injected into normal pregnant rats before, during and after the anlage of the mesoderm in the developing embryo. 2. Differential counts were made on wet and dry smears of blood from 15-day fetuses and the percent of non-nucleated red cells present taken as an index of maturation of the blood picture. 3. In a series of 264 treated and untreated fetuses from 66 litters of rats, statistical analysis of the data indicates the response in liver-treated animals to be within the range of biological variation.

## 11936

## Effect of Progesterone Anesthesia on Systemic Blood Pressure.*

SYDNEY M. FRIEDMAN. (Introduced by Hans Selye.)

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It has recently been shown by Selye[1] that steroid hormones may exert an anesthetic effect. Since it is known that anesthetics in general tend to depress the blood pressure, it appeared of interest to determine the blood pressure effect of progesterone anesthesia as compared to that of one of the standard anesthetics.

Eight female adult albino rats of an average body weight of 150 g (142 to 155 g) were given sufficient progesterone in an oversaturated solution (100 mg per cc) intraperitoneally to induce full surgical anesthesia, and the blood pressure was determined at 10-minute intervals throughout the anesthesia until recovery was complete. The same animals were similarly followed with nembutal anesthesia 24 hours later. Blood pressure recordings were made indirectly on the tail with an apparatus for non-anesthetized animals.[2] The total dose of progesterone ranged from 17 to 22 mg. Such a range was necessary since some of the animals are more resistant to this preparation than others. The total dose of nembutal (pentobarbital sodium) was 1/10 cc of a commercial preparation (Abbott) which contained one grain per cc.

Table I presents the data for systolic blood pressures obtained

* The expenses of this investigation were defrayed by a grant received from the Schering Corporation of Bloomfield, N. J., through the courtesy of Doctors G. Stragnell and E. Schwenk who have also kindly supplied the progesterone used in these experiments.

1 Selye, Hans, PROC. SOC. EXP. BIOL. AND MED., 1941, **46**, 116.

2 Friedman, Sydney M., in press.

TABLE I.

| Animal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Initial B.P. | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 |
| Progesterone | 95 | 90 | 125 | * | 80 | * | 90 | 94 |
| Nembutal | 89 | 95 | 92 | 80 | * | 92 | * | 106 |

*Blood pressure recordings were not obtained at this point.

initially as well as the average of readings taken during the course of full surgical anesthesia which occurred within 20 minutes of injection and lasted one to two hours. Blood pressure is expressed as mm of mercury.

In no case did progesterone depress the blood pressure to any greater degree than nembutal, and in one case anesthesia occurred despite a rise in pressure. With both agents a brief preliminary rise of 10 mm Hg was noted immediately following injection. In the case of progesterone, a sustained rise of 15 to 25 mm was frequently noted before anesthesia, especially in those animals in which the steroid was given in divided doses. Such pressor effects with progesterone were interesting since Grollman, *et al.*,[3] claimed to have obtained a rise in blood pressure almost to hypertensive levels with chronic injections of this steroid.

*Summary.* Progesterone in anesthetic doses given intraperitoneally does not lower the blood pressure to any greater degree than does nembutal. Anesthesia with progesterone occurs without relation to pressor or depressor effects elicited by this steroid.

## 11937 P

## Tensile Strength of Tibiae of Healed Rachitic and Normal Rats.*

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The early observation of Clark and Mrgudich[1] that rachitic and healed rachitic rat tibiae had lost the preferred longitudinal orientation of the crystal micelles of the inorganic material prompted

3 Grollman, Arthur E., Harrison, T. R., and Williams, J. R., Jr., *J. Pharm. and Exp. Ther.*, 1940, **69**, 149.

* Part of the expenses of this investigation were borne by a grant from the Nutrition Research Laboratories.

1 Clark, G. L., and Mrgudich, J. N., *Am. J. Physiol.*, 1934, **108**, 74.