terella monocytogenes did not produce complement-fixing or flocculating reagins for antigens commonly employed in the serum-diagnosis of syphilis. (2) Both produced complement-fixing antibody and agglutinins for antigens of homologous strains of *Listerella*. (3) Neither strain produced agglutinin for sheep erythrocytes in the immunization of rabbits. (4) Both strains produced moderate leucocytosis mainly due to an increase of polymorphonuclears with a slight increase of the monocytes in some of the animals.

10841

General Anesthesia by Cooling.

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It is often desirable to induce in animals a general anesthesia for operative purposes without the use of drugs. This is particularly true where, as in the study of chromatophores, the effectors are especially open to drug stimulation and may remain responsive to minute amounts of the reagent for relatively long periods of time. As an effective means to a drugless anesthesia cold is very convenient. Fishes, amphibians, and reptiles may be immersed in cracked ice and water or simply in cracked ice till they are thoroughly chilled, which occurs ordinarily in from 10 to 15 minutes. They will then remain quiescent either on an operating board or on a bed of cracked ice till an operation can be performed. From this treatment the animals recover quickly at room temperatures and are soon quite free from any after-effects of the cold. They may, therefore, be tested, if this step is desirable, almost at once, for they contain no residual reagent, the complete disappearance of which must be awaited before further work can be done.

For some time fresh-water and salt-water fishes have been treated successfully in the Harvard Laboratories by this method (Parker,[1] Abramowitz,[2] Osborn[3]). Recently Abramowitz has employed it on a larger scale in that dogfishes as much as a meter in length have been immersed in a tub containing cracked ice and seawater and there

1 Parker, G. H., *Proc. Am. Philos. Soc.*, 1937, **77**, 223.

2 Abramowitz, A. A., *Science*, 1937, **85**, 609.

3 Osborn, C. M., *J. Exp. Zool.*, 1938, **79**, 309.

stupefied preparatory to an operation. Frogs are of course easily anesthetized either in cracked ice or in ice and water (Parker and Scatterty[4]), and lizards may be chilled with cracked ice (Parker[5]). Thus far we have treated only cold-blooded vertebrates, but Pfeiffer[6] has applied the method to newly-born rats. For some time after birth the young rat fails to maintain a high, constant temperature. During this period Pfeiffer found that it could be chilled in an electric refrigerator and after it had become motionless it could be satisfactorily operated upon on a bed of ice. On warming such a rat, it again became active and was received by its mother. This procedure appears to have been first used by Wiesner.[7]

10842 P

Relation of Concentrations of Free to Conjugated Sulfapyridine in the Blood of Patients.

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In the course of a clinical investigation of the use of sulfapyridine in the treatment of pneumonia[1] and other conditions, we were considerably interested in the practical problem of dosage in relation to the level of the drug obtained in the blood. Patients were given varying amounts of the drug according to weight, 1 or 1.5 grams per lb per 24 hr, in order to study their blood levels and to compare the influence of various levels on therapeutic response. Six hundred and fourteen determinations* were made of free sulfapyridine content of the blood of 126 children. On the basis of the findings of these determinations we concluded, as will be reported elsewhere, that *groups* of patients of various ages, receiving equivalent amounts of sulfapyridine according to their weights have, on the average, approx-

4 Parker, G. H., and Scatterty, L. E., *J. Cell. Comp. Physiol.*, 1937, **9**, 297.

5 Parker, G. H., *J. Exp. Biol.*, 1938, **15**, 48.

6 Pfeiffer, C. A., *Am. J. Anat.*, 1936, **58**, 195.

7 Wiesner, B. P., *J. Obst. Gynæcol. Brit. Empire*, 1934, **41**, 867.

* Marshall's method adapted for use with the Evelyn colorimeter was used in making the determinations.

Merck and Co. kindly furnished the sulfapyridine (Dagenan).

1 Wilson, A. T., Spreen, A. H., Cooper, M. L., Stevenson, F. E., Cullen, G. E., and Mitchell, A. G., *J. A. M. A.*, 1939, **112**, 1435.