We have tried the action of the Zuelzer extract of the spleen by the Magnus method. This consists in immersion of an excised segment of the intestine from an etherized animal in Ringer's solution through which oxygen is bubbling. The intestine is attached to a heart-lever and the contractions registered. The spleen extract showed a marked action. In another method a balloon was inserted into the small intestine of an etherized animal and the contractions registered by Albrecht's piston recorder. This method also exhibited an increase of contractions in the intestine. But they are not so marked as when a watery filtered infusion of the spleen was used.

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The sequence of the protozoan fauna of hay infusions.

By **LORANDE LOSS WOODRUFF.**

[*Sheffield Biological Laboratory, Yale University.*]

1. In hay infusions, seeded with representative forms of the chief groups of Protozoa, there is a definite sequence of appearance of the dominant types at the surface of the infusion, *i. e.*, Monad, Colpoda, Hypotrichida, Paramœcium, Vorticella and Amœba.

2. The sequence of maximum numbers and of disappearance is identical with that of appearance, except that apparently the position of Amœba advances successively from the last (sixth) place to the fifth place and then to the fourth place.

3. A definite sequence of forms is not apparent at the middle or bottom of the infusions.

4. The middle of the infusions is tenanted chiefly by a free-swimming population brought there by an overcrowding at the top or bottom.

5. All of the protozoan forms considered (except Amœba) are chiefly surface dwellers and it is evident that when they pass their greatest development at the surface this maximum is seldom approached again, and their cycle is practically over.

6. The major rise and fall in numbers at the surface are usually about equally rapid, though the final disappearance of an organism may be long deferred.

7. The appearance of any of the protozoan forms under consideration, excepting Amœba, in appreciable numbers at the bottom is most often coincident with, or immediately subsequent to, its surface maximum, and portends its more or less rapid elimination as an important factor in the life of the infusion.

8. Numerous abnormal individuals and cysts are frequently to be found at the bottom in great abundance immediately after the surface maximum.

9. Emphasis is put upon the strictly biological interrelations (*e. g.*, those involving food and specific excretion products) of the various forms as the most important determining factors in the observed sequence.

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The experimental demonstration of the identity of so-called Brill's disease to typhus fever.

By **J. F. ANDERSON** and **J. GOLDBERGER.**

[*From the Hygienic Laboratory.*]

The rhesus monkey is susceptible to infection by inoculation with the blood from a case of "Brill's disease." One attack of the disease in the monkey induces a definite immunity to a subsequent infection with virulent blood of the same strain. Monkeys recovered from an infection with "Brill's disease" have been found to be immune to a subsequent infection with virulent blood from a case of Mexican typhus fever. Monkeys recovered from an infection with Mexican typhus fever have been found to be immune to a subsequent infection with "Brill's disease."

From the above results we conclude that the disease described by Brill is identical with the typhus fever of Mexico, and inasmuch as the New York strain is undoubtedly of European origin, we may also conclude that the typhus of Europe and the tabardillo of Mexico are identical. If this conclusion is correct, typhus fever has been present in New York City for a number of years and, according to verbal reports made to us, has occurred in other large cities of the United States. These results make the clinical recognition and study of typhus fever of increased importance and necessitate the exercise of appropriate prophylactic measures.