



Title	蝦夷富士産エゾサンセウオオの卵の異常に就て
Author(s)	松久, 健市
Citation	札幌博物学会会報, 11(3), 164-168
Issue Date	1930-11-30
Doc URL	http://hdl.handle.net/2115/63862
Type	article
File Information	Vol.11No.3_009.pdf



[Instructions for use](#)

ON SOME EGG-ABNORMALITIES OF THE
SALAMANDER, *HYNOBIUS LICHENATUS*
BOUL. FROM MT. YEZO-FUJI IN HOKKAIDO

BY

KEN-ICHI MATSUHISA



蝦夷富士産エゾサンセウウオの卵の異常に就て

松 久 健 市



It is remarkable that the urodelan fauna of Hokkaido is represented by only one species of *Hynobius*, *Hynobius lichenatus*, BOUL., while in the main land of Japan, beyond the Tsugaru Strait, Kiushu and Shikoku included, there is developed a characteristic fauna of Urodela, several species of *Hynobiidae* together with *Onychodactylus*, *Diemictylus* and *Megalobatrachus* inhabiting those districts very abundantly. No continental representative, whatsoever, of the salamander, *Salamandrella keyserlingii* DYBOW. which is found among the fauna of Sakhalin extends beyond the narrow Soya Strait (STEJNEGER (1907), INUKAI (1927)). Nevertheless the main island of Hokkaido is not so small in area, measuring 30260 square miles ranging in lat. from $41^{\circ}24' N$, to $45^{\circ}31' N$ and in long. from $139^{\circ}45' E$ to $145^{\circ}49' E$. There are many mountains measuring more than 2000 metres above sea-level and lakes and swamps of all sorts help to make up the diversified landscape of the island.

In spite of the very complicated geographical features of Hokkaido, it is curious that the salamander so far found is always of one and the same species. Even in the lakes high up on the central mountainous part the same salamander was collected.*

* By Dr. INUKAI, 1926.

It was in 1924 when SASAKI reported on the neoteny of *Hynobius lichenatus*. According to him in the lake "Kuttar-ush" in Hokkaido, the salamander lays the egg in the larval stage without metamorphosis; this fact was known only among Axolotl. By raising the neotenus salamander in aquarium he succeeded in obtaining the normal individual of the species. The fact is only remarkable inasmuch as the condition of the lake changes the general habits of the salamander as he so explained.

In 1927 it happened to the present author in collecting the salamander at the foot of Mt. Ezo-fuji in Hokkaido, that a cluster of eggs laid by the animal in the swamp was found completely devoid of pigment. As is well known, the egg of this salamander is, like that of the frog, generally blackish brown at the animal pole and yellowish gray at the vegetative pole (Fig. 1). So, it was that the albino egg-mass was actually glittering among the ordinary egg-masses in the water. It is very regrettable that the parent animal which lays such an egg has not yet been captured. Visiting there twice on the 18th of May, 1930, I could again collect albino eggs in the same swamp. The eggs were brought back to the laboratory and raised in the aquarium. No pigment developed in the early stage of the embryo (Figs. 2 and 3b). First in the embryo of 1.1 cm. body length the chromatophore appeared on the body surface. After this stage the larvae look only a little paler than the normal ones but are not albino at all.

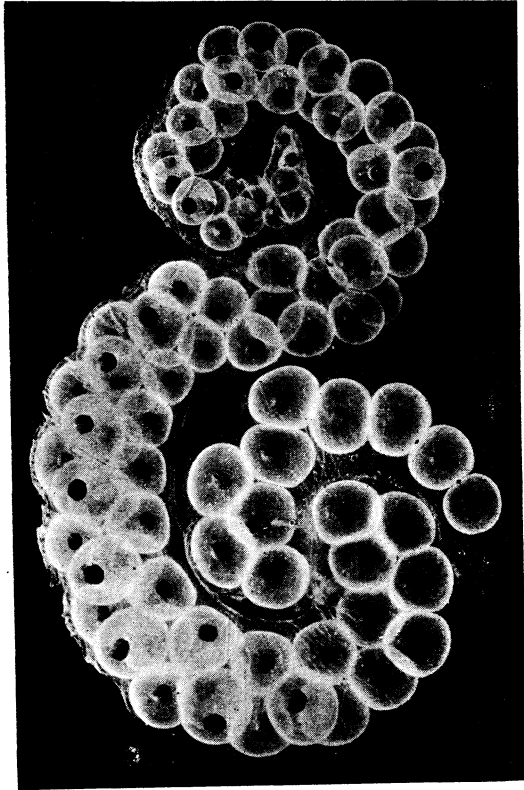


Fig. 1.

Normal egg from a swamp in the vicinity of Mt. Yezo-Fuji. About natural size.

Besides the albino eggs there were found a number of eggs which had

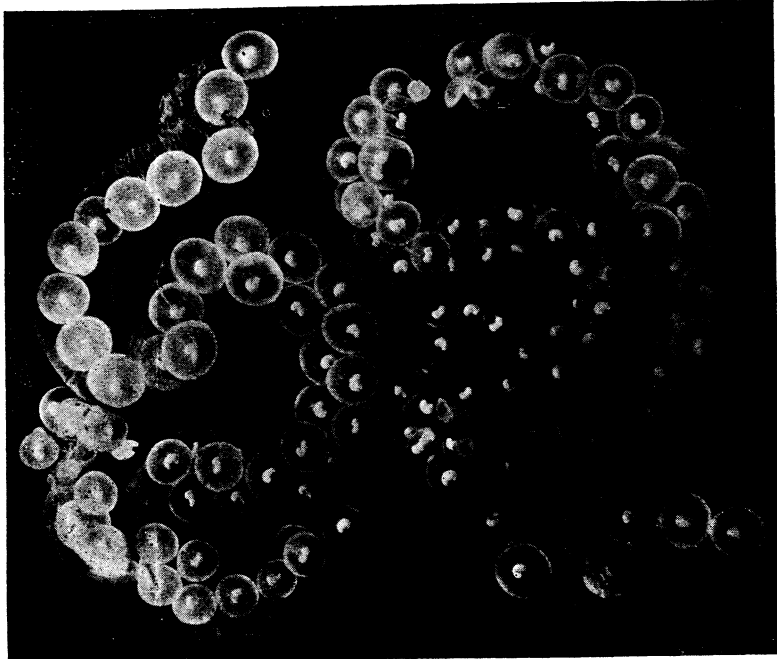


Fig. 2.

A partially developed albino egg spawned by one individual at the same swamp as in Fig. 1. About natural size.

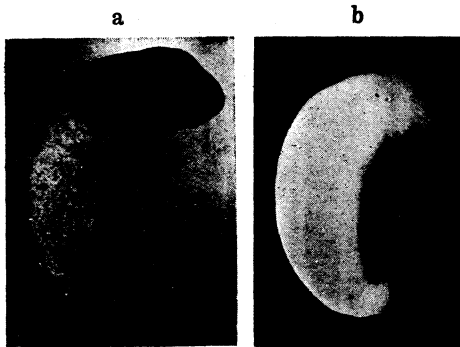


Fig. 3.

- a. Normal embryo of 0.54 cm. length, obtained from an egg in Fig. 1.
- b. Albino embryo of c. 5 cm. length, developed from an egg in Fig. 2. About $\times 7$.

a coloration between the albino and the normal stage (Fig. 4). Of course the embryo developed from these eggs proved to be normal in appearance.

The salamander in the locality just mentioned is remarkable not only in producing albino eggs but also in having abnormal egg-capsules which contain more than two eggs instead of one. In general it occurs only sometimes that two eggs are found in one gelatinous capsule even among normal ones. However, the salamander of Mt.

Ezofuji-locality is remarkable in that in some egg-lobes most of the gelatinous capsules have a multiple number of eggs. In the first capsule are contained two eggs, in the second three eggs and in the third even four or more eggs all found in the same lobe (Fig. 4). Such an egg-lobe was collected in 1927 and 1930 from the same swamp in that locality.

The swamp of Ezofuji-vicinity is unique in producing albino eggs and a multiple number of eggs in an egg-capsule. No other place in Hokkaido has yet been found having the same sort. It has not yet determined whether any particular environmental factor which prevails in that locality influences the animal to give rise to such abnormalities, though it is true that there is annually a particularly heavy snowfall in this region in comparison with other parts of Hokkaido. However, it is worthy of note that the Ezofuji-locality is characteristic in producing much abnormalities together with the fact that the Kuttar-ush lake has the neotenic individual of the same species. Accordingly it is true at least that the general features of *Hynobius lichenatus* are changed by the geographical conditions which are quite multiform in Hokkaido.

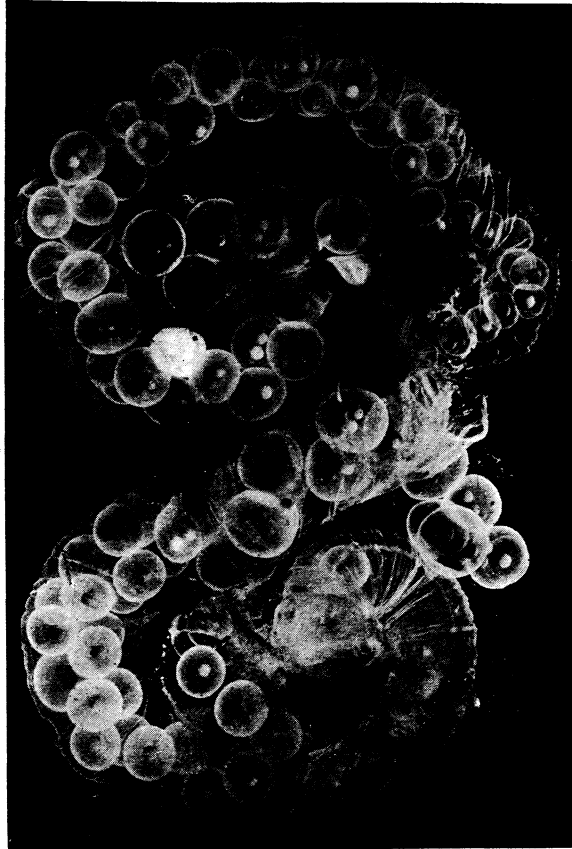


Fig. 4.

An egg lobe showing various colorations of eggs, and multiple number of eggs in one egg-capsule. About natural size. Note that there exists a pigmentless egg like that of Fig. 2 and normal eggs with pigment.

Literature

- DUNN, E. R.: New Species of *Hynobius* from Japan. Calif. Acad. Sci. 14th, Ser. Vol. 12, No. 2. 1923.
- The Salamanders of the Family of *Hynobiidae*. Proc. Am. Acad. Art. Sci., Vol. 58, No. 13. 1923.
- INUKAI, T.: On the Urodelan Fauna of Sakhalin. Annot. Zool. Jap., Vol. 11, No. 3. 1927.
- SASAKI, M.: On a Japanese Salamander, in Lake Kuttarush, which Propagates Like the Axolotl. Jour. Coll. Agr. Hokkaido Imp. Univ. Vol. 15, No. 1. 1924.
- STEJNEGER, L.: Herpetology of Japan and Adjacent Territory. Smiths. Inst. U. S. Nat. Mus. Bull., 58. 1907.

摘 要

日本内地には *Onychodactylus*, *Diemictylus*, *Megalobatrachus* と共に *Hynobiidae* 科に屬する多種の有尾類の分布するにも拘はらず、北海道は 30260平方哩の面積を占め山野湖沼に富むと雖も、是迄に見出されたるものは僅に *Hynobius lichenatus* BOUL. エゾサンセウウオ一種に過ぎず。1924年佐々木望博士がクツヲラウシ湖に於て Axolotl に似たる幼生成熟をなす *Hynobius lichenatus* を見出せるは、湖水の状態が山椒魚の習性に變化を及ぼすものと云ふが故に興味ある事柄なり。1927年著者は蝦夷富士山麓の一池沼に於て山椒魚の採集中、普通の黒褐色の卵の中に全く色素を欠く白色の卵の存在するを見出せり(第二圖)。1930年再び同所に於てかかる白子の卵を採集せり。之を實驗室内の水槽に飼養する時、体長約 1.1 cm 以上に至れば次第に体表に色素の生ずるを認む。更に之が普通型との中間に位する種々の濃度の卵も存在せり(第四圖)。又第二の異常として認めたるはある卵房(egg-lobe)はその卵囊(egg-capsule)中に二或は三、或は四以上の卵を含むもの甚だ多く存在する事なり(第四圖)。同地方には多量の積雪ありきは云へ、特にかかる異常を與ふる外界の因子は尙明かならず。然乍ら是はクツヲラウシ湖にては幼生成熟をなす事と共に特記するに値すべき事實にして或ばエゾサンセウウオの一般的の性質は種々の地理的條件により著しく變化する事を示すものならん。

Zoological Institute, Faculty of Agriculture,
Hokkaido Imperial University