

Short communications

Effect of cyproheptadine on feeding behaviour in albino rats

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The effect of cyproheptadine on feeding behaviour was investigated in fasted albino rats with the help of a Skinner box. Cyproheptadine decreased the rate of bar-pressing under continuous reinforcement although it has been reported to be an appetite promoting drug.

Increased food consumption after administration of cyproheptadine has been reported by various workers (Chakrabarty, Pillai, Anand & Singh, 1967; Bergen, 1969; Baxter, Miller & Soroko, 1970). As hunger can also be assessed from food-seeking behaviour (Miller, 1957), a study was undertaken to find out the effect of cyproheptadine on feeding behaviour with the help of a simple Skinner box.

Methods.—Ten albino rats, weighing between 100 to 150 g, were housed in separate cages. They were trained daily in a Skinner box, after a fast of 20 h, to press a bar for food-pellets of 0.25 grams. They were fed *ad libitum* outside each bar-pressing session. When the rate of bar-pressing under continuous rein-

forcement reached a stable base-line, experiments were carried out to discover the effect of cyproheptadine on this activity. The duration of each bar-pressing session was fifteen minutes. Cyproheptadine hydrochloride was dissolved in water (1 g in 300 ml) and administered subcutaneously (30 mg/kg) half an hour before each session. The rate of bar-pressing in rats injected with cyproheptadine was compared with that of control rats injected with the same volume of distilled water.

Results.—Administration of cyproheptadine decreased the rate of bar-pressing, whereas the rate of bar-pressing remained the same in control rats (Table 1). Behaviourally the animals were in a state of drowsiness after injection of cyproheptadine. There was no incoordination although movements were sluggish.

Discussion.—We (Chakrabarty *et al.*, 1967) reported that cyproheptadine increased food intake and the electrical activity of the feeding centre in cats. With almost the same dose as used in the present investigation, Baxter *et al.* (1970) observed increase in food intake in fasted rats after administration of cyproheptadine. The present investigation shows that cyproheptadine markedly decreased the rate of bar-pressing and produced a state of drowsiness. Chakrabarty *et al.*, (1967) observed that cyproheptadine produced drowsiness in cats with the appearance of high voltage slow waves in the E.E.G. records. The inhibitory effect of drowsiness on feeding behaviour was observed by Pavlov (Wyrwicka, 1967). Drowsiness after administration of cyproheptadine might contribute to the decreased performance of work for food pellets in fasted albino rats. It is not clear from the present study whether this reduction in

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TABLE 1. *Effect of cyproheptadine on the rate of bar-pressing (continuous reinforcement) in rats as compared with controls*

	Total number of bar-presses in 15 minutes	<i>t</i> value
A. Before injection of cyproheptadine	10.8±0.27	Between A & B=10.6
B. After injection of cyproheptadine	5.5±0.42	
C. Before injection of water	11.2±0.34	Between C & D=1.4
D. After injection of water	11.9±0.39	

Control rats were injected with the same volume of distilled water. Values are mean±s.e. Each value indicates mean value of five rats for five days.

performance arose from decreased motivation. Measurement of bar-pressing with a variable interval schedule and of food consumption at different doses of cyproheptadine is now under investigation to find the effect of cyproheptadine on motivated feeding behaviour.

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REFERENCES

- BAXTER, M. G., MILLER, A. A. & SOROKO, F. E. (1970). The effect of Cyproheptadine on food consumption in fasted rat. *Br. J. Pharmac.*, **39**, 229-230.
- BERGEN, S. S. (1969). Appetite stimulating properties of Cyproheptadine. *Am. J. Dis. Child.*, **108**, 270-273.
- CHAKRABARTY, A. S., PILLAI, R. V., ANAND, B. K. & SINGH, B. (1967). Effect of Cyproheptadine on the electrical activity of hypothalamic feeding centres. *Brain Res.*, **6**, 561-569.
- MILLER, N. E. (1957). Experiments on motivation studies combining psychological, physiological and pharmacological techniques. *Science, N.Y.*, **126**, 1271-1278.
- WYRWICKA, W. (1967). Conditioned behavioral analysis of feeding mechanism. In: *Handbook of Physiology. Alimentary Canal*, Vol. 1, pp. 63-78. Washington: American Physiological Society.