HEALTH & DISEASES



This column is taken care of by the "Studygroup for Diseases and the Optimum Keeping and Breeding of Terrarium Animals" of the Belgian Society "Terra". If there is a question concerning health or diseases, feel free to contact the president of the Studygroup: Mr. Hugo Claessen, Arthur Sterckstraat 18, B-2600 Berchem, Belgium. He will try to answer your question in this column to the benefit of all members.

SURGICAL REMOVAL OF TWO RETAINED EGGS IN *ELAPHE GUTTATA GUTTATA*.

By: J. Mennes, Klaverbloemstraat 8, 2060 Merksem, Belgium,
C.A.P. van Riel, Dr. Struyckenstraat 87, 4812 BB Breda, The Netherlands
and J. van den Bossche, Betanielei 66, 2130 Brasschaat, Belgium.

Contents: Introduction - Defining the problem - Anaesthesia - Surgical procedure - Post-surgical progress - References.

INTRODUCTION

The particular animal under discussion is an albino *Elaphe guttata guttata*, red phase, born in the summer of 1980 from captive bred animals, imported from the U.S.A. The weight on 8 February 1981 was 36 g, on 22 February 42 g, and on 16

April 80 g. On 24 March 1982 the snake was put in a terrarium with a male and copulation ensued immediately.
On 1 May 1982 seventeen eggs were laid. On 6 and 7 July 1982 twelve snakes hatched. Half way through the incubation period one egg collapsed: it contained two animals with their heads not separated from each other.
Between 17 and 20 March 1983, after changing the light cycle, copulations were again observed. On 21 April thirteen eggs were laid in wet sphagnum.

DEFINING THE PROBLEM

After the eggs were laid, two swellings as large as an egg remained visible from the outside: one at 2 cm and a second at 22 cm from the cloaca in the direction of the head. Apart from the absence of a suitable place to lay eggs, Frye (1981) stated that a possible cause of egg retention is the death of the embryo, a disturbance in metabolism or abnormal size of the egg (or embryo). Retained eggs can decompose, causing toxic reactions inside the mother animal, sometimes with fatal results. Mummification or calcification of the content of the egg can lead to obstruction of the reproductive tract. After seven days awaiting the normal expulsion of the eggs, external manipulation was unsuccessfully attempted, after which on 28 April surgical removal was requested.

ANAESTHESIA

Inhalation anaesthesia using of diethyl ether was chosen in preference to hypothermia or injection anaesthesia, because of the ease of controlling the duration of the surgical procedure, and the speed at which reversal of anaesthesia is possible. Stagnation of respiration was prevented by means

of enforced muscle activity in the animal at room temperature before contact with the anaesthetic. The administration of the anaesthetic was controlled by conscientious observation of reflexes and respiration. Intubation was not performed in order to avoid damage of the respiratory tract and the easy control of the free air passage under the tip of the tongue. Artificial respiration proved unnecessary at any stage of the operation.

SURGICAL PROCEDURE

Under aseptic conditions an incision was made in the longitudinal direction at the site of each swelling; the incisions were no larger than needed to excise the eggs without damage. The incisions were located on the ventral surface to the side of the midline, to avoid the ribs. Virtually no bleeding resulted from the incisions. The wall of the uterus, a thin transparent membrane, was incised and tied up to avoid retraction. After a simple removal of the eggs the uterus was sewn up with catgut (plain 4/0). The peritoneum and muscle layer were sewn up in one layer with the same suture. The skin was sewn up by means of the ventral scales with polyamid (monofil 4/0) and covered with transparent artificial bandage (Nobecutane Astra-Nobelpharma).

POST-SURGICAL PROGRESS

The extracted eggs were bigger than the other, normally-laid eggs and were infertile.
Within a few minutes of ceasing the administration of the anaesthetic the animal awoke and became active. Thereafter, it was put into a hygienic terrarium without water-bowl. From 2 to 5 May oxycycline was administered because of a small persisting swelling just before the cloaca. On 4 May

the snake ate one mouse.
On 20 May the sutures were removed and a dilation of a few millimeters appeared between the ventral scales in the wound at the cloacal end. It remained dry and covered with a layer of skin. On 2 June the animal sloughed and some pieces of skin around the wound could be removed. The snake showed a good apetite and grew well. The scars diminished with each slough and are hardly visible at the time of writing.
On 1 March 1984 the snake mated again and sloughed on 3 March. On 12 April oxytocin was injected intramuscularly and on 13 April sixteen eggs were laid without any problem. On 24 April the snake sloughed and on 25 April she ate again.
Commencing on 15 June fourteen young hatched. One young snake died in the egg.

REFERENCES

In addition to the cited literature some further references on surgical treatment of reptiles are also given.

Bonanth, K., 1979. Halothane inhalation in reptiles and its clinical control. Int. Zoo Yearb., Vol. 19: 112-125.

Frye, F.L., 1981. Biomedical and surgical aspects of captive reptile husbandry. Veterinary Medicine Publ. Comp., Edwardsville, Kansas 66111.

Loveridge, J.P., 1979. The immobilisation and anesthesia of crocodilians. Int. Zoo Yearb., Vol. 19: 103-112.

Mulder, J.B. et al., 1979. Surgical removal of retained eggs from a Kingsnake (*Lampropeltis getulus*). J. Zoo An. Med., Vol. 10: 21-22.

Vandeventer, Terry L. & Maryann Schmidt, 1977. Caesarean section on a Western Gaboon Viper (*Bitis gabonica rhinoceros*). Int. Zoo Yearb., Vol. 17: 140-142.

Zwart, P., G.M. Dorrestein, F.C. Stades & B.H. Broer, 1979. Vasectomy in the garter snake (*Thamnophis sirtalis radix*). J. Zoo An. Med., Vol. 10: 17-21.