

A NOVEL SPECIES AND A NOVEL SUBSPECIES OF *VOLUTIDAE* FROM NORTHWESTERN AUSTRALIA

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A B S T R A C T

A novel species of *Amoria*, *A. rinkensi*, and a novel subspecies of *Teramachia dalli* (Bartsch, 1942), *T. dalli claydoni*, are described.

KEYWORDS : *Gastropoda* - *Volutidae* - *Amoria* - *Teramachia* - *Amoria rinkensi* - n.sp. - *Teramachia dalli claydoni* - n.ssp.

I N T R O D U C T I O N

Shrimp boats trawling off the northwestern coast of Australia have recently obtained several interesting deep-water *Volutidae*, amongst others *Teramachia dupleayae* Emerson, 1985, and two unknown shells that will be described hereunder.

*Amoria rinkensi* n.sp.

The description of *A. rinkensi* is based on two dead-taken specimens, showing characteristics different from all other known *Amoria*.

TYPE MATERIAL : The holotype is in the Koninklijk Belgisch Instituut voor Natuurwetenschappen : collection number 26.989. The paratype is in the G.Poppe collection.

TYPE LOCALITY : 280 km. north north-east of Port Hedland, Western Australia.

RANGE : known only from the type locality.

HABITAT : both specimens were trawled at a depth of 475 m.

DIMENSIONS :

Holotype : height, 72.6 mm.; width, 32.0 mm.

Paratype : height, 73.1 mm.; width, 31.5 mm.

SHELL CHARACTERISTICS : The solid shell has an oblong-ovate shape. In the type specimens, it is hard to distinguish with certainty the transition from protoconch to teleconch. The light color and the shape of the very first whorls suggest a large protoconch. The protoconch and teleconch total 6 whorls together. The last whorl is extremely large : it measures 63 mm. in height in the holotype, and 64 mm. in the paratype. All whorls are very convex.

The lip becomes thicker towards the aperture, a characteristic more evident in the holotype than in the paratype. This suggests that the paratype is a subadult animal.

The columella has 6 strong plaits in the holotype, 5 in the paratype.

It is noteworthy that the paratype has a "double plait" (two plaits that "join together"). The siphonal notch is deep.

The color of the corroded type specimens is light apricot cream. Just above the suture there is a dark colored band of "callus", much in the same way as in *Amorioa grayi* Ludbrook, 1953. The columellar plaits are white. In the holotype, the aperture is completely white inside and a white callus covers the lower columellar plaits.

REMARKS : Because of the poor condition of the type specimens, live collected shells may reveal another base color and a beautiful ( or an ugly ? ) pattern. Presently, the following species are known in the genus *Amorioa* :

*A. lenthalis* McMichael, 1964

(considered by some authors as a dwarf form of *Amorioa undulata* (Lamarck, 1804)).

*A. canaliculata* (McCoy, 1869)

*A. damonii* Gray, 1864

*A. dampieria* Weaver, 1960

*A. diamantina* Wilson, 1972

*A. ellioti* (Sowerby II, 1864)

*A. exoptanda* (Reeve, 1849)

*A. grayi* Ludbrook, 1953

(*A. kawamurai* Habe, 1975 is a color variant of this species.)

*A. guttata* McMichael, 1964

*A. jamnachi* Gray, 1864

*A. macandrewi* (Sowerby I , 1822)

*A. maculata* (Swainson, 1822)

*A. molleni* (Iredale, 1936)

*A. necopinata* Darragh, 1983

*A. praetexta* (Reeve, 1849)

*A. ryosukei* Habe, 1975

*A. turneri* (Griffith and Pidgeon, 1834)

*A. undulata* (Lamarck, 1804)

(*A. sclateri* (Cox, 1869) is a color variant of this species.)

*A. volva* (Gmelin, 1791)

( possibly a color variant of *A. maculata* (Swainson, 1822)

*A. zebra* (Leach, 1814)

Weaver and duPont (1970) recognised the following subgenera in *Amonia* : *Amonia* s.s., *Amorena* Iredale; 1929, *Relegamonia* Iredale, 1936 and *Zebnamonia* Iredale, 1929.

Most authors accept *Relegamonia* and *Zebnamonia*, but there is much confusion as to the real value of *Amorena*. In *Amorena*, the protoconch is irregularly coiled, smaller and the columellar plaits are less oblique. There are often secondary plaits between the larger ones. *A. benthalis*, *A. exaptanda*, *A. sclateri* (= *undulata*) and *A. undulata* form this subgenus.

*Relegamonia* contains one living species : *A. molleri*. The protoconch is sharp-pointed; shells of adult specimens have a ridgelike callus just inside the edge of the outer lip, and possess a "fifth," broad, calluslike plait just above the last posterior columellar plait and sometimes joining it to form a double plait" (Weaver and duPont, 1970: 163).

*Zebnamonia* contains only *A. zebra* : the protoconch is small, elevated and pupiform. All other species belong to *Amonia* s.s.. They possess sharply angled oblique plaits generally 4 in number.

The shape, angle and number of columellar plaits distinguish *A. rinkensi* from the species placed in *Amonia* s.s.. The broad first whorls (protoconch whorls ?) and columellar plaits are also different from these of *A. undulata*. Only *A. molleri* is closely related to *A. rinkensi*, especially in the shape and number of the columellar plaits. *A. rinkensi* differs from it by its less elongated shell and more convex whorls. The callus found on the inner side of the outer lip in *A. molleri* is absent in both the holotype and the paratype of *A. rinkensi*. *A. molleri* lives along the East coast of the Australian continent : between Townsville (Queensland) and Sydney (New South Wales). *A. rinkensi* has been fished on the West coast of Australia.

The species is named in honor of Mr. Joe Rinkens, for sending both type specimens for study. Shells collected and carefully handled by Joe grace many major collections in the world; he contributed actively to our knowledge of the Australian molluscs.

*Teramachia dalli claydoni* n.ssp.

TYPE MATERIAL : The holotype is in the Western Australian Museum, Paratype 1 in the M.Claydon collection, Paratype 2 in the G.Poppe collection, Paratype 3 in the Koninklijk Belgisch Instituut voor Natuurwetenschappen.

TYPE LOCALITY : About 280 km. north north-east of Port Hedland, Western Australia.

RANGE : known only from the type locality.

HABITAT : All specimens were trawled on a depth of 475 m.

DIMENSIONS :

Holotype : height, 136 mm. ; width, 35 mm.  
 Paratype 1 : height, 173 mm. ; width, 49 mm.  
 Paratype 2 : height, 151 mm. ; width, 36 mm.  
 Paratype 3 : height, 125 mm. ; width, 36 mm.

SHELL CHARACTERISTICS : The fragile slender type specimens all lack their protoconch. The number of teleconch whorls varies from 13 to 14. Paratype 3 lacks probably 3 or 4 of the top whorls.

The first whorls are covered by sinuous axial ribs of variable importance. They form small cusps on their posterior ends (on the suture). These ribs gradually disappear between the 7th and 12th whorl.

The shape of the whorls varies during growth : the first whorls are straight, while the last whorls are convex. Paratype 3 has extremely convex whorls, but the shell of this specimen has been broken several times and can be regarded as slightly abnormal. Already after the first repairs, the whorls become more convex.

The suture is deeply channelled. Only paratype 1 is fully adult. In this specimen, the lip is thickened and reflected. A heavy varix is visible on the back of this shell. A fine grey callus covers the entire aperture, including the columellar area and the parietal wall.

The color of all the type shells is dull brown, slightly lighter on the top whorls. Paratype 3 and the back of paratype 2 are still covered with a glossy periostracum. This periostracum is thin but solid. It gives a darker outlook to the shell. The operculum is semicircular in shape and pale horn colored.

REMARKS : The genus *Teramachia* contains 6 recent species with two subspecies :

- T. dalli* (Bartsch, 1942)
- T. dalli claydoni* n.ssp.
- T. dupreyae* Emerson, 1985
- T. johnsoni* (Bartsch, 1942)
- T. johnsoni williamsonum* Rehder, 1972
- T. mirabilis* (Clench and Aguayo, 1941)
- T. smithi* (Bartsch, 1942)
- T. tibiaeformis* Kuroda, 1931.

The new subspecies differs from *T. dalli dalli* (Bartsch, 1942) by its constantly more elongated spire, slenderer shape and more numerous whorls. Compared to the holotype and a specimen of the MNHN, Paris, the first whorls of *T. dalli claydoni* are less convex, and almost flat.

The fine sculpture on the last whorls is more pronounced in *T. dalli dalli* than it is in *T. dalli claydoni*.

The following measurements are helpful, but are approximate as not a single shell has intact protoconch whorls. Only Paratype 1 of *T. dalli claydoni* has a fully grown lip, and it is possible that this is the only adult specimen of the series.

	<i>T. dalli dalli</i>	<i>T. dalli dalli</i>	<i>T. dalli claydoni</i>	<i>T. dalli claydoni</i>	<i>T. dalli claydoni</i>	<i>T. dalli claydoni</i>
	Hol.	Paris	Hol.	Par.1	Par.2	Par.3
Length	151	163	136	173	151	125
Width	51.5	53	35	49	36	36
Aperture	66.5	72	49	64	47	45
Whorls	11	11	13	14	14	?

*T. dalli dalli* is known from the Philippine Islands and Taiwanese waters. Its range is separated by several thousand kilometers from the locality of *T. dalli claydoni*.

In our present state of knowledge, it is prudent to consider *T. dalli claydoni* as a subspecies, as more findings, especially in Indonesian waters, may prove it to be only a southern clinal variant. Research on the animals or the finding of specimens with protoconchs may prove on the contrary that *claydoni* is a valid species.

The name has been chosen in honour of Mr. Mike Claydon who generously sent me the study material.

#### A C K N O W L E D G M E N T S

For the use of material and information on the above genera, I want to thank Dr. Ph. Bouchet, Mr. M. Claydon, Mr. H. Doute and Mr. J. Rinkens.

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PLATE 1

Figs. 1, 3, 5, 10.

*Amoria rinkensi* n.sp.

280 km. north northeast of Port Hedland, Western Australia.  
475 m. deep. Holotype, 72.6 mm. Koninklijk Belgisch Insti-  
tuut voor Natuurwetenschappen.

Figs. 2, 4, 8.

*Amoria rinkensi* n.sp.

280 km. north northeast of Port Hedland, Western Australia.  
475 m. deep. Paratype, 73.1 mm. Coll.G.PoppeX

Figs 7, 9.

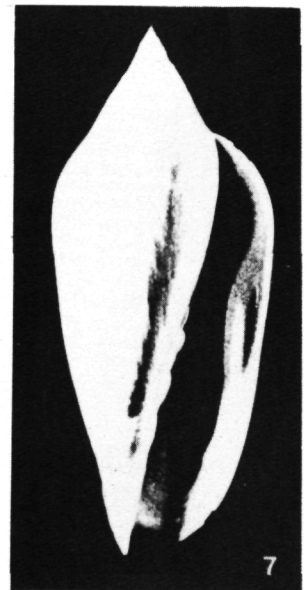
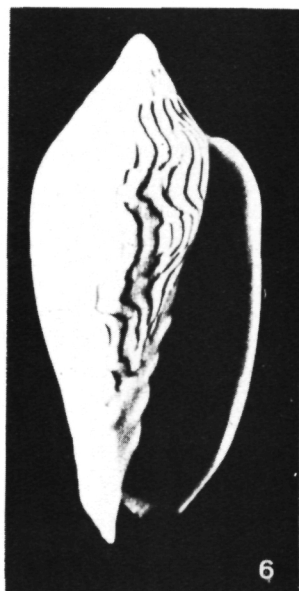
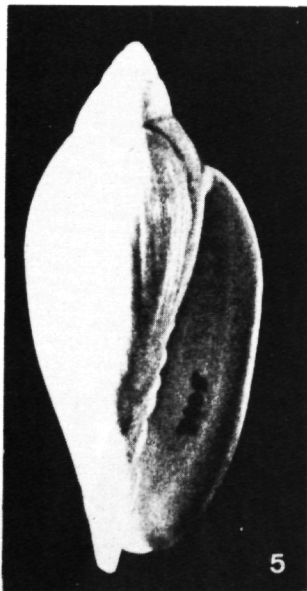
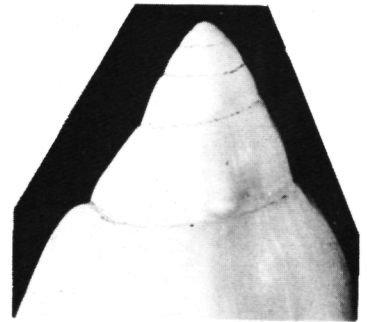
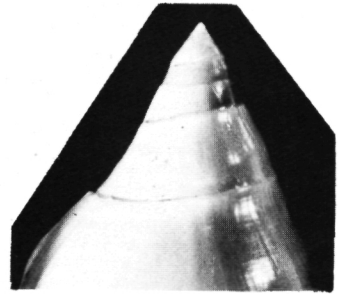
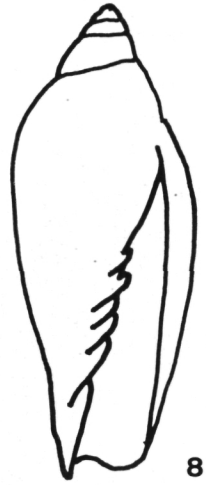
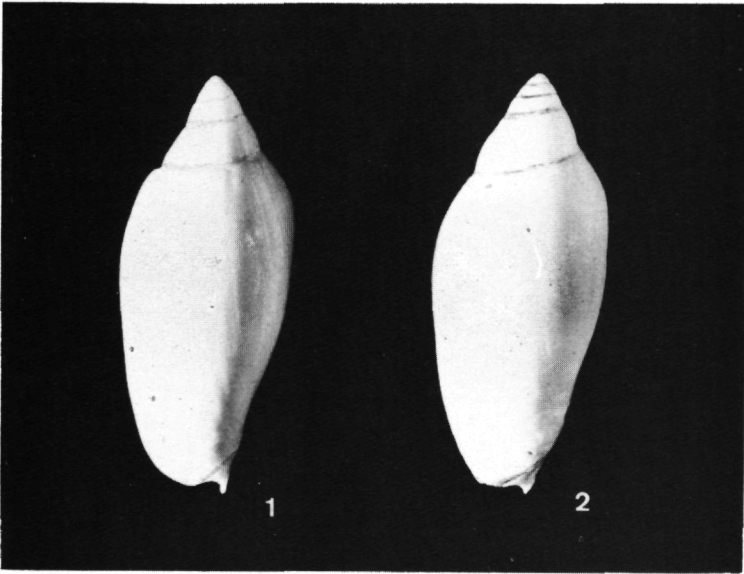
*Amoria molleri* (Iredale, 1936)

Mooloolaba, Queensland. 60 m. deep. 73 mm. Coll.G.Poppe.  
Compare fig.9 with fig. 10 ; fig.7 with fig.5.

Fig. 6.

*Amoria undulata* (Lamarck, 1804)

Near Port Lincoln, Southern Australia. 74.2 mm. Coll.G.Poppe.  
Compare with fig. 5.



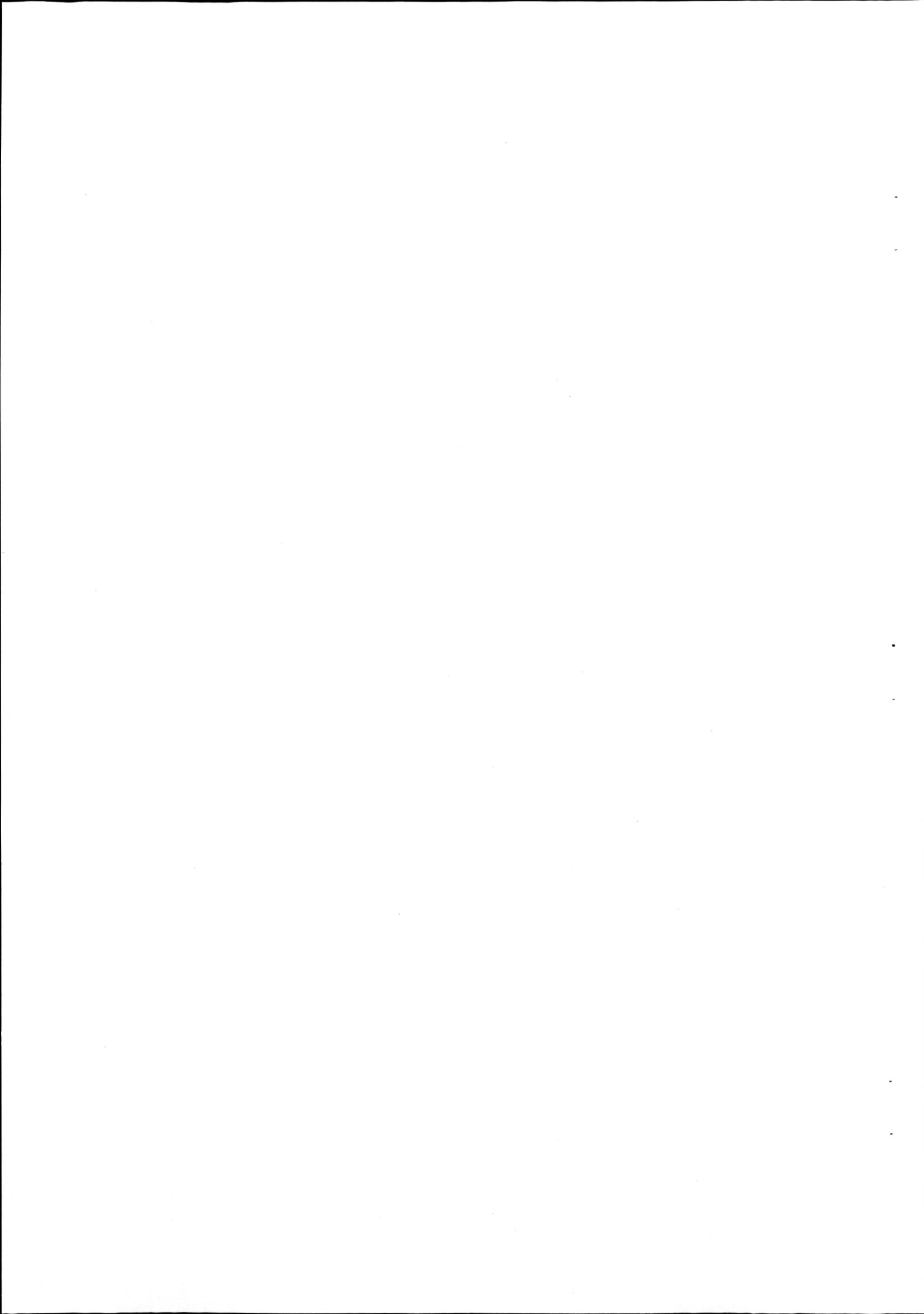




PLATE 2

Fig. 11.

*Teramachia dalli claydoni* n.ssp.

280 km. north northeast of Port Hedland, Western Australia.  
475 m. deep. Holotype, 136 mm. Western Australian Museum.  
Top whorls, compare with fig. 12.

Fig. 12.

*Teramachia dalli dalli* (Bartsch, 1942)

Philippine Islands, Musorstom 2, St. CP 79, 13°44'N,  
120°32'E, between 682 and 770 m. 163 mm. Coll. MNHN, Paris,  
Malacologie.

Top whorls, compare with fig. 11.

Figs. 13, 14.

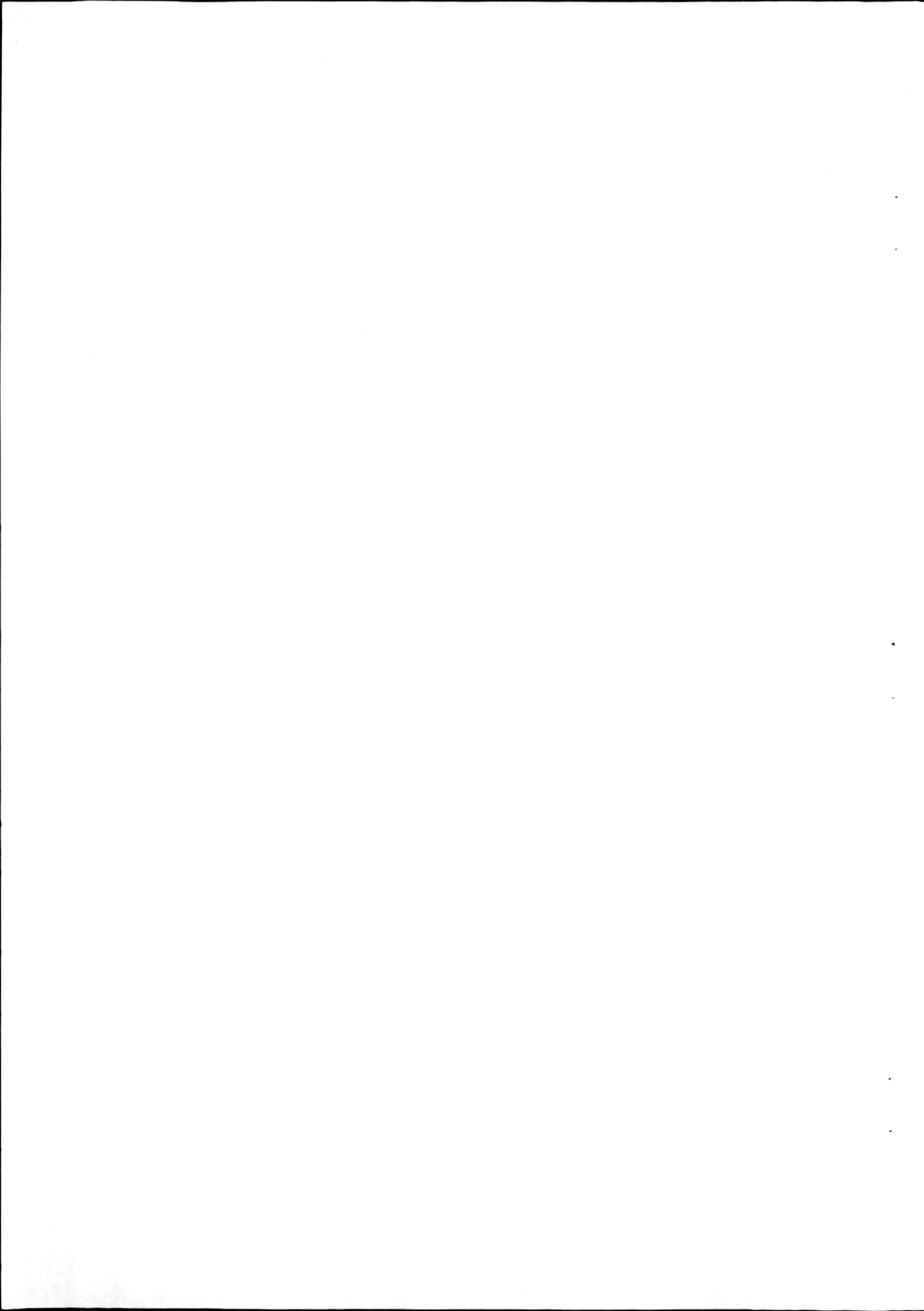
*Teramachia dalli claydoni* n.ssp.

280 km. north northeast of Port Hedland, Western Australia.  
475 m. deep. Paratype 1, 173 mm. Coll. M. Claydon.

Figs. 15, 16.

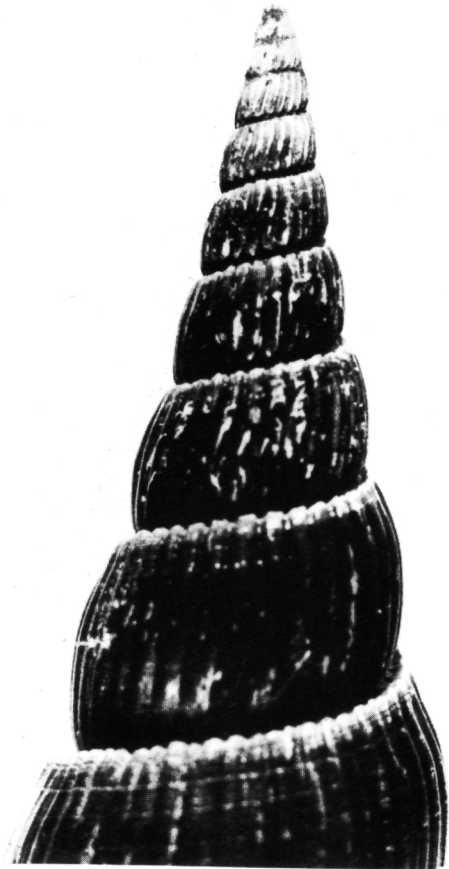
*Teramachia dalli dalli* (Bartsch, 1942)

Philippine Islands, Musorstom 2, St. CP 79, 13°44'N,  
120°32'E, between 682 and 770 m. 163 mm., Coll. MNHN, Paris,  
Malacologie.





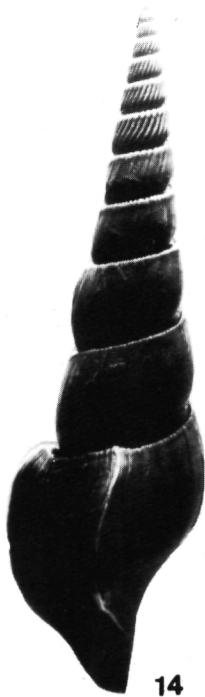
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12



13



14



15



16

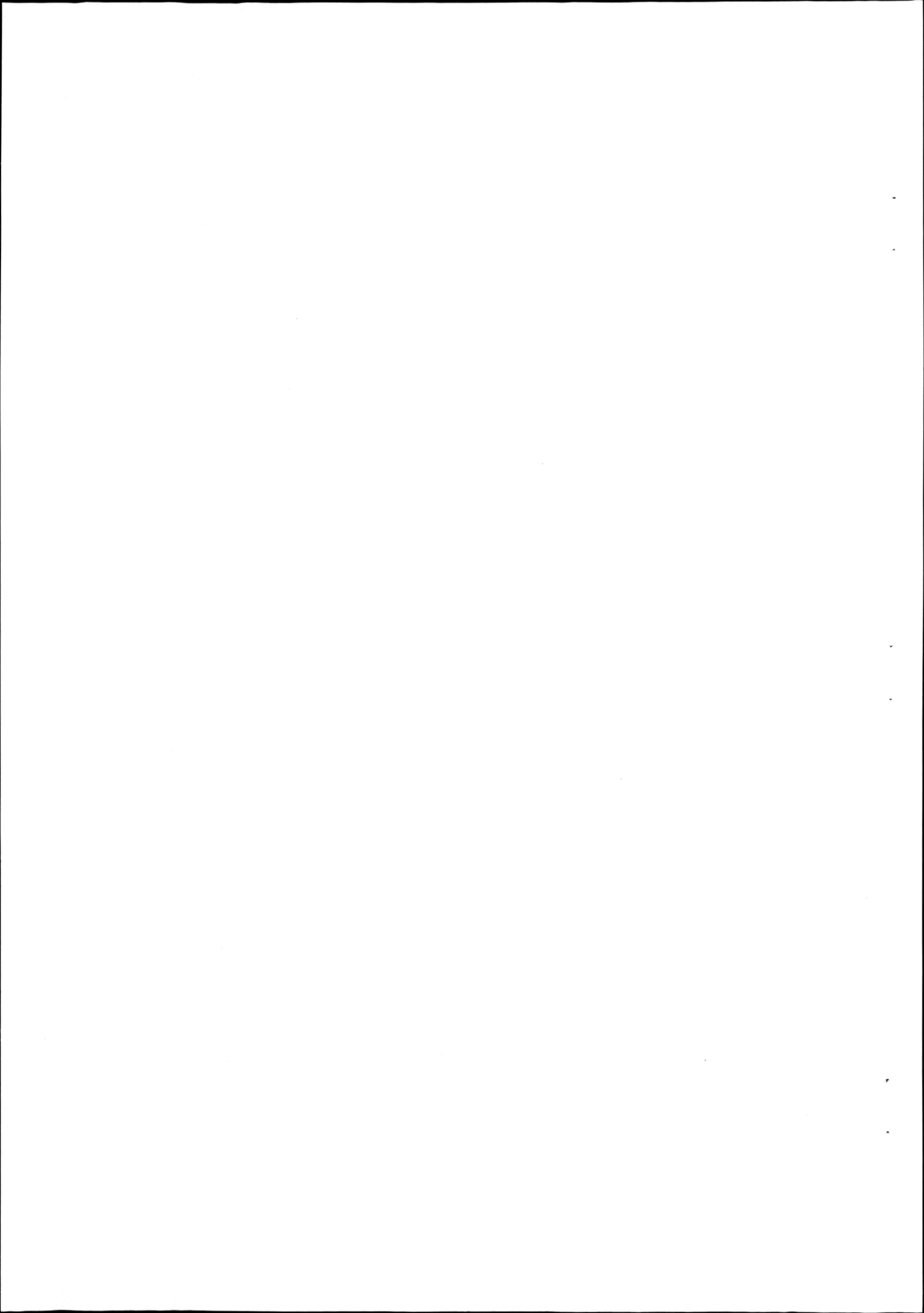


PLATE 3

Figs. 17, 18.

*Teramachia dupneyae* Emerson, 1985.

280 km. north northeast of Port Hedland, Western Australia,  
475 m. deep. Coll. G.Poppe.

Fig.17 : 208 mm., fig.18 : 222 mm.

Trawled together with *Amoria rinkensi* n.sp. and *Teramachia dalli claydoni* n.ssp.

Figs. 19, 20.

*Teramachia dalli claydoni* n.ssp.

280 km. north northeast of Port Hedland, Western Australia.  
475 m. deep. Holotype, 136 mm. Western Australian Museum.

Fig. 21.

*Teramachia dalli claydoni* n.ssp.

280 km. north northeast of Port Hedland, Western Australia.  
475 m. deep. Paratype 1, 173 mm. Coll.M. Claydon.

Operculum and details of aperture and siphonal canal.

Fig. 22.

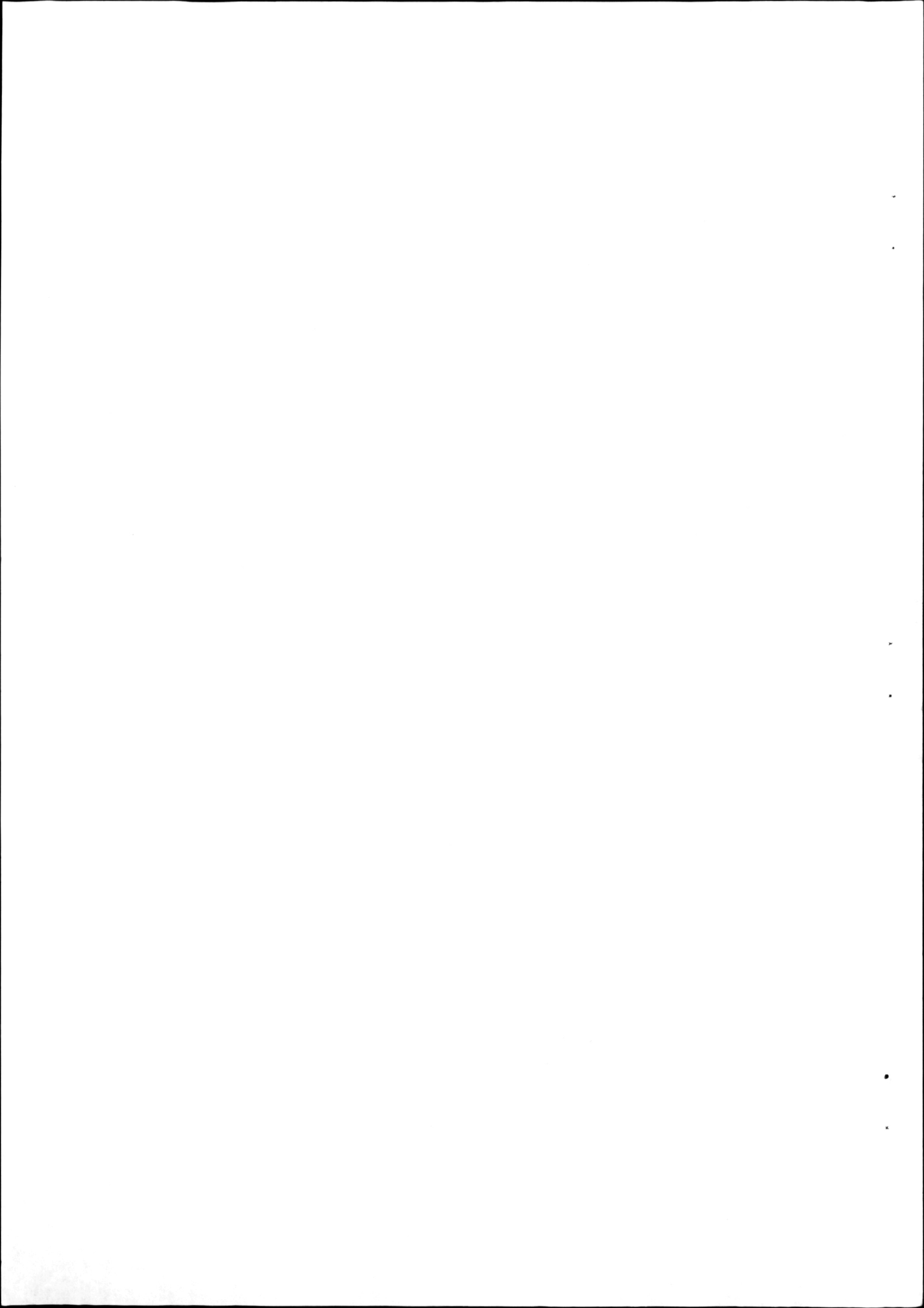
*Teramachia dalli claydoni* n.ssp.

280 km. north northeast of Port Hedland, Western Australia.  
475 m. deep. Paratype 2, 151 mm. Coll.G. Poppe.

Figs. 23, 24.

*Teramachia dalli claydoni* n.ssp.

280 km. north northeast of Port Hedland, Western Australia.  
475 m. deep. Paratype 3, 125 mm. Koninklijk Belgisch Instituut voor Natuurwetenschappen.





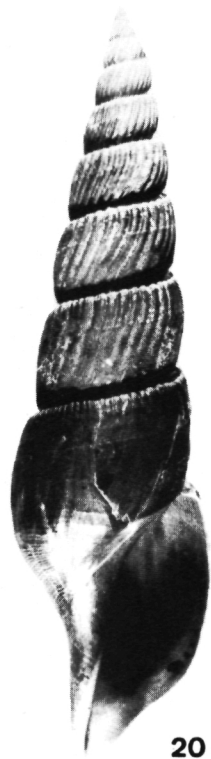
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18



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