degrees of maturity. Furthermore, it may be assumed that most of the ovulating follicles of the pretreated ovary are, in consequence of pretreatment, wholly mature at the time of injection of the ovulatory preparation and therefore respond more uniformly to the ovulatory stimulus.

The minimal interval between injection and ovulation in either pretreated or non-pretreated hens appears to be appreciably less than are the intervals for even the most reactive of mammalian ovaries. However, the differences are not of large order, and the approximate similarity of interval rather than differences should perhaps be remarked upon. In any event, the response of the avian follicle within 6 to 9 hours is the more striking in view of the relatively enormous size of the ovarian follicle, the structural and physiological peculiarities associated with the deposition of deutoplasm, and the marked differences in ovulatory sequences of mammals in comparison with birds generally and with the domestic hen specifically.

Summary. The time at which ovulation occurs following intravenous injection of appropriate hormone preparations into pretreated and normally laying (non-pretreated) hens has been determined. The interval in pretreated hens averaging more than 2 ovulations per hen at time of autopsy was 6.8 hours, range 6.1-7.2 hours. Ninety percent of all normally laying hens (69) ovulated from 6.5 to 8.5 hours following ovulatory injection, the remaining 10% of injected hens requiring up to 9.6 hours for ovulation. The non-pretreated hens were injected with 4 different hormone preparations administered at differing dosage levels and at times calculated to effect ovulation of follicles at varying degrees of prematurity. The minimal ovulatory interval recorded for pretreated hens was 6.1 hours, for non-pretreated hens, 6.5 hours.

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Effect of Air Currents on Plasma Prothrombin.*

ARMAND J. QUICK.

From the Department of Pharmacology, Marquette University School of Medicine, Milwaukee.

Tocantins[1] recently reported that plasma exposed to air currents

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1 Tocantins, L. M., PROC. SOC. EXP. BIOL. AND MED., 1942, **49**, 251.

showed a rapid diminution of prothrombin activity and that addition of CO_2 restored this loss. In view of the importance that these results have in the quantitative determination of prothrombin, and in the possible solution of the problem of preventing the spontaneous loss of this clotting factor in stored blood, it seemed important that these experiments be repeated.

Four cc of oxalated plasma were put in a pyrex test tube (25x100 mm) fitted with a 2-hole rubber stopper through which were inserted 2 glass tubes. One of the tubes nearly reached the surface of the plasma. The test tube was tilted to expose a maximum area of plasma surface, and a stream of air (first passed through a dilute solution of sodium hydroxide to remove CO_2) was blown over the plasma, kept at 38°C. The "prothrombin time" was determined by the author's method[2] and the CO_2 content by Van Slyke's original volumetric method. The loss of volume by evaporation was restored by adding distilled water.

The results indicate that the prothrombin of dog and rabbit plasma is not demonstrably altered by one hour aeration even though considerable CO_2 is lost. Human plasma aerated at room temperature likewise does not lose any significant amount of prothrombin activity in one hour. At 38°C, however, a definite loss of prothrombin occurs, which the addition of CO_2 does not restore. It appears, therefore, that the decrease of prothrombin is due to direct oxidative destruction or to the formation of an oxidation product in plasma which inactivates prothrombin, rather than to the loss of CO_2 from the plasma.

TABLE I.
Effect of Aerating Oxalated Plasma on Prothrombin Activity.

Type of plasma		Temp. °C	Before aeration: "Prothrombin time" sec.	Before aeration: CO_2 content vol., %	After one hour aeration: "Prothrombin time," sec.	After one hour aeration: CO_2 content vol., %	Loss of vol., cc
Rabbit		38	6		6		2
Dog		38	6	58	6	38	1.5
Human	I	25	12		12*		0.7
	II	38	12		13½		1.4
	III	24	11½	57	11½	33	1.3
	IV	38	12	63	14	35	1.6
					14½	53†	

*An additional hour of aeration did not affect the prothrombin time.
†After saturating with CO_2 of alveolar air.

2 Quick, A. J., *Am. J. Clin. Path.*, 1940, **10**, 222.