TABLE I.
Effect of Cortical Extracts on Lactation.

	Daily Injections	No. Mothers	Young Born	Young Reared	% Reared
A	Stock animals	27	157	113	72
B	Cortin 2 cc. of 1-40	9	42	1	2
C	Cortin 2 cc. of 1-80	4	30	4	13
D	Cortical extract 2 cc., 1-80	13	89	57	64
E	1 cc. lactation hormone + 1 cc. cortin (1-30)	5	33	17	51

The evidence indicates the existence of a new hormone in the adrenal cortex which supports lactation. *Cortilactin* is the name suggested for this new hormone.

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Further Experiments on Induction of Ovulation in Toads.*

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The authors have been interested in the problem of specificity of the maturity hormone of the anterior lobe of the hypophysis. Previously we[1] have reported that heteroplastic hypophysis implants from frogs may be used to induce ovulation in toads, thus proving the non-specificity of the maturity hormone in anurans. Kuyper, Pfeiffer and Wills,[2] on the other hand, were unable to produce ovulation in toads using injections of hebin (prepared from pregnancy urine). In our present experiments, we wished to further test the specificity of the hormone by implanting into toads, hypophyses from 2 different vertebrate classes. Garpike and albino rats were used.

A series of 6 *Bufo americanus* females were given daily implants of 2 to 4 hypophyses from garpike *(Lepidosteus platystomus Rafinesque* and *L. osseus L.)*. Ovulation occurred in 5 animals between the second and sixth day. The sixth female died of an infection without ovulating. The best results were obtained by implanting 4

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[1] Wills, I. A., Riley, G. M., and Stubbs, E. M., PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 411.

[2] Kuyper, A. C., Pfeiffer, C. A., and Wills, I. A., PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 413.

hypophyses daily. The discharged eggs in some cases appeared to be overripe. In several cases all the eggs were not discharged at one time. In most cases the eggs were retained in the uteri longer than normally. Males placed with the females did not copulate and artificial fertilization was not attempted so the eggs did not develop.

One "jumbo" female frog *(Rana pipiens)* was given daily implants of 4 Lepidosteus hypophyses. Eggs were laid on the fourth day. Ovulation and eggs appeared normal.

Two toads were given daily implants of 2 and 4 hypophyses from albino rats for 5 and 8 days respectively. Ovulation did not occur. The animal which received 2 hypophyses daily, died at the end of the fifth day as a result of shock and hemorrhagic condition in the region of the implants. The other female received 2 glands daily for 4 days and 4 glands daily for an equal period. This animal died a month later. Autopsy of both females showed that the ovaries were filled with normal eggs.

Evidence is accumulating that ovulation in all vertebrates is controlled by a mechanism in which the hypophysis plays a major rôle. Houssay[3, 4] has reported ovulation in fish, amphibians, and reptiles (snakes) after homoplastic implants had been made. In birds and mammals, various workers have shown an interrelationship between the hypophysis and the gonads but just what rôle the hypophysis plays, directly or indirectly, in the process of ovulation has not been determined with certainty. It may be that the maturity hormone is non-specific as are other hormones, or it may be specific in certain groups of animals. Houssay and associates,[4, 5] as a result of the failure to secure ovulation in toads using hypophysis implants from hen, rat, guinea pig, dog, cattle, frog, snake, and fish believe that there exists a "zoological specificity" of the hormone. Our previous experiments in which we obtained ovulation in toads, using frog hypophyses, and the present experiments, using fish, show that part of their conclusions are erroneous but the results of our experiments using rat hypophyses are in agreement with theirs. Examination of their data indicates that probably they did not use large enough numbers of hypophyses to secure positive results in the case of frog and fish implants. The failure to obtain ovulation using implants from rats may be due to a specificity between the groups or

[3] Houssay, B. A., *Compt. Rend. Soc. Biol.*, 1931, **106**, 377.

[4] Houssay, B. A., Giusti, L., Lascano-Gonzalez, J. M., *Compt. Rend. Soc. Biol.*, 1929, **102**, 864.

[5] Houssay, B. A., Giusti, L., Lascano-Gonzalez, J. M., *Rev. Soc. Argent. Biol.*, 1929, **5**, 397.

to a destruction of the hormone of the implanted glands by the host as a result of the incompatibility of the tissues and the subsequent reactions. The results of the present experiments only suggest that the maturity hormone among lower vertebrates is non-specific.

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Demoor's Active Substance of the Heart.

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Demoor[1, 2] has described a humoral regulatory substance elaborated by the nodal tissue of the heart which has the property of conferring rhythmicity upon the aperiodic beat of an isolated left auricle. His theory is based chiefly upon the observation that the right auricle of the rabbit or guinea pig, excised and dropped into a Ringer-Locke solution, soon assumes a regular rhythm; the left auricle, however, gives only aperiodic, jerky beats in this solution. If now, the solution in which the right auricle has been active for a while is poured over the left auricle, the latter gives rhythmical beats. Demoor has prepared both saline and alcoholic extracts of the right auricle of the rabbit which were able to confer periodicity upon the isolated left auricle of the rabbit. He has named this unknown substance the "active substance" of the heart. The writers have been able to confirm his observations.

All solutions used in the experiments were made from Baker's analyzed chemicals, recrystallized. The Ringer-Locke solution employed consisted of NaCl 0.9%, $CaCl_2$ 0.024%, KCl 0.042%, $NaHCO_3$ 0.01%, and Dextrose 0.1%. The pH was adjusted to 7.4, and the solution was oxygenated and maintained at a temperature of 37°C. throughout the experiment. An adult rabbit was placed under light ether anesthesia, the heart was exposed and perfused through the ascending vena cava with the Ringer-Locke solution for a short time to free the heart of blood. The heart was then excised and both auricles removed, care being taken to see that the venous

[1] Demoor, M. J., *Annales de Physiol. et de Physico-Chimie Biol.*, 1929, **5**, 1.

[2] Demoor, M. J., and Rylant, M. P., *Bull. Acad. Roy. de Med. de Belgique—Seance*, Oct. 26, 1929, 585.