

Cytoplasmic Inclusions in Acentrogobius Neilli (*Gobius neilli*. Day).

CYTOPLASMIC inclusions in Invertebrates have been worked out by a number of authors but workers on Vertebrate oogenesis seem to be few. Fish eggs have been studied by Hibbard and Parat, Eggert, Nath and a few others.

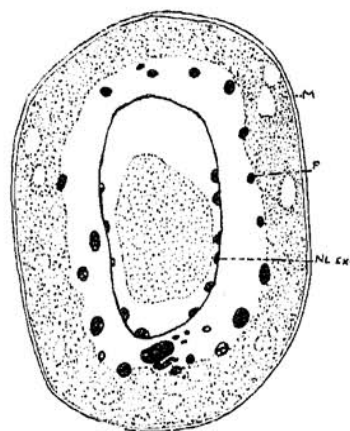
Acentrogobius neilli (*Gobius neilli*. Day), a common brackish water form in Madras, was studied by examination of fixed preparations as well as of fresh oocytes before and after treatment with solutions of neutral red, Janus Green.B, Scharlach.R, Sudan III and Osmic Acid 2%.

The mitochondria were studied from Champy, Bensley-Cowdry, Nassonov and Mann Kopsch preparations and for a study of the Golgi in addition to the last-mentioned technique Da Fano's silver impregnation method was also employed.

The mitochondria occur as a dense cloud of granules immediately surrounding the nucleus. With the growth of the oocyte they seem to move almost in the form of a ring away from the nucleus leaving a fairly clear space round the nucleus. They multiply quickly and soon occupy the whole area of the cytoplasm. They are not observed to take part in deutoplasmogenesis.

^c Cheema and Venkataraman, *J. Chem. Soc.*, **141**, 918, 1932.

The Golgi apparatus occurs as an irregular mass just touching the nuclear membrane.



Mann Kopsch Allman.
Young Oocyte. $\times 325$.
M.=Mitochondria.
F.=Fat.
NLEX.=Nucleolar Extrusions.

This breaks up and moves into the surrounding cytoplasm in the form of granules. Later they seem to be associated with fatty yolk globules.

Fat and fatty yolk both occur in the egg. Fat seems to arise from nucleolar extrusions. Fatty yolk probably arises by condensation of material by the Golgi apparatus.

A perusal of the literature on cytoplasmic inclusions will show that the term *fatty yolk* has been used to mean both yolk with a large quantity of fatty or lipoidal material (Ludford) and also for fat not miscible with the general cytoplasm (Nath). Actually there appears to be more than two kinds of deutoplasmic inclusions *fat*, *fatty yolk*, and *yolk* in eggs and it is proposed to discuss this matter more fully in a future communication.

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Hibbard, Hope and Parat, M., "Oogenesis of certain Teleosts," *Jour. Anat.*, **61**, 1927.

Eggert, Brune, "Entwicklung und Bau der Eier Von *Salarius flavo-umbrinus* Rupp," *Zool. Ann.*, Bd. **8**, 1929.

Nath, V. and Nangia, M. D., "A demonstration of the Golgi Apparatus and the vacuole as independent components in the fresh eggs of Teleostean Fishes," *Jour. Morph.*, **52**, 1931.

Nath, V., "Microchemical Tests: fats, lipods and vacuoles with special reference to Oogenesis," *Quart. Jour. Micr. Sci.*, June 1933.

Ludford, R. J., "Contributions to the Study of the Oogenesis of *Patella*," *Jour. Roy. Micr. Soc.*, 1921.