(*Cf.* Table I). The number injected represents amoebae which retained the oil for the period between injection and isolation with subsequent measurement. This period varied from 20 minutes to 2 hours.

The 3 oils last considered in Table I are similar in the respect that no digestion whatever took place. In the case of the mineral oil, nujol, none was expected. Injection of this oil was made at the beginning of the experiment to note the reaction, if any, of amoeba protoplasm to an inert fluid. When oleic acid was injected a very rapid and peculiar response followed—the oil was almost immediately surrounded by an envelope of apparently coagulated endoplasm and was extruded in times varying from 45 seconds to 3 to 8 minutes. A similar phenomenon was observed after injection of ox-foot oil but at a slower rate. (5 minutes to a few hours.)

As a result of this work definite evidence is presented that the protoplasm of *Amoeba dubia* has the ability to digest oils and therefore the presence of a lipolytic substance in this protoplasm is hereby demonstrated.

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Cocaine Potentiation of Epinephrine and Ephedrine Action on Uterus and Intestine.

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The work of Froehlich and Loewi[1] demonstrating that cocaine increases the sensitivity to epinephrine of the iris, urinary bladder, salivary glands and blood vessels of the cat, followed by De Eds'[2] results showing antagonism by cocaine of the pressor action of ephedrine, suggested the need for work with these drugs on other organs.

With excised strips of non-gravid uterus of the rabbit, suspended in Tyrode solution, there was a definite (20-400%) potentiation of epinephrine and ephedrine actions by cocaine. The cocaine-ephedrine potentiation was evident also on the ergotaminized rabbit uterus, no longer responsive to epinephrine, and on guinea pig uterus. Ephedrine caused contraction of both organs. These facts are important

[1] Froehlich and Loewi, *Arch. Exp. Path. Pharm.*, 1910, lxii, 159.

[2] De Eds, PROC. SOC. EXP. BIOL. AND MED., 1927, xxiv, 551.

in the analysis of the site of action of ephedrine, and possibly also of the sensitizing action of cocaine.

It is to be noted that the above potentiations were upon organs contracted by epinephrine or ephedrine. Reports by Lindblom[3] and Halsey[4] indicated a similar cocaine sensitization of the small bowel to the inhibitory action of epinephrine. We, however, have made 15 trials in 8 animals, without being able to demonstrate any definite sensitization of the small bowel of the rabbit or the small or large bowel of the guinea pig toward either epinephrine or ephedrine. The more frequent finding was an antagonism of the inhibitory action of epinephrine or ephedrine by cocaine.

No change in pH resulted from adding the cocaine solution to the organ bath, hence pH changes could not account for the sensitization.

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Relation of Bone Development in Infants to Calcium and Phosphorus Retention Ratios.

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Calcium and phosphorus retentions in infants receiving 3 different types of cow's milk modifications have been determined. In 2 cases the infants, who were quite normal, received the particular modifications, namely boiled cow's milk, and dried milk† for several consecutive months during the first year, thus making possible a number of metabolism studies on the same infant. With the 3rd mixture, namely S. M. A.,‡ the food was given from one to 2 weeks before the metabolic period, 2 studies being made with one infant; and one with a 2nd infant. The calcium and phosphorus retentions in one rachitic child have been included for comparison. Cod liver oil and orange juice were given daily in all but one case. In this,

[3] Lindblom, *Compt. Rend. Soc. Biol.*, 1926, xcv, 1072.

[4] Halsey, personal communication.

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† Klim: A whole dried milk preparation manufactured by Merrill Soule and Company, Syracuse, New York.

‡ S. M. A.: A cow's milk preparation in which the fat has been so modified as to more nearly resemble that of human milk. Cod liver oil is included in its preparation.