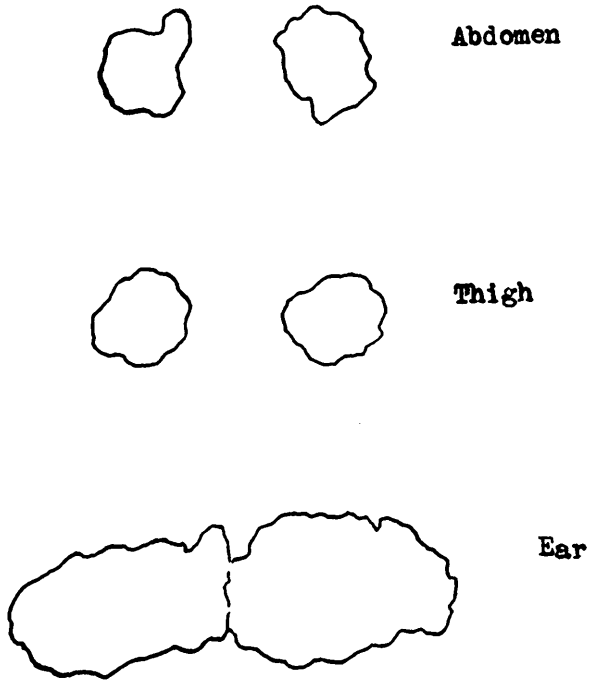

FIG. 3.
0.02 cc. of a 1 to 1,000 histamin solution injected into various sites of the skin of a dog.

gic manifestation, occurs as wheals of varying size, irregularly distributed throughout the skin.

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Observations on the Circulation of Guinea Pigs During Bronchospasm.

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The purpose of this experiment is to study the effect of bronchospasm on the circulation with reference to filling of the right heart.

Since anaphylactic shock in guinea pigs is manifested by bronchospasm, these animals were chosen.

The technic of the experiment was as follows:

Guinea pigs of 700 to 1000 gm. were sensitized by an intraperitoneal injection of 3 to 5 cc. of a 1 to 2 solution of egg white in buffered saline solution. The animals were allowed 15 to 20 days to become sensitive. At the end of this time the animals were anesthetized with amytal.

A cannula was placed in the right subclavian vein and pushed down into the right auricle. This cannula was connected to a water manometer fitted with a recording float similar to that used in mercury manometers. Physiological saline containing 0.7% of heparin was used in this system to prevent clotting of the blood.

Another cannula was placed in the trachea and connected to a closed breathing system which in turn was connected to a tambour so as to show exchange of air during respiration. This system was hooked up just previous to giving the shocking dose.

A trochar connected to a tambour was placed in the pleural cavity. This did not disturb the intrapleural pressure since the closed system remained intact. The tambour was standardized on the record in order to transpose the readings to cm. of water pressure.

These pressures were all recorded on a kymograph simultaneously; so that a composite record was obtained.

After everything was set, the drum was run long enough to record normal pressures. One cc. of the egg white was then injected into the venous cannula and washed into the circulation with the saline heparin mixture.

With this method we hoped to show the effect of bronchospasm on the circulation. In order to demonstrate the effects of bronchospasm on the circulation 3 separate pressures were taken and a 4th calculated. These pressures are the intra-auricular, intrapleural, and arterial pressures. Effective venous pressure was calculated as the algebraic difference between the geometric mean of the intrapleural pressure and of the intra-auricular pressure and was taken to indicate the degree of filling of the right heart.* Also, measurements were made to show whether air was entering or leaving the chest. This measurement is designated on the records and graphs as vorlage.

Figure 1 is a graph which is an exact transposition of one of the records. The figures on the abscissa represent the time in seconds.

* It is recognized that calculations of effective venous pressure will vary, depending upon the places where the venous measurements are made, and also upon the phases of the heart cycle. The effective pressures here recorded are mean pressures and were calculated according to the formula of Wiggers.[1]

[1] Wiggers, C. J., "Circulation in Health and Disease," Philadelphia, 1923, 105.

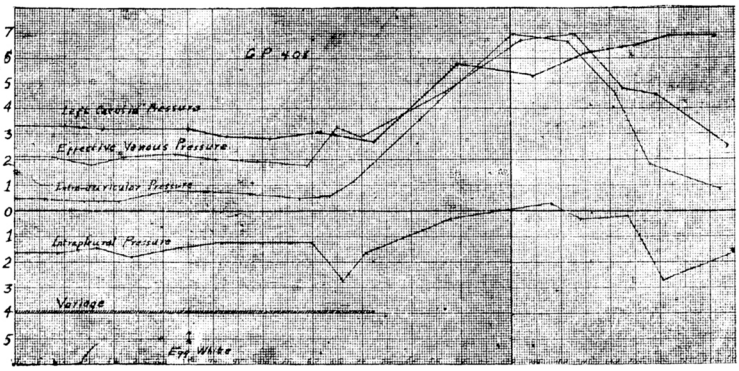

FIG. 1.

The figures on the ordinates represent the pressures in cm. of water above or below the zero except in the carotid pressure which is in cm. of mercury. The point at which egg white was injected is indicated. The vorlage indicates exchange of air up to the end of the marks.

In all the graphs intrapleural pressure is seen to fall either markedly, moderately, or very slightly; the fall being followed by a rise.

In all cases the effective venous pressure rose soon after the injection of the egg white; especially so in the cases where the bronchospasm was fatal to the guinea pig. At times, the effective venous pressure rose only slightly, the usual changes in intrapleural and intramuscular pressures being only slight. (Fig. 2.) In these cases,

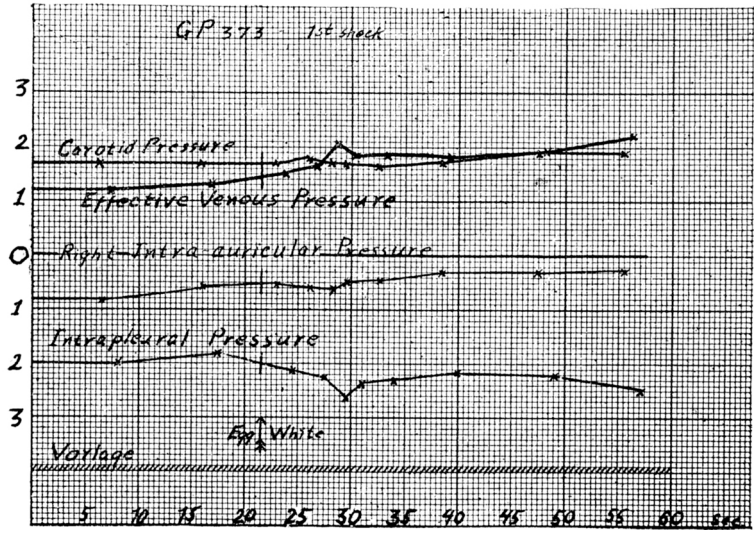

FIG. 2.

the guinea pigs continued to get air in and out of the lungs during the whole experiment and did not die because of bronchospasm.

Carotid pressure rose in varying degrees after the onset of bronchospasm.

Conclusions. 1. The circulatory effects as a result of bronchospasm were studied, particularly with reference to the effective venous pressure. 2. When bronchospasm is extreme there is a marked increase in the effective venous pressure. 3. When bronchospasm is not extreme there is very little change in the effective venous pressure.

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Extraction of Ovarian Hormone From Urine.

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Since the discovery of the presence of the ovarian hormone in the blood (Loewe,[1] Frank[2]) and in urine (Loewe[3]), Ascheim and Zondek[4] have shown that the urines of pregnant women contain large quantities of the hormone. This finding, which has been confirmed by Laqueur,[5] Slotta[6] and others, is of exceptional value in that it provides an excellent source of the hormone from the standpoint of expense as well as availability.

Recently Zondek[7] has published a preliminary note in which he states that the common organic solvents may be used to extract the hormone. We have used several organic solvents in addition to those commonly used but have found none so satisfactory as ethyl ether. In Table I are the data obtained by 4 successive extractions of the urine with ¼ its volume of ethyl ether. The combined ethereal extracts were washed with dilute alkali and dilute acid and then distilled to dryness. The residue was taken up in hot alcohol, cooled, filtered, and the potency determined. The data of Table I

[1] Loewe, S., *Klin. Wochenschr.*, 1925, iv, 1407.

[2] Frank, R. T., and Goldberger, M. A., *J. Am. Med. Assn.*, 1926, lxxxvi, 1686.

[3] Loewe, S., and Lange, F., *Klin. Wochenschr.*, 1926, v, 1038.

[4] Aschheim, S., and Zondek, B., *Klin. Wochenschr.*, 1927, vi, 1322.

[5] Laqueur, E., Dingemanse, E., Hart, P. C., and deJongh, S. E., *Klin. Wochenschr.*, 1927, vi, 1859.

[6] Slotta, K. H., *Deut. Med. Wochenschr.*, 1927, liii, 2158.

[7] Zondek, B., *Klin. Wochenschr.*, 1928, vii, 485.