

U. S. P., cannot be relied upon to destroy *S. aureus* in the presence of the concentration of organic matter used in the above experiments. However, it rated considerably better against *E. typhosa*. On the other hand, silver protein strong, U. S. P., was effective against both organisms but rated slightly lower than the non-colloidal compounds.

## 9941

### Inefficacy of Prontylin in Experimental Tuberculosis.

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The interest in chemotherapy aroused by the discovery of the therapeutic value of prontosil and related compounds has been applied to the study of their effects against many infectious agents. At least one prior report has been concerned with the chemotherapy of tuberculosis with Prontylin. Rich and Follis<sup>1</sup> administered the drug as dry crystals by mouth to guinea pigs inoculated subcutaneously, and sacrificed both treated and control animals 5 or 6 weeks after inoculation. Pathological surveys revealed less extensive lesions in treated than in control animals and indicated a possible beneficial effect of the drug.

In our experiments we have employed the intracerebral route of inoculation,<sup>2</sup> by means of which acute disease and death are induced in a short time by a small number of virulent organisms. The criterion of efficacy was survival-time following such inoculation.

Twenty healthy male guinea pigs were divided into 2 groups of 10 according to weight. Individual weights of 9 animals in the 2 groups were identical, and the mean weights of the 2 groups were 344 and 350 g. The twenty animals were given intraabdominal injections of Seconal,\* 20 mg per kg, to induce anesthesia, and were then inoculated intracerebrally with 0.00001 mg (moist weight) of a human strain of tubercle bacilli (designated Lockett), isolated in this laboratory. Beginning 24 hours after inoculation 10 animals

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<sup>1</sup> Rich, A. R., and Follis, R. H., Jr., *Bull. Johns Hopkins Hosp.*, 1938, **62**, 77.

<sup>2</sup> Smithburn, K. C., *J. Exp. Med.*, 1936, **64**, 771.

\* Sodium propyl-methyl-carbonyl allyl barbiturate, Lilly, supplied by Eli Lilly and Company, through Dr. G. F. Kempf, Indianapolis City Hospital.

were given 200 mg of Prontylin† in 10 cc physiological saline daily by intraabdominal injection. It was found that a solution of this strength could be prepared by heating the salt solution, dissolving the drug, and cooling to body-temperature. Injections were then made immediately before recrystallization took place. This dose was given daily for 23 days, at which time it was increased to 250 mg in 12.5 cc saline solution. The latter dose was given daily for 7 days, when treatment was discontinued because the animals were not benefitted by it.

The first death in the control group occurred on the 24th day and the last on the 51st day following inoculation. In the treated group the first death occurred on the 12th and the last on the 49th day. The mean survival time for the 2 groups was  $34.1 \pm 1.9$  and  $30.8 \pm 1.6$  days respectively. This difference is not significant. Gross necropsy-findings in the 2 groups were remarkably similar.

The difference in the methods we have used and those referred to above<sup>1</sup> are fourfold. We have used fewer organisms and have inoculated intracerebrally rather than subcutaneously; we have given the Prontylin intraabdominally in solution rather than by mouth; and lastly, we have relied upon survival-time to determine the effect. Since this drug is effective in certain other bacterial infections of the meninges, we do not consider that the route of inoculation invalidates this experiment. Moreover, survival-time after intracerebral inoculation of tubercle bacilli can be influenced by other means to be reported later. However, the possibility cannot be excluded that Prontylin may be more effective by mouth than by parenteral injection.

*Conclusion.* Under the conditions of our experiments, Prontylin exerted no beneficial effect in experimental tuberculosis.

## 9942 P

### Effect of Age of the Host on Resistance to Tuberculous Infection.

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In order to standardize procedures for virulence-tests, or tests on immunization, it is necessary to know the possible sources of varia-

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† *p*-amino-phenyl-sulfonamide, supplied by Winthrop Chemical Company, Inc.