This paper contains the results of preliminary studies on shell depositions in oysters. A detailed explanation is given of the distribution of the so-called chalky shell-deposits on the internal faces of the valves in Ostrea edulis and Ostrea angulata. It is a well known fact that internal shell areas may often be observed on which the crystalline nacreous layer is replaced by an apparently amorphous, soft, white mass. The distribution of these areas in the shells is such that it seems to be the function of the chalky deposits rapidly to fill in grooves, hollows etc. In Ostrea edulis of medium age the chalky deposits usually occur over the exhalant chamber, and, according to the authors, this is due to the mantle here often being extended and contracted, for which reason it is of importance that the inside of the shell should be flat. All these chalky deposits therefore must be considered as due to local unsuitabilities of the contour of the shell, and as formed to adapt the shape of the shell to the changing needs of the animal. Deposits of conchyolin and pigmentation in Ostrea edulis are further shortly discussed. Also in this paper it is stated that the shell has two growth periods, spring and autumn, and observations are set forth which indicate that crystalline depositions cease in Ostrea edulis at a temperature of about 11°C. This latter observation will, if confirmed, be of a certain practical importance. The problems treated in this paper concerning shell-depositions and development and growth of shell are as yet in many respects far from solved; the present paper therefore rightly arouses great interest.

R. Sparck.


The present paper contains the first part of a detailed record of investigations of the sex and the breeding-habits of Ostrea edulis, carried out by Dr. Orton during a long period. The main results are partly known already from a long series of preliminary reports published in "Nature". In the now published first part the change from female to male is discussed and some further elucidation given as to the sex and breeding of the oyster. Some previous observations made in Holland and the Limfjord (for instance that male-spawning is the first to set in; that the proportion of ripe females often diminishes in the course of summer) are confirmed. Results of investigations of the gonad in 702 "sick" oysters are further presented, to the effect that after egg-spawning sex-change sets in in the course of few hours, causing the individual in question to develop spermatozoa. Thoroughly and convincingly the author states how the sperm development after egg-spawning is very quickly increased in relation to the progressive age of the gonad, reckoned from the instant of egg-spawning. These investigations fully confirm the view formerly set forth by the author as well as the reviewer that all oysters after spawning nor-
mally pass into a male phase. It is likewise confirmed that oysters mainly
spawn either as males or as females.

Results are further presented of the examination of the gonad in 444
oysters at intervals after they have emitted their larvae. From this material it
appears that the male-phase following the egg-spawning lasts at least
one month, and decreases in the course of the following month when egg-
development once more sets in. If the egg-spawning takes place late in
the summer the male-phase will probably last all through the winter. At
twelve months from the last egg-spawning a considerable number of
individuals will once more have become functional females. The reviewer
cannot help remarking that this result, which is supported by a large
statistical material, is in perfect agreement with the view expressed by
him in his paper on the sex-change of the oyster.

Finally the author has some remarks on the physiology of sex in *O. edulis,*
and sets forth the hypothesis that the sex-change of the oyster may be
due to variations in metabolism. With our present knowledge of the phy-
siology and cytology of the oyster I should not think it possible to give
any definite answer to this question. But the hypothesis does not seem at all
improbable. From other sides it has been stated that temperature appears
to be of great importance to the rate of development of the different phases,
which seems to indicate that rhythmic variations of metabolism must
be taken into consideration. With regard to the author's mention of
*MNOILIOV's* chemical reaction for sex as possibly important for future
investigations of sex-change in the oyster, attention must unfortunately
be called to the fact that several experiments have proved this reaction
to be of small value in this connection.

Without doubt the results contained in this paper are valuable and based
on thorough investigations, but it cannot be denied that the many details
and the large statistical material make it less easily read. It may also
seem astonishing that no information at all is given as to temperature
and other hydrographical factors on the beds from which the oysters are
dredged. Some mention of nourishment and stomach-contents at the
different phases might also be of some importance. The announced con-
tinuation of these researches will be awaited with great interest.

R. SPÄRCK.

ILMARII VALIKANGAS. Planktologische Untersuchungen im Hafengebiet von
Helsingfors. I. Ueber das Plankton, insbesondere das Netz-Zoo-
plankton des Sommerhalbjahres. 298 S., 6 Tafeln. — Acta Zoologica
Fennica, I, 1926.

Die Untersuchungen der letzten Jahre über Brackwasserbiologie haben
immer deutlicher gezeigt, dass es hier eine Reihe interessanter Probleme
zu lösen gibt, welche sowohl von einem rein hydrobiologischen Stand-
punkt als in Bezug auf die Abwasserfrage von hervorragender Bedeutung
sind. Denn nicht nur der Chemismus des Mineralisierungsvorganges der
organischen Verunreinigungen sondern auch die dazu erforderliche Tätig-
keit der Abwasserkororganismen, hauptsächlich Bakterien, farblose
Flagellaten und Ciliaten, werden mehr oder weniger von den im Brack-
wasser vorhandenen Meeressalzen beeinflusst. Im einzelnen ist von den