Department of Pathology,
University of Liverpool,
Liverpool, England.

G. B. EAGLETON
J. WATT

Clatterbridge Hospital,
Bebington, Cheshire,
England.

R. MARCUS

September 12, 1968

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Effect of some psychotropic drugs on mice from a spontaneously aggressive strain

SIR,—The spontaneous or provoked aggressiveness of different animal species has often been used to study the antagonistic action of psychotropic drugs (Valzelli, 1967). In the mouse, a typical aggressiveness is manifested only after prolonged isolation of 3 to 4 weeks, which is technically difficult, or after painful stimulation.

A spontaneous aggressiveness is found in the male mice of the strain CF 1 (IFFA-CARWORTH) more than one month old, which is exhibited by tail wounds in mice grouped in a cage, only one animal, the "boss", remaining unwounded.

Preliminary tests were made to utilize this particular behaviour using the presentation of another animal to an aggressive mouse alone in his cage or in a new cage. However, in these conditions, prompt onset of fighting did not regularly occur.

To suppress the effect of a recent change of territory, we used the following conditions: preliminary isolation for 24 to 48 hr; the presentation of non-aggressive mice (male, Swiss strain, identical weight) according to the following protocol: every 30 min, two mice were successively presented, each animal being withdrawn after the first attack and being left, at the maximum, 5 min in the cage.

Under these conditions, 90% of mice behaved regularly in an aggressive manner, the others being easily eliminated. For the study of psychotropic drugs, we used groups of 8 aggressive mice for each dose. A repetition of the test every 30 min permitted the establishment of the kinetics of any anti-aggressive effect. In the control tests, we regularly obtained 16 aggressions for each animal; the effect of drugs was expressed as a percentage of the diminution of this aggressiveness.

The results are shown in Table 1. Efficacious doses are similar to those found by other experimenters using different methods (see Valzelli, 1967). This method seems to be better from two points of view: utilization of a natural aggressiveness and the technical facility of the test.

TABLE 1. PERCENTAGE OF DECREASE OF AGGRESSIVENESS IN MICE TREATED WITH SOME PSYCHOTROPIC DRUGS

Drug	mg/kg	Route of administration	% age of decrease of aggressiveness in mice treated after (time in min)					
			30	60	90	120	180	240
Diazepam	0·5	i.p.	0	0	0			
	1	,,	37·5	25	18·5	12·5	0	
	2	,,	25	31	37·5	31	18·5	0
	4	,,	56	31	18·5	25	18·5	0
	1	oral	0	0	0			
	2	,,	12·5	18·5	0			
	4	,,	37·5	12·5	0			
	8	,,	87·5	62·5	56	50	50	50
Meprobamate ..	64	oral	12·5	25	25	25	0	
	128	,,	6	6	0	0		
	256	,,	18·5	31	12·5	6		
Chlorpromazine ..	1	oral	25	25	12·5	12·5	12·5	
	2	,,	50	12·5	0			
	4	,,	56	50	50	37·5	25	
	8	,,	68·5	75	81	75	56	31
Haloperidol	0·125	oral	18·5	0				
	0·25	,,	12·5	12·5	6	0		
	0·5	,,	18·5	31	50	50		
Molindone	4	oral	25	12·5	0			
	8	,,	18·5	0	0			
	16	,,	68·5	75	68·5	25	0	
	32	,,	43·5	56	56	50	31	12·5
Imipramine	8	oral	25	31	25	25	37·5	37·5
	16	,,	18·5	12·5	31	31	0	
	32	,,	25	31	43·5	31	6	

Unité de Recherches de
Neuropsychopharmacologie (I.N.S.E.R.M.),
2, rue d'Alésia,
F. 75, Paris 14, France.

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JACQUES-R. BOISSIER
SYLVIE GRASSET
PIERRE SIMON

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