Report V.57....

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M-SERIES

VETERINARY APPLICATIONS REPORT

by

H. EDGES

on

GEMSBOK
RHINOCEROS, BLACK

date submitted 23/5/67

Report V.57....

Kruger Nat. Park
Vet app.

DR. H. EBEDES B.V.Sc.
VETERINARIAN
ETOSHA GAME PARK
OKAUKUEJO
VIA OUTJO
SOUTHWESTAFRICA

TEL. ADDRESS:
"BIOLOGIST ETOSHAPARK"

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LP RLFD
EJR RJW
KWB (2) WW
JWL
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GFB Library
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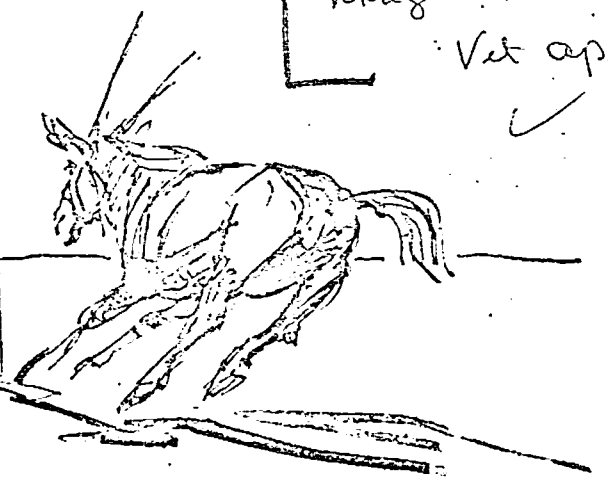

23 -5- 1967

Dr. G.F. Somers D.Sc., Ph.D., F.P.S.,
Pharmaceutical Research & Development Laboratories,
Reckitt & Sons Ltd.,
Dansom Lane,
Hull, ENGLAND.

MANUFACTURING
30 MAY 1967
DEPARTMENT

Dear Dr. Somers,

ETORPHINE HCL AND CYPRENORPHINE HCL.

Mr. G. Colman Green advised us in his letter of 30th March, 1967 that you have been appointed as Manager of the Pharmaceutical Research & Development Laboratories and will be responsible for all future contacts with regards to Etorphine and Cyprenorphine Hcl. May we take this opportunity of congratulating you on your appointment and hope that we will continue to receive from you the same enthusiastic and encouraging assistance we received from Mr. Colman Green.

The last correspondence received from you dates from the 3rd March 1967. We have noted the contents and will change the terminology as suggested. Our intended publication on gemsbok immobilization has not yet been approved of by the Secretary for S.W.A.

We apologise for the delay in writing to you but this was due to our absence from Etosha as a result of illness.

Gemsbok Immobilization Paper:

1. Your paragraph 3. regarding "flight distance":

We think that you have misinterpreted our meaning and have thus changed the 4th paragraph on page 7 to read as follows:

2/....

"After a herd of gemsbok had been subjected to stalking and being fired upon on two or three successive occasions, the "flight distance" increased from 60 yards to 130 - 150 yards due most probably to suspicion and fear of the vehicle. Gemsbok in Etosha Game Park soon learnt to associate the darting-vehicle with disturbance and took flight as soon as it approached the herd. When other vehicles approached them, they were not unduly upset."

We feel that this change should clarify the position and it should be evident that the increased "flight distance" is not due to the immobilization with Etorphine but the disturbance caused and the association of danger with the darting vehicle. Your comments on this would be appreciated.

Our experience with Etorphine does not indicate that after immobilization the animals are "psychologically marked". This may be very well be the case with Succinylcholine chloride for as you suggested the animal is paralised and conscious of what is happening around it. Your comment on the elephant in a zoo is most interesting.

2. a) "Righting reflex." Your paragraph 5.

We understand the following by the expression retention of righting reflex: With the animal in sternal recumbency and the head and neck in a straight line with the midline, any movement of the head either to the left or right of the midline will automatically be readjusted to its previous position. The action is similar to that of a pendulum coming to rest.
Your comments on this please.

b) Most of the gemsbok branded with a hot branding iron and injected deep intramuscularly with antibiotics, cortico-steroids, vitamins and intravenously with cyprenorphine or nalorphine showed no or little response to pain. This to us is an indication of analgesia and loss of consciousness.
Your comments please.

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3. % Cumulative frequency distribution.

You certainly went to a lot of trouble with the table and graph and we do appreciate it. A small point overlooked by you is E.58 (No.19 on table 5) where immobilization time was 48 seconds. The dart penetrated very close to the atlas vertebra just behind the right ear. I suspect that the drugs were injected very close to the spinal cord and were rapidly effective.

4. Immobilization times of the sexes.

Your paragraph 7.
We concentrated on immobilizing females because these will be translocated more often than males.

If you refer to table 5 and fig. 2. you will see that immobilization is considerably shorter when the dart site is the forequarters or neck. The significance of this

3/... is

is that in dense bushy terrain every minute is of importance as the animal can easily be lost and tracking takes a lot of time. In Table 5, 5 males as apposed to 25 females were darted. Of the five males darted one was not immobilised, the one darted in the lumbar region immobilised in 35 minutes and the three darted in locomator muscles averaged about 12 min. 13 secs. The five females darted in locomator muscles of the hind limb averaged 15 minutes and the eleven darted in the locomator muscle of the forelimb were immobilised in about 9 minutes (this includes E.58). We should in future pay more attention to dart site in relation to immobilization time. It is our personal conviction that darting in the muscles of the forequarters results in shorter immobilization time and at this stage are not prepared to formulate reasons for this occurence. Perhaps other workers have observed similar behaviour and if this is so we would be pleased to hear of their experiences. Perhaps you might wish to mention our observations to them.

Rhino immobilization.

You no doubt received our cable of May 11, 1967 from... the second black rhino translocated 200 miles in S.W.A. This was a bull ± 8 years old, estimated body weight 2,200 lbs.

Initially a dart containing 4 mg. etorphine Hcl plus 10 mg. Acetylpromazine was injected into the buttocks after an exciting but bumpy chase in a Land Rover of about four miles. The dart bounced out on impact and it appeared that only half the dose was injected and absorbed onto the circulation. After an hour during which the rhino showed marked sedation a further 2 mg. etorphine was injected, this time into the shoulder. After 9 min. 32 secs. of "goosestepping", often observed in zebra and gemsbok, the rhino was immobile. Before antagonism with cyprenorphine, 60 mg. siquil was injected intramuscularly. Antibiotics and vitamins were also injected, but no corticosteroids. Recovery time after 20 mg. cyprenorphine hydrochloride I.V. was 52 seconds. After two weeks in captivity the rhino is eating out of our hands and has shown no ill-effects as result of the translocation or drugs.

We have recently read a publication by Dr. J.M. King and B.M. Carter entitled "The use of the Oripavine derivative M 99 for the immobilization of the black rhinoceros (Diceros Bicornis) and its antagonism with the related compound M 285 or Nalorphine". East African Wildlife Journal, Volume 111, August, 1965.

We sincerely feel that the phencyclidine and hyocine could have been left out of the narcotic mixture and the dosage of M 99 increased. We feel this because the phencyclidine and hyocine cannot be antagonised and may have had an adverse effect on the rhino. In a recent communication dated 14th February 1967 we sent you details of zebra immobilization using only M 99 and acetylpromazine with the exclusion of hyocine and were pleased with our results. Hyocine does not appear to be necessary for non-ruminating herbivores.

4/...Supply

Supply of Etorphine:

For the past two weeks we have been testing a new cartridge for the Palmer Cap-Chur gun and also training a recently appointed ranger in the use of the Cap-Chur gun and cross bow. As a result our supply of etorphine has dwindled somewhat and a further supply in the near future would be very much appreciated.

Wildebeest:

We recently successfully immobilised two blue wilde beest with

2 mg. Etorphine + 25 mg. Hyocine + 20 mg. Siquil, and intend immobilsed several more in future.

Hoping to hear from you soon.

Yours sincerely,

Dr. H. Ebedes. B.V.Sc.