

yeast (6 hours at 120°C.) supplement, gave higher values for the raw milk than when no supplement or when autoclaved whey was used (3.0 cc. against 5.3 cc. for one unit of vitamin B<sub>1</sub>), suggesting that the higher values obtained when autoclaved yeast is used to supply the other components of the vitamin B complex are due to the presence of some vitamin B<sub>1</sub> in the supplement.

It is concluded that commercial evaporated milk contains about 60% less vitamin B<sub>1</sub> than an equivalent amount of raw summer milk.

### 9796 P

#### Reduced Latent Time of Blocking of the Berger Rhythm to Light Stimuli.

JOHN R. KNOTT. (Introduced by L. E. Travis.)

*From the Department of Psychology, State University of Iowa, Iowa City, Iowa.*

Recent reports<sup>1, 2</sup> have indicated that when a subject is instructed to respond manually to a light stimulus the latent time of blocking of the Berger Rhythm (the  $\alpha$ -wave of the electroencephalogram) is shorter than it is when no response is made. One of these reports<sup>2</sup> includes a correlation of  $.37 \pm .09$  between reaction time and latent time of blocking. This might be held as indicative of a relationship between "readiness" of the subject and the blocking time.

The present report is concerned with the same general phenomenon, but with a different emphasis in the approach. The aim here is to discover, if possible, the factors involved in the reduction of the latent time of blocking.

A series of experiments was run to verify the results of the previous investigators. Ten normal adult subjects were used. Standard equipment for recording included resistance-capacitance coupled amplifiers driving an ink-writing oscillograph. Plate electrodes were placed on the left occipital area and on the lobe of the left ear. The stimulus lights were of an intensity of 0.3 cp. Response, when made, was by a break key inserted in the light circuit and activating the signal magnet of the ink-writer.

The verification experiments involved 3 situations. (1) A situation of no response. (2) A situation demanding discrimination

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<sup>1</sup> Travis, L. E., Knott, J. R., and Griffith, P. E., *J. Gen. Psychol.*, 1937, **16**, 391.

<sup>2</sup> Jasper, H. H., and Cruikshank, R. M., *J. Gen. Psychol.*, 1937, **17**, 29.

(response to one and only one of 2 lights). (3) A situation demanding speed (response to either of 2 lights).

The results may be summarized in Table I.

TABLE I.

| Condition  | AM (sec.) | SD (sec.) | N (stimulations) |
|--|-----------|-----------|------------------|
| No Response  | .27       | .11       | 500              |
| Response <sub>1</sub> (Emphasis on discrimination) | .24       | .07       | 553              |
| Response <sub>2</sub> (Emphasis on speed)          | .21       | .12       | 686              |

The differences between the first condition and the second and third conditions were statistically significant, as was the difference between the second and the third conditions. The absolute magnitude of reduction appears slight, but the relative magnitude of reduction is 11% and 22%, respectively, for conditions 2 and 3, as compared with condition one.

In an attempt to determine the "cause" of this reduction 4 control experiments were run. To rule out increased sensitivity of the eye through dark adaptation, experiments were run in a reverse order (*i.e.*, 3, 2, 1,). The results held as presented in the table above. To rule out, possibly, effects from other cortical fields impinging upon the visual field, a tone of 180 cycles, about 85 db above threshold was impressed upon the subject while light stimulation was given. No reduction was observed. A third attempt was made on the supposition that imagery might be operating to pre-sensitize the visual region, leading to reductions of the order found. A uniform visual field (diffusely illuminated opal glass hemisphere) of low intensity was presented, upon which a brighter field aperiodically was flashed. Although this part of the study is still in a preliminary stage, the latent time of blocking appears to be longer than when the background illumination is absent. The fourth attempt was made on the lines of accepted neurophysiological theories of mental set, that there is a muscle strain involved. Hence, 3 subjects supported 5 pounds of lead in the palm of each hand (elbows on table, hands 10" above table top) during light stimulation. The results indicate an absolute reduction of 0.02 sec., (which is a relative reduction of 8%, *i. e.*, from 0.25 to 0.23 sec.). This difference approaches statistical significance, the critical ratio being 2.6. Further experiments on this line, with increase in the weight supported (and consequently more widely spread proprioceptive stimulation, approaching that in actual "set") are now in progress.