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**ON A NEW SPECIES OF OEGOPSIDS
FROM THE BAY OF TOYAMA,
GONATUS SEPTEMDENTATUS.**

By

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富山灣より獲たる開眼類に屬する一新種

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This cuttle-fish is often caught with drag-net at 100 fathoms or more along the coast of Etchû Province, where it is commonly called "*Dosu-ika*" by the fishermen. All the specimens (in formalin) which came under my observation were females, and their measurements were as follows:

	mm.	mm.	mm.	mm.	mm.	mm.
Dorsal length of mantle	138	164	169	185	220	190
Ventral length of mantle	130	155	158	174	210	179
Circumference of mantle	112	125	120	132	170	135
Breadth of mantle	40	50	40	48	55	48
Length of head	40	43	37.5	40	48?	42
Breadth of head	42	48	38	—	51?	43
Length of fins	80	94	93	105	134	110
Length of first arm	<u>left</u> 70 <u>right</u> 70	<u>left</u> 82 <u>right</u> 81	<u>left</u> 79 <u>right</u> 76	<u>left</u> 88 <u>right</u> 88	— —	<u>left</u> 103 <u>right</u> 103
„ „ second arm	78 —	94 93	93 90	98 98	— —	108 108
„ „ third arm	70 —	90 89	— 92	95 97	— —	108 107
„ „ fourth arm	65 —	82 82	78 78	87 84	— —	102 102
Length of tentacle	190 —	120 125	115 115	160 160	— —	200 200
„ „ club	80 —	70 70	65 65	80 80	— —	100 100
Length of nidamental gland	25	35	35	35	50	—

The measurements of the gladius of a specimen with the mantle-length of

220 mm. are 210 mm. in the total length, 22 mm. in the breadth and 170 mm. in the length of the vane.

The specific characters resemble those of *Gonatus fabricii* (LICHTENSTEIN), except in the tentacular suckers and radula, by which both species are easily distinguishable, as described elsewhere.

The body is large, soft and nearly choroidal, being easily mutilated. The mantle, cylindrical at the anterior half, tapers towards the posterior end, and terminates in a slender posterior portion of about $1/3$ of the whole length, and it has, at the ventral anterior margin, a broad emargination bounded laterally by two angular projections, and at the dorsal anterior margin, a slight angular median projection. The fins are broad, the total breadth being about equal to $3/4$ of the mantle-length, and together nearly rhomboidal in shape with a notching at the anterior attachment, and extending a little backwards beyond the posterior end of the mantle; their length are a little longer than half that of the mantle.

The head is about as broad as the mantle-opening and shows, at the ventral surface, a distinct siphonal excavation which is marked by a faint fold of skin along the boundary edge, and in a well preserved specimen, the anterior middle portion shows several longitudinal folds of skin. The olfactory crest of the neck consists of two semicircular folds, the ventral fold having a small membrane on the top. The eye-openings have a deep anterior sinus, the dorsal margin of which is markedly thickened. The collar-portion of the siphon is broad and free along the whole posterior margin around the neck. The siphonal resisting cartilage is distinctly broader than that of *Gonatus fabricii*, being nearly pear-shaped in contour tapering forwards, and having a broad median groove which also narrow towards the anterior. The pallial cartilage corresponding to the above is a longitudinal ridge which is not simply linear as occurs in *Gonatus fabricii*, but becomes much broader backwards, and rises highest at the anterior. The resisting cartilage of the nape is of cocoon-shape being a little expanded at both ends, with a longitudinal median groove marked laterally by 2 ridges, and it has a shallow sinus at each side of the groove at the anterior terminal margin.

The arms are subequal, the formula of arm-length being $2 > 3 > 1 \div 4$, and the longest arm is about half as long as the mantle. The webs of the outer surfaces, of average breadth, are developed in the usual manner. The umbrella, very narrow, as in *Gonatus fabricii*. The ventral arms have only suckers about 130 in number, arranged in 4 series, those of the 2 inner rows being a little larger. The lateral and dorsal arms have 2 marginal series of small suckers and 2 inner series of slightly

larger hooks, except at the proximal part as well as at the distal, there being $1/3$ – $1/4$ the length of each arm where only suckers are found (5 or 6 rows of suckers at the extreme base of each arm followed by 20–27 hooks, the last row of hooks stopping at the place $1/3$ or $1/4$ of the arm-length from the extremity). This number of hooks shows some variation among different individuals as well as among the different arms of each individual. The distal half of the horny ring of each sucker has about 10 sharp teeth, while the rest of the margin projects a little, showing a sickle-shaped edge, the median part of which sometimes bends forwards. The teeth, triangular in shape, laterally flattened are largest in the middle of the row.

The tentacles show a great variation in length that is caused by the degree of contraction, but seem about as long as the mantle, and the stalk is a little flattened laterally, with a flat but narrow inner surface. The club comprises about $1/3$ of the whole length of the tentacle, and is expanded lanceolately, with an elongate terminal portion; and the web on the outer surface is well developed, becoming wider towards the extremity and bending to the dorsal side distally.

The tentacular suckers are more simple than those of *Gonatus fabricii*, the hooks being entirely lacking in all the specimens which I examined. They are very numerous, occupying the whole inner surface of the distal half of the tentacle, and are equally minute, but those of the median region are a little larger than the others. In the specimen, of which the mantle-length is 164 mm, the series of the connective suckers, (about 57 suckers alternating with the fixing warts of the same number), begins at the extreme base of the sucker-bearing surface, and it runs along the dorsal margin of the club, towards the extremity, and stops at a distal point leaving $1/3$ of the sucker-bearing surface; the suckers farther distal of the connective ones along the same margin are about 46 in number. The number of the suckers contained in each transverse row in the same specimen is about 12 at the carpal portion, about 24 at the widest hand-portion and about 6 at the slender distal portion. And, there is at the extremity a circular series of 11 suckers. All these tentacular suckers are oblique in shape like the arm-suckers, and the aperture is large. The horny rings have, along about $4/5$ of the circumference of the higher margin, long teeth such as occurred in the arm-suckers, the number of the teeth being about 15 in the largest sucker.

The gladius resembles also that of *Gonatus fabricii* being provided with an endocone at the posterior; but the wings have much longer extension than *G. fabricii*, begin at the point of the anterior $1/5$ of the whole length from the end.

The whole outer surface of the mantle and head as well as the entire surface of

the arms and fins even in their inner or ventral sides, are thickly covered with minute and deep brownish chromatophores, and the chromatophores are imbedded in the skin which comes off easily.

The radula shows a characters entirely different from that of *Gonatus fabricii*. It comprises 7 series of teeth as it occurs in the most species of the Decapoda, and the median tooth is tricuspid, the lateral teeth, bicuspid, and both marginal teeth, unicuspid, being much longer than the preceding ones especially the outer marginal which are about thrice as long as the median one.

Remarks.— BERRY mentioned * 2 specimens caught on the coast of North America, identifying it with *G. fabricii*. According to his description and figures, these specimens seem to be identical with my present species, which is easily distinguishable from *G. fabricii* as the following key shows.

1. Tentacle with 2 or 3 larger hooks and some smaller ones as well as with numerous minute suckers. Three dorsal pairs of arms with 2 marginal series of smaller suckers and 2 central series of larger hooks along whole length. Radula with 5 series of teeth ; middle teeth tricuspid, others unicuspid.....
.....*Gonatus fabricii* (LICHTENSTEIN).
2. Tentacle with only suckers of very minute sizes. Three dorsal pairs of arms with 2 marginal series of smaller suckers and 2 central series of a little larger hooks, but at basal and distal portions with only suckers arranged in 4 series. Radula with 7 series of teeth ; middle tooth tricuspid, lateral teeth bicuspid and both marginals unicuspid *Gonatus septemdentatus* sp. nov.

* Bull. U. S. Bureau of Fisheries, XXX, p. 310, Pl. Lii, figs. 1, 2; Pl. Liii; Pl. Liv, figs. 1-4; Pl. Lv, figs. 1, 3-7. 1912.

摘 要

富山縣の沿岸に於て百餘尋の深海より偶々漁獲さるゝ珍しき烏賊あり新種なるが如し。本種は該地方の漁夫に依りて**ドスイカ**と稱せられ、体稍々大にして**スルメイカ**と匹敵す、体の全面は海老茶色を呈し脚は中央を走る二列の鈎列と其兩外側を走る左右各一列の吸盤を有せり、*Gonatus fabricii* に似る所あれども齒舌の齒列が七縦列に並べること、各脚の尖きと根元には吸盤列のみにして鈎列を欠くこと等に依りて區別し得可く又捉脚には微小なる吸盤のみにして鈎を有せざること亦大いに注意す可き相違なりとす。嘗て Berry が北米の沿岸に於て獲たる二個の烏賊に就きて記載せる者あり、其記載及圖版を見るに正しく本新種なる之如きも同著者は *G. fabricii* と見做せり、然れども余は上記の如き相違によりて之を明瞭に區別なし得るを以て茲に本新種を創出する所以なり。
