

貝類研究雜誌

VOL. I **ヴ井ナス** (THE VENUS) No. 2.

昭和4年2月 (February, 1929)

日本産ヒザラガヒ類の研究 (1)

Studies on Japanese Chitons (1)

瀧 庸, 瀧 巖

(By ISAO TAKI and IWAŌ TAKI, brothers)

本邦産のヒザラガヒ類の分類學的研究は從來, WOOD (1815), BRODERIP & SOWERBY ('28-'29), SOWERBY ('40), MIDDENDORFF ('46), ADAMS & REEVE ('47), REEVE ('47), GOULD ('59, '62), SCHRENCK ('67), LISCHKE ('73, '74), TAPPARONE-CANEFRI ('74), DALL ('78, 1926), PILSBRY (92, '93, '95, '01), THIELE ('09), BERRY ('17)等の諸學者によつてなされ, 既知の種類は四十餘種に達する程である. 併しその中には不完全な記載と思はれるものもあり, 又我等の容易に採集し得るものでも之等既知の何れにも同定し難きものがある. 即ち此の方面の研究は多くの未開拓の部分が残されてゐるといふことが出来る. 殊に邦人の手に成つた報告は瀧 庸(1924)を挙げ得るに過ぎぬ位である. それで我等兩人は上に掲げた標題の下に, 分類學的或は一般形態學的研究を逐次本誌上に發表し, 此の方面の知識に多少なりとも貢献したいと思ふ.

Genus *Notoplax* H. ADAMS, 1861.

Subgenus *Ikedaëlla*. new subgenus.

Diagnosis: Anterior valve with 5 ray-ribs; median valve with a prominent diagonal row of tubercles; posterior valve depressed-conical, insertion-plate narrow, subtriangular, multifissate in the posterior margin; girdle clothed with microscopical spinelets, scales missing. Type: *N. conicus*, new species.

This new subgenus apparently has a close relation with the subgenera *Loboplax*¹ (Pilsbry, 1893) and *Amblyplax*² Ashby (1926), but the characters of the tegmentum, insertion-plate of the median valve, and especially of the tail valve, are quite different from those of these subgenera. The essential points of difference among these three subgenera are as follows:

Characters	<i>Loboplax</i>	<i>Amblyplax</i>	<i>Ikedaëlla</i>
Ray-ribs of head valve	present	not prominent	present
Jugum	indiscriminable	prominent	prominent
Diagonal rib	absent	absent	present
Tail valve	flat	flat	depressed-conical
Sutural-plate of tail valve	broad and truncate	broad and truncate	narrow and subtriangular

Notoplax (Ikedaëlla) conicus, new species.

(Plate II, figs. 7-9, textfigs. 1-6)

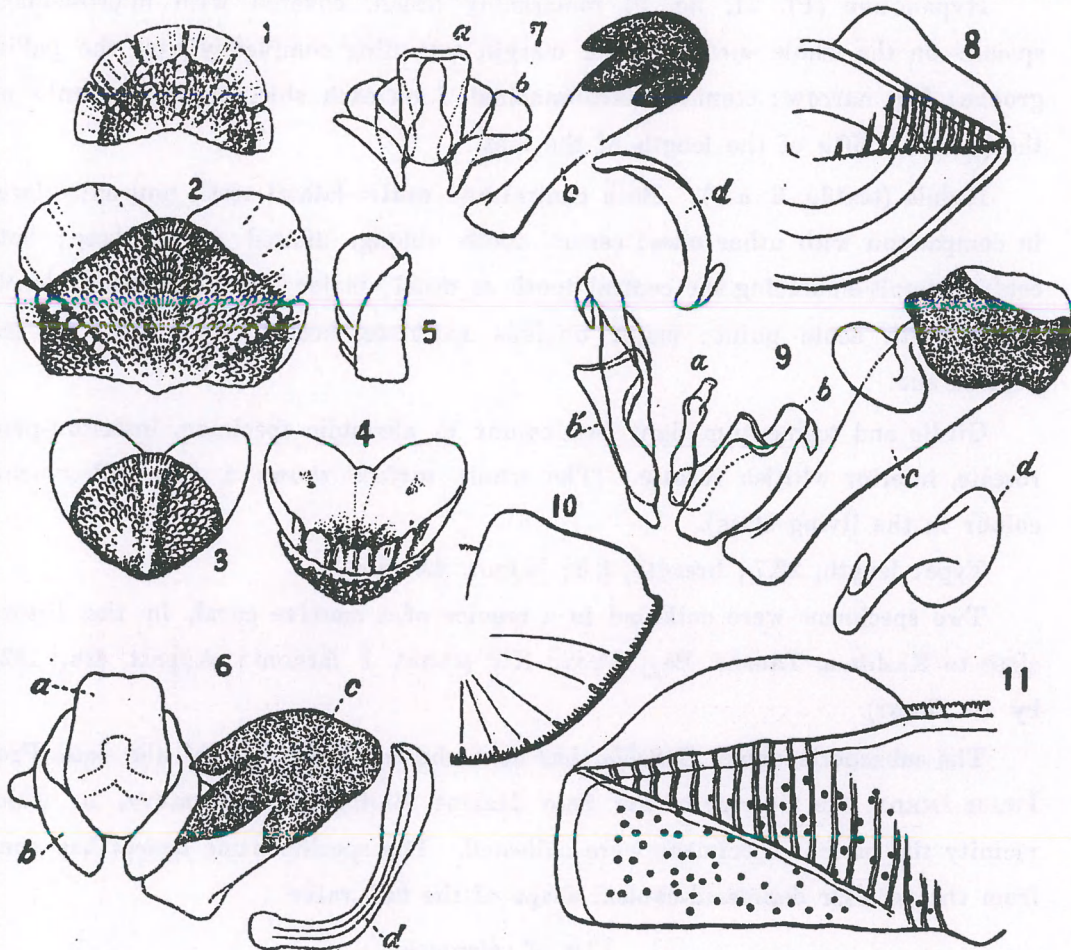
Body elongated, girdle as broad as the valves, deeply encroached at the suture, valves scarcely imbricated.

Girdle apparently smooth, leathery, covered with microscopical glassy spicules; 18 tufts of needle-like slender spines in usual arrangement.

Head valve (textfig. 1) rounded, with elevated apex, coarsely granulated throughout, having 5 radiating ribs of tubercles, which terminate in lobes at the margin, posterior margin somewhat sinuated; insertion-plate well developed, with 5 slits, teeth pectinated, with weak radiating grooves.

Median valve (textfig. 2, 4th valve) squarish, with pentagonal tegmentum, sculptured coarsely with granules; jugum slightly keeled at the ridge, wedge-shaped, rather smooth, covered with elongated weak granules, beaked at the posterior

1,2) The members of these subgenera have been recorded only from the southern Pacific, especially from Australia and New Zealand. As far as we are aware, no previous report of the occurrence of these forms has been made in the northern Pacific.



1-6 : *Notoplax (Ikedaella) conicus*, ヒトデヒザラガヒ. 1, 頭板; 2, 中間板; 3, 尾板背面; 4, 同腹面; 5, 同側面; 6, 齒舌. 7, *Notoplax dalkii*, ウスベニヒザラガヒ; 齒舌. 8-11, *Chiton kurodai*, クサズリガヒ. 8, 尾板背面; 9, 齒舌. 10, 尾板腹面; 11, 中間板.

end; lateral area slightly elevated, bounded by a conspicuous diagonal rib of tubercles, posterior edge also tuberculated; pleural area broad. Insertion-plate broad, almost smooth, posterior part and teeth slightly pectinated, one slit on each side.

Tail valve (textfigs. 3-5) depressed-conical, surface sculpture similar to that of the median valve; jugum rather distinct; mucro retracted to the terminal, slightly elevated; tegmentum fan-shaped; posterior area concealed under the mucro, distinctly bounded from the pleural area, tubercles arranged in about 7 radiating rows. Insertion-plate rather narrow, subtriangular, with 7 slits; teeth slightly pectinated, denticulated at the margin.

Hyponotum (Pl. II, fig. 9) remarkably broad, covered with microscopical spicules on the whole surface; inner margin extending completely over the pallial groove; foot narrow; ctenidia merobranchial, 7 on each side, occupying only on the posterior fifth of the length of the foot.

Radula (textfig. 6, a-d): Both central and centro-lateral teeth unusually large in comparison with other ones; central tooth oblong, dilated at the base; both centro-laterals embracing the central tooth as usual; major lateral tricuspid, deeply incised, with acute point; major uncinus spatulate, keeled, with more or less pointed end.

Girdle and tegmentum light flesh-colour in alcoholic specimen, insertion-plate roseate, interior whitish roseate. (The whole surface shows a fine yellow-ochre colour in the living state).

Type: length, 22.7; breadth, 9.5; height, 4.0 mm.

Two specimens were collected in a crevice of a massive coral, in the littoral close to Kashima, Tanabé Bay, Prov. Kii (about 1 fathom; August 4th, 1925, by Iw. TAKI).

The subgeneric name, *Ikedaella*, has been chosen in memory of the late Prof. IWAJI IKEDA, the founder of the Seto Marine Biological Laboratory, in which vicinity the present specimens were collected. The specific name *conicus* has come from the peculiar depressed-conical shape of the tail valve.

List of reference

PILSBRY, H.A. (1893): *Man. Conch.*, XV; NIERSTRASZ, (1905): *Die Chitonen der Siboga-Expedition, Siboga-Exp.*, Bd. XLVIII, S. 66-68; THIELE, (1909-'10): *Revision des Systems der Chitonen, Zoologica*, Bd. 22, Heft 56; ASHBY, (1926): *The achanthoid chitons of New Zealand, Proc. Malac. Soc. Lond.*, 17: p. 5 *et seq.*

Notoplax (s.s.) *dallii*, new species. (Pl. II, fig. 5, textfig. 7)

Body oval; valves slightly elevated, broad, beaked. Girdle wide, apparently smooth, though covered with very minute short spicules; intermixed with white dirk-shaped slender spicules; 18 tufts of bristles around the valves.

Surface of the valves granulated; head valve semicircular, without ridge, with granules in radial arrangement; having 5 slits, teeth smooth, thin, broad.

In the median valve, jugal and latero-pleural areas distinct; jugum wedge-shaped, smooth, keeled; latero-pleural area covered with rather coarse, flat, scale-like, drop-shaped granules, arranged in radiating rows. Sutural plate broad, smooth, with a shallow slit on each side; whence a groove runs up to the

tegumentum.

Mucro central, slightly elevated, posterior slope concave; jugum narrow, smooth; granulation similar to that in the other plates. Sinus flat, anterior edge of the insertion-plate moderately concave; central part of the interior concave, surrounded by a weak arcuated ridge; with 10 slits at the posterior edge.

Girdle yellowish brown or light reddish purple; tegumentum roseate, rarely with black patches; jugum more deeply roseate. Interior pink throughout.

Gill merobranchial, from beneath the 5th valve to the end of foot; 12 ctenidia on each side.

Radula (textfig. 7, a-d) about 58 rows, central tooth broad, oblong; centro-lateral consisting of three lobes, the innermost being saddle-shaped, the others directed outward; major lateral 3-cuspid, the median cusp being the longest; major uncinus arcuated, spoon-like.

Type: length, 15.5; breadth, 9.0; height, 3.2 (in mm.).

Locality; Baishinji-hama, Prov. Iyo (1917); Misaki, Prov. Sagami (1924) (Type).

Remarks: This species is closely allied to *Notoplax döderleini* of THIELE, (*l. c.*, I. Teil, p. 39, pl. 5, figs. 32-38, 1909), but there are some remarkable differences between these two as shown in the following table:

Characters	<i>N. dallii</i>	<i>N. döderleini</i> THIELE.
1. outline of valve	very wide	rather narrow
2. jugum of the median valve	narrow and acute	wide
3. „	almost smooth	“deutlich längsgestreift”
4. „	median ridge present	absent? (no description and no trace of a similar character on the figure)
5. lateral area	bounded by a very faint diagonal rib	absent? („)
6. tail valve	wide, nearly rhomboid	almost ellipsoid
7. „	a faint rib radiates from the mucro on each side	smooth?

These points of difference may be partly attributed to the difference in age of

the specimens, since TITTELE described his new species, *N. diderleini*, on a single extremely small example (6 mm) from Kajiyama, Kagoshima Bay, which was probably still immature. But we believe that it is worth while to rank the present species as distinct, because of the disparity of the characters between them, as seen above.

We dedicate this new species to the late Dr. W. H. DALL, who kindly examined some of our manuscripts.

Ischnochiton (*Lepidozona*) *iyensis*, new species.

(Pl. II, fig. 4)

Body elongate-oval; girdle narrow, covered with densely imbricating, oval, smooth and convex scales. Shell elevated, with an angular dorsal ridge.

Head valve provided with about 60 obsolete, radiating riblets; with 8 slits.

Jugum of median valve distinct, with 17 diverging longitudinal riblets on the second valve, 7-8 on the others. The number of the longitudinal lines of the pleural area varies from 14 to 20, and the intervals between these lines regularly latticed across. Lateral area moderately elevated, with 5-6 obsolete, radiating wrinkles, on which several minute granules are scattered. Each median valve, having one slit on each side.

Jugum of the tail valve less conspicuous; pleural area with similar sculpture as in the median valve; mucro central, somewhat elevated, from which about 25 quite obsolete, pustulose wrinkles radiate; with 10 slits.

Shell brownish roseate, girdle darker than the shell.

Length 23, breadth 13, height 6.5 (in mm.) Divergence about 92°.

Type: one dried specimen; off Gunchû-machi, Prov. Iyo, 1915. (found on a living shell of the edible *Rapana thomasiana*).

This species resembles *I. craticulatus* of GOULD¹, but is separable from this by the greater number of the radial riblets of the head valve, and by the inconspicuousness and scarcity of granules of these radial riblets and also by the scarcity of the number of slits of the head and the tail valves. It differs from *I. mertensii* of MIDDENDORFF² by the sculpture of the tegmentum and the number of slits.

Chiton kurodai, new species.

(Pl. II, fig. 3, textfigs. 8-11)

Chiton sp. ISAO TAKI (1924), *Dôbutsugaku-Zasshi*, 36: 285-286, with textfig.

1) GOULD, Proc. Boston Soc. Nat. Hist., vii, p. 161 (1859).

2) MIDD., Bull. Acad. Sci. St. Pétersb., vi, p. 118 (1847).

(in Japanese).

Body elongate-oval; girdle densely covered with imbricating scales. Shell elevated, moderately beaked on the median valves. The whole tegmentum is pitted microscopically into a fine reticulum, or with more minute pustulation, when it is free from erosion.

Head valve smooth, apparently without sculpture; slits 8-9; teeth thick, solid, well pectinated.

Lateral area of the median valve (textfig. 11) moderately elevated, smooth; jugum scarcely defined; pleural area sculptured with 14-18, weak longitudinal lires, which become obsolete and short toward the ridge; sinus shallow, with pectinated base, one slit on each side, teeth finely pectinated.

In the tail valve (textfigs. 8 & 10), mucro in front of the middle, posterior slope concave; central area with 11-14 lires; jugum inconspicuous; slits 9-12; teeth pectinated.

Gill holobranchial, number of ctenidia about 27 on each side.

A variegated and beautiful species. Shell roseate, with a broad paler area along the middle, painted with dark brown on its margin; girdle pale greyish-green, tessellated with dark colour; sometimes the shell is painted with a dark reddish brown, greyish-green, olivaceous, or even with a black colour.

Type: length 19.2, breadth 11.5, height 4.3 (in mm.) Divergence about 100°.

Radula: Central tooth (textfig. 9 a) slender, a short elongation articulated at the tip; centro-lateral (9 b, face, 9 b' lateral view) is a thick rod, combined with a thin and broad dilatation on the outer side, with a claw-like appendage on its apex; major lateral (9 c) well developed, with obtuse edge, under which there is a round outgrowth on the inner side; major uncinus (9 d) short, ending in an oval wing.

Locality: Prov. Iyo (1914); Misaki, Prov. Sagami (1924); Seto, Prov. Kii (1928) (Type).

Chiton aquatilis of REEVE (Conch. Icon., f. 73; PILSBRY, Man. Conch. XIV, p. 169) has been reported from Japan, but the present species is distinguishable from this by the smaller size of the shell and by the presence of pleural lires. *Chiton* sp., of BERRY (Proc. U. S. Nat. Mus., vol. 54, 1917), collected in Prov. Rikuzen, is quite different from the present species, both in the outline of the body and in sculpture.

It is a great pleasure for us to dedicate this species to Mr. T. KURODA, to whom we owe much of our knowledge concerning mollusca.

Ikedaiella (新亞屬) ヒトデヒザラガヒ亞屬 (新稱)

本亞屬は *Notoplax* 屬中の濠洲に産する2亞屬 *Loboplax*, *Amblyplax* に近似してゐるが、特に中間板に明瞭な顆粒状の斜行列があること、及び尾板が扁壓圓錐形であること等によつて之等と區別し得る。

新亞屬名 *Ikedaiella* は、その模式種が京都帝國大學理學部瀬戸臨海研究所の近海で採集せられたことに基き、同研究所の創設者、故池田岩治博士を記念する爲めにかく名づけられたものである。

Notoplax (Ikedaiella) conicus, (新種) ヒトデヒザラガヒ (新稱) (圖版 II, 7—9; 挿畫 1—6)

肉帯及び殻板は淡肉色、殻板の内面は薔薇色、紀伊田邊灣内の神島の沿岸にて大正14年、瀧 巖採集。和名は頭板に5條の放射肋のあるのを掌になぞらへたものである。體長、22.7 耗。本種を本亞屬の模式種とする。

Notoplax (s.s.) dalli (新種) ウスベニヒザラガヒ (新稱) (圖版 II, 5; 挿畫 7)

N. döderleini THIELE (鹿兒島灣産) に似てゐるが、各殻板は一層幅廣く、背域は幅狭く滑で、正中線上に隆起線を有し、側域には不顯著な斜行隆起があること等によつて區別せられる。伊豫、相模産。體長、15.5 耗; 殻板は薔薇色、肉帯は黃褐色。

Ischnochiton (Lepidozona) iyoensis, (新種) セダカヤスリヒザラガヒ (新稱)

(圖版 II, 4)

背隆起殊に高く、中間板の背域及び肋域の縦彫刻は明瞭で、側域には浅い放射状の溝がある。大正4年伊豫郡中町の沖にて採集せらる。體長23耗、色は帶褐紅色。

Chiton kurodai, (新種) クサズリガヒ (平瀬) (圖版 II, 3; 挿畫 8—11)

小形の美麗種で、桃色、褐色、灰綠色、黃褐色等を以て彩られることがある。伊豫、紀伊、相模にて採集せられた。和名は *Chiton* の英名 coat-of-mail shell の意味をとつたものであると。體長 19.2 耗。



Is. TAKI & Iw. TAKI: Japanese Chitons.