Summary. It has been shown that the addition of a weakly alkaline, buffered solution of safranin to a solution of commercial insulin yields an insulin-containing precipitate which, when injected in suspension into animals, causes hypoglycemia of gradual onset and extended duration. The blood sugar curve so produced is similar to, but not quite so depressed as, that given by the injection of an equal amount of protamine insulin suspension. The redissolved precipitates of safranin and protamine insulin are considerably inferior to the suspensions in retarding the fall of the blood sugar and/or prolonging the period of hypoglycemia.

9022 C

Bactericidal Effects of Vapors from Crushed Garlic on *Mycobacterium leprae.*

ROBERT S. MCKNIGHT AND CARL C. LINDEGREN.

From the Department of Bacteriology, College of Letters, Arts and Sciences, University of Southern California, Los Angeles.

Walton, Herbold, and Lindegren[1] showed that the vapors from freshly crushed garlic were germicidal to certain organisms. The present paper reports the effects of these vapors on different strains of acid-fast and non-acid fast *Mycobacterium leprae.*

Petri dishes containing 3% glycerin nutrient agar were warmed in an incubator at 37.5°C. for about 2 hours and a heavy suspension of organisms was then spread on the agar. After inoculation, one gram of garlic, freshly ground in a meat-chopper, was placed on the inverted cover of the petri dish below (but not in contact with) the agar. The dish was sealed with a large rubber band and placed in the incubator at 37.5°C. The fumes from the garlic were allowed to fill the air-space below the agar surface. The amount of volatile substances transported to the agar was varied by exposing the agar to the fumes of the garlic for different lengths of time. Intervals of from one minute to 2 hours were used. At the end of each interval, the dish was removed from the incubator and the cover containing the garlic replaced by a sterile cover. Then the dish was returned to the incubator and after 3 days' incubation the amounts of growth on the various plates were compared (Table I). The heaviest growth was given a score of 4. If the treated plates

[1]Walton, L., Herbold, M., and Lindegren, C. C., *Food Research,* 1936, **1**, 163.

TABLE I.
Comparative Amounts of Growth of *Mycobacterium leprae* on Agar Plates Exposed to the Vapors from One Gram of Crushed Garlic at 37.5°C.

Characteristics of Strains	Exposure in minutes								
	0	1	2	4	8	16	32	64	128
Non-acid-fast Yellow	4	4	4	4	2	1	2		
	4	4	4	4	2	1	1		
	4	4	4	4	3	2	1		
	—	4	4	4	3	1	1		
	4		4	—	—		1	0	
	4		—	3	3		2	1	
	4		4	4	—		1	0	
	4		4	4	4		2	0	
	4		4	4	—	0	0	0	0
	4		4	3	2	1	0	0	0
	4		4	2	1	0	0	0	0
Non-acid-fast Orange	4	4	3	3	3	2	0		
	4	4	4	3	3	2	0		
	4		—		2		1	0	
	4		4		—		2	1	
	4		3		3		1	0	
	4		3		3		1	0	
Acid-fast Yellow	4	4	4	4	4	2	2	0	
	4	4	4	4	3	3	1	0	
	4	--	4	4	4	3	1	0	
	0		4	3	1	0	0	0	0
	0		4	4	2	2	1	0	0
	0		4	4	2	0	0	0	0
	4		4	4	4	3	1	—	
	4		4	4	4	3	2	0	
	4		4	4	4	—	2	0	

showed about three-fourths of this amount, they were scored 3; if about one-half, they were scored 2; if about one-fourth, they were scored 1; if no growth occurred, they were scored 0.

A non-acid-fast yellow strain of *M. leprae* obtained from Dr. T. D. Beckwith, a non-acid-fast orange strain from Dr. J. F. Kessel, and an acid-fast yellow strain from the American Type Culture Collection were used. As indicated in Table I, the tests were run in 8 batches. In each batch, sets of either 3 or 4 plates were treated at each of the different time exposures. Each row across the page indicates the scores of one of the sets of plates in each batch. The control plates were usually spread last. In one batch using the acid-fast yellow strain, it is clear that spreading of the control plates was forgotten. A blank space indicates that no test was made. A dash indicates that a contamination made it impossible to estimate the amount of growth accurately.

On plates exposed for 32 minutes, growth was markedly inhibited and practically no growth occurred on plates exposed for an hour or more.

The writers are indebted to Mr. Ernest C. Phillips for performing many preliminary experiments which were consistent with those herewith described.

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Body Temperature and Plasma Lipids in Rabbits.*

ELDON M. BOYD, J. H. ORR AND G. B. REED.

From the Departments of Pharmacology and of Bacteriology, Queen's University, Kingston, Ontario, Canada.

Chauffard, Laroche and Grigaut demonstrated that there was an inverse relationship between body temperature and serum cholesterol in patients afflicted with typhus. This observation has been repeatedly confirmed in practically all of the commoner febrile conditions of man and of some animals. Boyd,[4] in whose paper a comprehensive bibliography appears, showed that not only did febrile temperatures affect plasma cholesterol but also the concentration of other lipids in both plasma and in the red blood cells. Similar data were simultaneously published by Stoesser and McQuarrie.[7, 8, 9] This work has proven that during an acute febrile condition there occurs a lipopenia (term introduced by Boyd[4]) or decreased concentration of blood lipids and that the decrease occurs in plasma and not in the red blood cells in which latter the lipid values may actually increase.

The present paper is concerned with further research into the significance of this febrile lipopenia and in particular represents an attempt to evaluate the effect of temperature *per se*. McQuarrie and Stoesser[6] reported that no change occurred in the value of

* This work was aided financially by the Alice F. Richardson Fund of the Kingston General Hospital. The authors wish to thank Messrs. J. W. Stephenson and E. A. Watkinson for technical assistance.

4 Boyd, E. M., *Canadian Med. Assn. J.*, 1935, **32**, 500.

7 Stoesser, A. W., PROC. SOC. EXP. BIOL. AND MED., 1935, **32**, 1324.

8 Stoesser, A. V., PROC. SOC. EXP. BIOL. AND MED., 1935, **32**, 1326.

9 Stoesser, A. V., and McQuarrie, I., *Am. J. Dis. Child.*, 1935, **49**, 658.

6 McQuarrie, I., and Stoesser, A. V., PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 1281.