My first thought in making these experiments was that calcium is necessary for fertilization on the assumption that in some way it holds intact a substance loosely bound to the sperm head which makes possible the reaction of the sperm with the egg. Calcium free sea-water, then, would bring about the loss of this substance and thus render fertilization impossible. If, however, fertilization takes place in oxalated sea-water, this assumption is untenable.

On the basis of Robertson's work, which indicates that "fertilizing" substance can not be extracted in presence of calcium, we might conclude that the *Nereis* experiments here cited show that the effect of boiling sperm in oxalated sea-water is to extract a fertilizing substance from the sperm. This I do not believe and for several considerations.

Though hypertonicity is not responsible for the results here reported, nevertheless, boiling must certainly increase the salt content of the oxalated sea-water. Again, any amount of oxalate present above that necessary to remove calcium must increase on boiling. Moreover, in the sea-water itself chemical changes ensue through boiling. And finally, on boiling, the sperm perhaps lose specificity—they act as any foreign colloid which may induce development.

The results here reported might thus be due to the total of these several factors each of which alone is incapable of calling forth development. I conclude, therefore, that the results here reported do not indicate that they are due to a fertilizing substance extracted from the sperm.

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THE WESTERN SOCIETY OF NATURALISTS

THE annual meeting of the Western Society of Naturalists was held in Salt Lake City, Utah, June 22-23, 1922, during the convocation of the Pacific Division, American Association for the Advancement of Science. Presiding officers were Dr. F. B. Sumner, *president,* and Dr. J. F. McClendon, *secretary pro tem.*

The following officers were chosen at the annual election: H. S. Reed, *president;* Chester Stock, *vice-president,* and C. O. Esterly, *secretary.*

The program presented was as follows:

JUNE 22

PHYSIOLOGICAL PAPERS

The occurrence of essential oils in desert plants: MAXWELL ADAMS.

The influence of temperature upon the germination of orange seed: H. S. FAWCETT.

Influence of gravity on the development of new growth on horizontal shoots: F. F. HALMA.

Mitosis in rhizopods and flagellates: C. A. KOFOID.

Longevity of Artemia in natural and artificial brines: E. G. MARTIN.

Some quantitative aspects of growth: H. S. REED.

Dendograph record of the redwood (with lantern slides): D. T. MACDOUGAL.

The occurrence of goitre in relation to the distribution of iodine: J. F. MCCLENDON.

HEREDITY AND EVOLUTION

The two chromosomes of Clarkia: L. L. BURLINGAME.

Inheritance of flower color in Clarkia: L. L. BURLINGAME.

The law of geminate species: D. S. JORDAN.

Theories as to the mode of evolution: J. P. LOTSY.

The origin and inheritance of specific characters: F. B. SUMNER.

Darwinism—an analysis by observation and experiment: W. L. TOWER.

JUNE 23

PAPERS READ IN JOINT SESSION WITH THE ECOLOGICAL SOCIETY OF AMERICA

The original grasslands of California: F. E. CLEMENTS.

Why not conserve the marine mammals of the Pacific? B. W. EVERMANN.

Factors limiting the distribution of Teredo navalis in San Francisco Bay: C. A. KOFOID.

Climate of the Inland Empire in relation to silviculture and forest fires: J. A. LARSEN.

Food and game fishes of the Snake River, Great Basin: S. B. LOCKE.

Wild bird life of the rookeries on the islands of Great Salt Lake (with motion pictures): C. G. PLUMMER.

A bog forest near Victoria: G. B. RIGG.

CHESTER STOCK,
Secretary