Report V..30.....

Reckitt & Sons Ltd.

2686

M-SERIES

VETERINARY APPLICATIONS REPORT

by

T. B. Coupy

on

RHINOCEROS, BLACK

date submitted 20/6/66

Report V..30...

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Reference No. W/3/1/211

VETERINARY RESEARCH LABORATORY
DEPARTMENT OF VETERINARY SERVICES
MINISTRY OF AGRICULTURE
P.O. BOX 8101, CAUSEWAY
SALISBURY
RHODESIA

20th. June, 1966.

Mr. Coleman Green,
Pharmaceutical and Research Development Lab,
Reckitt and Sons Ltd.
HULL.
United Kingdom.

Dear Mr. Coleman Green,

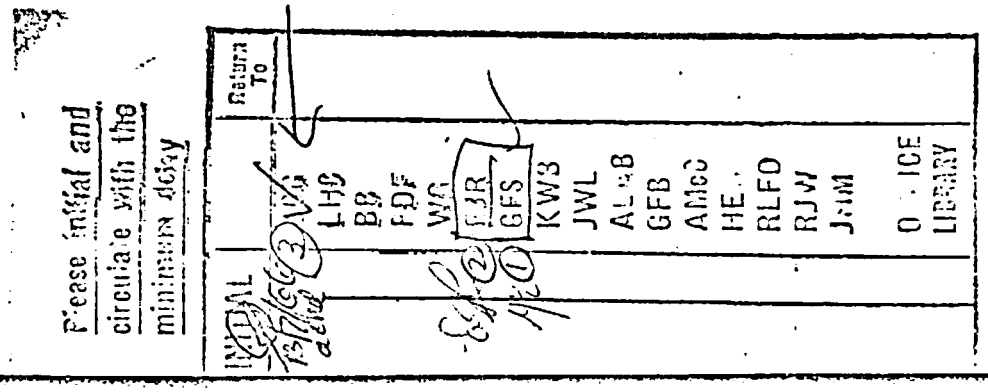
I recently received the 0.25 gm M99 and 0.5gm M285. Thank you very much for them.

I enclose some results of Rhino capture last year carried out by two National Parks officers in a particularly isolated area which I was not able to visit at the time. Both these two officers are very observant and have had a lot of experience with Rhino capture and managed, I think, to get some useful records.

Yours sincerely,

J.B. CONDY.
for ASSISTANT DIRECTOR OF VETERINARY SERVICES (RESEARCH).

Please initial and circulate with the minimum delay



(Layman) R. Thompson - followed by Fothergill (Layman) R. Jones knows him.

EFFECTS/DRUGS AND ANTIDOTES.

Of the two immobilising drug mixtures, morphine sulphate and M-99, the former is by far the kinder of the two drugs. The morphine sulphate, delivered at the rate of one gram per rhino, completely immobilised the animal in approximately 30 minutes. Visual records and tracking indications revealed that the animal seemed to suffer no effects of the drug administration for 15 - 20 minutes. Thereafter, the animal would start to become unsteady on its feet and would often execute complete circles as the drug took effect, walking over bushes rather than round them until eventually they are anchored "in" a bush or else lose all the strength to stand. In every case, the time taken for the animal to succumb is considerable. Once down a tighness is generally found in the animals breathing which can be relieved by small administrations of Lethidrone.

The M-99 mixture, however, while very much easier to administer (because of the small quantities required) is very harsh on the rhino's system. It will be noted from Annexures A. B & C. that the experiments conducted on the quantities of this immobilising drug required for an adult rhino were gradually reduced from 1.5 mgms. to 1.00 mgms. One milligram is quite sufficient for a fully mature black rhinoceros. The practical experience gained by the capturing officers during 1964 and earlier, proved of immense value in actually saving the lives of some of the rhino which would otherwise have succumbed completely to the harsh effects of M-99. It was most obvious that old animals and those in poor condition just could not take the fierceness of this drug. On several occasions large doses of antidote were administred in the field due to abnormal and lour "hammering" of the heart.

Complacency with a drug which was reported to be completely "safe" from the rhino's point of view, resulted in the writer killing a large rhino cow with a dosage of only 1.25 mgms. In fairness to the writer, it must also be recorded that this cow was very old, had already lost two of her top teeth and had just completed an arduous year of nursing a calf, she was also very thin and her entire body was covered in a growth a sample of which was despatched to our Research Branch. It is also noteworthy to record that she only ran 400 yards after darting ~~before~~ collapsing in mid-stride.

An extremely old and emaciated rhino bull, Madala, died as a result of receiving only 1.00 mgms of M-99. The antidote, Lethidrone which was administered in the field in progressive dosages up to a maximum of 75 c.c.s, failed to revive this animal. This animal had practically no solid food in its stomach and a distrinct hyena bite and other maulings by hyena were noted on the animals [illegible].

M-99 took only about 10 minutes to immobilise the rhino after darting. This helped tremendously in the tracking and the success of recovery. Little or no gradual effect was noted with this drug. From visual and tracking evidence, the animal appeared to succumb very rapidly once the drug took effect and in many cases the animal collapsed in mid-stride and ended up lying on its brisket. In most cases, once the drug effected the animal, it went down with in 20 yards. Tight breathing regularly resulted from M-99 administration but this could be relieved with small doses of Lethidrone.

The antagonist to M-99, had such a varied effect on individual animals, that its use was deemed inadvisable. Two adult rhino cows were successfully revived after M-99 drugging with this antagonist but the next, described above, failed to respond at all to this antidote. Other animals responded unfavourably and its use was abandonned in favour of the antidote, Lethidrone.

Lethidrone proved a suitable antidote for both Morphine sulphate and M-99 drug mixtures.

[illegible] R. ROTHERGILL — ANNEXURE "A"

[illegible] TSETSE AREA

[illegible]	TIME HR	BODY WEIGHT	SITE OF DART	REMARKS · Extracted from diary of Warden R. Rothergill
[illegible]	1326	900 - 1,000	Left Shoulder	a) Effect of Acetylpromazine very prolonged. b) Injection Berenil on 28.7.65 c) Anal Temperature 96°.6°F. d) Died in pens at W.M.P.
[illegible]	1435	2,000	Front Shoulder	a) Breathing shallow - gave 15 cc Lethidrone 0950 to relieve breathing b) Anal Temperature 99°F
[illegible] died)	1339	2,000 lbs	Right Buttock	This animal had ear-tags in place. He had been caught on the Kariba Islands and released on the Mainland during, "Operation Noah"
[illegible]	1111	2,200	Right Buttocks	Old dart wound on shoulder - healed - 1964 Operation (?)
[illegible]	1413	1,600	[illegible] Shoulder	Anal Temperatures: 0810 - 98.2° F 0900 - 100.1° F 1210 - 100.1° F 1055 - 99.9° F
[illegible] dronc	1548	2,100	Low left leg (Unspecified)	Needle was blocked with 'Cylinder' of hide.

[illegible] M. R. THOMSON — ANNEXURE "B"

[illegible] SABISIWE T. C. U. A.

[illegible]				
[illegible]	1746	800	Right Shoulder high	This was the sole survivor of the small rhino population in this Tsetse controlled Hunting Area. Its mother had been killed a few weeks ealier.

RHINO CAPTURE : WARDEN

SENGWA RIVER - KARIBA

	DATE	NAME	SEX	DRUG & AMOUNT USED	TIME DARTED	DISTANCE TRAVELLED	TIME DOWN	ANTIDOTE GIVEN TIME & AMOUNT
1	15.7.65	KAMBA	F	1.5 mgms M 99 0.75 mgms Hyoscine 3 mgms Acetyl-promazine	0753	400 yds	0815 Found	0833 - 15 cc 1317 - 20 cc 1352 - 10 cc 1527 - 10 cc Lethidrone
		R5 present for this animal. with R5's letter						
2	18.7.65	UMFULI	F	1.5 mgm M-99 1 cc Hyoscine	0800	2 miles	0930 Found	0950 - 10 cc 1028 - 5 cc 1420 - 20 cc Lethidrone
3	22.7.65	KARIBA	M	1.25 mgm - M 99 1 cc Hyoscine	0729	250 yds	0745	1 cc - M 285 0.5 cc - M 285 (In field - a.m. Time not specified) 3.5 cc - M 285 1320
4	24.7.65	KUSENEI	M	1.25 mgm - M 99 1 cc Hyoscine	0710	200 yds	0722 Found Standing	1.5 cc - M 285 0754 4 cc - M 825 1100 2½ cc - M 285 1200 10 cc Lethidrone 1407
5	.7.65	JESSIE	M	1.25 mgm - M 99 1 cc Hyoscine	0722	600 yds	0755	5 cc Lethidrone 0815 5 cc Lethidrone 0 23 20 cc Lethidrone [illegible]
6	1.8.65	MAPAN	F	1.25 mgm - M 99 1 cc Hyoscine	0945	2½ miles	1135 Found	1545 - No Drug type or quantity Specified - probably Lethidrone

RHINO CAPTURE : RANGER

CHEBIRA :

	DATE	NAME	SEX	DRUG & AMOUNT USED	TIME DARTED	DISTANCE TRAVELLED	TIME DOWN	ANTIDOTE GIVEN TIME & AMOUNT
7	17.10.65	CHEBIRA	F	1 mgm M-99 1 cc Hyoscine	1213	300 yds	1217 Found	15 cc Lethidrone 1223 10 cc Lethidrone 1627 20 cc Lethidrone 1741

RANGER W. R. THOMSON — ANNEXURE "C"

KARIBA LAKE AREA

[illegible] DART	TIME	BODY WEIGHT	SITE OF DARTS	REMARKS
M 285 M 285	1345	1600	Side	
	1930	2000		
	1700	1700		At 1945 another 2 cc's of M 285 given by using capchur gun
M 285	Died	1900	Shoulder	Senile. Two teeth missing. Died at 1510
M 285 M 285	1615	500 600	Shoulder	
Lethi- - 1123 1255	1305	1800	Near tail	
[illegible]	[illegible]	1900	Buttocks side	
Leth.		2000		After getting antidote at 1420 the rhino awoke and became violent and while still tied on sledge another .25mg of M 99 was given. The rhino then calmed down.
Leth. Leth. Leth.	1803	1600	Side	
Leth. Leth. Leth. Leth.	Died	1700	Side	Very old rhino

Wt = 27,900 lbs.

RHINO CAPTURE : RANGER

SENGWA RIVER - KARIBA

	DATE	NAME	SEX	DRUG & AMOUNT USED	TIME DARTED	DISTANCE TRAVELLED	TIME DOWN	ANTIDOTE GIVEN TIME & AMOUNT
8	27.8.65	KAFUPI	F	1.25 cc M 99 1 cc Hyoscine	0800	½ mile	0825	0916 - 1 cc M 285 1336 - 3 cc M 285
9	28.8.65	CHITSUKU	F	1.25 cc M 99 1 cc Hyoscine	1524	1 mile	1610	1615 - ½ cc M 285 : 1710 1 cc - M 285 1925 - 2½ cc M 285
10	2.9.65	RUPERT	M	1.5 mg M 99 1 cc Hyoscine	0859	1½ miles	1338 Found	1641 - 4 cc M 285
11	5.9.65	SENGWA (mother)	F	1.25 mg - M 99 1 cc Hyoscine	0845	400 yds	0851	0935 - 1 cc M 285
12	5.9.65	SENGWA (calf)	F	.75 mg - M 99 1 cc Hyoscine	0914	400 yds	0923	0935 - 1 cc M 285 1610 - 3 cc M 285
13	11.9.65	FUNGAYI	F	1 mg - M 99 1 cc Hyoscine	0910	1½ miles	0948	0955 - 1 cc Ethidrone : 1740 - 10 cc Eth. : 1127 10 cc Eth. 1255 20 cc Eth.
14	18.9.65	MALAMBITA	F	1 mg - M 99 1 cc Hyoscine	0809	1 mile	0913	0930 - 10 cc Eth. 1112 - 15 cc
15	20.9.65	KAMANURA	M	1 mg - M 99 1 cc Hyoscine	1335	1½ miles	1420	1430 - 10 cc Eth. 1810 - 30 cc Eth.
16	23.9.65	KANYOKA	M	1 mg - M 99 1 cc Hyoscine	0850	400 yds	0913	0930 - 10 cc Eth. 1710 - 30 cc Eth. 1755 - 10 cc Eth.
17	25.9.65	MDALA	M	1 mg - M 99 1 cc Hyoscine	0820	50 yds	0826	0835 - 10 cc Eth. 1500 - 30 cc Eth. 1535 - 20 cc Eth. 1555 - 15 cc Eth.

5 M.99 = 20.0 mg.

Crude mean M.99 = 1.58 mg/kg

13/7/66.