including the 2 controls, showed the presence of H agglutinins for the strain employed in final dilution ranging from 1:2560 to 1:5120 when tested about 2 weeks after the termination of the experiment. Agglutination of O antigen ranged from 1:10,240 to 1:40,960 with all of the sera tested.

Of the 16 untreated controls 12 showed positive blood cultures at daily intervals up to the time of death; blood cultures of the 4 surviving animals were negative throughout. Of the 72 treated animals positive blood cultures were observed at daily intervals up to the fourth day of treatment in 50 or 70%; thereafter they were sterile in the case of those that subsequently succumbed, as likewise in those surviving.

Summary. (1) Sulfanilamide, sulfapyridine and sulfathiazole were slightly effective in the treatment of *B. typhosus* septicemia of rabbits. (2) Sulfanilamide was found most effective followed in order by sulfapyridine and sulfathiazole. (3) Recovery was apparently aided by the rapid production of antibodies (agglutinins).

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Failure of Sulfonamide Compounds in Treatment of Experimental *B. diphtheriae* (*Corynebacterium diphtheriae*) Infections of Guinea Pigs.

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To the best of my knowledge the effects of the sulfonamide compounds in the treatment of experimental *Corynebacterium diphtheriae* infections have not been reported upon and no reports are available upon their use in the treatment of diphtheria of human beings. As herewith reported, neoprontosil, sulfanilamide, sulfapyridine and sulfathiazole by oral administration to guinea pigs inoculated with 1 to 2 minimal lethal doses of the virulent bacillus have proven ineffective insofar as mortality is concerned although it is reasonable to assume that their administration to human cases of diphtheria may be helpful in combatting secondary infections with hemolytic streptococci, pneumococci and *Staphylococcus aureus.*

The virulence of the strain of *Corynebacterium diphtheriae* selected was such that subcutaneous injection (abdominal) of 0.6 to 0.8 cc of a suspension carrying about 1000 million per cc harvested

in saline solution from 48-hour blood agar cultures, to guinea pigs weighing from 220 to 255 g proved lethal in about 4 days with the production of local lesions of edema and necrosis. Broth cultures were not employed in order to avoid the inoculation of preformed exotoxins.

Guinea pigs within the same age and weight range were then inoculated with 1 cc of the suspension (about 1000 million bacilli) by subcutaneous injection in the median abdominal line, the dose being from 1 to 2 minimal lethal doses in order to avoid overwhelmingly severe infections. The compounds were administered orally in dose of 0.05 g per animal corresponding to about 0.2 g per kg. The first dose was given immediately after inoculation with the second dose 4 hours later. Thereafter the compounds were given at 9 a.m. and 3 p.m. daily for 4 additional days corresponding to a total dosage of each compound of about 2 g per kg.

The results are summarized in Table I. Of 8 untreated controls 2, or 25%, survived, although showing local lesions of edema and necrosis. As shown in the table, none of the sulfonamide compounds employed were therapeutically effective insofar as survival was concerned. The degree of local edema with and without necrosis varied considerably among the treated and untreated animals so that no deductions on the therapeutic effects of the compounds on them are permissible. Cultures were made of the local lesions of 4 animals from each series, including the controls, on the second, fourth and seventh days after the institution of treatment and all were positive.

TABLE I.

Sulfonamide Compounds in Treatment of Experimental *Corynebacterium diphtheriæ* Infections of Guinea Pigs.*

Compounds†	No. animals	Survivals; Days						% survivals
		1	2	3	4	5	7	
Neoprontosil	8	8	8	6	2	1	1	12.5
Sulfanilamide	8	8	8	7	4	2	2	25
Sulfapyridine	8	8	7	6	3	2	2	25
Sulfathiazole	8	8	8	8	6	4	3	37.5
Controls	8	8	6	4	2	2	2	25

*Weights 220 to 255 g; inoculated subcutaneously with 1 cc of suspension carrying 1000 million per cc.

†Dose 0.05 g per animal orally; first dose given immediately after inoculation; second dose 4 hr later; thereafter 9 a.m. and 3 p.m. for 8 additional doses.

Summary. (1) Neoprontosil, sulfanilamide, sulfapyridine and sulfathiazole by oral administration proved ineffective in the treatment of experimental *Corynebacterium diphtheriae* infections of guinea pigs insofar as survival was concerned.