(4 mg norethindrone acetate, 0.05 mg ethinylestradiol), Aconcen (*8*) (3 mg chlormadinone acetate, 0.1 mg mestranol), and other preparations of different origin in single cases, for a period of 1 to 24 months. Serums from 25 of these women showed positive tests, whereas 9 were negative for C-reactive protein. A control group of apparently healthy women in the reproductive age was also investigated. Twenty specimens were taken between the 12th and 14th day, and 20 were taken between the 24th and 26th day of the cycle. Four positive tests were observed among the 40 specimens (Table 2).

A third study was performed on a group of 26 apparently healthy women under cyclic administration of Ovulen (*5*) (1 mg ethynodiol diacetate, 0.1 mg mestranol) for a period of 7 to 38 months. Twenty-three specimens from this group showed C-reactive protein (Table 2).

The tests were performed in the first and third studies with "CR-test Latex Anti-CRP Reagent" (*9*). In the second study "Latex CRP Reagent Behringwerke" (*10*) was used. There were no differences in the number of positive tests before and after inactivation at 56°C for 30 minutes. A prozone phenomenon (that is, negative reaction in undiluted serum, positive reaction in diluted serum) was observed in a few cases, indicating a relatively high concentration of C-reactive protein in these specimens.

The data were obtained in part from inhomogeneous groups. Interpretation is difficult at present, but our observations suggest a certain influence of hormones on the appearance of C-reactive protein in human serum. This should be considered in clinical evaluation of the test.

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13. The specimens from patients under treatment with Ovulen were made available through the courtesy of G. D. Searle and Company, Chicago, and Dr. J. Scott, Department of Obstetrics and Gynecology, Ohio State University, Columbus, Ohio. Study supported by G. D. Searle and Company, Chicago, Illinois.

19 May 1966

Magnesium Pemoline and Behavior

Plotnikoff reports (*1*) facilitatory effects of magnesium pemoline of "acquisition and retention" (or on "learning and memory") of an avoidance task in rats. Unfortunately, his language implies more than is supported by the data. It implies first of all that the pemoline-treated animals acquired the avoidance task to a shorter latency than the controls, indicating an effect of the drug on the acquisition process, which the data clearly support. It also implies that the pemoline-treated rats retained at a shorter latency or for more trials than the controls, which the data also indicate. However, in this latter case the controls are equivocal with respect to whether these data represent a drug effect on retention processes. This is because the control rats had previously acquired the task to a significantly poorer degree than the drug animals. In other words, the difference in retention may simply be a consequence of the difference in level of acquisition (the better the acquisition, the better the retention) and may therefore only reflect effects of the drug on acquisition processes, whatever these acquisition processes are. The large difference in retention between the control rats of Table 2 and the three groups of Table 3 casts some doubt on the reliability of the retention test.

It is particularly important that this point be recognized since the work has implications for research on possible biochemical processes in learning and memory, and particularly on the role of RNA in coding memory. There are indications that one should distinguish between effects on short-term acquisition and long-term retention; for example, goldfish given puromycin exhibit short-term acquisition but not long-term retention (*2*). Although RNA could be involved in both short- and long-term memory, theory and data suggest that it is more likely to be involved in the latter. Thus, if the behavioral effects of magnesium pemoline are due solely to its action on RNA polymerase, one might expect to see behavioral effects on retention or consolidation, and lesser, if any, effects on acquisition. Whatever the case, it certainly seems necessary to distinguish whether the effects observed are on short- or long-term memory processes, or both, and it seems desirable to establish whether magnesium pemoline has any effect when acting on long-term memory processes alone.

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Over the past few years we have found it extremely difficult to condition control animals to criterion for retention (15 seconds or less) in less than 50 acquisition trials (ten trials per day). Actually many animals reach acquisition criterion (15 seconds or less) within 10 trials but show only limited retention on day 2 without buzzer or shock reinforcement. For these reasons, it was especially striking that rats receiving prior treatment with magnesium pemoline not only reached acquisition criterion within a few trials but even exhibited a high degree of retention (15 seconds or less jump out time) for several months.

Thus, I believe our data support enhancement of both short- and long-term memory of this conditioned avoidance response in rats.

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2 June 1966