actually some "anti-auxin," and that the growth hormone is an antiflowering hormone when present in more than optimum concentration. At still lower concentrations, auxin may limit flowering because it is present in insufficient concentration to support the essentially vegetative growth of flower parts (*4*).

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Comments and Communications

On Geochemical Effects of Freezing

It has been shown that growing ice as it forms from dilute (10^{-2} to 10^{-6} *M*) solutions of many ionic compounds selectively incorporates ions of one sign into the nascent surface layers (*1, 2*). The effect is sensitive to the nature and abundance of ions in the solution, but it is readily exhibited by a number of different inorganic salts which have been tried in laboratory samples. As the ice surface develops beyond the point of attachment of the impurity ion, the space charge in the ice and in the solution is neutralized by the circuitous passage of a counter electric current, leaving the impurity centers distributed uniformly throughout the bulk ice. In many freezing situations the process produces an effective chemical action due to the primary ion separation, and to the associated electrochemical action of the current in the unfrozen electrolyte.

A consideration of the geochemical significance of these phenomena as they occur in nature should not be overlooked. The alkali halides in solution are such as to give conditions of high selectivity in the process, and CsF will serve to illustrate the action and indicate the quantities involved.

A solution of CsF (10^{-5} *M*) will result in the placement of approximately 10^{16} fluoride ions per cubic centimeter of ice, rejecting almost completely the cesium ions. Calculations yield the following quantities.

Population of fluoride ions relative to water molecules in the ice	$1:3\times10^{6}$
H_2 liberated/m^3 of ice frozen	1/120 gmol
O_2 liberated/m^3 of ice frozen	1/240 gmol
Number of repeated freezings required to dissociate ⅓ of the water involved	10^{6}
Depth of world ice formation to liberate H_2 equal to that present in the atmosphere (optimum conditions)	3 m

These effects may influence also the presence of heavy ions in terrestrial waters where freezing occurs. Consider, for example, a solution of cupric halides. Many conditions of freezing in nature will provide a suitable electrode configuration to effect an electrolytic deposition of copper from the solutions. Such depositions of copper may be responsible for some native copper occurrences.

In attempting to estimate the geochemical consequences of natural freezing, it is important to point out that knowledge of the processes here suggested has been developed for the most part from laboratory tests on controlled impurities. The measurements which are made on growing ice in the laboratory are sensitive to types of impurities and to certain contaminants such as excess CO_2 which prevent or obscure the action illustrated. Sea water has been used in laboratory tests, however, and the basic electrical manifestations have been verified for this substance. One can say with reasonable certainty that the freezing of water is a significant agency for influencing the concentration and nature of the solute materials of terrestrial water.

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Optical Masking Device for the Aminco-Stern Electrophoresis Apparatus

The photographic recording of electrophoretic patterns is often impeded merely because of the optical properties of the material under examination. Thus, in blood serum, portions of the curve may be almost invisible due to coloration caused by partial hemolysis, or the albumin peak may be so sharp that it is impossible to obtain a photograph which includes the tip of the peak without overexposing the remainder of the curve. A system which allows for masking of

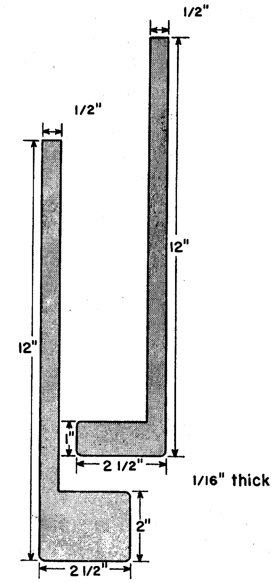

FIG. 1. Masks.

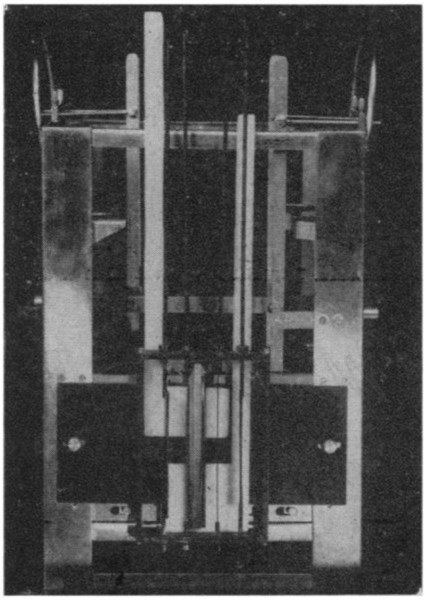

FIG. 2. Masks in cell holder.

areas of high light transmission in order to effect a balance in overall photographic exposure would be a solution to this problem. Such a device has been developed for use with the Aminco-Stern electrophoretic apparatus (Universal Model)[1] and is described below.

Masking sheets are cut from thin (1/16 inch) opaque plastic (Plexiglas or similar type) to the dimensions shown in Fig. 1. These "golf-club" shapes are placed in between the shutter bracket and plate of the cell holder, and each adjusted to the desired level by means of the top of the strip. Proper tension on the masks is maintained by pressure from one of the vertical shutters of the cell holder. Masks may be used singly or in a pair (as shown in Fig. 2) to provide the desired effect of either single or double masking, respectively. Thus for colored solutions one mask is used to cover the non-colored portion of the cell, while two are used to increase the exposure time on an albumin peak by masking out the areas on both sides of that peak. A typical example of the former situation is illustrated in Fig. 3.

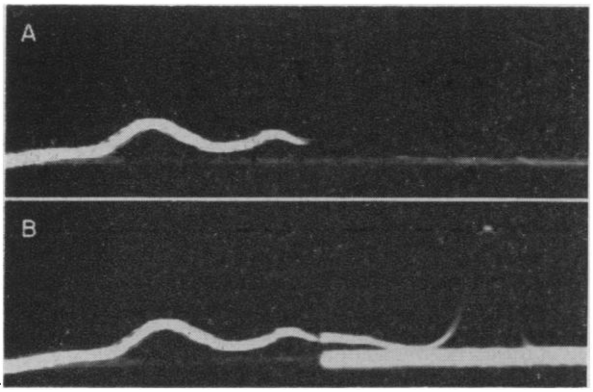

FIG. 3. Highly colored serum. A, film exposed for 7 sec without masking. B, same serum, but film exposed for 7 sec on the left and 60 sec on the right using a single mask.

Although this device is designed for the Aminco-Stern Universal Model Analytical Double-Cell Holder, masking strips of analogous dimensions and shapes may be used on other Aminco models.

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[1] Made by the American Instrument Company, Inc., Silver Spring, Maryland.

Outbreak of Malaria with Prolonged Incubation Period in California, a Nonendemic Area[1]

THE recent appearance of 34 related cases of malaria in one area of California has afforded an unusual opportunity to observe the natural history of *P. vivax* malaria in a nonendemic area. The investigation of this outbreak, started in August 1952, is still in progress. The interest expressed by several malariologists in the rather unique circumstances surrounding this outbreak has prompted this preliminary report.

All elements of a well-organized scientific study were naturally combined to permit an epidemiologic evaluation of malaria in a nonimmune population living in a nonendemic locality. One relapsed case exposed to innumerable anopheline mosquitoes at a semi-isolated summer vacation area of over 1800 Camp Fire Girls localized the situation.

The epidemiologic investigation was greatly simpli-

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