

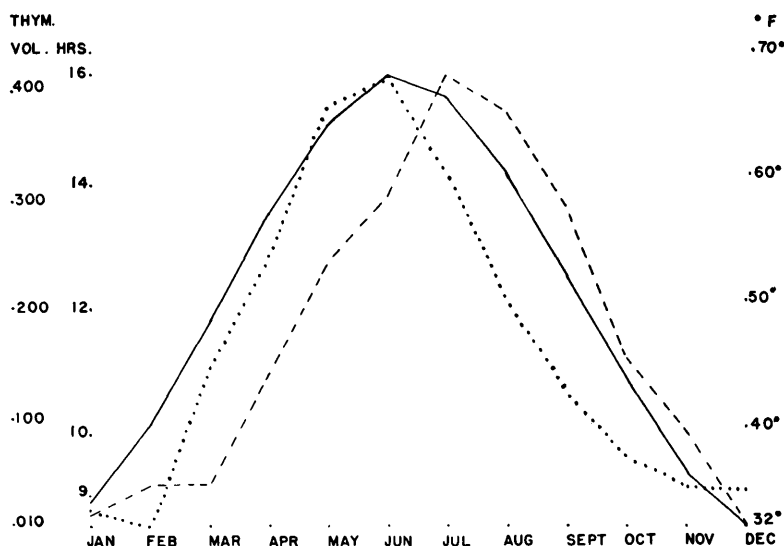


FIG. 1. Annual weather cycle, and thymus volume of female mule deer, National Bison Range, 1953, 1954. Avg monthly day length, ———; avg monthly temperature, 1953-1954, - - - - -; avg monthly thymus vol/body wt ratios of female mule deer of all age groups, ·····

and reached its largest size in all 3 age classes during late spring and early summer (May-July). All 3 groups exhibited the same type of annual thymus volume cycle, although the fawns had the highest value of the 3 age classes for the late spring-early summer months. Pregnant or lactating adult does had the lowest value of the 3 age classes for that time of year, although these values were considerably higher than those of the winter months. The data permit the hypothesis that light stimulates production of a thymotropic hormone probably via the pituitary gland.

There is very good correlation between average monthly hours of daylight and thymus volume body weight curves. Stress factors such as high temperatures and "burnt up" vegetation in late summer, and cold temperatures and difficultly available food in snowy winter months may also affect the size of the thymus.

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Obtaining Data by Telephone. A Clinical Evaluation of Hypnotic Drugs. (22696)

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The widespread use of hypnotic drugs suggests that many people require some aid to fall asleep. Repeated studies at the Indianapolis General Hospital using the usual doses of various hypnotics have failed not only to demonstrate differences among hypnotic agents but also between the hypnotics and placebo. This paper presents our experi-

ence with telephone reporting.

Method. Tablets of Ethinamate (Valmid), Glutethimide (Doriden), Methypylon (Noludar), and secobarbital sodium (Seconal Sodium) containing 500 mg, 500 mg, 200 mg, and 100 mg, respectively, were used. Envelopes containing one or 1½ tablets of these hypnotics or placebo were given to patients

TABLE I. Reported Time Lapse Prior to Onset of Sleep. Condensed form of data used in analysis. (Numbers in body of table refer to No. of reports in each category.)

Onset in min.	Tablets Placebo		Tablets Seconal		Tablets Valmid		Tablets Doriden		Tablets Noludar	
	I	II	I	II	I	II	I	II	I	II
0- 30	9	13	17	18	13	15	13	14	16	9
31- 60	9	4	6	5	5	6	7	12	7	7
61-120	5	7	3	2	9	6	4	1	2	6
121-480	4	3	1	2	0	0	3	0	2	5

receiving out-patient care. These envelopes were coded and directions as to order of administration given to the patients. The order of administration was also noted on the report form. The medications were given in a planned order so that randomization was obtained. Each morning the patients called the hospital to report the results of the previous night. Any of several persons answered the telephone and recorded the data. The questions were: The envelope number, the number of tablets taken, how soon they fell asleep, how long they slept, how well they rested, whether they were dizzy or drowsy when they awoke, whether they liked the medications and whether it helped them to sleep. Any other statements relating to the medication were also recorded. After the first 2 or 3 calls, some of the patients discontinued calling. They were called the same day to obtain their report and learn their reason for not calling. Following this show of interest on the part of the investigators, most of the patients did not fail again. Despite the many diversions which occurred, it was thought that adequate and accurate records had been obtained from 16 patients. These 16 patients completed the series, some several times, for a total of 27 complete reports on each medication at each dose.

Results. In the analysis of the data equal emphasis was placed on each of the 27 completed series of treatments. Since each series

included the administration of each of 5 drugs at 2 doses, 270 daily reports were obtained. In plotting the curve for the onset of sleep (Table I) a skew distribution was observed. Transformation to logarithms, therefore, preceded variance analysis. Variance analysis indicates that sleep was significantly more prompt when hypnotics were used than when placebo was given. The differences among the drugs and between the 2 doses were not significant.

Analysis of the data on the duration of sleep (Table II) indicates significant heterogeneity among the hypnotics but placebo was not significantly different from the over-all hypnotic effect. This was an unexpected effect which on a clinical basis was illogical. Therefore, any comparison of the duration of sleep was not considered valid.

Analysis as to the number of times awakened, side-effects, and other data demonstrated no significant differences among the hypnotics, between the hypnotics and placebo, or between the two doses of drugs(1).

Discussion. By using adequate doses, differences among hypnotic drugs can be demonstrated in animals(2) and men(3,4). In these studies both the onset and duration of the central depression was measured. It was assumed that patients who had difficulty getting to sleep were capable of recognizing the effects of any drugs which enabled them to achieve the sleeping state more promptly.

TABLE II. Reported Durations of Sleep. Condensed form of data used in the analysis. (Numbers in body of table refer to No. of reports in each category.)

Duration in hr	Tablets Placebo		Tablets Seconal		Tablets Valmid		Tablets Doriden		Tablets Noludar	
	I	II	I	II	I	II	I	II	I	II
0 - 4	5	2	2	3	2	2	3	1	5	6
4.5- 6	10	5	5	4	11	8	4	7	2	8
6.5- 8	9	15	17	14	12	14	17	14	17	10
8.5-12	3	5	3	6	2	3	3	5	3	3

Patients were able to recognize a more rapid onset of sleep with hypnotics than with placebo. Unless the hypnotics were long acting and produced a "hangover" no after effects would be expected and none were noted.

Conclusions. 1. The onset of sleep is more prompt when usual therapeutic doses of hypnotics are administered to patients. 2. Duration of sleep and incidence of undesirable effects produced by Seconal, Valmid, Doriden, and Noludar were not significantly different from those produced by placebo.

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