the organs are unable to excrete arsenic in sufficient quantities. 3. Excessive loading of arsenic in the skin and liver causes injury and even destruction of the cells, producing dermatitis and jaundice. The work of Throne, Van Dyck, Marples and Myers[9] has shown that arsenic may produce lesions of the skin which are only manifest in many instances several years after the initial intoxication. The same authors have demonstrated that arsenic may be an etiological factor in the genesis of eczema.

Sodium thiosulfate, when given intravenously, causes increased arsenic excretion as shown by the urine analyses before and after thiosulfate reported by Groehl and Myers.[2] When this load is removed from the cells and the factor so irritating to the involuntary nervous system is lessened it is probable that this latter is able to resume its normal function of maintaining a barrier and excreting arsenic normally.

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The Hydrogen Ion Concentration of the Nucleus and Cytoplasm of the Egg Cell.

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By means of the microinjection apparatus the series of acid dye indicators of Clark and Lub and the basic dye Neutral Red

were injected both into the cytoplasm and into the nucleus of the immature starfish egg.

The color changes upon injection indicate the pH of the nucleus to be in the neighborhood of 7.6 to 7.8, whereas that of the living cytoplasm is 6.6 to 6.8,[1] and cytoplasm cytolyzed by mechanical injury is 5.4 to 5.6.

TABLE I.

Starfish Egg.	Cytoplasm.		Nucleus
	Injured 5.4-5.6	Normal 6.6-6.8	7.6-7.8
Methyl Red	Yellow	Yellow	Yellow
Br. Cr. Purple	Yellow	Blue	Blue
Br. Thy. Blue	Yellow	Green	Blue
Phenol Red	Yellow	Yellow	Red
Cresol Red	Yellow	Yellow	Yellow
Neutral Red		Red	Orange

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3221

The Effect of Fluorides on the Echinoderm Egg.

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In the course of some experiments by one of us on the action of fluorides on coagulation of the blood it occurred to us to note the effect of fluorides on other cell structures. The arbacia egg, since it is reliable and convenient to work with, was chosen for study.

The eggs were placed in 70 cc. of sea water containing one cc. of an isotonic solution of NaF, KF, K oxalate, and K citrate respectively. An immediate flocculation of the eggs occurred in the sea water to which NaF, or KF were added. No similar phenomenon occurred with K oxalate or K citrate, or when artificial sea water was used in which Ca was absent. The flocculation, therefore, seems to be a direct effect of the fluorine ion and