content of cortical alveoli into the interstice between the plasma membrane and the preexisting egg membrance. This change and the subsequent separation of the egg membrane begin at the animal pole and end at the vegetal pole. The separation of the egg membrane is due to a colloid osmotic pressure of the perivitelline fluid which is derived from cortical alveoli. Essentially similar cortical changes are induced when ripe unfertilized eggs are immersed in distillled water, fresh water or M/7.5 Ringer's solution which is nearly isotonic to eggs. This may be regarded as an activation. Time required for completion of cortical changes is dependent on salt concentration of media. In the egg of the goldfish, it requires about five minutes in distilled water or fresh water whereas it is twenty minutes in M/7.5 Ringer's solution (20-22°C). The same is true when inseminated (dry method) eggs are immersed in distilled water, fresh water or Ringer's solution. In distilled water or fresh water, released content of cortical alveoli remained as opaque granules in the perivitelline space for a considerable period of time. In Ringer's solution they soon disperse in the perivitelline space. No cortical changes of the unfertilized eggs take place when an isolated ovary is kept in a moist chamber. Auto-activation is inhibited in the ovary or in theovarian fluid. In the isotonic soluton of sodium oxalate (M/11) which precipitates Ca ions, cortical changes are reversibly inhibited. When unfertilized eggs of the goldfish are activated by immersing them in fresh water for five minutes and then inseminated in the solution, a few eggs are fertilized and developed into embryos. This shows that the sperm can enter the egg in which cortical changes are nearly completed.

Ichthyological Notes

New, Rare or Uncommon Fishes from Japanese Waters. V. Notes on the Rare Fishes of the Suborders *Stromateoidei* and *Tetragonuroidei* (BERG). By Tokiharu ABE

A. Icticus has priority over Papyrichthys. As kindly pointed out by Mrs. M. GREY (personal correspondence), *Icticus* JORDAN and THOMPSON, 1914,* has priority over *Papyrichthys* SMITH, 1934. By consulting old papers on the fishes formerly placed in the so-called *Nomeidae, Psenidae* or *Centrolophidae* it has become more and more corroborated that *Icticus ischanus* JORDAN and THOMPSON may represent adult stages of *Icticus pellucidus* (LÜTKEN). *Psenes* sp. described and figured by FRANZ (1910) may be *Icticus pellucidus*. It was collected at Misaki by DOFLEIN. Recently Dr. I. TOMIYAMA has gathered some specimens of *pellucidus* at Misaki, and is publishing a report on them in the forthcoming volume 50 of "Fig. Descr. Fish. Japan," of which he is one of the collaborators.

It may be added here that the posterior part of the pharynx in the specimen of *ischanus* taken in Tokyo Bay on July 13, 1953 (ABE '54, p. 93, foot-note), has a pair of compressed lateral sacs resembling those of *Nomeus albula* (*v. infra*). The internal plications of the sacs bear slender teeth as in *Nomeus*.

(*continued to p. 178*)

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* They placed *Icticus* in the family *Icosteidae*, which, according to BERG, 1940, represent the order *Icosteiformes*. Suborders *Stromateoidei* and *Tetragonuroidei* belong to the order *Perciformes*.

Résumé

Studies on the variation of the number of the anal fin-rays in *Oryzias latipes*
II. Cross experiments

(1) Some cross experiments were made to explain the inheritance of the number of rays in anal fin in *Oryzias latipes*.

(2) The effect of selection was observed in the first two selective generations. The inheritance of the chracter seems to follow the scheme of polygenes.

(3) The number of the rays is also subject to a drastic change by a major recessive gene, "*fused*."

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B. A record of Nomeus albula from Hachijo Island. Mrs. T. SHIGETA, Hachijo Branch Station, Tokai Regional Fisheries Research Laboratory, has purchased a fresh example of *Nomeus albula* (MEUSCHEN) on April 29, 1954, from a fisherman at Hachijo Island, and sent it to the writer along with adult and young examples of *Cypselurus pinnatibarbatus japonicus* (FRANZ), *Danichthys* sp. and a few other fishes. Although there have been a few records of this famous fish from Japanese waters (UCHIDA, 1930; SAKAMOTO, 1931; KATŌ, 1933; KURODA, 1939) the present writer has examined the fish for the first time because of its scarcity there. The present specimen measures 100 mm in total length, 79 mm in fork length and 71 mm in standard length.

D. XII, 27; A. *ca.* 28; P. *ca.* 24 (left), *ca.* 23 (right); V. I 5. Gill-rakers 7/1/*ca.* 16 (left), 7/1/16 (right); pseudobranchiae well developed. The pectoral fin is long, longer than the ventral fin; the length of thc former is 18.8 mm, and the length of the latter is 17.5 mm. The tongue is very wide, concave dorsally, and has a notch at its anterior margin. The teeth of the upper jaw are canines of moderate size, and arranged in a single row. The teeth of the lower jaw are mostly covered proximally by a semitransparent continuous membrane. The palatines and vomer bear a few teeth of moderate size. The posterior part of the pharynx has a pair of hard lateral sacs, each of which, when seen from below, resembles the abdomen of a coiled insect larva, or light-colored isopod. There are weak teeth on the inside of the sac. The coloration is much nearer to the figure given by GOODE and BEAN than to that of HERRE and HERALD. In the buccal cavity is found an egg measuring *ca.* 2 mm in diameter, which is probably of *Cypselurus pinnatibarbatus japonicus* (FRANZ) or *Danichthys* sp.

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Résumé

Japanese common goby angled in Tokyo Bay, often has the ash-coloured tumour swelling on the skin. I observed the scales involved in this tumonr tissues to find out any particular influences of tumour cell to the scale. The results obtained are as follows: -

(1) Some of the ctenoid teeth of their scales have grown abnormally long so much as to be two or three times of the normal teeth. And they bent in their shapes sometimes like snakes. In these cases, the apical area of scales were situated at nearly vertical position to the body surface because of being pushed up by overgrowing of connective tissue near the apical area of the scale.

(2) In an example of small regenerating scale, the ctenoid teeth arose directly from circuli were observed. They seem to support the theory which the ctenoid teeth have developed phylogenically from circuli.

(3) Scales absorbed were often observed. Some of them lost their normal forms by their severe destruction.

(*continued from p. 178*)

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(*to be concluded*)