

Greater uniformity of lesions could be obtained if they were made severe rather than slight or moderate. Where these appeared of unequal severity, the worse one was chosen for treatment and the other kept as a control, to keep possible errors on the side of conservatism. In severe corrosions the usual gray area appeared, but within one to two hours, sloughing occurred readily, so as to reveal the underlying muscle, covered only by a clear, more rarely a bloody serous exudate. Twenty-four hours later this had apparently condensed to form a hard crust and the skin margins were bound down and indurated. Healing proceeded by granulation under the crust, the final result being in every case a surprisingly insignificant scar.

*Conclusions.* 1. Infiltration of 3% calcium gluconate within 8 hours after intense application of hydrofluoric acid caused a significant shortening (about 30%) in healing time and a significant reduction (about 50%) in the incidence of suppuration. The latter cannot alone wholly account for the quicker healing. 2. Multiple treatment at 24-hour intervals is no more effective than a single treatment. 3. Rats appear to show a much quicker and less complicated recovery from severe hydrofluoric acid corrosion than humans. 4. The lesions heal characteristically by granulation under a hard crust.

We are indebted to Professor Torald Sollmann for his important suggestions.

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#### **Rise in Serum Copper Following Oral Administration of Copper Sulfate.**

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In a recent publication<sup>1</sup> we suggested that copper may be transported in the serum. The data presented in this paper support this conception. Using dogs as experimental subjects, we have been able to demonstrate a substantial increase of copper in the serum following oral administration of aqueous solutions of copper sulfate.

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<sup>1</sup> Sachs, A., Levine, V. E., Andersen, A. C., and Schmit, A., in press.

The dogs were kept in individual cages and were maintained at a constant weight on a Purina chow diet. They were fasted for 18 hours, following which the basal copper level in the serum was determined from hour to hour for 7 hours. The results indicate that fasting serum copper values remain practically constant. Several days later, at the end of another 18-hour fast, a sample of serum was collected. Then the copper sulfate ( $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ ), dissolved in approximately 400 cc of distilled water, was administered immediately by stomach tube. Serum samples were collected one half hour later and at hourly intervals thereafter for 5 hours. The serum copper concentrations were determined by the method previously described<sup>1</sup> except that final color comparisons were made with a photoelectric colorimeter.

The effect of feeding varying amounts of copper sulfate is illustrated in Fig. 1. In each case the serum copper was raised definitely above the basal level. As the curves indicate, the larger doses of copper sulfate produced a more sustained rise in the serum copper than the smaller doses. The dogs retained 8 mg of  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  per kilo very well, but doses as large as 16 mg per kilo usually caused emesis. We shall determine the maximum dose which can be retained and which will at the same time produce the maximum rise in serum copper. We also plan to determine the site of absorption of copper from the gastrointestinal tract.

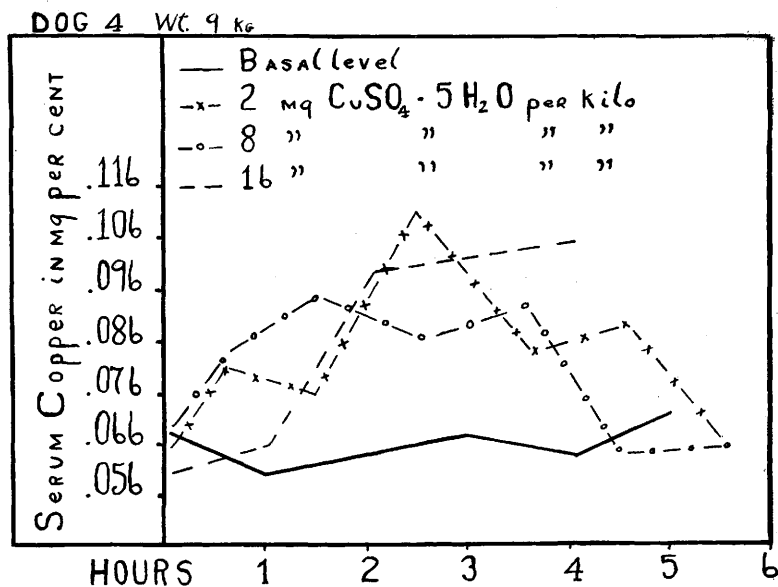


FIG. 1.