production is of more than theoretical interest since it is these antibodies which may be of the greatest importance in combatting infection by the more virulent strains of organisms.[1, 9] On the other hand, should no results of immediate practical importance result from the extraction of the 2 labile substances, the value of the sonic method as a research tool in immunology and bacteriology has already been demonstrated. For example, known methods of mechanical disintegration, as in the ball mill, are too slow in their action to enable the extraction of constituents which deteriorate completely during three days of storage at low temperature. Only by rapid sonic disintegration combined with lyophile preservation has it been possible to obtain the new *S. hemolyticus* material in sufficiently stable form for use in experiments which require more than a day for completion.

8730 C

Myohemoglobin Content of the Hypertrophied Heart of the Anemic Rat.

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The anemia which develops in rats raised on an iron and copper-free diet is accompanied by marked cardiac hypertrophy and significant chemical changes in the myocardium. A study of the muscle hemoglobin in the hearts of these animals is presented in this paper.

Most of the methods used were described in an earlier report.[1] In the present series, the animals were quickly opened along the mid-line while under light ether anesthesia, a cannula inserted into the inferior vena cava, and the point forced up past the level of the diaphragm. The heart was thus perfused with normal saline containing 5% glucose at 37°C. until it ceased to beat. At this time, the fluid returning from the heart was practically free of blood hemoglobin as indicated by lack of color. The ventricles were then carefully severed from the body at the atrioventricular ring. They were opened immediately, blotted dry, weighed and analyzed for muscle hemoglobin by the procedure described by Whipple.[2] Blood

[9] Day, H. B., *J. Path. and Bact.*, 1933, **37**, 169.

[1] Cowan, D. W., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 417.

[2] Whipple, G. H., *Am. J. Physiol.*, 1926, **76**, 693.

hemoglobin determinations were made by the method of Sahli. There were 14 anemic rats and 15 littermate controls. The results are shown in Table I.

TABLE I.
Data Comparison of Anemic Rats with Litter Mate Controls. Each Value Is Followed by Its Standard Deviation.

	Litter mate controls	Anemic rats
Blood hemoglobin, %	16.5 ± 1.1	4.1 ± 0.8
Ventricular wt., mg.	429.3 ± 76.3	820.1 ± 136.4
Body wt., gm.	160. ± 28.	92. ± 19.
Ventricular wt./body wt. ratio	2.7 ± 0.38	9.07 ± 1.45
Muscle hemoglobin in ventricles, mg. %	389. ± 60.	363. ± 58.
Total muscle hemoglobin in ventricles, mg.	1.63 ± 0.14	2.90 ± 0.25
Total muscle hemoglobin in ventricles, mg./100 gm. body wt.	1.04 ± 0.18	3.27 ± 0.67

The concentration of muscle hemoglobin in the myocardium is not significantly different in the 2 series. The total amount of muscle hemoglobin is nearly twice as great for the anemic rats, owing to the great hypertrophy present in these cases. It is evident that in spite of the severe anemia, growing rats have the ability to store manufactured muscle hemoglobin in their hearts in amounts not only sufficient to meet the demands of normal heart growth, but indeed to maintain normal muscle hemoglobin concentration during the development of abnormal hypertrophy.

8731 C

Staphylococcal Antihemolysin-Titers Following Staphylococcal Toxoid in Chronic Osteomyelitis.

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The progress of immunization following the therapeutic administration of staphylococcal toxoid to patients with staphylococcal infections may be followed in the laboratory by the titration of staphylococcal antitoxin in the sera of these individuals. It is the purpose of this communication to record the serologic response, as measured by repeated titrations of antihemolysin (antitoxin?), in a series of 38 patients with chronic osteomyelitis who received therapeutic injections of staphylococcal toxoid.