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Induced Ovulation in *Amphiuma*.

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Since the work of Wolf¹ and Houssay, Giusti and Lascano-Gonzalez,² ovulation has been induced in about 21 species of amphibia (Rugh).³ Induced ovulation in *Amphiuma tridactylum* Cuvier can now be added to this list.

Very little is known about the life history of this amphibian. Baker⁴ attempted to induce ovulation by means of injections of frog and catfish pituitary glands. Since only one female *Amphiuma* was used and the results were negative, the work obviously needed to be repeated. The author is greatly indebted to Dr. F. H. Wilson of Tulane University for supplying the animals used in this experiment and for information concerning their life history and habits.

Materials and Methods. Five adult female specimens of *Amphiuma* with palpable eggs in their ovaries were collected in June and injected daily with fresh cattle or frog pituitary glands macerated in distilled water or an aqueous suspension of desiccated sheep pituitary powder. Intraperitoneal, intramuscular and subcutaneous routes were used. The animals were kept in covered boxes, the bottoms of which were covered with 3 inches of dirt from the normal habitat.

Observations. Beginning June 13, 1941, animal No. 1 was injected daily with macerated male and female frog pituitary glands. On June 23 she laid one egg and another on June 24. A total of 9 female and 13 male frog pituitaries using all three routes were required to produce ovulation. Injections were continued, using a total of 2 cc of aqueous extract of cattle pituitary (1 cc = .2 of a gland). On June 28 the animal died and at autopsy no ovulated eggs could be found in the abdominal cavity.

Animal No. 2 was injected intraperitoneally with cattle pituitary extract beginning June 13, 1941. A total of 18 cc (1 cc = .2 of a

¹ Wolf, O. M., *Anat. Rec.*, 1929, **44**, 206; *Proc. Soc. Exp. Biol. and Med.*, 1929, **26**, 692.

² Houssay, B. A., Giusti, L., and Lascano-Gonzalez, J. M., *Rev. de la Soc. Argentina de Biol.*, 1929, **5**, 397.

³ Rugh, R., *Biol. Bull.*, 1934, **66**, 22; *J. Exp. Zool.*, 1935, **71**, 149.

⁴ Baker, L. C., *J. Tenn. Acad. Sci.*, 1937, **12**, 206.

gland) was given in daily doses of 2-4 cc. The animal died June 19. No eggs were laid but at autopsy several eggs (6-10) were found free in the abdominal cavity. Some of the eggs had burst and an accurate count was impossible.

Animal No. 3 was injected daily with 5 cc of an aqueous suspension of desiccated sheep pituitary powder beginning June 13. The intraperitoneal route was used. The animal died June 18. No eggs were laid and at autopsy no ovulated eggs could be found in the abdominal cavity.

Animal No. 4 was given daily subcutaneous injections of 2 cc of cattle pituitary extract beginning June 20. The animal died over the week-end of June 28 after receiving a total of 12 cc (1 cc = .2 of a gland). No eggs were laid and at autopsy no ovulated eggs could be found in the abdominal cavity.

Animal No. 5 was injected intramuscularly with cattle pituitary extract beginning June 20. On June 24 after receiving 4 cc of the extract (1 cc = .2 of a gland) this animal was found in the process of laying eggs. A total of 35 eggs was laid that day. Nine more were found on June 25 and 5 more on June 27.

Animals No. 6 and No. 7 were untreated. Neither one laid any eggs during the period of observation. *Amphiuma* has never before been known to lay eggs in captivity.

Discussion. Since our knowledge of the mating habits and life history of *Amphiuma* is fragmentary, it is impossible to draw any extensive conclusions from this work. Further work on this problem is in progress. According to Baker⁴ eggs are normally laid in August. Observations on this point are few but ovulation induced in June undoubtedly represents a precocious process.

It is suggested that the intramuscular and subcutaneous routes are more efficacious because at autopsy those animals which were injected intraperitoneally, contained large amounts of fluid in the abdominal cavity. This fluid resembled the injected material which in all probability failed to be absorbed by the peritoneum.

Conclusion. Ovulation in *Amphiuma* can be induced prior to the normal egg-laying season by injections of cattle and frog pituitary suspension and extract.