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Observations on Ecdysis in Japanese Fishes (Preliminary Report)

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Fortunately the author had some chances to observe interesting ecdysis of several fishes in the Enoshima Aquarium during January 1956 and February 1957. About 200 species of Japanese shore fishes have been kept in the aquarium from July 1954, and in seven of them the phenomena have been observed not infrequently.

Though their shed skins are thin and semitransparent, they usually float in the water about a day or two, and therefore the ecdysis can be rather easily recognized in the aquarium tank.

There seem to have been published only two reports on ecdysis in fishes. In 1920 Gilchrist described on the phenomena in *Agriopus torvus*, *A. spinifer* and *A. verrucosus*, and later Heldt (1927) in *Balistes capriscus*, *Scorpaena porcus* and *Dactylopterus volitans*.

The following list shows the materials observed.

- Family Platacidae
Platax pinnatus (L.)
- Family Scorpaenidae
Pterois lunulata Temminck & Schlegel
Pterois volitans (L.)
Parapterois heterurus (Bleeker)
- Family Synanceiidae
Erosa erosa (Langsdorf)
- Family Triglidae
Chelidonichthys kumu (Lesson & Garnot)
- Family Cephalacanthidae
Dactyloptena orientalis (Cuvier & Valenciennes)

African *Agriopus* and *Scorpaena* is placed in the same group as Japanese *Pterois* and *Parapterois*, and *Dactylopterus volitans* is very close to Japanese *Dactyloptena orientalis*.

As far as the author has observed, *Erosa erosa* cast their skin as a whole, but on the contrary, other six shed irregularly and successively from every part of the body and fins. The ecdysis can be observed in all seasons in *Pterois lunulata*

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and *Chelidonichthys kumu*, but infrequently at long intervals in *Platax pinnatus* and *Erosa erosa*.

In the course of ecdysis the skin is usually observed to become detached from the whole body and fins, leaving a brightly coloured fresh skin underneath.

I. Simultaneous ecdysis

In five individuals of *Erosa erosa*, the ecdysis was observed in January, February, July and November 1956. At any time, the skin was shed simultaneously, and it remained on the bottom of the tank about a day or two. Their average total length which was 116 mm in October 1955, reached up to 136 mm in February 1956. Though four of them had afterwards died of old age in January 1957, they had passed all healthy in the aquarium tank from autumn 1954.

In the individual of *Platax pinnatus* which has been reared from December 1955, the ecdysis was observed on 24th April and 24th September 1956. In the former case, the skin was first cast off simultaneously, but the shed membrane was soon torn off into numerous small pieces in the water. In the latter case, however, the skin was shed irregularly and successively from every part of the body.

This fish had been 160 mm in length when collected in December 1955 and has grown up to 250 mm till present by passing all healthy in this period.

The author, however, could not ascertain the phenomena on the other five specimens. Two of them which were about the same size as the above-mentioned individual died by the starvation and injury, and the other three younger and smaller fishes are still alive in healthy condition.

II. Successive ecdysis

Similar to the above-mentioned case in *Platax pinnatus* the successive ecdysis was ascertained again in the following five species; *Pterois lunulata*, *Pterois volitans*, *Parapterois heterurus*, *Chelidonichthys kumu* and *Dactyloptena orientalis*.

A number of *Pterois lunulata*, *P. volitans* and *Parapterois heterurus* have been kept mixed in one and the same aquarium tank, and *Pterois volitans* has shed its skin on 18th November 1955 while *Parapterois heterurus* cast its membrane on 16th February 1955. In *Pterois lunulata*, on the other hand, the ecdysis was frequently observed in all seasons.

The same frequent shedding seems to take place in *Chelidonichthys kumu*. The ecdysis of *Dactyloptena orientalis* was only once experienced on 14th September 1955. Their shed skins were cast off irregularly and successively from every part of the body and fins.

Literature

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