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On the anti-spasmodic and anesthetic properties of benzaldehyde.

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In several publications appearing elsewhere the author has described his investigations concerning the pharmacological properties of some benzyl esters on the one hand, and of benzyl alcohol on the other.[1]

Following these studies it was but logical to inquire into the properties of benzaldehyde, a chemical substance closely related to the above. Accordingly, experiments were instituted with the object of determining whether benzaldehyde exhibits the anti-spasmodic properties of benyzl benzoate on the one hand, and the local anesthetic properties of phenmethylol or benzyl alcohol on the other.

Benzaldehyde is sufficiently soluble in water (0.2 per cent.) to admit of experimentation on isolated tissues *in vitro*. Experiments with solutions of benzaldehyde on various isolated smooth-muscle organs were found to show that benzaldehyde relaxes the tonus and inhibits the contractions of such organs. Experiments with the drug on whole animals and observations of various organs *in situ* revealed also a sedative effect. Perhaps the chief exception to the rule was in case of blood pressure experiments. It was found that the pressure did not fall after injections of benzaldehyde solutions or suspensions except when large quantities were injected intravenously.

More interesting than the effect on smooth-muscle is the local anesthetic action of benzaldehyde. Experiments with aqueous solutions and more concentrated suspensions or emulsions of benzaldehyde showed that that substance possesses definite and marked local anesthetic properties. Thus it was found that it anesthetizes the sensory nerve endings of the frog's skin, of the

[1] *Journal of Pharmacology and Experimental Therapeutics*, 1918, Vol. 11, pp. 263, 389, 419.

cornea, and of the human mucous membranes. Furthermore, benzaldehyde solutions were found to paralyze also nerve conduction.

The toxicology of benzaldehyde has been worked out long ago, owing to its presence, in combination with hydrocyanic acid, in bitter almonds and other plants. As is well known, benzaldehyde is very little toxic, and can be taken by mouth in large quantities without any injurious effects. For this reason, it is official in the U. S. Pharmacopœia. The interesting local anesthetic properties of benzaldehyde found by the present author throw light upon the pharmacological action of compound tincture of benzoin and some other drugs. Practically, benzaldehyde is not as adaptable to clinical use as benzyl alcohol, because solutions of it are rapidly oxidized to benzoic acid. A detailed description of its pharmacological properties will appear in the *Journal of Pharmacology and Experimental Therapeutics*, and its relation to the therapeutic value of some well-known pharmaceutical preparations will be discussed more fully in a medical historical paper elsewhere.

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A biological test for corpus luteum extracts in vitro.

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The present authors have been engaged for some time in the study of the physiological action of various glandular extracts, and more particularly of their influence on the genito-urinary organs. In the course of these investigations, they have discovered a reaction produced by corpora lutea which it is deemed desirable to report in this place. It was found that aqueous or saline extracts of fresh and dessicated corpora lutea of various animals exert a powerfully stimulating action on the vas deferens and seminal vesicles. Small quantities of such extracts when introduced into a chamber containing a freshly excised vas deferens