That this hormone will be useful in the treatment of diabetes mellitus in the human subject there can be little doubt. Judging by the results obtained on diabetic animals it will in some ways be much superior to "Insulin." Its effect develops slowly and is long maintained. The fact that relatively crude extracts of many plant tissues are practically non-toxic is also a factor of great practical importance. A few results are indicated in Table 1.

TABLE 1.

Animal.	Source of extract.	Blood sugar.	
		Control.	Low point.
Normal rabbit	Yeast	0.110	0.046
Normal rabbit	Yeast	0.118	0.046
Normal rabbit	Yeast	0.080	0.038
Normal rabbit	Onion	0.118	0.058
Normal rabbit	Lettuce	0.094	0.056
Normal rabbit	Wheat leaves	0.103	0.065
Normal rabbit	Wheat leaves	0.106	0.058
Normal rabbit	Bean greens.	0.095	0.065
Depancreatized dog	Onion	0.190	0.090

158 (2118)

Evidence of the dynamic importance of auricular systole in man.

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Considerable discussion has arisen as to the dynamic importance of auricular systole. Some of the differences of opinion are no doubt due to the fact that the vigor of auricular contraction varies considerably under different experimental conditions. The idea has occurred to many that evidence of the dynamic importance of auricular systole might be obtained *in man* by comparing the ventricular efficiency during normal action with that found in auricular fibrillation. But nothing has come of this suggestion because no adequate criterion for comparing the ventricular efficiency had been found. In this report we wish to suggest that an accurate study of the duration of total ventricu-

lar systole and the phase of systolic ejection may offer a criterion of ventricular efficiency as determined by auricular systole.

Our attention was directed to this question in the course of an investigation into the duration of ventricular systole in fibrillation of the auricles. Inasmuch as the venous pressures are considerably increased in this condition, we anticipated, on the basis of animal experiments, that the duration of systole and its ejection phase would be greater than in corresponding cycles of normal hearts. Contrary to expectations, however, we found that on the whole the length of total systole as well as the duration of the ejection phase was definitely shorter than normal. This shortening was apparently unrelated to the age, blood pressure, medication or etiology of the fibrillation.

In attempting to explain this we were fortunate in finding a patient in whom periods of auricular fibrillation alternated spontaneously with a normal mechanism, as established by electrocardiograms. Fortunate also was the fact that the heart rate remained rapid during the periods of normal mechanism. This permitted calculations at approximately the same heart rates.

Results: The measurements of twenty-two beats during fibrillation of the auricles and of a like number during normal heart action gave the figures shown in Table 1. They indicate that

TABLE 1.

Cardiac mechanism	Predominant heart rate (beats per min.)	Duration of preceding diastole (average)	Duration of total ventricular systole (average)	Duration of systolic ejection phase (average)	Duration of "systole" as calculated from formula $S = .31\sqrt{C}$
Auricular fibrillation	151	0.222 sec.	0.175 sec.	0.128 sec.	0.195 sec.
Normal mechanism ..	130	0.234 sec.	0.226 sec.	0.171 sec.	0.210 sec.

under otherwise practically constant conditions the duration of systolic ejection and total systole were shorter during the period of auricular fibrillation than during the interval in which normal auricular contractions were present.

These effects can be interpreted in the following way—indeed, as previously indicated, they can not be explained in any other manner. During the synergic auricular contractions which occur

normally, an additional ventricular filling takes place or at least the intra-ventricular pressure is increased. This operates to lengthen the duration of the systolic ejection phase and through this the length of the entire systole. When the synergic auricular contractions are in abeyance as in auricular fibrillation, the ventricles either fill less efficiently or at least the initial tension is not as high, in spite of a considerable venous pressure in the veins.

Summary: 1. The duration of ventricular systole and its ejection phase are influenced at corresponding heart rates by the diastolic filling and the initial pressure of the ventricles, as demonstrated by recent experimental work.

2. The duration of these periods in hearts with auricular fibrillation is shorter than normal at corresponding heart rates, even in spite of the higher venous pressures present.

3. These intervals increase when the heart reverts to a normal mechanism.

We conclude, therefore, that these observations give probable if indirect evidence of the dynamic importance of auricular systole in the normal heart beat in man.

159 (2119)

Kahn precipitation test for syphilis—improved procedure.

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The precipitation test for syphilis proposed by the author[1] called forth favorable comment from a number of investigators (Keim and Wile,[2] Herrold,[3] Young,[4] Ide and Smith,[5] Holmes[6]

[1] PROC. SOC. EXP. BIOL. AND MED., 1922, xix, 182; *Arch. Derm. and Syphil.*, 1922, v, 570 and 734, vi, 332.

[2] *J. Amer. Med. Ass'n.*, 1922, lxxix, 870.

[3] *J. Amer. Med. Ass'n*, 1922, lxxix, 957.

[4] *J. Amer. Med. Ass'n*, 1922, lxxix, 1674; *Amer. J. of Public Health*, 1923, xiii, 96.

[5] *Arch. Derm. and Syphil.*, 1922, vi, 770.

[6] *J. Mo. State Med. Ass'n*, 1922, xix, 479.