little value, unless the relative volumes of plasma and corpuscles are known. It appears probable that the wide variations in the calcium content of whole blood in apparently normal individuals and variations for sex as reported by Lyman[1] may represent variations in corpuscular volume rather than in the calcium content of the plasma in these conditions.

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114 (1292)

Circulatory effects of tyramin.

By A. W. HEWLETT.

[*From the Division of Medicine, Leland Stanford Jr. University.*]

The subcutaneous injection of 0.06 to 0.08 gm. tyramin into normal individuals usually produces the following circulatory changes:

1. The systolic blood pressure increases markedly.
2. The diastolic blood pressure increases to a much less extent.
3. The pulse pressure is therefore increased.
4. The volume pulse in the arm becomes larger.
5. The heart rate is usually slowed.
6. The T wave in the electrocardiogram becomes notably larger with no constant change in the other waves. This alteration is most constant and is usually most marked in Lead II.

The changes in blood pressure and in the volume pulse in the arm indicate that the systolic output from the heart is increased. The changes in the electrocardiogram suggest those described by Rothberger and Winterberg after stimulating the right stellate (accelerator) ganglion.

Where epinephrin produces marked circulatory effects after subcutaneous injection these appear to be of a similar nature to

[1] Lyman, H., *Jour. Biol. Chem.*, 1917, XXX, 1.

those produced by tyramin. But tyramin is more constant in its action and it rarely causes the muscular tremor and apprehension that so frequently follows a large epinephrin injection.

115 (1293)

Absence of urea-splitting ferments in the animal tissues.

By AHMED E. SHEVKY (by invitation).

[*From the Laboratory of the Medical Division of Stanford University Medical School, San Francisco.*]

In 1912 Löb and Gutmann[1] published some data from which they concluded that a ferment capable of splitting NH_3 from urea existed in the pig's ovaries. Taniguchi[2] in a similar investigation which appeared last year confirmed this with somewhat more detailed data on determinations done with extracts from cow's ovaries. Both investigators used the Kruger and Reich method of ammonia estimation and their technique of extraction involved several hours of incubation.

In the present study corpora lutea were separated from fresh cow's ovaries, ground with twice its volume of 0.9 per cent. NaCl solution and filtered after standing one hour at room temperature. A similar extract was made from the rest of the ovaries. To 1 c.c. samples of a 2 per cent. urea solution were added 5, 10 and 15 c.c. of the filtrate and the mixture incubated for one hour at 37° C. Samples of urea solution and of the filtrate alone were similarly treated.

Ammonia estimations on all the samples were done by the aëration-titration method, using Barnett's recently described technique.[3] No more ammonia was found after incubation in the samples of extract and urea mixture than the combined ammonia content of the urea and of the extract samples.

In the following table figures for the corpora lutea extract are given, extracts from the rest of the ovaries gave similar results.

[1] Löb, W., and Gutmann, S., *Biochem. Z.*, 1912, XLI, 445.

[2] Taniguchi, Y., *Acta scholea med. univ. imp.*, Kioto, 1916, I, 3, 299.

[3] Barnett, G. D., *J. Bio. Chem.*, 1917, XXIX, 459.