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ABSTRACTS OF THE COMMUNICATIONS.

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1 (411)

The influence of alcohol and other anesthetics on developing embryos.

By **CHARLES R. STOCKARD.**

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In previous experiments I had found magnesium salts to induce peculiar defects in the eyes of fish embryos. When eggs are subjected to such solutions, a large percentage of the embryos present all degrees of the cyclopean defect, while other individuals develop a normal eye on one side of the head with its mate on the other side small and defective or entirely absent. This latter condition was termed *Monophthalmicum asymmetricum* to distinguish it from true median cyclopia.

It seemed probable that these defects were due to the anesthetic properties of the magnesium solutions and to test this supposition eggs have been treated with several other anesthetics; alcohol, chloroton, chloroform and magnesium again. All of these act particularly upon the developing central nervous system and sense organs. Other parts of the body are somewhat delayed in their rates of development but are normal in appearance.

Alcohol gave the most decided and interesting results. When used in certain strengths it causes from 90 to 98 per cent. of the embryos to show typical defects in the head region. The eyes are either cyclopean, asymmetrically monophthalmic, both small, poorly formed and deeply buried in the head or entirely absent.

The ears are normal in many individuals but not infrequently both are poorly developed and often one is scarcely formed. When one eye is large and the other small or absent the well formed ear is usually on the side with the more perfect eye. The general growth rate is retarded and spina-bifida sometimes occurs.

Chloroton, chloroform and ether are more general in their anesthetic effects, the entire embryo being unusually depressed. In all of these substances, however, if the concentration be delicately regulated the eye defects so common in alcohol and magnesium may be produced.

Cyclopia and other eye defects, in fish embryos at least, are produced by lessening the developmental energy at certain critical stages. This is readily accomplished by treating the developing embryo with anesthetics.

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On the variation in the resistance of human erythrocytes in disease to hemolysins, with especial reference to syphilis.

By **RICHARD WEIL.**

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The observations herein presented have to do with the alterations in the reaction of the red blood cells to the action of certain hemolytic agents. This alteration in the resisting power of the red cells may be either in the direction of a diminution or an increase in their resistance; increased resistance, however, is apparently a much more striking and demonstrable feature than is the reverse, and seems to me, furthermore, to be of considerable importance from the standpoint of immunity. My observations comprise a study of almost five hundred human cases, normal and diseased, in which the red cells were subjected to the action of various lytic agents. Among the agents so studied were various acids and alkalies; certain metallic salts, such as bichloride of mercury, which possesses a well-known hemolytic power; certain vegetable hemolysins, such as saponin, digitonin and cyclamin, and certain animal venoms, such as rattlesnake and cobra venom. The results obtained from the study of the inorganic lysins have not been such that they could be reduced to a definite correlation with any given