

5. The emetic action of Urganin on the intact cat is less than that of ouabain or Tincture of Digitalis.

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NOTE ON UROTROPIN MANDELATE.*

PREPARATION AND TOXICITY OF A NEW URINARY ANTISEPTIC.

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The recent discovery that mandelic acid (1) and certain of its salts (2), (3), (4) are efficacious in the treatment of urinary infections makes it desirable to study new salts and combinations of this acid. In this preliminary paper, we wish to report the preparation and toxicity of the hexamethylenetetramine salt which appears to offer possibilities as a superior mandelic acid preparation.

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EXPERIMENTAL.

A solution of 86 Gm. of mandelic acid and 79.2 Gm. of hexamethylenetetramine in 100 cc. of water was concentrated to a volume of 85 cc. and allowed to crystallize in the cold. The crystalline material (63 Gm.) was filtered and recrystallized from 200 cc. of absolute alcohol from which the product was obtained as clumps of small, white, granular crystals (54 Gm.) m. p. 130–132° C. The original mother liquor on further concentration and cooling yielded 88 Gm. more of the salt melting at 129–131° C.

Analyzed for $C_{14}H_{20}O_3N_4$

	C.	H.
Calculated for	57.53	6.85
Found	57.44	6.88

The urotropin mandelate is soluble in alcohol, very soluble in water (5 Gm. dissolve easily at room temperature in 5 cc. of water) and only slightly soluble in ether and acetone. The salt has a sour, not unpleasant taste, and the aqueous solution is slightly acid to litmus.

Samples of this material which have stood for a year show no signs of decomposition. Samples which have been exposed to light and air do, however, possess a slight odor of benzaldehyde.

TOXICITY.

Urotropin mandelate was administered orally by stomach tube in aqueous solution once daily for 20 days to male rats weighing approximately 100 Gm. at the start of the experiment. The rats were weighed daily and the dose administered was calculated per Kg. of body weight. A second group of rats served as controls and received orally by stomach tube 10 cc. of water per day per Kg. of rat. The results are summarized in Table I.

TABLE I.

Rat Number.	Material Administered.	Dose per Kg. Gm.	Initial Body Weight. Gm.	Body Weight after 20 Days' Dosage. Gm.	Gain in Body Weight. Gm.	Total Amount of Material Administered Per Rat. Gm.
21	Urotropic Mandelate	5	95.0	61.0	-34.0	7.18
22	in aqueous	5	106.0	*
23	solution	5	100.0	98.0	-2.0	7.73
24	0.5 Gm. per cc.	5	100.0	84.0	-16.0	8.66
	Average of group	5	100.2	81.0	-17.3	7.86
1	Urotropin Mandelate	2	100.0	130.0	+30.0	4.66
2	in aqueous	2	96.0	124.0	+28.0	4.24
3	solution	2	97.0	103.0	+6.0	3.96
4	0.2 Gm. per cc.	2	99.0	138.0	+39.0	4.42
5		2	99.0	136.0	+37.0	4.58
	Average of group	2	98.2	126.2	+28.0	4.37
		Cc.				Cc.
6	Water controls	10	99.0	145.0	+46.0	24.3
7	Water controls	10	105.0	170.0	+65.0	26.9
8	Water controls	10	97.0	168.0	+71.0	26.6
9	Water controls	10	97.0	179.0	+82.0	27.8
10	Water controls	10	94.0	135.0	+41.0	24.6
	Average of group	10	98.4	159.4	+61.0	26.0

* Rat Number 22 died on 16th day of the experiment.

AUTOPSY.

No macroscopic abnormalities were noted in the group of rats receiving 2 Gm. urotropin mandelate per Kg. daily. However, ulcers of the pylorus, possibly due to the high concentration

of the solution administered, were found in two of the three rats receiving 5 Gm. of the compound per Kg. body weight daily. The pylorus was definitely thickened in all rats receiving the 5 Gm. per kilo dose.

More detailed experiments are in progress and will be reported at a later date.

SUMMARY.

1. The preparation of the hexamethylenetetramine salt of mandelic acid has been described.
2. The toxicity of the hexamethylenetetramine salt of mandelic acid has been determined in rats.

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PRICE PROBLEM WITH PHYSICIANS—U. S. P. AND N. F. SUGGESTIONS.*

BY EMMET WEAVER.¹

I have often wondered whether or not pharmacists who operate stores other than those located in Medical Arts Buildings have the same problems that we do. My store is located in a building where more than three hundred doctors of all kinds have their offices. During the course of the day every one of these doctors passes into my store. Some are easy to contact, while others are very difficult of approach. Some are easily satisfied, while others seem never to be satisfied no matter how hard we try to please them.

Our arrangement is somewhat the same as in most stores, although in some instances we have departed from the orthodox and installed some innovations. The prescription department is located in a balcony, is connected with the main store by means of speaking tubes, and recently we have installed a loud speaker system which may be easily heard in all parts of the store. Three men are on duty in this department at all times and they have nothing before them but prescription problems.

We have on hand a complete stock of pharmaceuticals representing every ethical manufacturer and it is seldom we are without a preparation we should have. The biological department is complete in every respect and is equipped with probably one of the few mechanical refrigeration units in the southwest. This insures that the biologicals will have proper care under very trying conditions. I mention these things in order that you may have a picture of our most important department.

We have the problem of price to the physician. The average doctor will call for a certain preparation ostensibly for his own use. We quote a price of twenty-five per cent under list. Immediately we have the retort it is too high and can be obtained from so and so at such and such a price, which in most cases is way below

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