determine whether acetol was excreted unchanged after its administration, the urine was distilled in slightly acid solution and a reduction test made on the distillate, always with negative results.

In the first three experiments, in which the animal was not caused to shiver—to completely rid it of glycogen—during a preliminary period, a marked rise in glucose excretion resulted after the introduction of 10 gm. of acetol, which was not manifest on the administration the following day of 7 gm. of this substance (in dog 2). Moreover, when another animal (dog 4) was caused to shiver on the third day of phlorhizination, by bathing it in ice water followed by a two-hour stay in a cold room, no increase in urinary glucose resulted from the first administration of acetol nor from the ingestion of the same amount on the following day. Albuminuria was not present in three experiments, as found by Greer, Witzemann, and Woodyatt.[2]

No evidence is available to show that this substance gives rise to acetone bodies. Just why it is not converted to glucose is problematical in view of the fact that the phlorhizinized dog converts into sugar many closely related substances.

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Some results obtained by the treatment of nervous phenomena with glucose.

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Recently Edwards, Page and Brown[1] have described cardiovascular disturbances accompanying insulin hypoglycemia in dogs. They found that insulin brought about certain irregularities in heart action, a slight decline in mean blood pressure and a lowered CO_2 capacity of the blood. Similar results associated with nervousness have been observed following the injection of

[1] Edwards, J. J., Page, I. H., and Brown, P. K., PROC. SOC. EXP. BIOL. AND MED., 1924, xxi, 170.

insulin in normal individuals or an overdose of insulin in diabetics, by Banting and his associates.[2, 3, 4] These results are apparently due to lowered blood sugar and may be relieved by the administration of glucose or of adrenalin. This action of adrenalin is attributed to its glycogenolytic effect on the liver.

We were impressed by the similarity of these findings in insulin hypoglycemia to those in some young patients with low blood sugar and low CO_2 capacity who were suffering from severe nervous manifestations. Experiments were conducted in the feeding of glucose to these children, with immediate and striking relief of their symptoms. This encouraged us to try glucose therapy in a number of other cases with similar but less severe symptoms with like success.

The symptoms in the cases referred to were either psychic—asthenia, anorexia, phobias, etc.—or somatic symptoms such as tachycardia, palpitation and digestive disturbances, commonly thought to be psychogenic. These were associated with a blood sugar, which in most instances was within the limit generally considered normal, but below the average finding, a low CO_2 capacity of the blood and a high red cell count and hemoglobin, which latter findings were in contrast with the anemic appearance of the patients. The significance of the relatively low blood sugar is indicated by the fact that the patients' symptoms were promptly relieved by feeding glucose, and this relief in some instances was associated with a slight increase of blood sugar.

We have summarized the blood findings and clinical symptoms in ten of these cases in the accompanying table. We believe that they represent a group in which symptoms which are apparently psychogenic have a definite metabolic cause.

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[2] Banting, F. G., Campbell, N. R., and Fletcher, A. A., *Brit. Med. J.*, 1923, i, 8.

[3] Fletcher, A. A., and Campbell, N. R., *J. Metabl. Research*, 1922, ii, 637.

[4] Banting, F. G., Best, C. H., Collip, S. B., MacLeod, J. J. R., and Noble, E. C., *Am. J. Physiol.*, 1922, lxii, 162.

Case	Sex	Age	Blood sugar	CO_2 capacity per 100 cc. blood.	Symptoms	Dose of glucose in gm. per day necessary to relieve symptoms
			mg. per 100 cc	cc.		
1	♀	12	85	58	Pallor, emaciation, phobias, irregular pulse.	60 to 100
2	♀	28	78	56	Pallor, emaciation, asthenia.	80
3	♀	28	92	56	Pallor, emaciation, asthenia, asthma.	70
4	♀	11	73	55	Pallor, asthenia.	60
5	♀	23	92	52	Pallor, emaciation, asthenia, night terrors, indigestion.	50
6	♀	60	87	61	Pallor, emaciation, asthenia, phobias, irregular pulse, indigestion.	50
7	♀	35	75	56	Pallor, asthenia, irregular pulse, indigestion.	60
8	♀	14	85	58	Pallor, phobias, night terrors, irregular pulse.	50
9	♂	21	90	60	Pallor, emaciation, asthenia.	50
10	♀	55	86	50	Pallor, asthenia, neuralgic pains.	40

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Cyclic variations in the spontaneous contractions of the human fallopian tube.

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In two recent papers it has been shown that periodic variations occur in the spontaneous contractions of the Fallopian tube during the reproductive cycle in the pig (Seckinger, 1923)[1] and in Macacus rhesus (Corner and Seckinger, 1923).[2] These in-

* Introduced by George B. Wislocki.

[1] Seckinger, D. L., *Johns Hopkins Hosp. Bull.*, 1923, xxxiv, 236.

[2] Corner, G. W., Seckinger, D. L., *Anat. Record*, 1923, xxvi, 299.