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## Effect of Terminal Procedures on Liver Glycogen.

WILLIAM F. REINDOLLAR. (Introduced by John C. Krantz, Jr.)

*From the Department of Pharmacology, School of Medicine, University of Maryland, Baltimore.*

The purpose of this investigation is twofold: (a) to ascertain the effect, if any, of 2 anesthetics of the barbital series containing the cyclohexenyl group, upon the liver-glycogen content of the fasting white rat; (b) to study any possible chemotherapeutic effect that may be attributed to a methyl group linked directly to the nitrogen in one of these compounds. The 3 compounds given consideration were

(1) N-methyl 5,5′ methyl, Δ′ cyclohexenylmalonylurea—Evipal.
(2) N-desmethyl 5,5′ methyl, Δ′ cyclohexenylmalonylurea.
(3) N-desmethyl 5,5′ ethyl, Δ′ cyclohexenylmalonylurea—Phanodorn.*

Numbers 1 and 2 are identical except for the absence of a methyl group linked to the nitrogen in the latter case; numbers 2 and 3 are identical except that in phanodorn an ethyl group replaces the methyl group. Compounds 2 and 3 are identical in hypnotic activity, furthermore compound number 2 is unstable; hence numbers 1 and 3 were chosen for investigation.[1]

Male albino rats weighing between 100 and 150 gm. were fed at least 5 days on a standard diet and then fasted 48 hours before using. Those of the first group were killed by decapitation, the liver was extirpated and its glycogen content determined. The second and third groups were anesthetized with sodium evipal and sodium phanodorn respectively; the liver being removed as soon as surgical anesthesia was obtained.

Glycogen was determined by first extracting and converting to glucose, using Good's[2] modification of the Pflüger[3] method and titrating the glucose, employing the technique of Shaffer and Somogyi.[4]

In order to obtain a measure of the degree of precision of the method it was applied to aliquots of fresh beef liver previously di-

* The phanodorn used in these experiments was furnished through the kindness of the Winthrop Chemical Co.

1 Personal communication: Charles W. Hooker, Winthrop Chemical Co.

2 Good, Kramer, and Somogyi, *J. Biol. Chem.*, 1933, **100**, 485.

3 Pflüger, *Pflüger's Arch.*, 1906, **114**, 242.

4 Shaffer and Somogyi, *J. Biol. Chem.*, 1933, **100**, 695.

gested in 30% potassium hydroxide solution made up to a definite volume; also to the pooled livers of 5 fasted rats similarly treated. The results are recorded in Table I.

TABLE I.

| Material | Determinations No. | Min. % | Max. % | Mean % |
|---|---|---|---|---|
| Fresh Beef Liver | 6 | 0.97 | 1.09 | 1.06 |
| Pooled Rats' Livers | 5 | 0.03 | 0.04 | 0.03 |

Table II combines the results on the fasted animals killed by decapitation, anesthetized by sodium evipal, and sodium phanodorn respectively.

TABLE II.

| Terminal Method | Animals No. | —Glycogen, %— Min. | Max. | Mean | Probable Error of Single Determination | Probable Error of Mean |
|---|---|---|---|---|---|---|
| Decapitation | 30 | 0.03 | 0.44 | 0.14 | ±0.07 | ±0.02 |
| Sodium Evipal | 32 | 0.04 | 0.60 | 0.23 | ±0.10 | ±0.03 |
| Sodium Phanodorn | 35 | 0.03 | 0.45 | 0.16 | ±0.08 | ±0.02 |

*Summary.* A comparison of the effect of 2 methods of terminal procedure, decapitation and anesthesia, upon the liver-glycogen content of the albino rat has been made. Neither of the 2 drugs employed depressed the liver-glycogen content; neither was significantly glycogen sparing.

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## Effect of Prolonged Exercise on Polynuclear Count in Man.

J. J. BOOKMAN AND D. J. FRAAD. (Introduced by E. Ponder.)

*From the Arnold Biological Laboratory, Brown University, and the Biological Laboratory, Cold Spring Harbor.*

It is generally agreed that the white cell count in man increases to a considerable extent after severe exercise of short duration. This increase, however, does not involve any appreciable shift in the polynuclear count and is accordingly to be regarded as due to a redistribution of white cells from "organ reservoirs" rather than as the result of marrow activity.[1] Hitherto no attempt has been made

[1] Ponder, Saslow, and Schweizer, *Quart. J. Exp. Physiol.*, 1932, **22**, 21.