Letters to the Editor

A restraining cage for metabolic studies in rats

SIR,—The cage shown in Fig. 1 was developed to enable urine and bile to be collected from rats after oral administration or injection of drugs or other foreign organic compounds. While similar to the cage described by Bollman (1948), it has the advantages of being easily and rapidly adjustable to rats of different sizes and weights and of allowing urine to be collected normally.

The cage is made of 8 mm thick Perspex and consists of an 18 by 35 cm base plate and three 10 cm wide upright pieces. The front piece is 27 cm high and has a spring clip to hold a water bottle. The middle piece is 12·3 cm high and is placed 6 cm from the front piece. Both of these are screwed to the base plate and are grooved to take a slidable food cup made of 3 mm thick Perspex. The end piece including its base is 22 cm high and is movable along a slot in the base plate. The end piece can be moved from 13 to 25 cm from the front piece and is fixed by a set screw. Holes for the drinking tube and the tail of the rat are 2 cm in diameter.

The urine collector, made of stainless steel sheet, is 8 cm long and is placed 3 cm under the floor bars on the end plate. It slopes downward and narrows towards the outlet tube which is 8 cm under the floor.

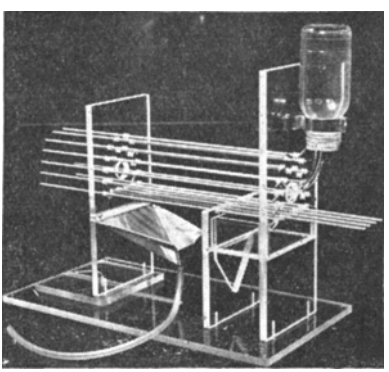

FIG. 1

The floor and sides of the cage are made of 32 cm long stainless steel rods (3 mm diameter welding rods) placed through holes in the upright pieces. The floor is 6 cm wide and consists of six rods placed 12 cm above the base plate. Access to the food cup is obtained by sliding the four inner rods back to the middle upright piece. The sides are formed by rods placed in the outer ring (10 holes, 6 cm high by 6 cm wide) or the inner ring (8 holes, 4·5 cm high by 4·5 cm wide) and the enclosed space can be easily varied by using different combinations of holes. The rods are bent on one end and are prevented from sliding by stretching rubber bands on the opposite ends.

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Reference

Bollman, J. L. (1948). *J. Lab. clin. Med.*, **33**, 1348.

Amphetamine toxity in aggressive mice

SIR,—The toxic effects of amphetamine in mice can be influenced by a number of factors: weight of the animal (Chance, 1947; Fink & Larson, 1962), environmental temperature (Hohn & Lasagna, 1960; Askew, 1961; Fink & Larson, 1962) noise (Chance, 1946, 1947; Cohen & Lal, 1964), the number of animals in a cage (Chance, 1946; Burn & Hobbs, 1957) and painful stimuli (Weiss, Laties & Blanton, 1961).

Mice kept isolated for a long time and showing aggressiveness also show increased sensitivity to the toxic effects of amphetamine.

Male, Swiss, albino mice, weighing about 20 g were used. They were kept usually 6/cage in Makrolon cages with a floor surface of 40 cm^2 at a room temperature of 22° and a relative humidity of 60%.

Aggressive mice were obtained (Yen, Stanger & Millman, 1959) by isolating the animals in individual cages of the same dimensions, but with an opaque wall, for four weeks. After this period, the mice became aggressive and fought amongst themselves when they were grouped.

Dexamphetamine was given intraperitoneally in different doses to both normal and aggressive mice. Each group contained isolated and grouped animals. The toxicity was calculated after 24 hr (Litchfield & Wilcoxon, 1949).

The results are in Table 1.

TABLE 1. TOXICITY OF AMPHETAMINE IN NORMAL AND AGGRESSIVE MICE

Experimental condition	LD50 (and 95% confidence fiducial limits) of dexamphetamine in mg/kg/i.p.	
Normal mice		
— isolated	47·5	(32·7 — 68·8)
— grouped	9·0	(8·0 — 12·0)
Aggressive mice		
— isolated	11·0	(7·3 — 16·5)
— grouped	3·7	(2·6 — 5·3)

A minimum of 48 mice was used for each experimental group.

The toxicity of dexamphetamine is increased in aggressive mice compared with normal mice whether they are isolated or grouped at the moment of the administration of the drug.

Since Halpern, Drudi-Baracco & Bessirard (1962) suggested a correlation between amphetamine toxicity and the level of brain catecholamines, this was investigated, but when brain 5-hydroxytryptamine and noradrenaline was