

pyometra. It would be interesting to have more details about the anoestrous ovaries which Mr. Gould finds in the type of case which responds to this treatment. There is a suggestion in his letter of an association with cystic ovarian disease, in which event his good treatment results are in accord with theoretical expectations, since a review of the literature (Dawson, 1957) shows progesterone does appear to ameliorate cystic ovarian disease, in which pyometra is sometimes a secondary complication. In a study of 21 pyometra cases (Dawson, 1949) 4 associated with cystic ovarian disease were found, 10 with a retained corpus luteum and 6 with empty inactive ovaries; on general grounds one would expect only the disease type of the first 4 to benefit from progesterone treatment and that in the other 2 types the essential return to an ovarian cycle could not be achieved by exhibition of this hormone which would rather tend to prolong the anoestrus. These 21 cases comprised over one-fourth of a group of puerperal purulent endometritis cases studied intensively. As there is general agreement that the latter is a very common condition, perhaps Mr. Gould is fortunate to find pyometra a rare condition where he practises!

Yours faithfully,  
F. L. M. DAWSON, A.V.I.O (Sterility).  
Ministry of Agriculture, Fisheries and Food,  
Veterinary Investigation Centre,  
Madingley Road,  
Cambridge.  
December 4th, 1959.

#### References

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Sir,—The very title of the correspondence on this point is misleading as massage of the ovary has no effect on pregnancy whatsoever, and it would have been far better to state clearly that at least so far as termination of pregnancy is concerned in the intact animal the writers were referring to enucleation of the corpus luteum.

In my experience enucleation of this body in the first 3 months of pregnancy invariably results in abortion. If abortion does not follow then it is almost certain that either some residual luteal tissue was left behind during enucleation, or else that a second corpus luteum was present, perhaps in the other ovary, and that this was not removed. The examination of ovaries in living animals followed by the slaughter of the cows within a day or so can be a very humbling experience in this connexion.

During the last few years Dr. Moore (now of Sydney University) and I have been carrying out some experiments, part of which involved the trans-

fer of ova in normal and above normal numbers to sheep which were ovariectomised at the time of transfer, i.e. 2 to 3 days after oestrus. Pregnancy was maintained by daily injections of either progesterone alone, in varying doses, or progesterone plus oestradiol benzoate. Despite the fact that these daily injections were all stopped at the sixtieth day of gestation the sheep went on to lamb normally at the expected time. In the sheep, therefore, the ovaries are not only unnecessary for the maintenance of pregnancy from the sixtieth day onwards, but they are also unessential for the induction of parturition and subsequent lactation.

Yours faithfully,  
The Gravel Pits,  
Huntingdon,  
Cambridge.  
L. E. ROWSON,  
Director.  
December 5th, 1959.

#### (Exotic) Operations on (Exotic) Reptiles

Sir,—After the recent correspondence in these columns concerning exotic operations I feel I must take this opportunity to mention a recent operation which I successfully performed.

A 4-year-old Indian spotted grass snake was brought into the surgery with the history of having swallowed a small ball-bearing; it showed considerable discomfort. On X-ray examination the ball-bearing was clearly shown up in the second part of the duodenum and an enterotomy was advised.

After the usual pre-operative procedure, a midline incision though the muscle was made and the ball-bearing was easily distinguished and removed.

The intestine was sewn up with 00000 gut using a Czerny-Lembert suture. The abundant ventral musculature was then approximated with similar gut, and the skin, which proved especially difficult, was sutured with fine nylon. 100,000 units of streptomycin were then administered intramuscularly and the diet was restricted for 3 days.

The snake made an uneventful recovery after a period of convalescence with a penicillin-enriched diet.

No literature was available on general anaesthetics which could have been used and the operation was performed under restraint and local anaesthetic.

Yours faithfully,  
A. P. JONES.

23 Ravensbourne Gardens,  
London, W.13.  
December 6th, 1959.

#### The Use of Succinylcholine Chloride (Suxamethonium Chloride) for the Control and Management of Wild Animals

Sir,—In THE VETERINARY RECORD of April 18th, 1959, you kindly printed a letter by us on the use of Suxamethonium. On the basis of our early attempts to immobilise wild animals, we suggested that intramuscular injection of this drug might be useful for the control of horses that had become unmanageable on air or sea transport—as an alternative to destruction. We were, perhaps with justification, taken to task by Dr. Phyllis Croft who

pointed out several adverse aspects of the use of this drug.

It is not inconsistent with modern thinking to inflict a small amount of unavoidable pain on an animal to promote its own good. It is debatable if the fasciculations caused by Suxamethonium are as painful as, say, a small surgical procedure such as encasing a lower extremity of a dog in plaster of Paris to treat a simple fracture, and certainly it does not last as long. Furthermore, the more unpleasant side effects of the drug may be mitigated by addition of substances such as atropine, and work on these lines is in progress. We find that signs of fear may be greatly reduced in a wild animal by precautions such as walking quietly, covering its eyes, and talking in whispers and as little as possible. When those precautions are observed, animals appear to show no increased apprehension at the sight of humans and are not more difficult to approach than previously. Furthermore this drug is being used to save the lives of wild animals and, we hope, will save very many more in the near future. Animals of 9 different species have been successfully immobilised to date including rhinoceros, hippopotamus and several species of antelope, and we hope that we shall shortly have a considerable amount of information available to enable these methods to be extended to other territories.

To the British veterinarian the application of veterinarian science to wild animals outside captivity may not seem immediate. In Africa there is a growing body of opinion that wild animals, especially wild ungulates, are very necessary to the country's economy and that the present increasingly rapid destruction of these animals should cease, and the haphazard methods of eradication replaced by scientifically controlled cropping and utilisation. The main rôles in which wild animals are believed to be capable of playing an important part are as follows: (1) as a natural resource in proper land utilisation; (2) as part of the normal balance of soil flora and fauna and thus a factor in land conservation; (3) as a source of protein food that may yield more with a much smaller degree of destruction of land than that which can be obtained from domestic stock; (4) as an attraction for foreign capital. So far the only control of wild animals has been through destruction. Not only have they been shot for food and sport, but they have been shot wherever they came into conflict with agricultural pursuits, wherever they were thought to endanger

human life, whenever an animal was sick or damaged, and in many cases whenever they crossed a game reserve boundary. They have been shot unselectively; the young and the female being killed as readily as the older male.

There are a number of species of animals in Africa in immediate danger of extinction, others are on the verge of a decimation that will virtually preclude their building up again into useful numbers. It is our object to save as many of those animals as possible through immobilisation and transportation as an alternative to shooting, and to assist the preservation of others mainly through increasing our knowledge of their migration cycles and movement patterns, as well as their food habits, dietary needs, etc. A few days ago we made a pilot experiment in immobilising a number of wild buffalo in a National Park and in vaccinating these animals against rinderpest, a disease to which they are highly susceptible. We hope that our experiments in marking animals such as hippopotamus in connexion with cropping schemes will assist in a proper estimation of the numbers that can be killed, and indicate the areas which the killing will affect. Pilot experiments have been completed on the moving of animals such as giraffe and kob antelope from areas bordering arable land to marginal areas where their survival may be permitted.

We feel that with the development of this technique of immobilising wild animals a weapon has been forged that is assisting in wild life preservation and may be instrumental in saving many more animals in the future. Through its use game management in its more immediate sense is becoming possible, thus adding an enormous section of interest to the veterinary field in countries such as Africa where large tracts of undeveloped and marginal land lend themselves to wild life utilisation and preservation.

Lastly, we would refer to the excellent article on the use of succinylcholine chloride by Mr. Neal and Professor Wright in your issue of October 17th, which has just come to hand after the draft of this letter was completed.

Yours faithfully,

J. A. LOCK,

A. M. HARTHOORN,

Departments of Medical Pharmacology,  
and Veterinary Physiology, Makerere  
College, Kampala, Uganda.

November 23rd, 1959.

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN  
Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Atrophic Rhinitis	Foot-and-Mouth	Fowl Pest	Sheep Scab	Swine Fever
1st to 15th Nov., 1959	16	—	—	251	—	75
Corresponding period in						
{ 1958	2	—	—	25	—	38
{ 1957	13	1	8	72	—	43
{ 1956	14	—	7	70	—	17
1st Jan. to 15th Nov., 1959	224	2	9	979	—	1,133
Corresponding period in						
{ 1958	139	5	116	642	—	1,107
{ 1957	290	8	125	816	—	852
{ 1956	1,197	11	135	673	—	667