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On the antiseptic action of benzyl alcohol.

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In a communication[1] dealing with the pharmacological and therapeutic action of benzyl alcohol as a local anesthetic one of the authors (M.) called attention to the fact that pure benzyl alcohol when injected subcutaneously or intramuscularly was irritant and produced necrosis of tissue. In every case, however, in which this occurred there was never a pyogenic infection noted; the slough being of a sterile character. This, it was remarked, was undoubtedly due to the antiseptic properties of pure benzyl alcohol and the destructive effect was not at all surprising as similar results could be produced by antiseptics in general when injected into the tissues in the undiluted form. It was interesting, however, to investigate further the antiseptic properties of phenmethylol or benzyl alcohol, and especially in dilute form. In the present communication the authors wish to report a few observations on the subject.

Bacteriological studies with solutions of benzyl alcohol in water showed that it is quite antiseptic to a number of microorganisms. Experiments with a 0.5 per cent. solution of phenmethylol were found to kill cultures of Friedländer bacillus within nineteen hours. The same strength of the drug killed *pyocyaneus* cultures within twenty-four hours and growths of *bacillus coli communis* in seventy-two hours. Experiments with a 1 per cent. solution of benzyl alcohol gave evidence of even more marked and rapid bactericidal action.

A large number of clinical histories seem to confirm the authors' observations of the antiseptic properties of benzyl alcohol. A study of over 200 post-operative histories of patients on whom operations were performed with the use of benzyl alcohol as a local anesthetic showed that in all cases the wounds healed rapidly

[1] Macht, *Jour. of Pharmacol. & Exp. Therap.*, 1918, XI., 263.

and without any infection, such as was occasionally noted in cases in which ethyl chloride had been used. In all the above cases the concentrations of the benzyl alcohol employed ranged from 0.5 per cent. to 4 per cent. and such solutions were never found to be noticeably irritant to the tissues. As far as the authors have been able to learn none of the other commonly used local anesthetics such as cocaine, novocain, alypin, etc., can be said to possess antiseptic properties. It is therefore interesting to call attention to the antiseptic properties of benzyl alcohol as a desirable concomitant of its anesthetic action.

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On the action of opium alkaloids on Trypanosoma brucei.

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In a paper on the "Toxic Action of Opium Alkaloids Individually and in Combination with Each Other on Paramecia," by Macht and Fisher,[1] it was shown that some of the opium alkaloids were very toxic for that organism while others produced very little effect on it. It was found that the benzyl-isoquinolin group of alkaloids of which papaverin is the principal representative killed paramecia very quickly; whereas the pyridin-phenanthrene group of which morphin is the principal member was comparatively non-toxic. A further analysis of the papaverin action proved that the toxicity of that alkaloid was to be ascribed to the presence of the benzyl radicle in its molecule. Following the above investigation, it was interesting to inquire into whether the opium alkaloids are also toxic for other forms of protozoa, and especially for trypanosomes. The present authors have accordingly undertaken the study of the action of various opium alkaloids and their derivatives on *Trypanosoma brucei.* The organisms were obtained through the kindness of Dr. Wade Brown, of the Rockefeller Institute for Medical Research.

[1] Macht and Fisher, *Jour. of Pharmacol. and Exp. Therap.*, 1917, x., 95.