turity occurs in nature only in April, May and very early June.

In a further study,[7] it was found that the degree of effectiveness of the light and the character of its effect depend on the wave-length of the light used, when the luminous intensity is the same in artificial additions to daily sunlight period inside a room behind window glass. Red light, at relatively low intensity of illumination, induces sexual maturity in as short time as 23 days in midwinter, while green at the same intensity does not induce it at all, but inhibits it, in males at least. This occurs in juvenile birds of the previous summer's broods as well as in older birds.

It is known that spring sunshine is relatively rich in long red wave-lengths and poorer in the shorter wave-lengths of light, while summer and autumn sunlight is richer in shorter wave-lengths in comparison. So the same intensity of sunlight in spring is more stimulating to sexual maturity than in autumn or summer, for it contains relatively more of the stimulating red rays.

In view of all the above findings, it is suggested that Riddle's results point to a conditioning of the age at first sexual maturity in doves and pigeons, which have polyoestrous cycles, as well as in juncos, crows and starlings, with single yearly sexual activity, by the action of increasing or decreasing effectiveness of daily light periods. This effectiveness depends on length of period, intensity and wave-length of illumination per day. This may be affected by the above mentioned changes of the relative amounts of longer, stimulating rays and shorter, inhibitory wave-lengths of light incident to the season and height of the sun above the southern horizon. This is probably correlated with the endocrine functions of the thyroid and anterior pituitary glands as Riddle suggests.

The following scheme is suggested to describe the relation of age at first sexual maturity to the endocrine function and to the acceleration or delay of sexual development in birds on the basis of Riddle's, Rowan's and Bissonnette's experiments:

E = basal endocrine stimulus to sexual development of each race, or bird.
$-L$ = action of shortening days with decreasing intensity and less long-wave light.
$+L$ = action of lengthening days with increasing intensity and relatively more long-wave light.
R = Rate of development to sexual maturity in birds nearing the 4–5 month age at any time.
A = Age at first sexual maturity.
For July to January, $R = E - L$.
For February to June, $R = E + L$.

$$A = \frac{K}{R} = \frac{K}{E \pm L}$$

where K is a constant for the breed of bird. Birds mature early if they reach 4 to 5 months of age when $+L$ is effective, in February to June, and late if $-L$ is effective, in July to January.

It would be interesting to test the correctness of this suggestion by treating young doves or pigeons, of known breeding behavior, with various types of daily light period as has been done with the starlings. If it is valid, the age at maturity in these birds can be modified at will, irrespective of season.

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[7] T. H. Bissonnette, "Studies on the Sexual Cycle in Birds. VI. Effects of White, Green and Red Lights of Equal Luminous Intensity on the Testis Activity of the European Starling (*Sturnus vulgaris*)," *Physiol. Zool.*, in press, 1932.

"ENTAMOEBA" PHALLUSIAE

MACKINNON and Rae describe *"Entamoeba" phallusiae* in the June number of the *Journal of the Marine Biological Association* of the United Kingdom. This note is written merely to call attention to the slight doubt whether the form described is an *Entamoeba*. *Entamoeba* has a centronucleus (Boveri's very convenient term) containing a centrosome with a centriole, as have also many small amoebae, *e. g.*, most soil amoebae. From the figures and description of *"Entamoeba" phallusiae* one is in doubt as to the presence of an intranuclear centrosome, Fig. 3, A, B, and C suggesting, but not showing it.

The parasitic habit is not enough to determine that a species is an *Entamoeba* rather than an *Amoeba*, though it makes it probable that it is so. The chief distinction between the two genera is in the presence or absence of a centronucleus. Species of the true genus *Amoeba* have not been found to contain a centrosome, with centriole, in the nucleus. Many minute soil amoebae are morphologically *Entamoebae* and should be so recognized in spite of the absence of the parasitic habit. Habitat is hardly a proper determinative feature for generic diagnosis.

Amoeba, of course, is clearly a valid genus (See Mast and Johnson, Archiv f. Protistenkunde, 75, 1, 1931). Many so-called genera both of *Amoebae* and of forms with centronuclei when treated as subgenera give as good or a better idea of probable relationship.

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NATURALLY DEPOSITED EGGS OF THE MYXINOIDEA (HYPEROTRETIA)

EVER since J. Müller (1843) described the genital system of the myxinoids, many interested zoologists in Europe and America have attempted in vain to find the naturally deposited eggs of these eels. In

1896 a Chinese fisherman, who had accidentally brought to the surface on trawl lines some eggs of *Bdellostoma stouti* near Monterey, California, collected a number of the eggs for G. C. Price, Bashford Dean and others. The fisherman would reveal to no one how or where he secured the eggs, and his secret died with him.

Through the courtesy of the Boston Society of Natural History, the Committee on the Permanent Science Fund of the American Academy of Arts and Sciences, the Bashford Dean Memorial Committee of the American Museum of Natural History and the National Research Council, I have been able to search during several summers for the naturally deposited eggs of Myxine and Bdellostoma. In the summer of 1930 I succeeded in collecting between five and six hundred naturally deposited eggs of *Bdellostoma stouti* near Monterey, California; at least 130 of the eggs had embryos.

No one has succeeded in finding naturally deposited eggs of Myxine, and the many attempts to obtain fertilized eggs by keeping the eels in captivity have failed. While fishing during the months of July, August and September, 1931, near the mouth of Frenchman Bay, five miles from Bar Harbor, Maine, I succeeded in collecting about fifty naturally deposited eggs of *Myxine glutinosa*. The eggs were brought up from the bottom of the ocean in from thirty to thirty-five fathoms of water.

My experience in searching for the eggs of both Bdellostoma and Myxine leads me to the conclusion that the eels do not migrate, and that they deposit their eggs at all seasons of the year in certain favorable spots very near their feeding grounds.

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SEDIMENTATION AND SEDIMENTOLOGY

"SEDIMENTATION," as generally understood, is that branch of geology which deals with the processes of sedimentation and the origin of the sedimentary rocks.

Webster's New International Dictionary for year 1929 says: "Sedimentation is an act or process of depositing sediments."

The current use of the term in geology is ambiguous and in some cases incorrect. Geologists in general have not taken very kindly to the term "sedimentationists," but resort to cumbersome phrases such as "petrologists interested in sedimentary rocks" or "petrologists working on sedimentary deposits." It is questionable if the use of the phrases "sedimentary petrology," and "sedimentary petrologist" side by side with "sedimentary deposists," *i. e.*, deposits formed by sedimentation, is correct.

Sedimentology is here suggested as a term for the subject taught, retaining *sedimentation* for the act or process of deposition. The new term and its derivatives *sedimentologist, sedimentologic and sedimentological,* will tend toward clearness. *Sedimentology* and *sedimentation* have their analogies in *glaciology* and glaciation, respectively.

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REPORTS

SCIENCE BOOKLETS FROM THE AMERICAN ASSOCIATION

IN 1929, a suggestion to the council of the American Association for the Advancement of Science brought about the appointment of a special committee on the preparation of a series of science booklets for distribution to the American public.

This committee was to arrange for selecting the most appropriate books on each of twenty-seven subjects deemed most important in the field of pure science, and to secure the cooperation and collaboration of numerous scientists, librarians and others familiar with these books. The committee was also to find funds with which to pay for the printing of the lists when ready.

In this series the applications of science to industry and invention are not developed to any great extent; it is hoped that lists on the industrial sciences, especially on the applications of the physical sciences, may be worked up into similar lists by some other national body.

In the fall of 1929, tentative title lists, containing a considerable surplus of titles beyond the twenty-five which had been set as the maximum number for any one list, were mailed to a large number of prominent scientists and to some of the larger public libraries and museums, asking for votes on the most suitable books and cancellation of the least desirable titles, as well as for editorial suggestions that would make the lists most useful for the purpose.

This purpose was very carefully defined; it appears on each of the printed lists:

These lists have a three-fold object: (1) To select and describe a few authentic and especially interesting books acceptable to the "general reader"; (2) to supplement these with several introductory treatises in understandable style; (3) to suggest a group of text-books for more advanced study by ambitious amateurs, or persons studying by themselves. Books written in America, recent and not out of print, nor too expensive, have been favored, but there are numerous exceptions. The books can generally be borrowed from libraries, or bought from bookstores. Libraries which lack these titles may able to borrow them