d-lysergic acid diethylamide (LSD). All drugs were given to rabbits subcutaneously once a day for 3 days. Drugs used were : physostigmine salicylate (4 mg/kg), reserpine 'Serpasil-Ciba' (0·5 mg/kg), chlorpromazine chloride 'Hibernal-Leo' (5 mg/kg) and *p*-hydroxy mercuribenzoate (10 mg/kg).

The results are shown in Table 1. Only physostigmine salicylate had an effect on SP content in rabbit's brain. After 3 days administration of this drug concentration of SP in rabbit's brain decreased from 19 ± 1·5 U./g to 7 ± 0·73 U./g. The other drugs administered to the rabbits did not influence change of SP content in the brain.

Table 1. Amount of SP U./g in the Rabbit's Brain after Administration of Drugs

Drug	No. experiments	SP (U./g)	Significance
Control	5	19 ± 1·5	
Physostigmine salicylate	5	7 ± 0·73	$P < 0·01$
Reserpine	5	16 ± 1·3	Not sign.
Chlorpromazine	5	19 ± 2·1	,,
p-Hydroxy mercuribenzoate	5	16 ± 1·6	,,

These results are in accordance with those obtained from rabbit small intestine the SP content of which was also influenced only by physostigmine[7]. Similar results were obtained with reserpine and chlorpromazine by Paasonen and Vogt[1] and by Laszlo[4]. One possible explanation for the disagreement with results of other authors is the interference produced by nucleotides present in the SP extracts if they are not purified[4].

The physostigmine effect on SP content in rabbit brain, in conjunction with previous results[7], suggests a relation between central cholinergic mechanisms and SP.

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Postnatal Behavioural Effects of Meprobamate injected into the Gravid Rat

Werboff and Kesner[1] have claimed that administration of meprobamate to gravid rats for four successive days during any period of pregnancy resulted in offspring that, compared with the controls, were lighter in body-weight and significantly poorer at learning a Lashley III maze. The latter deficiency was attributed to some unspecified effect of the drug on the developing brain. Since previous experience with meprobamate had not revealed any deleterious effects on body-weight or size among the progeny of meprobamate-treated females[2], and since it seemed unlikely that a cerebral impairment due to prenatal drug exposure should be unrelated to the embryo's age at the time of insult[3], we repeated the Werboff and Kesner experiment. This replication also provided the opportunity for verifying an earlier report by Werboff and Havlena[4] that prenatal exposure to meprobamate altered performance on the inclined plane and in the open-field test.

The experiments were carried out exactly as described by Werboff *et al.*[1,4]. Pregnant female rats were injected three times a day at approximately 8-h intervals for four days. One group received distilled water subcutaneously, the other group received meprobamate, 20 mg/kg dissolved in distilled water. They were injected during gestation on days 5–9, 10–14 or 14–18. The offspring were weighed twice-weekly. At 25 days of age they were given three trials on an inclined wire screen, but no more than 120 sec were allowed per trial. The shortest time required to reach the top was selected for calculating the time of climbing. At about 55 days of age the rats were placed in the open field (a 5-ft. × 3-ft. grid of 12-in. squares) for 120 sec once a day for five consecutive days. The number of squares crossed and the activities (number of fæcal boli, etc.) were counted. At 75 days of age the rats were placed on a 23-h food deprivation schedule and began seven days of preliminary training on a 36-in. straight alley. On the eighth day of training, practice on the Lashley III maze was started with the following schedule: days 8, 9, 10—2 trials per day; days 11, 12, 13—3 trials per day; days 14, 15—5 trials per day. The criterion of learning was two out of three correct trials run in 20 sec or less per trial.

No measure revealed any significant difference between the offspring of meprobamate-treated and those of water-treated rats. Body-weights at 75 days of age, for example, averaged 288·3 ± 38·6 g for control males as compared with 290·4 ± 36·7 g for experimental males, while female offspring weighed 186·2 ± 22·4 g and 190·1 ± 36·0 g for control and experimental groups, respectively. Median inclined plane scores were 13·5 (range 2–120) sec for control and 16·5 (range 2–120) sec for animals of the experimental groups. The difference was not statistically significant at the 0·05 level. Furthermore, open-field scores were not significant for the number of squares traversed nor was emotionality significantly different between the two groups at the 0·05 level. There was no significant difference between the drug-tested animals and the controls in learning the Lashley III maze (Table 1). The learning scores of the offspring were also analysed according to the stages of pregnancy during which their mothers had been injected. No significant differences were found relating either to the substance injected or to the fœtal age at which injections were made.

Table 1. Trials to Criterion on Lashley III Maze of Progeny of Rats Administered Meprobamate during Various Stages of Pregnancy

Group	No. rats	Total stages	Stage First (3–9 days)	Second (8–12 days)	Third (13–18 days)
			(Mean number of trials ± *S.E.*)		
Control	81	14·2 ± 0·6	14·5 ± 1·2	12·9 ± 2·3	14·2 ± 0·7
Meprobamate	83	12·8 ± 0·6	15·0 ± 3·6	13·0 ± 0·8	12·1 ± 0·9

Our experiments have failed to verify the reports by Werboff *et al.*[1,4] of behavioural alterations subsequent to prenatal exposure to meprobamate. Furthermore, neither these rats nor those previously described by Berger have shown the weight loss which was noted in Werboff's rats and attributed by him to meprobamate. It appears likely that the behavioural data presented by Werboff are merely a reflexion of the poor physical status of his rats. Our results clearly show that the physical status of the offspring of meprobamate-treated rats should be in no way inferior to the offspring of the untreated animals. Treatment with meprobamate during pregnancy did not cause any impairment of performance on an inclined plane, behaviour in the open-field test, or in ability to learn a maze by the offspring.

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