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Prolactin-Like Reaction Produced by Hypophyses of Various Vertebrates.*

C. P. LEBLOND AND G. K. NOBLE.

From the Department of Anatomy, Yale University, and the American Museum of Natural History.

Lyons and Page,[1] by intradermal injections of very small amounts of prolactin-containing substances over the crop gland of the pigeon, were able to detect amounts of prolactin 100 times smaller than can be detected by intramuscular injection (confirmed by Bates and Riddle[2]). McQueen Williams,[3] Burrows and Byerly,[4] and Reece and Turner[5] implanted pituitary bodies in the same region and were able to determine the amount of prolactin contained in them by estimating the amount of local proliferation of the crop wall.

The hypophyses of mammals, birds, reptiles, amphibians and fish have been tested by us for the presence of prolactin by the same method. The reactions of the crop walls were graded with plus signs, in a way similar to that of Burrows and Byerly. The results reported in Table I show that positive reactions have been obtained with hypophyses of mammals, birds, reptiles, amphibians and fish.

The specificity of the growth response of the crop gland may be doubted, however, since positive reactions have been observed after implantations with livers of pigeon, turtle, catfish and sunfish, also with brains of sunfish and catfish. In these cases, as after implants of pituitary bodies of amphibians, reptiles and fish, undulated thickenings could be observed, but few or no fat granules were visible in sections of these thickenings following staining with Scharlach R. Such granules are numerous in sections of thickenings produced by treating immature pigeons with small doses of prolactin.†

Conclusion. A prolactin-like reaction is produced by implantations of hypophyses of animals representative of the main classes of

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1 Lyons, W. R., and Page, E., PROC. SOC. EXP. BIOL. AND MED., 1935, **32**, 1049.

2 Bates, R. W., and Riddle, O., PROC. SOC. EXP. BIOL. AND MED., 1936, **34**, 847.

3 McQueen Williams, M., PROC. SOC. EXP. BIOL. AND MED., 1935, **33**, 406.

4 Burrows, W. H., and Byerly, T. C., PROC. SOC. EXP. BIOL. AND MED., 1936, **34**, 841, 844.

5 Reece, R. P., and Turner, C. W., PROC. SOC. EXP. BIOL. AND MED., 1936, **34**, 402; 1936, **35**, 60, 367.

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TABLE I.
Local Prolactin Reactions Produced by Pituitary Bodies of Various Species of Vertebrates.

	No. of pit. implanted	Reaction (No. of pluses)	No. of pit. implanted	Reaction (No. of pluses)	No. of pit. implanted	Reaction (No. of pluses)
Birds Mammals	*Rabbits*		*Mice*		*Rats*	
	2 ♂	4	8 ♂ ♀	3	4 ♂ ♀	2
			20 ♂	4	2 ♂	2
			20 ♀	1-2		
	Chickens ♂		*Chickens* ♀		*Pigeons*	
	3	4	1	?	5 ♂ ♀	3-4
	1	4	2	2		
	1	3	2	3		
	2	3	2 ♂ ♀	4		
	2	4				
Reptiles	*Kinosternon odoratum*					
	10 ♂ ♀	0				
	10 ♂	0				
	20 ♂ ♀	1				
	50 ♂ ♀	1-2				
Amphibians	*Rana pipiens* ♂		*Rana pipiens* ♀ *and* ♂ ♀			
	6	0	4 ♀	0		
	4	0	8 ♀	?		
	24	2	100 ♂ ♀	?		
	8	?	60 ♂ ♀	1?		
Fish ♂ ♀	*Ameiurus nebulosus*		*Eupomotis gibbosus*		*Various*	
	48	2	30	0-1	1 tile fish	?
	80	2	50	3	1 mackerel	?
	48	traces	30	?	2 salmon	0
	100	2?			15 perch	0
	100	4			4 codfish	0
	70	2?			2 "	0
	50	?			5 "	?
					4 "	0

The sign ♂ ♀ indicates that males and females have been used without regard to sex.

vertebrates, also with livers of all submammalian classes. That this reaction implies the presence of the lactogenic hormone may be doubted because of the absence of fat granules in the proliferations.