

Indo-Pacific Chamidae – Part II

Chama ambigua — *Chama brassica* complex

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Introduction: For this series of articles, the author did not prefer an alphabetical review, but species that somewhat resemble each other (as far as seen by non-specialised people) are clustered. In this second article, *Chama ambigua* Lischke, 1870 and the complex of *Chama brassica* Reeve, 1847 are treated. *Chama brassica* is established as a nomen protectum.

2. *Chama ambigua* Lischke, 1870

Lischke, 1870. Malakozologische Blätter. Vol. 17: 27.
 Lischke, 1871. Japanische Meeres-Conchylien. 2: 128:
 pl. 8, fig. 2.

“Testa rotundato-ovata, valde crassa, ventrosa, alba, lamellis pallide purpureis ornata; intus alba, postice et infra plerumque fusco vel violaceo limbata; valva sinistra in latere affixa, ejusdem pars libera sensim ascendens, ideo tectiformis, lamellis concentricis plicatis instructa; valva dextra multo minor, parvum convexa, pariter lamellosa; margo valvarum internus integer. — Alt. speciminis maximi 80, long 60, lat. 52 millim.”

[translated: Shell round-ovate, very thick, swollen, white, with pale purple lamellae; white within, mostly posteriorly and anteriorly tinged with brown or violet; left valve broadwise attached, the free part growing upwards, so tectiform (roof-shaped), and with concentrically folded lamellae; the right valve much smaller, slightly convex, equally scaled; inner margin of the valves smooth]

Lischke (1870: 29) mentioned 39 specimens of *Chama* collected at Nagasaki, of which 4 specimens belong to his new species *Ch. ambigua*. Lischke (1871: 128) mentioned “Habitat ad Nagasaki” [= type locality]. He also distinguished the species from the very superficially resembling *Ch. imbricata* Broderip.



The figured type in Lischke, 1871

Note concerning Lischke and his types in Düsseldorf. Carl Emil Lischke (1813-1886) was born in Stettin (then Prussia), where he became an assistant judge at the Provincial Court. Soon he switched to a career in the Civil Service. In 1847, he was sent to Washington as a Royal Prussian Attaché entrusted with immigration affairs. After his return in 1850, he became mayor of Elberfeld for a period of 12 years. Still, since his childhood he had also been deeply interested in natural sciences (zoology and botany). In 1968 he was one of the founding members of the Deutsche Malakozologische

Gesellschaft and he had friendly relationships with Troschel, Kobelt, Weinkauff, Küster, Clessin and Dunker. The latter published a book exclusively focusing on Japanese molluscs in 1861. Lischke, with his extensive contacts among diplomates, merchants and sea captains, started his own collection of sea shells from SE Asia, mainly Japan. He continued the work of Dunker and published *Japanische Meeres-Conchylien*, whose first volume was dedicated to Dunker. In 1873 Lischke would limit himself to botany and he sold his collection and malacological library to the pharmacist Theodor Löbbecke, who had just put his pharmacy up for sale to completely dedicate his life to malacology. Lischke's shell collection became part of the extensive collection of Löbbecke, who moved to Düsseldorf. The Löbbecke Collection is still kept there in the Aquazoo—Löbbecke Museum. [Info based on the excellent article by von Cosel, 1998]



Holotype of *Chama ambigua*

[photo: S. Curth © Aquazoo Löbbecke Museum, Düsseldorf, Germ.]

3. Complex: *Chama brassica* Reeve, 1847

***Chama brassica* Reeve, 1847**

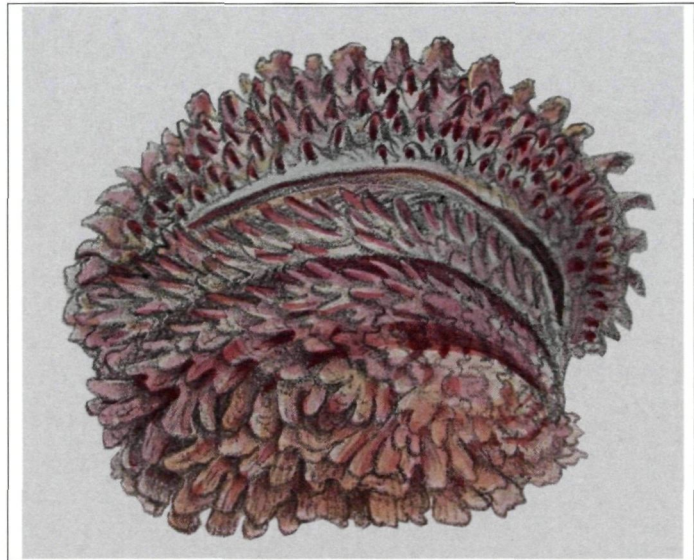
Reeve, 1847a. Proc. Zool. Soc. London. Part XIV: 119. [Latin description only]

Reeve, 1847b. Conch. Icon. Vol. IV. *Chama*, sp. 31. *Chama brassica*. Pl. VI, fig. 31:

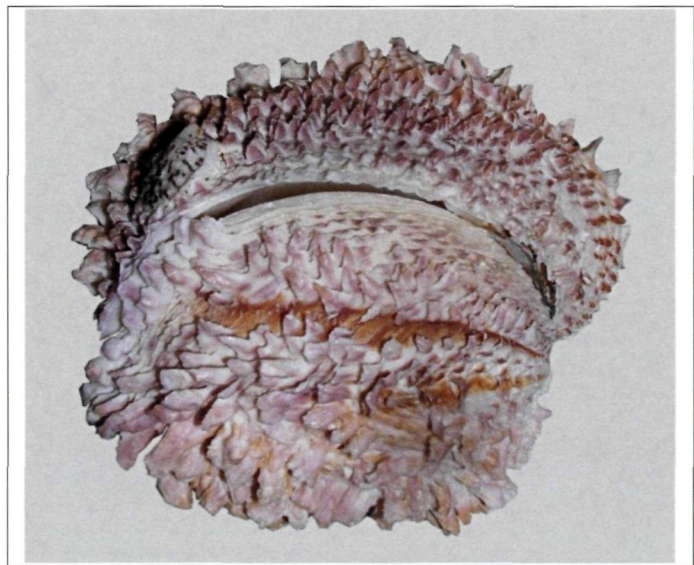
“CHAMA BRASSICA. Cham. testâ suborbiculari-ovată, circuiter trigonâ, valvis ambabus rugosis, profusè squamatis, squamis valvae superioris subfoliaceis, inferiori brevibus, erectis; albidâ, squamis roseis.

THE CABBAGE CHAMA. Shell somewhat orbicularly ovate, circuitously triangular, both valves rough, profusely, squamate, scales of the upper valve slightly foliaceous, of the lower short and erect; whitish, scales pink.

Hab. Island of Cabul, Philippines (under stones at low water); Cuming.” [= type locality].



The figured syntype in Reeve, 1847b



Lectotype of *Chama brassica* in NHMUK

Type material: The lectotype, which was designated by Delsaerd (1986), is kept in NHMUK (19951761), measurements 65.5 x 53.8 mm, and was excellently figured in Reeve (1847: fig. 31), full-size. Two paralectotypes are kept in NHMUK (1995176 2-3); measurements 55.1 x 43.7 mm and 44.5 x 33.2 mm.

Ch. brassica is a well-known species, usually with purplish scales with a characteristic shape. Specimens with a yellow colour are rare. The inner margins are smooth and of the same colour as the outside of the valves. The smooth inner margins were often mentioned by Smith (1885: 171), Hidalgo (1903: 380) and Lamy (1921: 239, 1927: 325), a.o.



The characteristic shape of the scales

Distribution: In coll. author specimens from Andaman Islands, Thailand, Malaysia, Philippines, Australia, Solomon Islands. In literature: Vietnam, “attached to rocks and corals at 1–40m, uncommon” (Thach, 2005: 270, pl. 82, fig. 1). — Tonga (Smith, E.A., 1885: 171). — “Found on ship bottoms in Pearl Harbor; its present status in the Hawaiian Islands is unknown” (Paulay, 1996: 25). But Kay (1979) nor Moretzsohn & Kay (1995) mention the species for Hawaii. — Society Islands and Marquisas are mentioned by Tröndlé & Boutet (2009: 8), but the species does not seem to have reached French Polynesia; also not mentioned by Salvat & Rives (1983).

Chama elatensis Delsaerdt, 1986

Delsaerdt, 1986. Revision of the Chamidae of the Red Sea. *Gloria Maris* 25 (3): 120-121, pl. 8, figs. 1-4.

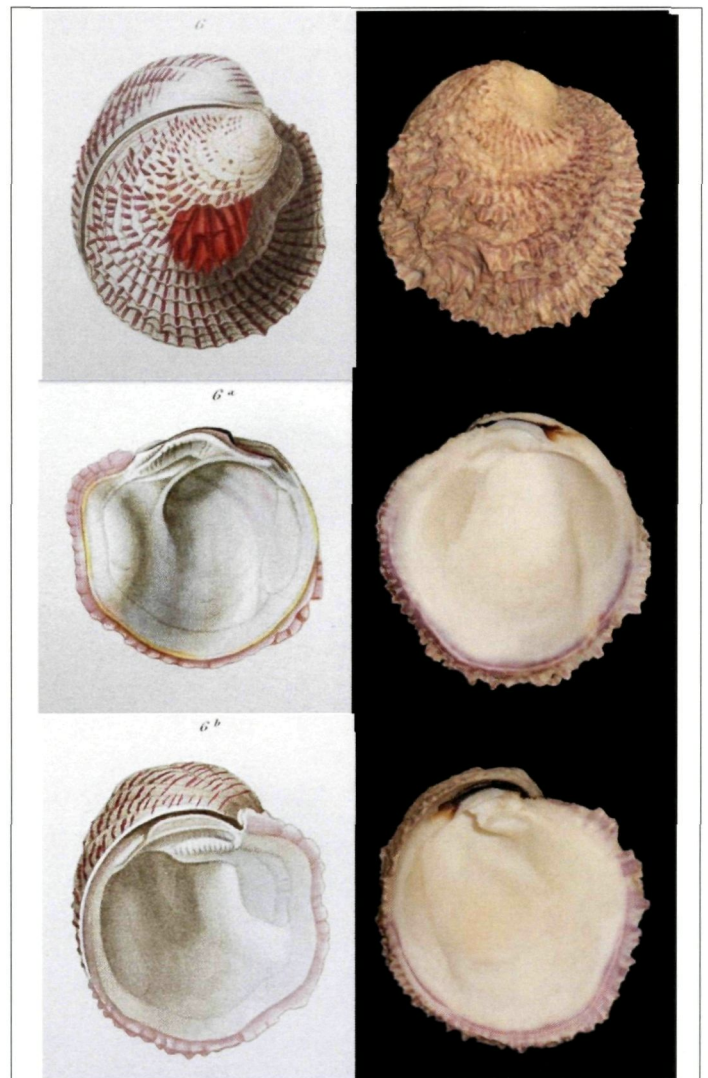
Some 35 years ago Dov Peled (Israel) brought specimens from Eilat, which were different from the Indo-Pacific specimens of *Chama brassica*, to my attention. He was convinced that these Eilat specimens belonged to a separate species. Edgard Haviland (Florida) shared Dov Peled’s opinion. Photos of specimens kept in Coll. J. Rapoport (Israel) confirmed the same characteristic: all the examined specimens from Eilat have obviously crenulated inner margins (instead of the smooth margins of the Indo-Pacific specimens). This crenulated margins are not a growth stage of juvenile or subadult specimens: The holotype and 4 paratypes have a length of 60+ mm. By way of precaution, I preferred to describe the Eilat specimens as a new subspecies in 1986: *Ch. brassica elatensis*. Type locality: “Eilat South, Gulf of Aqaba”.

Huber (2010: 675) synonymised the crenulated form *elatensis* with *Ch. brassica* as “some *brassica* from the Philippines or from Japan studied demonstrated weak crenulations as well...”. However, other people specialised in the Red Sea molluscan fauna share the opposite opinion: Menesini (1995: 88) considered *Ch. elatensis* a separate species. G. Verbinnen (Belgium), H. Dekker (The Netherlands), D. Korkos (Israel), M. Kovalis (Israel) cannot accept that these *Ch. elatensis* specimens are just a form of *Ch. brassica*. D. Korkos, who has seen many such specimens from the Gulf of Aqaba, concluded: “My opinion is that it is a different species”.

Chama chinensis Chenu, 1846

Chenu, 1846. Illustrations Conchyliologiques. Vol. I. — *Chama*: pl. 5, figs. 6, 6a, 6b.

The colour plates realised for Jean Charles Chenu’s work undoubtedly belong to the most beautiful colour plates in the history of conchology. Recent species of **Chamidae** were illustrated on 7 colour plates, fossil species on 2 black and white plates.



Figured type in Chenu (1846: pl. 5, figs. 6, 6a, 6b)
Syntype 1 in MHNG [photos: E. Tardy © MHNG]

Chenu figured "*Chama chinensis* Chenu". Compared with the other illustrated species, fig. 6 is rather poor. I enhanced figs 6a-6b using Photoshop. The publication dates of the *Chama* plates were different. Sherborn & Smith (1911: 266) gave 1846 for plate 5.

I could not find any description of **Chamidae** in the work by Chenu. Huber (2010: 676) mentioned that the type had not been traced as yet. Two syntypes have recently been found (MHNG - MOLL - 82278). Syntype 1 measures 68.7 mm (length), syntype 2 measures 52 mm (info: E. Tardy, MHNG). The hardboard label reads: "*Chama brassica* Reeve. / *Ch. chinensis* (Chenu ?) coll. Deless."

Huber (pers. comm., 2018) stated that "the name *Ch. chinensis* is unambiguously validated by the Geneva type material. According to ICZN Art. 72.10 Chenu's name replaces the later *Ch. brassica*". Yet, based on the same ICZN the name *Chama brassica* Reeve, 1847 can be maintained when the following conditions are both met: Art. 3.9.1.1. the senior synonym or homonym has not been used as a valid name after 1899, and Art. 3.9.1.2. the junior synonym or homonym has been used for a particular taxon, as its presumed valid name, in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years.

Of course it is very easy to find 25 works of at least 10 authors for a species of *Conus* or *Cypraea*, contrary to even a popular species of *Chama*. Yet, here they are: Aungtonya, Thaiklang & Srisuwan (1999: 377) - Bernard, Cai & Morton (1993: 65) - Bosch, Dance, Moolenbeek & Oliver (1995: 242) - Delsaerd (1986: 81) - Dey, A. & Ramakrishna (2007: 200) - Dharma (2005: pl. 104, fig. 15) - Héros, Lozouet, Maestrati, von Cosel, Brabant, & Bouchet (2007: 250) - Huber (2010: 675; 681 figs.) - Hutsel, Hutsel & Pisor (2001: 127) - Mensini (1995: 64, 72, 73 etc.) - Okutani (2000: 564, 1222) - Oliver (1992: 105) - Paulay (1996: 25) - Paulay (2003: appendix 1) - Poppe (2011: pl. 1079) - Qiqian (1984: 193) - Ramakrishna & Dey (2010: 144) - Robin (2011: 176, fig. 2) - Selli (1973: index pl. 8) - Springsteen & Leobrera (1986: 313) - Spry (1964: 119) - Subba Rao & Dey (2000: 237) - Tan & Woo (2010: 11) - Tan & Low (2014: 329) - Thach (2005: 270) - Tikader, Daniekl & Subba Rao (1986: 176) - Tröndlé & Boutet (2009:7) - Zongyan (2004: 259).

The late M.O. Montilla, a well-known Philippine shell dealer in his life wrote (in his letter 4.7.1981): "We here in the Philippines have very limited knowledge in *Chama*. All we know is *Chama lazarus* and *brassica*"

We have a clear and extensive original description of *Ch. brassica* by Reeve, the lectotype has been preserved and very accurately figured in the original description, a correct type locality and the specific name has been used

since Reeve. So, it does not make sense to drop this generally used name of one of the best-known *Chama* species of the Indo-Pacific. The present conclusion: ***Chama brassica* must be considered a nomen protectum.**

"Chama cf. chinensis"

On plate VI, specimens identified as "*Chama cf. chinensis* Chenu, 1846" are illustrated. In my collection there are several specimens from Madagascar (don. dr. Rabesandratana, 1982), several specimens from the Gulf of Aden and from the Philippines: These specimens have a stable sculpture that differs from the well-known *Ch. brassica*. This sculpture does not show the scales typical of the latter (see above). The shells are heavy and they are only white inside, with glossy milky-white margins. The status of these specimens is not clear to me. It is one of the reasons why this part is titled: "*Chama brassica* complex".

Beautiful specimens of *Ch. brassica* from the Solomon Islands are kept in my collection, but not a single specimen like these "*Ch. cf. chinensis*" was ever found by J. Kengalu and his team of divers.

Chama praetexta Reeve, 1847

Reeve, 1847a. Proc. Zool. Soc. Lond. Part XIV: 117.
Reeve, 1847b. Conch. Icon. Vol. IV. *Chama*, sp. 46.
Chama praetexta. Pl. VIII, fig. 46. English description:

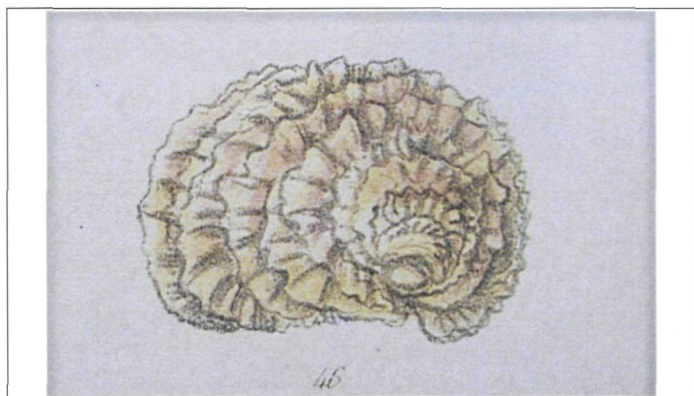
"THE FLOUNCED CHAMA. Shell ovate, both valves very beautifully concentrically fimbriated, frills thin, subpellucid, large, more or less erect, margins of the valves smooth; pale yellow, frills reddish beneath. Hab. — ?"

Reeve added: "This truly delicate and beautiful shell was received by Mr. Cuming from a continental naturalist of some celebrity as the *C. croceata* of Lamarck, but does not answer to the description. There are several Lamarckian species of this genus, and even the Linnean *C. gryphoides*, which is quite impossible to identify with the least degree of certainty."

The holotype is kept in NHMUK and readily recognisable in Reeve's fig. 46. Its measurements are 36.7 x 35.4 mm.

Clessin (1889: pl. 15, fig. 3) figured a specimen from "Mauritius (coll. Bülow)", identified "*Chama praetexta* Reeve", but it does not correspond with Reeve's figure. Tryon (1872: 119) listed *Ch. praetexta* and added "Perhaps = *C. frondosa*, Brod." [a well-known species from the Gulf of California]. Lamy (1921: 16) mentioned

specimens collected by Jousseume in Djibouti, Aden in 1817, which correspond with Clessin's figure of *Ch. praetexta*. He considered *Ch. praetexta* a valid species. We read the same in Lamy (1827: 313-314).



The figured holotype in Reeve, 1847b



Holotype of *Chama praetexta* in NHMUK

Huber (2010: 675) stated that the holotype of *Ch. praetexta* is "a smaller, whitish, lamellate *brassica* with smooth margins, but otherwise quite close to typical Red Sea or Indian Ocean forms."

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For photos of specimens from their own collection, I gratefully mention: Chino, M. (Japan) — Coltro, M. (Brazil) — Korkos, D. (Israel) — Kovalis, M. (Israel) — Verbinnen, G. (Belgium). W. Backhuys always encourages me in his personal way. A. Verhecken was the first referee.

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PLATE III

Chama ambigua Lischke, 1870

- | | | | |
|----|----------------|---|----------|
| 1. | 70.4 x 38.7 mm | Kii, Japan.
Right valve 47.3 x 33.6 mm, 31.8 x 29.7 mm. | [Ch.148] |
| 2. | 55.1 x 55.4 mm | Shirahama, -40m, Wakayama Pref., Japan (1988). | [Ch.462] |
| 3. | 40 mm | Sakai, Minabe, Wakayama Pref., Japan.
(upper valve 41.8 mm, lower valve 37.5 mm)
In Coll. M. Chino (Japan). | |
| 4. | 42.5 mm | Japan.
In Coll. Femorale. © Femorale. | |

Chama brassica Reeve, 1847

- | | | | |
|----|--|---|----------|
| 5. | 64.2 x 63,3 mm
(on the right: the left valve) | Off Phuket Island, Thailand. | [Ch.334] |
| 6. | 52.4 x 55.4 mm | Phuket Island, attached on coral, Thailand. | [Ch.205] |
| 7. | 71.9 x 68.9 mm | Cebu, Philippines.
(inside of the valves: pallial line and muscle scars
are indicated with a dotted line) | [Ch.108] |

PLATE IV *Chama brassica* Reeve, 1847

- | | | | |
|----|----------------|--|----------|
| 1. | 72.4 x 58.9 mm | Leg. J. Kengalu, 7.1987: inside a wreck of a
supply ship (World War 2), dived -30m,
Bonegi, near Kakambona village, W of Honiara,
Guadalcanal, Solomon Islands.
(the left valve was attached to an iron wall) | [02164] |
| 2. | 84.0 x 75.3 mm | Leg. J. Kengalu, 10.1985: inside a wreck of a
supply ship (World War 2), dived -30m,
Bonegi, near Kakambona village, W of Honiara,
Guadalcanal, Solomon Islands.
Left valve 72.6 x 71.2 mm
(found attached to iron wall). | [Ch.219] |
| 3. | 71.3 x 77.3 mm | Leg. J. Kengalu, 10.1985: inside a wreck of a
supply ship (World War 2), dived -30m,
Bonegi, near Kakambona village, W of Honiara,
Guadalcanal, Solomon Islands.
Left valve 72.6 x 71.2 mm
(found attached to iron wall). | [Ch.218] |

III



1



2



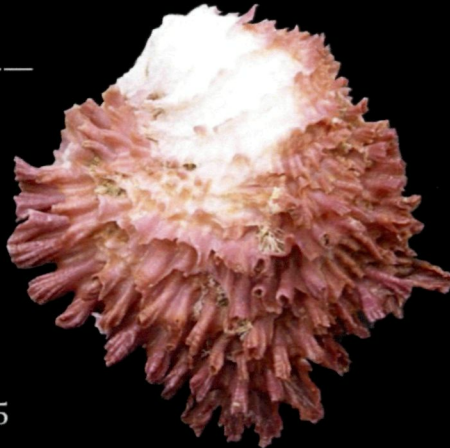
3



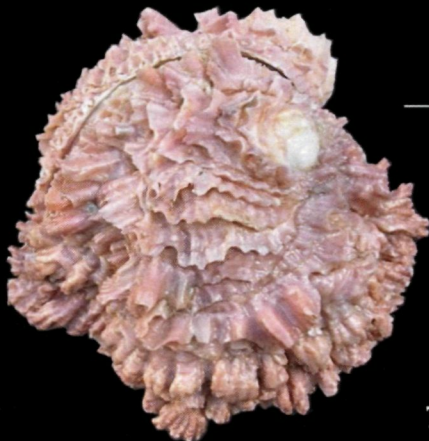
4



5



6



7



108

108

IV



V



VI



PLATE V *Chama elatensis* Delsaerdt, 1986

- | | | | |
|----|----------------|---|---------|
| 1. | 36.6 x 32.0 mm | Paratype 2
Leg. J. Rapoport, 1977: Eilat South, Israel, G. Aqaba. | [Ch.28] |
| 2. | 30.3 x 28.6 mm | Paratype 5
Leg. D. Peled, 3.1979: Eilat South, Israel, G. Aqaba,
on coral, depth 10-12 m.
Left valve 30.3 x 25.5 mm.
Right valve 22.9 x 30.1 mm. | [Ch.23] |
| 3. | 44.4 x 43.8 mm | Ex Coll. Edg. Haviland (Florida), 7.1980:
Red Sea. [no exact locality]
Right valve 44.4 x 43.8 mm. | [Ch.29] |
| 4. | 46.7 mm | Leg. M. Kovalis: Eilat, Israel, G. Aqaba.
In Coll. M. Kovalis (Israel). | |
| 5. | 78.3 x 67.0 mm | Leg. G. Verbinnen, 1989: Ras umm Sidd, - 3 à 4 m,
(S of Sharm-el-Sheikh), Egypt.
Red Sea, near the mouth of the G. Aqaba.
In Coll. G. Verbinnen (Belgium). | |
| 6. | 80,6 mm | Leg. M. Kovalis: Eilat, Israel, G. Aqaba.
In Coll. M. Kovalis (Israel). | |

PLATE VI***Chama elatensis* Delsaerdt, 1986**

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|----|---------|--|--|
| 1. | 63.7 mm | Leg. M. Kovalis: Eilat, Israel, G. Aqaba.
In Coll. M. Kovalis (Israel). | |
|----|---------|--|--|

***Chama cf. chinensis* Chenu, 1846**

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| 2. | 61.4 x 47.9 mm | Bohol, Philippines. | [Ch.461] |
| 3. | 66.0 x 52.3 mm | Mactan, Philippines. | [Ch.259] |
| 4. | 81.8 x 71.8 mm | Leg. Tan Siong Kiat, 6.2.2004:
Tanah Merah ferry terminal, Chiangi,
Singapore. | [Ch.345] |
| 5. | 82.3 x 67.5 mm | Leg. Tan Siong Kiat, 6.2.2004:
Tanah Merah ferry terminal, Chiangi,
Singapore. | [Ch.345b] |
| 6. | right (upper) valve
left (attached) valve | 79.2 x 65.3 mm (h x w) x 40.4 mm
94.3 x 74.2 mm (h x w) x 58.9 mm
W. Wranik (Wilhelm Pieck Universität,
Sektion Biologie, Rostock): G. Aden. | [Ch.310] |