

SCIENTIFIC PROCEEDINGS

ABSTRACTS OF COMMUNICATIONS.

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Pervaporation, perstillation and percrystallization.

By **PHILIP ADOLPH KOBER.**

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In the course of some experiments on dialyzation, my assistant, Mr. C. W. Eberlein, called my attention to the fact that liquid in a colloidion bag, which was suspended in the air, evaporated, although the bag was tightly closed. At first we were inclined to ascribe it to evaporation through a small aperture at the top of the bag, but further experiments and especially the speed of evaporation soon forced us to the conclusion that the aqueous vapor is given off through the membrane, as though the water were suspended as a solid without any membrane present. This phenomenon we have named pervaporation. The speed of this pervaporation is so great that with ordinary heating facilities such as a Bunsen flame and electric heaters, it has been impossible to heat water in a collodion container to a boil.

Distillation by means of pervaporation we have called perstillation. When a dialyzable solute within the membrane container reaches saturation, it crystallizes on the outside of the membrane. This phenomenon we have named percrystallization. In order to show some of the possible uses of these phenomena, we described a number of experiments and discussed the theoretical considerations.

For details see April number, Journal American Chemical Society, 1917.

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A contribution to the metamorphosis of skin in amphibians.

By **EDWARD UHLENHUTH.**

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Gudernatsch has shown that thyroid is able to induce metamorphosis in frog and toad larvæ, if they are fed on this gland. The effect was so striking that metamorphosis sometimes started five days after thyroid was fed.

From these experiments it is however not certain that thyroid is the substance which under normal conditions causes metamorphosis, nor has it been proven by these experiments that an agent similar to its physiological character is involved in normal Amphibian metamorphosis.

In a series of experiments it has been shown, that also under normal conditions some agent must be furnished to the organs of the animal in order to bring about metamorphosis of these organs. It has turned out that the organs themselves are unable to produce this agent and that it is the body which produces the agent, *i. e.*, some place or organ in the animal's body remote from the organs examined. If this agent is prevented from reaching the organ, it will not metamorphose.

The general method of these experiments is to remove the organs from the animal's body, before the body begins to produce the agent and to graft it to another animal in which the agent will not be produced for a long time. By means of this metamorphosis of the organ can be inhibited for as long as the new host does not metamorphose; in this way metamorphosis could in some cases be delayed by seven months. Until now the eyes, the skin and the gills—the latter by Kornfeld—were studied in this way. Today we will report mainly on experiments performed on the skin of *Amblystoma punctatum*.

In order to make you familiar with the changes occurring in the skin of this animal during development I will show a few pictures.