A SUGGESTION CONCERNING THE ANESTHETIZATION OF THE RAT¹

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Pentobarbital sodium² or chloral hydrate have long been used to anesthetize small animals. Pentobarbital sodium alone is usually not sufficient to keep rats surgically anesthetized for intervals much greater than 30 min (Lumb, 1963) unless repeated supplementary injections are given. On the other hand, profound general anesthesia with chloral hydrate is hazardous because of the rapid and sustained depression of the respiratory mechanism. Although the combined use of these agents, as suggested by Valenstein (1961), reduces the mortality rate below that observed for pentobarbital sodium or chloral hydrate used alone, animals are sometimes lost due to the accumulation of fluid in the lungs during surgery.

To minimize some of these difficulties, a pre-anesthetic agent, chlorprothixene,³ has been used in combination with pentobarbital sodium with remarkably good success. Chlor-

prothixene is much like the phenothiazines (chlorpromazine) which "... depress central and sympathetic nervous activity, exert atropine-like and antihistaminic action, produce sedation, hypnosis and anesthesia, and potentiate other drugs with these specific qualities" (Remmen, Cohen, Ditman, and Frantz, 1962, p. 68). However, the advantage of chlorprothixene over chlorpromazine is the apparent stimulating influence on the respiratory system (Pellmont, Steiner, Besendorf, Bach-told, and Läuppi, 1960).

The dose values listed below were derived from the use of chlorprothixene as a pre-anesthetic agent with 120 albino and 12 hooded rats, 80 to 300 days of age, tested over a period of several months. Best results were obtained when the chlorprothixene was administered intraperitoneally and a period of 15 to 20 min elapsed before intraperitoneal administration of the pentobarbital sodium. If the same syringe is used for both injections, it is advisable to avoid contamination by rinsing the syringe thoroughly before drawing out the prescribed dose of pentobarbital sodium. Occasionally, it may be necessary to anesthetize animals in which a pulmonary disorder has already developed. In such cases, it is satisfactory to administer chlorprothixene as pre-

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²Manufactured by Abbott Laboratories and marketed under the trade name Nembutal.

³Manufactured by Hoffman-La Roche, Inc. and marketed under the trade name Taractan.

Table I
Body-Weight Dosage Chart for Combined Use of Chlorprothixene and Pentobarbital Sodium

Weight	Chlorpro- thixene* (4.4mg/Kg)	Pentobarbital Sodium** (40mg/Kg)	Weight	Chlorpro- thixene	Pentobarbital Sodium
200 g	0.07 cc	0.16 cc	375 g	0.13 cc	0.30 cc
225	0.08	0.18	400	0.14	0.32
250	0.09	0.20	425	0.15	0.34
275	0.10	0.22	450	0.16	0.36
300	0.11	0.24	475	0.17	0.38
325	0.12	0.26	500	0.18	0.40
350	0.13	0.28			

*Based on 12.5 mg/cc concentration.

**Based on 50 mg/cc concentration.

scribed normally followed by a reduction of the prescribed pentobarbital sodium dose (4 mg/100 g body-weight) recommended for non-congested rats to a dose level of 3.0-3.5 mg/100 g body-weight.

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