

A NEW AGLAJA FROM JAPAN.

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[PLATES 10 AND 11.]

THE opisthobranchiate fauna of the coast of the Biological Station of the Tokyo Imperial University at Misaki is particularly rich, and some of them have already been published by the late Sir C. Eliot. The specimen here noted was caught by a collector of the Biological Station on the 4th November, 1929. The preserved material in very good condition was kindly placed at my disposal by Mr. M. Iwasa, assistant of the Imperial University at Sapporo, and it was painted while alive in water colour by him.

I am glad of this opportunity of expressing my thanks to Mr. M. Iwasa for my pleasure in investigating the species.

AGLAJA IWASAI, sp. nov. Nom. Jap. Tunonasiohkurogahi.

General Colour.—Judging from the dorsal aspect of the living animal (Pl. 10) sketched by Mr. Iwasa, the animal seems to be warm blackish brown in colour, while living. Along the median line of the head shield are two fairly large amber yellow spots, anterior (Pl. 11, f. 1, AYS) and posterior (Pl. 11, f. 1, PYS). The anterior margin of the body and inner margin of the anterior end of the head shield have amber yellow dot lines respectively. The posterior margin of the head shield is rimmed with a narrow amber yellow line. Both the anterior ends of the parapodial lobes are also rimmed with amber yellow lines. The posterior margin of the mantle has few amber yellow parts. I cannot designate the true colour of the foot, but it seems to be the same as that of the dorsal body.

In the preserved specimen both parts are of dull purplish black colour, but the anterior margin and the antero-lateral margins of the foot are rimmed with black lines.

Body.—The body is ovate oblong and somewhat swelled in the middle portion.

Dimensions.—The measurements of the well-preserved specimen are 80 mm. long, 44 mm. wide, and 36 mm. high.

Head-shield.—The form of the head-shield (Pl. 11, f. 1, HS) is somewhat elongated oblong, and not bilobed behind. The posterior tip of the head-shield is somewhat projected like a tongue, and both the basal parts of this projection are more or less notched. The head-shield is free from the body on its posterior and lateral margins. The length of the head-shield is 40 mm., the breadth 33 mm. The distance between the two amber yellow spots is 14 mm.

The distance between the centre of the anterior spot and the anterior end of the head-shield is 19 mm. The anterior spot is almost round and its diameter is 3 mm. The posterior spot is more or less elongated and its size is 4×3 mm.

Parapodial Lobes.—The parapodial lobes (Pl. 11, f. 1, PL) are free and their margins are rimmed with sorghum brown colour lines. The anterior parts of the parapodial lobes have short amber yellow rims. The fleshy parapodial lobes are recurved on the dorsal sides of the body, but not so large as to be used as swimming organs.

Mantle.—The posterior end of the mantle (Pl. 11, f. 1, MT) has two somewhat large lobes and a large gaping orifice between the lobes.

Foot.—The foot (Pl. 11, f. 2, FS) is rather wide, its widest median part measuring 42 mm., and its length covering the length of the body. The anterior margin of the foot is not truncate, and is rather rounded. The sides of the foot are continued in fleshy parapodial lobes.

Branchia.—The white branchial plume is rather large (72 mm. long, along the outer side, 29 mm. wide, and 8 mm. thick), and is situated at the posterior end of the body on the right side (Pl. 11, f. 1, GL), its free extremity (Pl. 11, f. 2, GL) curving to the left side of the body. Both the dorsal and ventral sides of the branchia are subdivided into about 11–12 leaflets, each of them being folded to many small filamentous appearances (Pl. 11, f. 3).

Anus.—The oval anal papilla stands about 2 mm. just in the median line of the body near the left basal part of the branchia. The largest diameter of the anus (Pl. 11, f. 1, 3, AN) is about 3.5 mm. The inner wall of the anal papilla is folded.

Genital Pores and External Spermatic Groove.—The male reproductive opening (Pl. 11, f. 1, MP) is situated on the anterior right side of the body near the mouth. This opening is connected by means of a fine groove, the spermatic groove (Pl. 11, f. 1, SGR), with the common genital opening (Pl. 11, f. 1, CGP), which is found on the right posterior side of the body near the beginning of the branchia. The length of the spermatic groove is 45 mm. along the lateral side of the body.

Shell.—The shell (Pl. 11, f. 4) is internal and situated at the posterior extremity of the body, only covering a part of the gill. The calcareous part of the shell is lilac grey in colour. The volute part is very small, and the outer membranous expansion is rather broad. The length of the shell is 20 mm. and breadth 11 mm.

Central Nervous System.—The central nervous system, as usual in the genus, lies on the anterior dorsal surface of the large pharyngeal bulb and the three ganglia (cerebral, pedal, and pleural) are small but distinct. Besides these three ganglia there is a distinct

parietal ganglion under the right pleural ganglion. Each buccal ganglion is very small, but pretty distinct, and is connected with the other by means of a very fine, short, connective. The buccal ganglia (Pl. 11, f. 5, BG) are situated on the ventral face of the pharyngeal bulb, at a spot about two-thirds from the anterior end. Thus it may be seen that the buccal ganglia, as compared with the central ganglio-mass, are situated quite behind the pharyngeal bulb.

Alimentary System.—The ovate mouth opening has two black lip-like lobes. The vertical length of the mouth is 10 mm., and its breadth 6 mm. Mouth cavity is not high (about 3 mm.); it leads into the cavity of the voluminous pharyngeal bulb. The bulb is extraordinarily large, 37 mm. long, 25 mm. wide, and 24 mm. high, and has a pear-shaped form. Its outer surface is arranged with many fine parallel lustrous longitudinal fibres. The posterior end of this bulb (Pl. 11, f. 5, 6) is connected by the short stalk with the stomach, has no mandibles or radula, and its wall is very smooth except the closely arranged, very fine transverse fibrils. Along the median line the wall of this pharyngeal bulb in the pharyngeal cavity makes a large fold, the breadth of which is 10 mm., its height 13 mm., and a large groove on the ventral outer surface of the pharyngeal bulb.

Stomach.—The stomach (Pl. 11, f. 6) is a rather small muscular sac under the large liver. The colour of the stomach is pale chalcedony yellow with vinaceous lilac spots. There are no horny teeth or spines, but an ear-like folded process (Pl. 11, f. 6, FP) protrudes on the posterior part of the stomach. The inner wall of the stomach is strongly folded. The length of the stomach is 14 mm. and the width 13 mm.

Liver.—The compact, voluminous liver is posterior to the pharyngeal bulb and its colour is dark porcelain green in the preserved specimen. The length of the liver is 13 mm., its breadth 22 mm., and its thickness 16 mm.

Pericardium.—The pericardium and the heart are of the type common to this genus.

Gonad.—The ovotestis lies posteriorly to the liver and is closely attached to its posterior surface, but can be easily distinguished from the liver. The colour of the preserved specimen is somewhat blackish brown. The length of the ovotestis is 32 mm., breadth 22 mm., and thickness 11 mm.

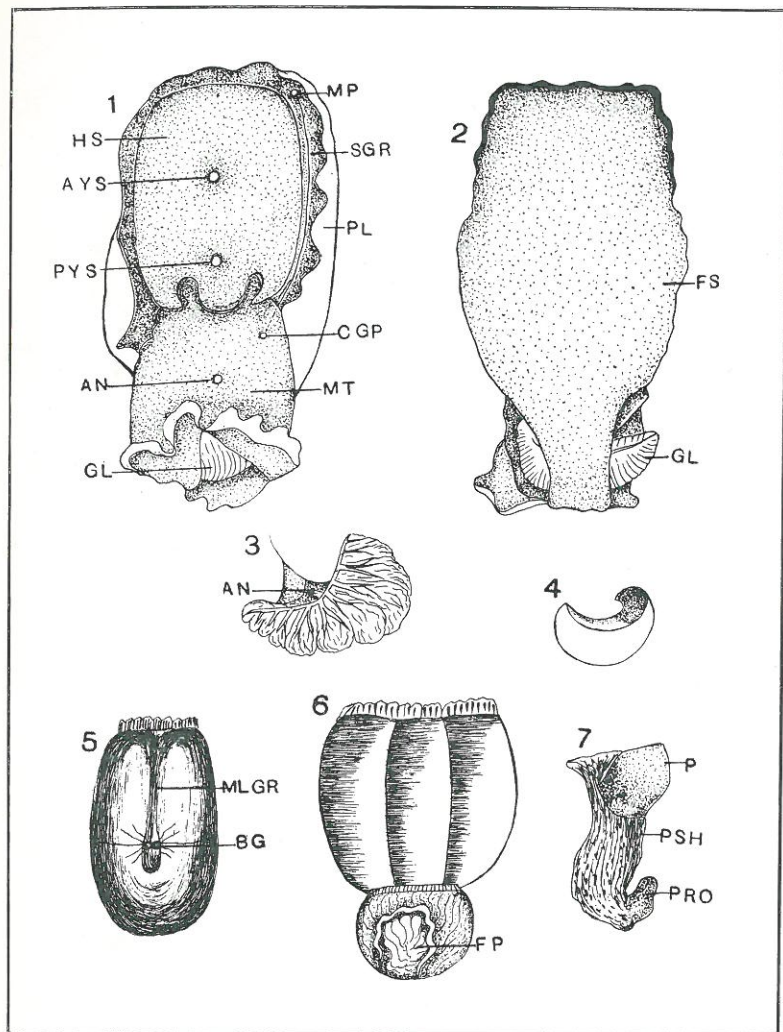
Spermatheca.—The round spermatheca is situated near the right side of the liver, and its colour is ivory yellow. The maximum diameter of the spermatheca is 11 mm. The duct of the spermatheca is very long (about 22 mm.) and is so slender that unless due care be taken in dissecting it there is danger of its being cut through.

Male Genital Organ.—The blade-like penis (Pl. 11, f. 7, P) is fairly large in this species, and its length measures 14 mm. and its





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breadth 6 mm. The penis-sheath (Pl. 11, f. 7, PSH) is also fairly large according to the size of the penis. On the other hand, the so-called prostatic gland (Pl. 11, f. 7, PRO) is very small (about 4 mm. long and 2 mm. wide) and its colour is dark vinaceous grey.

Habit.—This species was found in shallow water (about 2 feet deep) near the Biological Station of the Tokyo Imperial University at Misaki on the 4th November, 1929.

There is only one species of *Aglaja* (*Aglaja gigliolii* Tapparone-Canefri, 1874) known to be Japanese. I think *Aglaja iwasai* is to be clearly differentiated from it, the reasons being as follow:—

- (1) The shell is absolutely different.
- (2) The size of its body is much larger.
- (3) Its colour is different.
- (4) It has no flagellum or filament at the tip of the left separated lobe of the mantle.

Aglaja iwasai is different from all the known species of *Aglaja* and I dedicate it to Mr. Iwasa in gratitude for his kindness to me.

EXPLANATION OF PLATES.

PLATE 10.

Aglaja iwasai, sp. nov. Dorsal view, from a watercolour drawing made by Mr. Iwasa from the living animal at Misaki. The scale of the drawing was not indicated, but it is approximately double the size of preserved specimen.

PLATE 11.

FIG.

- 1.—Dorsal view of the preserved specimen. Nat. size. MP, male genital pore; SGR, spermatic groove; PL, parapodial lobe; CGP, common genital pore; MT, mantle; HS, head shield; AYS, anterior yellow spot; PYS, posterior yellow spot; AN, anus; GL, gill.
- 2.—Ventral view of the preserved specimen. Nat. size. FS, footsole.
- 3.—Side view of the gill. $\times \frac{1}{2}$. AN, anus.
- 4.—Shell. Nat. size.
- 5.—Ventral view of the pharyngeal bulb, showing the median large groove and the position of the buccal ganglia. Nat. size. MLGR, median large groove; BG, buccal ganglia.
- 6.—The pharyngeal bulb and the stomach have been slit lengthwise and opened out flat. Nat. size. FP, ear-like folded process on the inner wall of the posterior part of the stomach.
- 7.—The penis sheath has been slit somewhat lengthwise, showing the large penis. $\times 2$. P, penis; PSH, penis-sheath; PRO, so-called prostatic gland.