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REMARKS ON THE SCYPHOMEDUSAN FAMILY PELAGIDAE

BY

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(With 2 text-figures)

The Pelagidae consist of the five genera *Pelagia*, *Chrysaora*, *Dactylometra*, *Kuragea* and *Sanderia*. The first four genera are closely allied, each having 8 sensory organs and 8 radial diverticula, while *Sanderia* alone is characterized by the possession of 16 sensory organs and 16 radial diverticula. Though the four former medusae are distinguished from one another by the number of the tentacles and marginal lappets, these differences occur during the metamorphosis of a species of the higher genera. *Pelagia* retaining the general form of the ephyra is the most primitive, and differs principally from the latter by the presence of the adradial tentacles and developed oral arms. The ephyra of *Chrysaora* at first reaches the *Pelagia*-stage and then comes to be equipped with 24 tentacles and 32 marginal lappets. The medusa of *Dactylometra*, after passing through the *Pelagia*- and *Chrysaora*-stages, is provided with 40 tentacles and 48 marginal lappets. In the Japanese species *Dactylometra pacifica*, however, 16 more tentacles appear on the sides of the sensory organs. Though these tentacles remain small compared with other ones and are associated with rudimentary lappets, the medusa with these characters agrees with the diagnosis of *Kuragea*. On account of this character STIASNY (1932) erred in identifying specimens of *Dactylometra pacifica* with *Kuragea depressa*. Such being the case, the distinction of these medusan genera, especially in the last two, is somewhat obscure. On the other hand, *Sanderia* is distinctly marked among the family in the possession of 16 sensory organs and 16 radial diverticula. In 1886 GOETTE, describing *Sanderia malayensis*, proposed to divide the Pelagidae into two sub-families, Eupelagidae and Sanderidae. In addition to the number of the sensory organs and radial diverticula, GOETTE pointed out the rudimental character of the oral arms, which is, however, due to ill-preservation or a wrecked condi-

tion of the medusa. I am of opinion that the gonads of *Sanderia* present a remarkably different appearance from those of other genera. The gonads of *Pelagia*, *Chrysaora*, *Dactylometra* and *Kuragea*, are similar in structure, separated into four interradial horse-hoof-shaped ones, which are transversely folded many times and are laid within the smooth subumbrellar wall, while those of *Sanderia*, also divided into four interradial ones, are furnished with sausage-shaped processes arranged along the outer margin of looped gonads, which are protruded on the subumbrella. Below is given a newly revised diagnosis of the genera belonging to the Pelagidae, accompanied with a list of Japanese medusae of the family.

Family *PELAGIDAE* GEGENBAUR, 1856

a) Subfamily *EUPELAGINAE* GOETTE, 1886 emend UCHIDA

Pelagidae with 8 sensory organs and 8 radial diverticula. Gonads folded and enclosed in the smooth subumbrellar wall.

Genus *Pelagia* PÉRON et LESUEUR, 1809

With 8 tentacles alternating with 8 sense organs, 16 marginal lappets.

1) *Pelagia panopyra*

PÉRON et LESUEUR

The medusa is common from central Japan southward to the tropical Pacific. It is pelagic throughout life and is found in the warm current "Kuroshio". Generally found on the Japanese coasts from winter to early summer. Colour pinkish.

Genus *Chrysaora*

PÉRON et LESUEUR, 1809

With 24 (3×8) tentacles, nearly equal in length, 3 between each successive pair of sensory organs. 32 marginal lappets.

2) *Chrysaora helvola* BRANDT

The species is an arctic form. It is common in summer along the eastern coasts

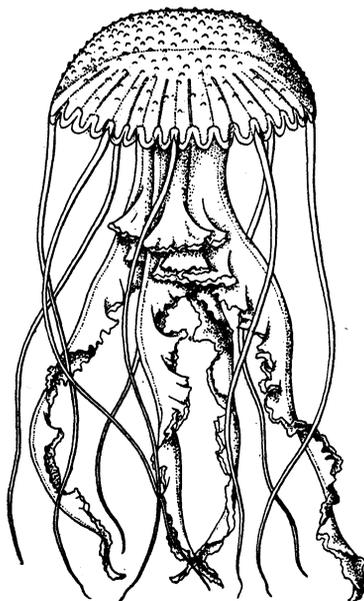


Fig. 1. *Pelagia panopyra* PÉRON et LESUEUR ($\times 2/3$)



Fig. 2. *Chrysaora helwola* BRANDT
($\times 1/2$)

of Hokkaido and Saghalien. Tentacles brown in colour. 16 brownish radial streaks on the subumbrella.

Genus *Dactylometra*

L. AGASSIZ, 1862

With 40 (5×8) tentacles, almost equal in length, 5 between each successive pair of sensory organs. 48 marginal lappets. In *D. pacifica* 16 more small tentacles and lappets appear.

3) *Dactylometra pacifica* GOETTE

The medusa is one of the commonest medusae in Japanese waters, including Honshu, Shikoku, Kyushu, Loochoo Islands and Korea. In Hokkaido and Saghalien only found as rare temporary visitors. Tentacles reddish brown. 16 brown radial bands on the exumbrella, which are rarely absent. The species is abundant from winter to late spring. It gives much annoyance to fishermen.

Genus "*Kuragea*"

KISHINOUE, 1902

With 56 (7×8) tentacles, nearly equal in length. 64 (8×8) lappets.

The genus may be united with *Dactylometra*.

4) *Kuragea depressa* KISHINOUE

The species is very rare in Japan. It is characterized by its flat exumbrella. Pigmentation on the exumbrella and the tentacles faint. The medusa, about 100 mm in diameter, is provided with 56 tentacles nearly equal in length and 64 well formed lappets, while *Dactylometra pacifica*, more than 150 mm in diameter, also has 56 tentacles and 64 lappets, of which 16 tentacles are

small and 16 lappets rudimentary. The specimens¹⁾ collected by TH. MORTENSEN in 1914 at Misaki and described by STIASNY (1922) as *K. depressa* are nothing but specimens belonging to *D. pacifica*.

b) Subfamily *SANDERINAE* GOETTE, 1886 emend UCHIDA

Pelagidae with 16 sensory organs and 16 radial diverticula. Gonads giving rise to sausage-like processes which are arranged on the outer margin and protruded beyond the subumbrella.

Genus *Sanderia* GOETTE, 1886

5) *Sanderia malayensis* GOETTE

The species is found in summer, mostly in the southern regions of Japan. Colour pinkish. Exumbrella marked with faintly brown radial bands. Abnormal forms frequently occur. It is a troublesome medusa to human beings on account of its poisonous nematocysts.

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1) Through the kindness of Dr. P. L. KRAMP of the Zoological Museum of Copenhagen, I was able to examine these specimens on the occasion of my visit there (1930).