tame, so that they show confidence and trust..

You can observe their natural habits going on in your presence, which you could not do with the same species in the wild state, because their exceeding shyness and fear of man make it impossible freely to observe their habits, till in some way or another you have convinced them that in one place at any rate man is not an enemy. Then you can have the great pleasure of watching close to you the colour of their plumage, their movements, their courting, their flight and all the other things that make them beautiful and interesting.

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Illustrations in above article from Wood-Cuts by Robert Gibbings

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VELD FIRE CAUSES TRAGIC DEATH

A ranger at Pafuri was informed about a severely crippled elephant. On his arrival he found the animal without foot pads These pads were later collected close to one another within 300 yards from where the elephant was standing. The elephant was destroyed and it was found that it was walking on raw stumps. This animal was probably trapped in a bush fire which had raged in Portuguese territory a few days previously, and it had walked across the white-hot coals and hot sand. The trunk showed burns too.

"Koedoe" 1960

EAGLES SHOULD BE PROTECTED

Wahlberg's eagles play an important role in the destruction of quela colonia. One of these birds of prey was seen killing a 10-ft. mamba. A yellow-billed kite caught a large puffadder. (Kruger Park)

"Koedoe" 1960.

NATURE'S TOLL IS SUFFICIENT

- - HELP TO PRESERVE!

During July, a nest containing 37 ostrich eggs was found near Masanje (Kruger Park), but unfortunately the hyenas discovered the nest in late August and destroyed it completely.

"Koedoe" 1960.

Department of Nature Conservation of the Cape Province Administration

The first drug technique successfully used on big game in Rhodesia. A humane method which has proved effective and the use of which should be encouraged in the "animal round-up" on the newly-proposed Wankie Fence.

"OPERATION NOAH"

The Black Rhino Rescue

by Dr. A.M. HARTHOORN

EFFICIENT techniques had been developed for the rescue of all the animals which were stranded on the various islands in the Kariba Lake with the exception of the black rhinoceros. The rhinoceros is not a tractable animal and is not susceptible to the usual techniques of netting, snaring or driving. As all these methods tried on one rhinoceros failed it was decided to try to move them from the islands by use of a drug technique. In May of this year we made the journey from Uganda to Rhodesia for this purpose.

The transport of rhinoceros even with the drug technique presented special difficulties, not only as compared to other animals rescued from the islands, but also the problems were different at Kariba from those we had previously experienced. Rhino had already been rescued from areas where bush was being cleared such as those at Makindu in Kenya but there it was possible to bring transport to the immobilised rhino for his removal to another area; this of course was not possible on the Kariba islands. The question was discussed at some lentgh with the senior game ranger, Mr. Fothergill, and it was decided that the best system would be to construct first of all a raft and secondly a special means to transport the rhinoceros from the place where it would go down to the water's edge. The construction of both these vehicles presented considerable problems, not so much in the relation of their design but in the acquisition of the materials for their manufacture. It was here that Rupert Fothergill was especially indefatigable and he soon had a large amount of material which had been "scrounged" from the companies working on the Kariba Dam and included a number of 44-gallon petrol drums and large baulks of timber.

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The raft was constructed basically of 18 44-gallon petrol drums. Each of these were calculated to have a buoyancy of at least 30 pounds so that between them they should be able to bear not only the raft superstructure but the largest rhino as well as several attendants to look after him on the journey across the water.

COVER PICTURE

A game ranger injects a tranquillizer to calm the rhino after she had awakened Previously she had been shot with a special dart loaded with 1,400 mgs. of gallamine trieth iodide to put her to sleep

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The drums were securely lashed with thick wire to a superstructure of wood and special provision was made at the sides to hold the numerous ropes which were considered necessary to prevent the rhinoceros from struggling during his journey. Any struggling would, of course, have endangered the stability of the raft and might have resulted in capsizing. Special struc- — resulted in its capsizing. Special structures were also made fore and aft for towing purposes. The appliance for conveying the rhinoceros to the water's edge was of less conventional design and after some thought and discussion it was decided to construct a skid. This was made from two smooth tree trunks about five inches in diameter, fixed together in the form of a " V," the apex pointing forwards, and across this was constructed a platform made of thick two-inch planks reinforced in various ways. A metal ring was placed at the front for towing the rhino. This had to be of considerable strength and it was calculated that some 30 or 40 men would be needed to pull the structure when the rhinoceros was on it. The plan was that after the rhino had been placed on the skid he would be drawn not only to the water's edge but straight on to the raft itself.

When these structures had been completed we made a reconnaissance to the first island where a rhino was known to be stranded. After a small search he was seen and his weight estimated at 2,500 pounds. When we approached a little too close he made a mock charge, that is, he didn't charge directly at us but past us, but for the moment it was a little worrying especially as he made rather a lot of noise crashing through the undergrowth. We decided to make an attempt to move him the following day.

Before the actual immobilisation

could take place, large scale preparations had to be made as well as general organisation and training of the team of men. This was all accomplished in an incredibly short space of time by the senior game ranger. The raft, all the men and numerous small boats with outboard motors were all transported from the base to a temporary camp on an island a very short distance away from Rhino Island itself. That afternoon we rehearsed, in detail, the sequence of events which should take place after the rhino had been darted. This sequence of events followed exactly as planned on the actual day.

That day we set off early in the morning intending to arrive at Rhino Island soon after dawn. We arrived as scheduled and made contact with 30 odd men who had been sleeping in the temporary camp on the neighbouring island. All the men were placed in the small boats and these were stationed on the leeward side of the island, everybody being adjured to keep strict silence. The game ranger, a cameraman and one of us then disembarked on the island and started systematically looking for the rhinoceros. Also with us was a scout carrying a coil of thin rope which would be used to tie the animal's legs as soon as he went down.

As the island was only about half a mile long we soon spotted him. Perhaps the word "spotted" should be qualified; we actually perceived he was in front of us. The rhino's bushcraft was as good as our own and he constantly managed to keep in thick about 40 yards ahead of us as we moved round the edge of the island. On the few occasions that we managed to get within 20 yards we could actually see little bits of grey hide but never during this time did he present an adequate target for us to use our air gun and the projectile syringe containing the muscle relaxant. When we had completed a circuit of the island we were all getting rather tired but, suspecting that the rhinoceros was tiring as well, we decided to change our technique. With our new method, the man with the air gun was placed on the narrowest part of the island, in a tree in a clearing. The photographer was also stationed there. The senior game ranger with a number of scouts then beat the length of the island driving the rhinoceros past the shooter. At about two o'clock in the afternoon the rhino came trotting past within about 35 yards of the tree where the shooter was hidden and the dart was delivered, striking him in the right buttock area. Immediately the senior game ranger followed on the rhino's track accompanied by the man carrying the rope and 14 minutes later he blew his whistle indicating that the animal had gone down, as we heard later, not without charging him first. By the time we arrived on the scene the rhino had already been securely tied and it was possible to administer the antidote to the muscle relaxant and at the same time give him a large dose of tranquillizer which was designed to keep him quiet and happy during his unaccustomed journey.

A word may be said at this juncture about the drug used. The drug is not an actual anaesthetic and does not put the animal to sleep. It is very difficult to use anaesthetics on these large animals and if they are they have to be used with extreme care; therefore the actual aneasthetisation of these animals with a projectile syringe is not really practicable. The principal drug used is a muscle relaxant manufactured by Messrs. May and Baker and donated for this purpose of capturing lagre animals. By locking the nerve impulse to

the muscles of locomotion it causes the animal to relax, lie down and be incapable of getting up and either running away or charging. Drugs are added to the muscle relaxant to make its action smoother and experiments are still continuing on the best additives and the safest mixtures. The principal drug used here was Gallamine triethiodide which is showing great promise as a drug for the handling of the larger animals such as buffalo and elephant. When the animal has been immobilised with this drug it is tied and tranquillized. Then the action of the muscle relaxant is reversed with an antidote. It should be noted that the capture of the larger mammals by the drug-immobilising technique is not yet fully developed and therefore cannot yet be considered as a safe technique without observing a large number of special precautions.

As soon as the rhinoceros was tied and tranquillized the men in the small boats were called to the area by a number of prearranged whistle blasts. They arrived on the side of the island nearest to the place where the animal lay, bringing with them the special skid. This was placed beside the animal and on it were arranged the bags filled with grass which we had prepared for the purpose of cushioning the head and neck and other parts of the rhino as he lay on the skid. With the use of all the available men we first placed the animal upright on his brisket, then we slid the sledge right up to him and then lowered him on to his side. There was great excitement amongst the various groups of porters at seeing this huge animal apparently completely helpless and they made a tremendous noise in their exaltation and it was quite difficult to keep them quiet. As experience had taught us that noise is extremely disturbing to these animals we eventually restored order and organized the team for traction of the skid to the water's edge, eventually getting the men to pull all at the same time.

The sledge was moved without much difficulty to the water's edge and then up a small ramp on to the raft itself. When the animal was on the raft he was very securely tied by criss-cross ropes going from one side of the raft to the other to prevent any more than the slightest movement. Tying the animal securely is doubly effective because not only does it prevent most of the movements he might otherwise make but also prevents him from trying to break loose and it is very essential while moving these large animals to give them the impression that all resistance is useless, in which case they will usually acquiesce and lie down quietly.

After he had been securely tied down the animal was then sluiced with water to cool him down, as his temperature had obviously risen during the chase, and the raft was prised loose from the mud on which it had been firmly embedded due to the extra 2,500 pounds which had been placed on it. It was then taken in tow by one of the two very fine motor launches used on these rescue operations and the towing started slowly across the 12 miles separating Rhino Island from the mainland. We were heading for a special point on the mainland where, the day before, the landing had been prepared by cutting away the submerged bush and trees which would have hampered the raft's progress and safe landing. We arrived only a little while before sundown and just as the sun was threatening to sink behind a bank of clouds low on the horizon; this naturally caused some distress to our photographer who was hoping to make a complete film, both of the capture and transport and also of the release.

Before the skid was towed from the raft on to the shore a numbered card tag was fixed to the rhino's ear so that we might have a chance of recognizing him some time in the future and find out where he had gone to after his release and possibly also how long he had lived. Also for short-term recognition a light white plastic collar was placed round his neck.

These plastic collars often last for quite a long while and a rhinoceros released in Tsavo National Park has been seen on many occasions, wearing for as long as six months the green plastic collar placed on him when he was let out of his crate. The skid was then drawn to the shore and most of the ropes removed. Just before the final leg ropes were undone a rope with a quick release knot was put on the hind legs to stop him getting up before we were ready. This was removed lastly and we all expected the rhino to jump up and run into the bush. In actual fact he remained lying down without any attempt to get up.

It was not until a bucket of water had been thrown over him that he suddenly realised that he was no longer tied and jumped up with amazing alacrity and proceeded to chase his rescuers up trees and into the water. We are happy to relate that it was only after he had disappeared into the bush that the sun finally sank behind the clouds precluding all further photography.

After the rescue of the fourth rhino we had to leave Kariba both to get on with our work at home and also because we felt that the technique of drug immobilisation had been sufficiently demonstrated. In this latter we were proved right as since leaving, the Game Department, using the same technique, has moved three more rhinoceros to places of safety.

In a similar way to this four other rhinoceros were removed from various islands in the Kariba Lake and transported to safety. Some of these did surprising things such as hiding in the water at our approach and actually turning back from the mainland to swim after the boat to give it a final dig with their horn as a gesture of independence.

In conclusion we must record the assistance and kindness we received from the various people associated with the rescue of game at Kariba and their generous hospitality and also our appreciation of the magnificent work that they are doing.

While the previous article outlines the actual experience of drug technique on big game, we thought it may also be of interest to include the photographer's record of his reaction to this outstanding event *See page* 185

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Photograph by Malcom N. Smith *Copyright reserved*

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