly his wanderlust returned and he began to disappear, sometimes for days at a stretch. Inevitably, one day he vanished; we never saw him again and I had to face the fact that he had gone for ever.

The house was very strange without the familiar patter of feet and 'peep' noises and we mourned our mongooses for many months. They had been two of the most fascinating little creatures we have ever known.

12. Rufus

Dennis Kearney and his wife moved into the house where Bill and I had lived when I first came to Tsavo East. One morning their servants were startled to find a newly born rhino calf just outside their quarters and summoned Dennis to deal with the situation. Everyone was afraid that the mother would come to collect her baby, even though there appeared to be no sign of her in the vicinity. A search party later found where she had given birth; it was just behind the Kearneys' house and it is probable that, when daylight came and everyone started to go to work, she took fright at finding herself so close to human habitation, and that this was how she came to abandon her baby.

The orphan was named 'Rufus' and was cared for by Dennis and his wife for the first year of his life, by which time he was beginning to outgrow his shed at the back of the house. In 1961, when he was rising one year old, he was taken together with three young buffalo, Buster, Susannah and Miriam, who had also been raised by Dennis, to join the other orphans.

These additions to the family necessitated a reshuffle and Samson and Aruba were moved into a new stockade made of six-inch and ten-inch pipes embedded in concrete with an outer fence of expanded metal which made it lion proof.

The elephants, always nervous of anything strange, were, to begin with, very suspicious of Rufus and the buffalo but Rufus's complete indifference reassured them and within a week our little herd of assorted animals astonished and delighted visitors to the Park.

Rufus was irresistible in spite of an inexhaustable cupboard love that was positively shameful. He had an extremely sweet tooth and the greatest treat that could be bestowed on him was a chocolate. He would stand with his eyes closed and make sucking noises, still dreamily savouring its lingering flavour long after every vestige of the sweet had disappeared. He revelled in attention and much preferred human company to that of the other orphans, for there was always the chance of a titbit. He liked to

spend many hours in the workshop with Dennis, munching slowly at a pile of lucerne placed there for his benefit, and would amble up to the house at odd intervals, walk up the front steps on to the verandah and poke his head through the sitting-room door to announce his presence. These visits were usually profitable, for he would have to be enticed out with a sweet, or some fruit.

He was the most docile and placid animal I had ever known and children could ride him and handle him with safety.

Although we enjoyed Rufus's company, David insisted that for his own good he must accompany the other animals and learn to live off the natural vegetation so that, when the time came, if he chose to join his wild brethren he would be in a position to fend for himself in a natural environment. He was therefore encouraged to spend as much time as possible selecting his own food. For a while he was still given lucerne at night, then slowly his lucerne ration was supplemented with the shrubs he liked until he was getting no artificial food.

In a way that is characteristic of his species, he established his own middens at strategic places, and it was amusing to see him, trotting hurriedly to his nearest lavatory. He always scattered his droppings with his hind legs. I often wondered why, because there is always a reason for the instinctive reactions of wild animals.

Samson, now seven feet tall, was of course still undisputed leader of the orphans. Respected by all the others, he always behaved with the dignity which befitted his station. Aruba made great friends with Rufus and liked to stand over him and protect him in the way Fatuma behaved towards Piglet.

The three buffalo differed in temperament. Susannah and Miriam were rather aloof, while Buster was friendly and enjoyed a sparring match to show off his strength.

For many years, David had been uneasy about the destruction of the vegetation by elephant and, especially, about the number of large trees that were being demolished. What would be the result of this change in the character of the Park, and how would it affect the other wild creatures that lived there? The bush was being opened up. Was the rainfall sufficient to promote good grassland in the place of the *commiphora* bush, or was a desert in the making? An elephant, given the opportunity, feeds mainly on grass so perhaps, by destroying the bush and creating grassland, they were providing more food for themselves. We feared, however, that

we must now expect fires fed by the grass that was creeping in and fanned by high winds. Would the change be, overall, for better or worse? We didn't know and the need for research to provide the answers to some of the problems was pressing, so we appealed for scientific advice.

In all changes someone usually suffers and in Tsavo it was the rhino who were not able to adapt themselves to the new circumstances. Those on the Athi were the worst affected and this was the area of the Park which harboured the greatest number of rhino.

It was obvious that our orphans, particularly the two elephants and Rufus, were going to be invaluable for our research since, by studying their feeding habits and behaviour, we should be able to reach a better understanding of the problems that the change in vegetation had caused.

To begin with it was thought that the deaths among the rhino might be due to disease. To check this it was necessary to obtain bloodslides and other specimens for examination but although, where so many animals were dying, it would seem a simple matter to obtain a fresh carcase, in practice this was not the case. The broken nature of the country, the confusion caused by large numbers of vultures circling around, the huge area involved and the rapid decomposition of a body in the intense heat, all contributed to our difficulties. Eventually, the veterinarians came down so that an on-the-spot study could be made of the casualties.

Post mortem examinations were carried out on several rhino but no specific disease could be isolated except that each had suffered from acute anaemia. Watching these operations was not something I enjoyed and I was appalled at the number of parasites that came to light. There were worms of all shapes and sizes in the intestines, the stomach housed repulsive maggots known as bots, and one rhino had worms even in its eyes. Although I was told that some of these parasites were not unusual and caused the animal no harm or even discomfort, I was amazed that any creature could survive when harbouring such an assortment of lodgers.

After we had lost some eighty rhino in this area, the rains broke and this temporarily relieved the situation. Unfortunately these deaths proved to be only the forerunner of a major disaster which took place in the following year.

While all these researches were going on, David often had to go to Nairobi to attend conferences and sometimes I went with him. It was on one of these trips that I acquired two more unusual and interesting pets.

into his box himself, he was quite willing to be carried there after dark and put to bed like a child.

I could never understand why he behaved in this eccentric way, preferring to sit on the ground instead of in a tree like other weavers, but then Gregory Peck was no ordinary weaver.

He always kept to rigid working hours and insisted on being the centre of whatever was going on. Involved in the construction of a nest on the concrete-mixer, he would squawk excitedly, as he tried to make himself heard above the clatter and dive every now and then into the workshop to pick up wood shavings. Noise delighted him, so when work started on the construction of new ranger lines at the main gate, some distance from the house, he went along every day to supervise operations. He would arrive at the office, promptly at seven in the morning, in time to catch the lorry that took the Africans to work, and would perch on the cab and be driven off, flapping his wings to keep his balance, much to the amusement of the men. If, by some chance he missed the transport, he flew to the main gate.

At lunch time he would return on the lorry, exhausted and usually covered in grease but at the sound of the two o'clock bell, he would immediately fly out of the window, determined not to be late. So busy was he, that I became worried that he never seemed to be able to spare the time to catch his own grasshoppers. I knew he must be hungry so, once again, I filled his tin for him; it was kept on the verandah so that he could help himself at will.

Gregory's greatest charm lay in a complete absence of any sort of inferiority complex. He considered himself superior to every other bird and equal to all other creatures and, above all, he hated to be laughed at. If a stranger entered the house, Gregory would usually arrive to give him the once-over and, placing himself opposite the guest, would stand with his head up, looking down his beak, regarding the stranger with a supercilious stare. If, as usually happened, the stranger laughed, he would give an outraged squawk and fly on to the visitor's head. This seemed to be his way of showing who was boss, and the harder the visitor tried to dislodge him, the more determined he became to stay. As a punishment, he usually added a 'peck,' and this could sometimes be embarrassing if the visitor happened to have an elaborate hair-do.

At this time, an effort was made to restock the Park with leopards trapped in the settled areas up-country. These creatures had been one of the main targets for poachers, and the Park population had been sadly depleted in



Samson and Rufus during air operations

The Orphans of Tsavo

We called his name and made clucking noises but our voices were swamped by the roar of the river and sounded pathetically feeble. The light of the torch picked up plenty of pairs of eyes that glowed like embers in the dark, but the owner invariably turned out to be a genet or a mongoose. After an hour, we gave up in despair feeling very miserable. As we ambled slowly back to camp, I heard a patter of feet and there was Old Spice, running along the road to catch up with us. He was overjoyed to have found us again and showed it by the purring and nuzzling that went on as David and I took it in turns to hold him.

We carried him back and introduced him to our new home, and the next night he appeared as usual at dusk.

Now that the rains had come, he found plenty of new ways to occupy his time. There were interesting puddles to be inspected and a startling variety of insects of all shapes and sizes to be sampled. Indeed, he was so busy that his nocturnal visits to our tent became more infrequent, but he still usually found time to pop in and say good-night to us each morning before retiring to his bush.

The wild flowers were indescribably beautiful and each day I discovered more and more in blossom. There were delicately scented 'snowdrops,' others that looked like brilliant forget-me-not-blue verbenas; there were wild lilies, African violets, and a host of other equally lovely plants. The flowers of the delonix trees were as gorgeous as any orchid, and once again the snow white convolvulus covered the earth. Every day I brought back a bouquet, and placed it in a vase on the table, where we could admire it at leisure.

David was still busy on the construction of the pumphouse for the Yatta pumping scheme and, fortunately, had just enough cement on the north bank when the floods came to be able to carry on. Sandwiched between the Tiva River in the north and the Galana, we were now completely cut off and, as we had some sixty African labourers with us, we were rather anxious. Each night we listened to the weather reports on the radio and, as the rains up-country showed no signs of abating, it soon became obvious that we could expect to be stranded for a long period. David therefore diverted his attention to the construction of an airfield behind the camp, which could serve a rescue party in the case of an emergency.

Just next to this area, in a pass in the Yatta known as Thabangunji, stands an enormous boulder and on top of this huge rock is a mysterious pile of small pebbles. At the turn of the century, the warlike Masai tribe used to take this route on their way to raid other less powerful tribes and



Above, Rufus and Reudi enjoy a mudpack; below, baby rhino we tried to rear after its mother died during the drought



this way. Animals trapped up-country were sent down by rail in a wooden crate, accompanied by an armed ranger.

I usually went to watch the release, and had some exciting moments. On one occasion, the leopard jumped up at the cab of the lorry in which we were sitting, clawing the window and growling with savage fury. Although the windows were of course wound up and we were quite safe, it was nevertheless rather terrifying.

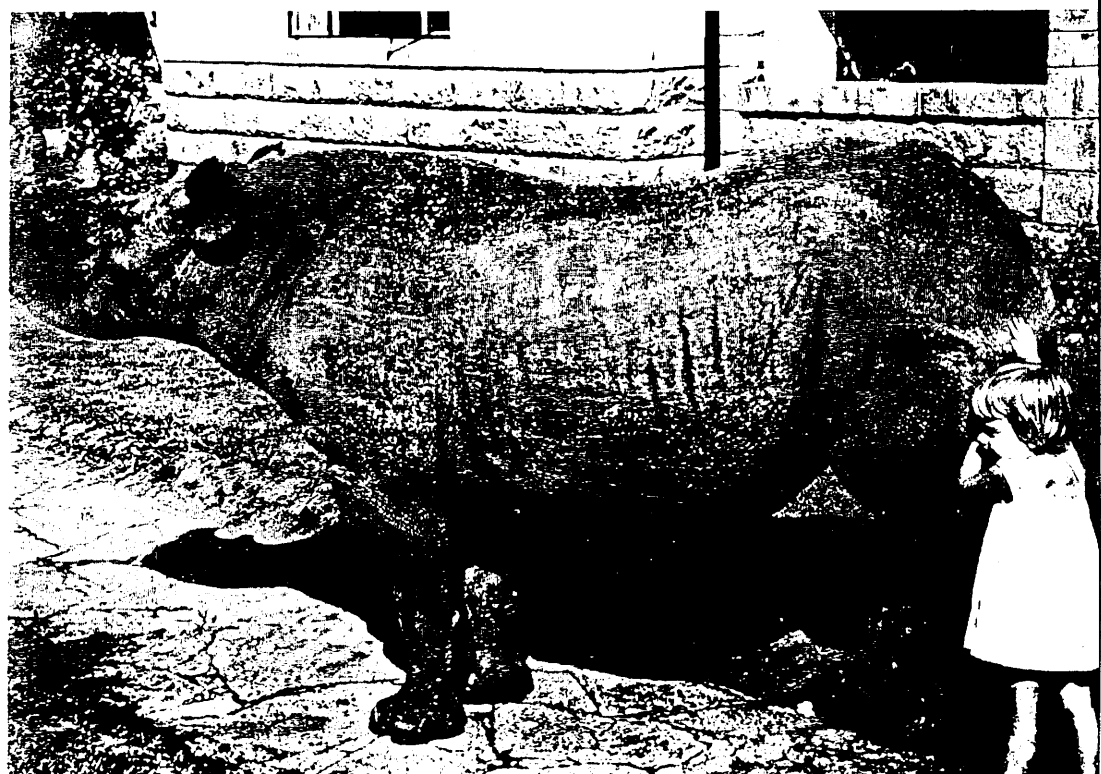
Gregory usually insisted on being present at the releases, and it was difficult to restrain him from jumping on to the expanded metal at the top of the box as it was being positioned, from which vantage point he would peer at the snarling occupant with interest and many was the time that I thought he would come to grief when a leopard swiped at him. But, as he was completely fearless, it was practically impossible to keep him out of harm's way: hawks were the only creatures for which he seemed to have any respect.

Now that Gregory was living with us I acquired a strange assortment of other little birds. There was Oliver Twist, a baby swift, who fell out of his nest at the railway station. I reared him successfully until one day he plucked up the courage to fly, and soared into the sky, never to return. There was Abdul, a little bulbul, whose end was not so fortunate. The first flight he made was intercepted by a shikra. I heard his agonised squawk, and rushed out just in time to witness the tragedy. There was Puffin, a little puffbacked shrike, who, although completely eclipsed by Gregory Peck, nevertheless 'lived happily ever after.' He was given to me by Ian Parker, who was then in charge of the Game Management Scheme on our eastern border. He was a pretty little bird, predominantly black, with a pure white chest and a curious way of fluffing out the white feathers on his back to form a mantle. He usually only displayed this cloak when sleepy or cold, normally the white feathers were not visible. He was a gentle, shy little bird, and was bullied by Gregory, who resented his presence and looked upon him as the lowest of the low.

For a week or two, I kept Puffin in his box, until he knew his name and would answer with a faint piping cheep. When I decided that the time had come for him to be let out, we opened the door to his cage and he flew eagerly into the garden, settling in a tree on the lawn. I called him, at the same time holding up a grasshopper and, after a few moments, he fluttered down and without any hesitation snatched it from my fingers. Unlike Gregory, he would not sit on my hand but flew on to the low hedge or the verandah wall when hungry, so that I could feed him.



Above, Rufus sucking sweet and below, with Angela



21. *Samson and Rufus*

With the departure of Aruba, Samson and Rufus became great friends, and to see them playing together was a comic sight. For these games, Samson had to kneel or lie down so as to be more or less the same level as Rufus. When Samson was in position, Rufus would lower his head and roll his eyes and, adopting a truly menacing expression, would charge at Samson, butting him with his horn. This did not make much impression on Samson who usually managed to ward off the impact with his trunk, and ended up by wrapping it round Rufus's neck in a vice-like grip that almost throttled him. Puffing and snorting indignantly, Rufus would hastily reverse, disentangle himself, and mount a fresh onslaught which would end in the same way. Eventually, he would lose his patience and his eyes would glint dangerously, but Samson remained impervious to the threats so, in the end, Rufus would walk off in disgust.

Samson, however, would then get up, walk in front of Rufus and finally lie down enticingly. Invariably, Rufus failed to resist the temptation of having a try at getting his own back, and so the fun would start all over again.

One day Sike reported that Samson was unwell. This was startling news; he had never before had a day's illness. David went to examine him and found him, the epitome of misery, idly swinging his trunk to and fro, while his eyes were sunken and dull. He was suffering from violent diarrhoea. Plainly he had eaten something that disagreed with him. In order to avoid the possibility of food poisoning, the herdsman had been told never to allow visitors to the Park to give the orphans anything except fruit. Sike, when questioned, was adamant that Samson's illness could not have come from any artificial food but that he must have eaten some indigenous plant that was poisonous. Whatever the cause, he was in a bad way, and his condition gave us grave concern.

The most important thing was to persuade him to eat a little, for an

Samson and Rufus

elephant can become desperately weak almost overnight once it stops feeding. David spent a lot of time urging and encouraging him to nibble at the food that had been cut for him, but although he reluctantly ate a few pieces, just to please David, he had lost all interest in food.

That afternoon the lorry was dispatched to collect red earth and a mud bath was prepared as a special treat for the invalid. At the sight of this Samson brightened up a little and, when the bath was ready, he immediately lay down in it and David plastered the cool mud over his fevered body.

The next morning he was extremely weak and we were alarmed by the fact that he appeared to have difficulty in lifting one of his front legs off the ground, and dragged it. He was confined to his stockade; again we went to great pains to whet his appetite, but without much success. For three days Samson's condition was critical, then one morning we were delighted to find that he had recovered and was feeding with his usual relish.

The destruction of hundreds of large trees by elephant was a continual worry to David, who had recommended that this should be the subject of scientific study; so that how the change in the nature of the country would affect the other inhabitants of the Park could be assessed. Although many scientists came and had a brief look, none of them was able to stay on to carry out a detailed study of this complex problem. Everyone agreed that the problem was a very serious one and that the number of elephant would have to be reduced. In fact, the number of elephant in the Park was not known, at a guess four thousand elephant was considered a likely figure. It is not easy to count elephants in an area of bush country eight thousand square miles in extent, and a thorough census had so far been beyond our meagre resources. Very opportunely, the Army came to our assistance and kindly put three Beaver aircraft and two helicopters of the 8th Ind. Recce Flight at our disposal for a week. The opportunity was taken to combine this count with a training exercise: the Army Air Corps arrived in force one afternoon, complete with maintenance and ground crews, petrol bowsers, camouflaging gear and all the usual paraphernalia necessary for an army operation.

Samson and Rufus, who were feeding nearby, entered into the spirit of the occasion and provided the soldiers with an unusual diversion by rolling drums of fuel along the ground.

The Park had been divided into blocks, and details of how the count was to be made were carefully worked out by David and the C.O. The ground crews camped on the airfield and fortified their position by digging trenches all round. Most of the men had just arrived from the U.K. and

were rather uneasy when they saw fresh signs of elephant all around. One man stared at an elephant 'football' which was lying just outside his tent and remarked that he hoped the owner wouldn't come to claim it during the night! In fact, the owner did come during the night and brought several friends with him, which was certainly a compliment to the Army's efforts at camouflage but caused quite a stir in the camp. Two soldiers asleep on the petrol bowser awoke with a start when it began to rock, and were horrified to see an elephant scratching his back on it. None of the troops got much sleep and when, in the morning, they were walking towards the aircraft and a lion suddenly galloped across the airfield, all agreed that this was going to be an unusual training exercise.

The aerial count went like clockwork and, when the southern portion of the Park had been completed, we all moved to a tented camp already erected in the north. The ground crews stole away in the dead of night to baffle an imaginary enemy and to dig in at the new base. Here more excitements awaited them. One moonlight night, a pilot and his crew were sleeping in their Beaver aircraft parked on the airfield, when two rhino chose this place to have a duel. Praying that the combatants would not vent their fury on the aircraft, the spectators got an excellent view of the affray and fortunately the rhino were too engrossed to become aware of their presence.

The final figures of the count showed that instead of the four thousand elephant, which we supposed lived in Tsavo East, in fact it harboured over nine thousand out of a total of some fifteen thousand counted in the Park and surrounding areas, and even these figures were believed by those who took part in the operation to be an under-count.

Besides estimating the elephant population it was also important to know the movements of the herds, were they all-year residents of the Park? Did they at times move out and seek new feeding grounds beyond our boundaries? During the rains, did they have a set migratory pattern? For instance, did those of the northern area cross the Galana River and at times move south, or did they keep to a clearly defined territory?

David now devised an ingenious system of marking them. Samson was the ideal subject on whom the device could be tested. It consisted of a container filled with plastic paint, fitted with a nozzle at one end and connected to a compressed air cylinder at the other. When the moment for experimenting with this contraption arrived, Samson, who was feeding just in front of the garage, was lined up and ignominiously squirted with water, in order that an idea of the range could be obtained. He did not

appreciate this joke, and took himself off indignantly to more peaceful surroundings.

The device was then positioned at a popular waterhole near Mudanda Rock. David and Hassan Said crouched behind a thin sapling that seemed rather inadequate protection against an elephant, but was the only tree in the area. I was stationed on top of a small rocky promontory to signal when a herd was approaching.

I did not have to wait long. Soon a group of eight elephant, led by a crusty old cow, came into view and walked with slow deliberate strides towards the waterhole. I waited anxiously for the expected jet of white paint to hit the leader, who by this time was wading into the middle of the pool, sucking up trunkfuls of water. Suddenly, there was a faint hissing sound, a dribble of paint oozed out of the end of the nozzle and splashed on to the ground below. The nozzle had become clogged. Attempts to remedy the trouble were unfortunately noticed by the leader of the herd, who rushed at Hassan and David with a blood curdling trumpet forcing them to seek safety on my rocky look-out.

We had quite a long wait before the next herd arrived and the men took the opportunity to deal with the nozzle. It was dusk and the full moon had risen above the horizon when the elephant came to drink. This time the contraption worked and one elephant was successfully marked on the rump. As soon as she felt the spray, she spun round and gave a ferocious demonstration which sent the men once more scrambling up on to the rock. The limited range of David's marking device was a handicap which made the operation rather a hazardous business.

As it was now very late, we decided that we would pack everything up and try again the next day. While we were loading the equipment into the car, a very large herd of buffalo appeared and made it quite plain that they were determined to drink despite our presence. They milled round the car; it seemed that they realised that, under cover of darkness, they had the advantage for they refused to be driven off. I took refuge in the car while the men, casting furtive glances over their shoulders, hastily bundled the remaining bits and pieces into the back, and we went off.

In the weeks that followed we managed to mark eighteen wild elephants, but the experiment was not entirely successful for, although several sprayed elephant were observed three months later from a helicopter provided by the Navy, our lack of aircraft made it difficult to keep track of the subjects. Another drawback was the fact that during the rains the elephants plastered themselves in red mud and obliterated the splashes of paint.

Later, thanks to the Royal Navy who usually placed a helicopter at our disposal whenever they called at Mombasa, we were able, from time to time, to carry out many other counts on a smaller scale in certain areas. Samson and Rufus always displayed great interest in any activity on the airfield; a regular feature of the exercises was a portrait of them lined up with the crew in front of the aircraft. To-day these photographs no doubt grace many naval establishments in Britain.

Rufus also became a subject of study. David noticed that the rhino of the Park seemed to be more affected than other animals by the change in their habitat. All those that had died in the 1960 drought were covered in black patches, which proved to be decomposed blood, but how this substance came to be deposited on the skin seemed to baffle the experts. It was thought that the presence of thousands of biting flies might be related. An expert from the Veterinary Department came down to study these flies on the spot and Rufus's contribution to science was extremely valuable in this connection. He was followed during his perambulations throughout the day and the flies' behaviour towards him was noted. His middens were examined and it was found that two types of biting fly were breeding in them, a *lyperosia* species and one peculiar to rhino known as *rhinomusca brucei*. David wondered whether the decomposed blood on the rhinos' hide might not have been the excrement of these *rhinomusca*; he decided to breed them in the laboratory in order that they could be studied more closely. Rufus provided an unending supply of food for the larvae, which were fed on his droppings. David soon discovered that he could make Rufus defecate on demand when he needed a fresh supply for his larvae; all he had to do was to escort Rufus to the nearest midden and scrape the ground with his feet, in imitation of a rhino. Rufus then instantly 'obliged' and in this way it was possible to ensure that the droppings were absolutely fresh and free from the ova or larvae of other flies.

Eventually David's efforts were rewarded and thousands of flies hatched out under the net cover that had been erected over the breeding trays. Some were killed and mounted to enrich the fly collection, others were dissected and submitted to scrutiny under the microscope, a few escaped during the difficult process of herding them into a jar, and a privileged number were kept and encouraged to continue their normal cycle. These naturally had to be fed, so David held them over Rufus's back in an upturned bottle for this purpose; as he was quite used to being bitten by these flies during his excursions in the bush, Rufus never even noticed the operation.

There was one type of large biting fly, known as *tabanus*, which perse-

cuted him mercilessly, especially during the rains, and he would flinch and stamp his foot when they punctured the skin. During the short periods when these flies were most troublesome, Rufus was fed at headquarters and spared the daily trip into the riverine forest with Samson. We noticed that he liked to roll in some old engine oil that had been thrown out near the garage; this seemed to discourage the attentions of the flies, so we took to rubbing him over with an oily rag.

With the encouragement, guidance, and help of Dr Phil Glover, who also loaned us a biologist, Peter Napier Bax, a collection of the food plants of elephant was made. Specimens of each plant favoured were pressed and about two pounds of the portion of the plant that had been seen to be eaten by elephant, was dried and sent for analysis. A file was opened for each plant, and visual observations of elephant feeding on it were noted and recorded. This work was very time consuming; I helped with a lot of the documentation but most of it had to be done by David in his spare time. After fourteen months of hard work a fairly comprehensive collection had been built up. Here, again, Samson helped enormously with this study. On one occasion he was followed for a whole day; specimens of every plant he ate were collected and analysed by Dr Dougall of the Plant Research Station in Kitale. Throughout that day, Samson browsed sixty-four species, and spent only four hours twenty-two minutes on purposes other than browsing. All his droppings were also collected and carefully weighed. By the end of the day rows and rows of paper bags, containing all the specimens, had to be sorted out and even this small experiment involved an astonishing amount of work.

Another interesting experiment, which was thoroughly enjoyed by Samson, was the 'orange experiment.' The purpose was to find out how long it took for food to pass through an elephant. In Uganda it was found that the stomach contents were always five to six per cent of the total body weight; presumably, if the time taken for the stomach to be emptied could be ascertained—by estimating the weight of the elephant—the weight of the stomach contents could be calculated, and a rough indication of the food consumed by an elephant in a day could be made. Samson was therefore fed a large quantity of oranges, his favourite food. He thought this a wonderful idea, gobbled them up greedily, smacking his lips and immediately extending his trunk for the next one. The observers then waited patiently for the reappearance of the oranges; they had a long vigil: the first one arrived in his droppings eleven hours later and the last nineteen hours after the experiment had begun.

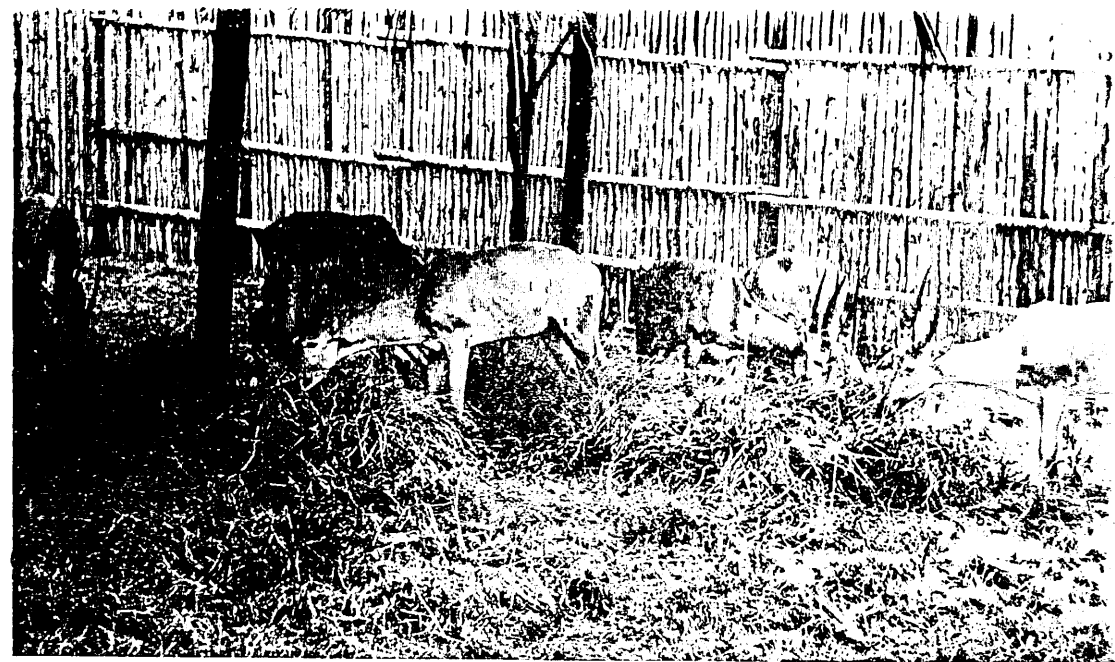
The Orphans of Tsavo

During the analyses of the specimens sent to Dr Dougall it was found that the bark of certain trees favoured by elephant, particularly the fibre of the baobab, was extremely rich in calcium, and it was therefore suggested the elephant might well be damaging the trees in a search for this mineral. David therefore arranged for lorry loads of calcium-rich lick to be deposited at Mudanda Rock near the pool; this proved extremely popular and was disposed of in a few days. Unfortunately, however, the cost of transporting huge quantities of the lick proved beyond our resources and had to be discontinued.

Recently several features of the vegetational changes taking place in Tsavo East had puzzled David and made him doubt the wisdom of destroying large numbers of elephant without further careful research into the problem. Until now he had accepted the experts' theory: that the destruction of the bush would lead to the emergence of a desert and to the ultimate death, by starvation, of most of the elephant and rhino in the Park—the rainfall being insufficient to promote good grassland. Therefore he had advocated reducing the number of elephant in order to halt the trend and save the Park as a faunal sanctuary. Now he noticed that good grassland had, in certain areas, taken the place of the bush and also that there had been a very marked increase in the numbers of plains' animals; zebra and oryx being particularly numerous. Whereas at one time it had been most unusual to see more than ten zebra together in Tsavo East, it was now not uncommon to find herds of a hundred and more. Buffalo had also multiplied tremendously.

During the study of the food preferences of elephant, it had been discovered that grass, when available, provided almost eighty per cent of an elephant's diet. David was therefore very much interested in experiments carried out on a Government Ranch near the Park border, which showed that when the bush was removed, grass rapidly took its place and provided increased fodder for livestock. Now he began to question whether, far from destroying their habitat, the elephant were not in fact improving it, for themselves and for many other creatures as well?

He found it strange that, in books written at the turn of the century about the first European explorers who probed this area and about the construction of the railway from Mombasa to Nairobi, there is no reference to the presence of elephant in the area, although other big game animals are frequently mentioned. Was it possible that at this time there were no elephant, or very few, and if so, why? Giant baobabs in the Park carry healed scars that look very similar to those inflicted by elephant today,



Above, Hunters antelope in holding pen; *below*, taken by lorry to release point



and scattered throughout the Park are the ancient graves of Galla tribesmen, a pastoral stock people whose herds could not have survived in tsetse ridden bush country. Could it be that this country had in fact been grassland in bygone days and that the bush had crept in as the result of overgrazing? There is evidence of erosion having taken place a long time ago in certain areas, which would seem to support this theory. If so, perhaps the change taking place to-day was part of a natural cycle?

In any case David now believed that, even if every elephant was spirited away, the trend could not be reversed for already a lot of the woodland had disappeared and fires, once almost unknown in Tsavo, now swept through the Park and they would carry on the conversion. We wondered what would happen if all the dead wood were to be removed, leaving only the grass and living trees which had not been browsed by elephant; would Tsavo then appear devastated? Or would people find that it was a better place with a carrying capacity greater than before? We did not know the answers, but it was important that we should try to find them.

At last Tsavo East acquired its own aircraft and David was trained to fly it. Now he could get a better picture of the situation and his doubts about the need for hasty action increased, indeed he became convinced that we might well have had wrong ideas about the solution to the problem.

It was unfortunate that many articles in the press claiming that the elephant were already dying of starvation bore little or no relation to the truth and confused and aggravated the situation. With an elephant population like that of Tsavo animals die every year from natural causes; nature usually chooses the end of a dry season to carry out her selective culling and it is then that the aged and ailing succumb. In fact, fewer deaths of both elephant and rhino were recorded in 1965 than in any previous year in spite of the partial failure of the April to May rains.

Towards the end of the year, the Ford Foundation made a substantial sum of money available for research into the Tsavo elephant; this news was a relief to all of us. We now hope that, although it will be some months before the scientists are actually in the field, the mystery will be unravelled before too long. Much groundwork is necessary; houses and laboratories have to be built, equipment and transport made available, but we believe that the elephant 'problem' is going to prove a very interesting study and that research may provide some unexpected answers.



Above, Grevy zebra in holding pen and below, after their release

