

Electrical Resistance of Gel-forming Mixtures during Setting.

HURD AND SWANKER in a letter to the Editor (*Journ. American Chemical Society*, June, 1933), have reported that the electrical resistance of gel-forming mixtures containing solutions of sodium silicate and acetic acid of various concentrations, undergo no change during the process of setting.

Prasad and Hattiangadi (*Journ. Indian Chem. Soc.*, 6, 893, 1929) had observed that the pH (determined colorimetrically) of the alkaline gel-forming mixtures containing sodium silicate and acetic acid increases during the process of gelation. With an expectation that some consequent changes in the electrical conductivity of the gel-forming mixtures would take place during the process of gelation we undertook to measure the electrical resistance of the gel-forming mixtures containing solutions of various concentrations of sodium silicate and of acetic and citric acids in February 1932. Our results were in agreement with those now reported by Hurd and Swanker that the electrical resistance of a gel-forming mixture does not change during gelation.

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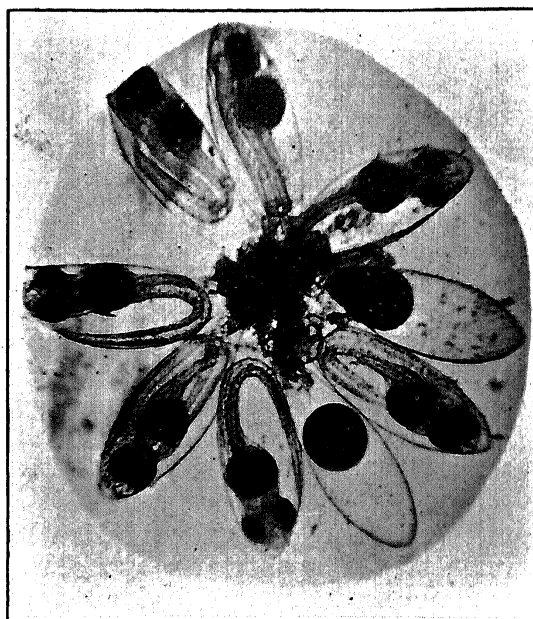
Preliminary Observations on the Life History of *Acentrogobius Neilli* (*Gobius neilli*. Day).

SPECIES of *Gobius* are essentially shore forms and many are found in brackish and fresh waters. The eggs and life-histories of several forms of this genus have been described by Guitel, Holt, Petersen and Lebour, to mention a few. Their accounts mostly deal with the nature of the eggs and the time of their occurrence. *G. minutus*, *G. microps*, *G. pictus* and *G. ruthensparrii* have had their life histories more fully worked out by Lebour and Petersen. *Gobius* usually attaches the eggs to shells of Lamellibranchs such as *Pecten*, *Ostrea*, *Mya*, *Cardium*, and often to the shell of *Patella*. The breeding months near Plymouth seem to be April, May and June. Hatching takes place in about a fortnight and a free swimming larva about 3 mm. long without pelvic fins emerges. Very little is known about the life histories of the forms occurring in India. Several stages of

G. ostreicola were described by Bhattacharya from preserved material from the Chilka Lake.

Gobius neilli occurs in large numbers in the brackish waters of Adyar and grows to 3¼ inches. They begin to breed when they are 20 mm. long. Mature females can be obtained in enormous numbers just before the monsoon. A few days after commencement of the monsoon most of them are found to have spawned. Developing stages were obtained by artificial fertilisation.

Almost immediately the outer cover of the egg swells up into a club-shaped structure. The micropyle comes to be placed at the



narrow end of the club through which mucilaginous threads flow out and anchor the egg case to the substratum. The case itself is packed with a jelly like material in the centre of which the embryo undergoes its development.

Within 32 hours after fertilisation the Head, Eye Vesicles, Notochord and Brain are established.

The embryo begins to rotate in a longitudinal axis in the egg case from the middle of the second day and hatches out as a free swimming fry at the beginning of the third day of development (72 hours). The process of hatching is interesting and is executed by the embryo breaking open one side of the egg case near the free end. Further development has been followed up to the eighth day.

The time taken for hatching is very much less in this form than in those described by Lebour and can only be attributed to the