to these; (3) spontaneous blink; (4) eye movement; (5) momentary lifting of the head; (6) sitting up. The mean recovery rates for all groups were compared using *t* tests.

The results are summarized in Table 1. The acute cannabis and chronic cannabis groups required a mean dose of thiopentone to reach the anaesthetic endpoint which was 26–27% smaller than for their respective untreated or chronic Tween controls. The latter did not differ significantly in the dose required. The rate of recovery was indistinguishable in all four groups of animals. One acute cannabis treated animal, however, which was given the same dose of thiopentone as the control group, being therefore more deeply anaesthetized, took 3 times longer to recover.

It is concluded that cannabis potentiates thiopentone anaesthesia in the rabbit, and that the potentiation lasts at least 5 days longer than a period of chronic cannabis administration.

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Brain monoamines and the increase in motor activity in the rat after amphetamine

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Unilateral lesions in the nigrostriatal dopamine pathway of the rat induce asymmetric posture (Andén, Dahlström, Fuxe & Larsson, 1966) which can be converted into vigorous rotation towards the lesioned side by the administration of amphetamine (Ungerstedt, 1969). The present study attempts to demonstrate whether 5-hydroxytryptamine and/or noradrenaline have a function in amphetamine-induced rotational motor activity.

Electrolytic lesions were placed in the following brain areas of albino rats: left substantia nigra, medial raphé nucleus and the left or right mesencephalic reticular formation in the area of the cerebellar-rubral tract. In one group of rats a lesion was placed in the substantia nigra and another in the medial raphé nucleus of the same animal. The rats were observed for signs of asymmetry for up to 42 days after the operations and were administered amphetamine (3 mg/kg i.p.) on three occasions during this period. At the end of the observation period the animals were killed and the concentrations of dopamine, 5-hydroxytryptamine and noradrenaline were determined biochemically in the striatum, hippocampus and forebrain cerebral cortex. Brain sections (25 μm) were stained for the localization of acetylcholinesterase to verify the sites of the lesions.

Rats with lesions in the substantia nigra had reduced dopamine concentrations in the striatum on the lesioned side. Lesions in the medial raphé nucleus reduced the 5-hydroxytryptamine content of the striatum (by 70%), hippocampus (by 62%) and the cerebral cortex (by 55%), while the dopamine in the striatum was unaffected. Rats with lesions in both the left substantia nigra and the medial raphé nucleus often showed marked asymmetry either ipsi- or contralateral to the lesion in the substantia nigra. This asymmetry was potentiated by amphetamine. Rats with a lesion in the medial raphé nucleus were hyperactive but showed no consistent asymmetry, although several showed spontaneous asymmetrical rotation either moving

to the right or the left. The asymmetry in both groups of rats could not be correlated with changes in the 5-hydroxytryptamine concentrations but occurred with lesions that were not quite central and extended into the reticular formation on one or other side. The results suggested that 5-hydroxytryptamine was not involved in the amphetamine-induced rotation seen in rats with unilateral lesions in the substantia nigra but that a similar rotational motor activity could be produced by the destruction of a system other than the nigrostriatal dopamine system.

When a single unilateral lesion was placed in the mesencephalic reticular formation in the area of the cerebellar-rubral tract ipsilateral turning occurred that was potentiated by amphetamine. There was a reduction in the noradrenaline content of the cerebral cortex on the lesioned side (by 80%) while the dopamine in the striatum was unaffected. The effect of amphetamine in this case may be due to stimulation of motor activity on the non-lesioned side with the possible involvement of noradrenergic neurones. It has been suggested that the stereotyped behaviour produced by amphetamine may be due to dopamine release and the locomotor stimulation to the release of noradrenaline (Taylor & Snyder, 1971).

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Effect of oxypertine on anxiety-induced behaviour in baboons

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Oxypertine (Integrin, Winthrop) has been used for some time as an effective antipsychotic agent in schizophrenia, and Hollister (1963, 1971) has shown that it influences preferentially the affective components rather than paranoid tendencies, greatest improvement being recorded in symptoms of anxiety and depressed mood. Recent clinical studies (Jaffe, 1971; Tyson, 1970) have indicated that this drug has anti-anxiety activity after total daily doses of 30–60 mg. The technique of human intrusion into an established colony of baboons (*Papio cynocephalus*) as a means of inducing anxiety and aggression in the leader of the colony has been used to confirm this observation (Beattie, Berry & Lister, 1970; Berry, Beattie & Lister, 1970). Oxypertine, 0·25–4 mg/kg orally, produced a marked suppression of anxiety-induced aggression in the leader of the colony. The effects of the drug were detectable 20 min after dosing and lasted for up to 5 hours. The maximal effects occurred 60–120 min after dosing. No sedation or other undesirable effects were recorded at these dose levels. Slight ataxia was seen after an oral dose of 8 mg/kg oxypertine, though this effect was transient. No signs of sedation were detected at any dose level studied.

These experiments again illustrate the value of the baboon as a test for evaluating anti-anxiety drugs and demonstrate the close correlation between the minimal effective dose in the baboon with the recommended therapeutic dose in man (Table 1).