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A New Fossil Species of *Indolithes* new genus from Java, Indonesia (Gastropoda: Fasciolariidae)

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ABSTRACT A new, moderately large shell of a fossil species from the family Fasciolariidae Gray, 1853 is described from the Middle Miocene at Bengbreng Hill, West Java, Indonesia. The shell of this new species is related to species of the genus *Clavilithes* Swainson, 1840. The characteristics of a globular body whorl, low spire, and moderately long siphonal canal, distinguish it from species of the genus *Clavilithes* that have a fusiform shape, high spire, and usually long siphonal canal. This leads to its placement in a new genus *Indolithes* new genus. The new fossil species is compared with two other fossil species of Fasciolariidae from Java, *Clavilithes fennemai* (K. Martin, 1906) and *C. verbeeki* (K. Martin, 1895).

KEY WORDS Gastropoda, Fasciolariidae, *Indolithes*, *Indolithes elvinae*, Java, Indonesia.

INTRODUCTION

Although Indonesian fossil molluscs are more abundant at Nyalindung in West Java, Bengbreng Hill in West Java is also productive, with a relatively similar suite of species, and is the site of the recent discovery of a new species of fossil fasciolariid. It has an inflated, globular body whorl, low spire, and moderately long siphonal canal, which distinguishes it from species of the genus *Clavilithes*, and is sufficiently different morphologically to be recognized as the type species of a new genus *Indolithes* new genus Morphologically speaking, the most similar fossil species already described are *Clavilithes fennemai* (K. Martin, 1906) and *C. verbeeki* (K. Martin, 1895), both of which also come from Java fossil beds, and both of which are compared with the new species described herein. There are currently five fossil species of *Clavilithes* known from Java. These are: *Clavilithes tjidamarensis* (K. Martin, 1879), *C. verbeeki* (K. Martin, 1895), *C. tjaringinensis* (K. Martin, 1895), *C. fennemai* (K. Martin, 1906), and *C. songoensis* K. Martin, 1914.

The taxonomic history of *Clavilithes* overall takes several twists and turns. Beginning with Solander's work in Brander, 1766, a discussion of subsequent authors work is referred to here. Among them are descriptions of the species *Murex deformis* Solander in Brander, 1766 (p. 22; pl. 2, figs. 37-38); and *Murex longaevus* Solander in Brander, 1766 (p. 22; pl. 2, fig. 40; pl. 6, fig. 73; pl. 8, fig. 93). Lamarck, 1803 (p. 317) described *Fusus longaevus* based on *Murex longaevus* Solander in Brander, 1766 (p. 22; pl. 2, fig. 40; pl. 6, fig. 73; pl. 8, fig. 93). He also described *Fusus clavellatus* based on *Murex deformis* Solander in Brander, 1766 (p. 22; pl. 2, figs. 37-38), and *Fusus noae* based on *Murex noae* Chemnitz. In 1816, Lamarck provided images (pl. 425) for *Fusus clavellatus* Lamarck (figs. 1ab, 2ab), *Fusus longaevus* Lamarck (figs. 3ab, 4), *Fusus noae* Lamarck (fig. 5).

Swainson, 1835 proposed the genus *Clavella*, but no species was placed within it; the genus *Clavella* was used earlier by Oken, 1815 for a crustacean genus (Snyder, 1999). Swainson, 1840 emended the genus name to *Clavilithes* with the following description: "unequally fusiform, the body-whorl and spire being conic, and the canal suddenly contracted and attenuated; terminal whorls papillary; inner lip thick; pillar smooth". He did not designate a type species and placed four species in the genus, namely *Fusus clavellatus* Lamarck, 1816 (pl. 425, fig. 2), *F. longaevus* Lamarck, 1816 (pl. 425, fig. 3), *F. noae* Lamarck, 1816 (pl. 425, fig. 5), and *Clavilithes ponderosa* Swainson, 1840 see also Lamarck, 1816 (pl. 425, fig. 4) (Snyder, 1999).

Earlier, Deshayes, 1836 wrote *Fusus longaevus* Lamarck (p. 523; pl. 74, figs. 18-21) = *Murex longaevus* Solander, p. 22; pl. 8, fig. 93 = *Murex deformis* Solander, p. 22; pl. 2, figs. 37-38; *Fusus noae* Lamarck (p. 528; pl. 75, figs. 8-9, 12-13) = *Murex noae* Chemnitz. The type species of *Clavilithes* Swainson, 1840 was designated by Herrmannsen, 1846 (p. 246), as *Fusus noae* (Chemnitz) = Holten, 1802 = Lamarck, 1803 (Snyder, 1999: 3). Gray, 1847: 13 stated the type species of *Clavilithes* to be *Fusus longaevus* (Solander in Brander, 1766), followed by H. & A. Adams, 1853 and Cossmann, 1889 (see Palmer, 1937, p. 356 footnote 551) (Snyder, 1999: 3). Mayer-Eymar, 1876: 89, made table including *Fusus (Cyrtulus) noae* Lamarck = *Fusus noae* Lamarck in Deshayes, 1836 (p. 528; pl. 75, figs. 8-9, 12-13); *Fusus (Cyrtulus) parisiensis* Mayer-Eymar = *Fusus longaevus* Lamarck in Deshayes, 1836 (p. 523; pl. 74, figs. 18-21) (non Solander). Mayer-Eymar republished it in 1877.

Cossmann, 1889 placed *Murex longaevus* Solander in Brander, 1766 as type species of genus *Clavilithes* Swainson, 1840. *Clavilithes longaevus* (Solander) = *Murex longaevus* Solander, p. 22; pl. 2, fig. 40; pl. 6, fig. 73 (pl. 8, fig. 93 was placed as *Clavilithes deformis* (Solander)). *Clavilithes deformis* (Solander) - *Murex deformis* Solander, p. 22; pl. 2, figs. 37-38; pl. 8, fig. 93 (pl. 8, fig. 93 originally *Murex longaevus* Solander) = *Fusus longaevus* Lamarck in Deshayes, 1836 = *Fusus parisiensis* Mayer-Eymar, 1877. Lamarck, 1803 followed Solander in Brander, 1766: *Murex longaevus* (pl. 2, fig. 40; pl. 6, fig 73; pl. 8, fig. 93) as *Fusus longaevus* Lamarck; but Deshayes, 1836 (p. 523) and Cossmann, 1889 (p. 173) grouped pl. 8, fig. 93 with *Murex deformis* Solander, Deshayes still used the name *Fusus longaevus* Lamarck, Cossmann used the name *Clavilithes deformis* (Solander).

According to Grabau, 1904, "Swainson's description leaves no doubt as to which species belong to his genus, for he gives the characteristics of *F. longaevus* (*F. parisiensis* May.) and not those of *F. noae*". The type species of *Clavilithes* is *Clavilithes parisiensis* (Mayer-Eymar, 1877) = *Clavilithes longaevus* (Lamarck in Deshayes) (non Solander). Grabau, 1904, *Clavilithes parisiensis* (Mayer-Eymar, 1877) = *Fusus longaevus* Lamarck, 1803 = *Fusus longaevus* Lamarck, 1816, pl. 425, fig. 4 = *Fusus longaevus* Lamarck in Deshayes, 1836, p. 523; pl. 74, figs. 18, 19 = *Clavilithes longaevus* (Lamarck in Swainson, 1840), p. 304, fig. 72b = *Clavilithes deformis* (Solander) in Cossmann, 1889 (Note: not *Murex longaevus* Solander, p. 22; pl. 2, fig. 40; pl. 6, fig. 73; and not *Murex deformis* Solander, p. 22; pl. 2, figs. 37-38; pl. 8, fig. 93). Grabau, 1904: 104, "Swainson included *Fusus noae* in his genus, a practice carried out by every subsequent writer. That species is, however, strikingly distinct from *F. longaevus* of Lamarck and Deshayes, and is here separated under the generic name *Rhopalithes*". Grabau, 1904, the type species of *Rhopalithes* Grabau, 1904 was *Fusus noae*

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Lamarck. *Rhopalithes noae* (Chemnitz) = *Murex noae* Chemnitz, 1795 = *Fusus noae* Lamarck, 1803 = *Fusus noae* Lamarck, 1816 = *Fusus noae* Deshayes, 1836 = *Clavilithes noae* (Chemnitz) in Cossmann, 1889. Grabau, 1904 proposed *Clavellofusus* as a new genus of species previously united with *Clavilithes parisiensis* (Mayer-Eymar, 1877). Grabau pointed out the characteristics of genus *Clavellofusus*. "Long slender spire, the whorls of which in the more primitive species rest upon each other in the manner of the slender Fusi. The ribs are strong and far apart, and the protoconch consists of not more than two and a half volutions, the last one of which is sparingly ribbed and the first obliquely erect as in *Fusus*. The whole protoconch is minute and markedly different from the coarse many-whorled protoconch of *Clavilithes* with its depressed "naticoid" apical whorl. The sutural shelf is abrupt in this genus, delimited by a sharp angle, and either horizontal or sloping slightly inward". He named three species: *Clavellofusus spiratus* Grabau, 1904 as type species, *C. tuberculatus* Grabau, 1904, and *C. macrospiratus* Grabau, 1904.

Cossmann, 1904, disagreed with Grabau and did not accept the genus *Clavellofusus* Grabau, 1904. *Clavellofusus spiratus* was wrongly separated from variety of *Fusus longaevus* Lamarck. The genus *Clavellofusus* is identical to *Clavilithes*. *Rhopalithes* can be recognized at most only as a section of *Clavilithes*. Cossmann, 1907, *Clavellofusus spiratus* is a young specimen of *Clavilithes deformis* (Solander). Chose not to use the name *C. deformis* (Solander) and adopted *C. parisiensis* (Mayer-Eymar, 1877). Cossmann, 1907, placed *Rhopalithes* Grabau, 1904 as a subgenus of *Clavilithe*s Swainson, 1840; and was followed by Wenz, 1943. Cossmann, 1907, wrote notes and provided figures for *Clavilithes longaevus* (Solander), pl. 10, fig. 198-1; *Clavilithes parisiensis* (Mayer), pl. 10, figs. 198-2, 198-2'; *Clavilithes (Rhopalithes) noae* (Chemnitz), pl. 10, fig. 198-7'.

The genus *Rhopalithes* was proposed by Grabau, 1904 with the type species *Fusus noae* Lamarck, 1803 = *Murex noae* Holten, 1802 (Snyder, 1999; Beu & Marshall, 2011). The genus *Clavilithes* Swainson, 1840 and *Rhopalithes* Grabau, 1904 at this point in time therefore both shared the same type species, *Murex noae* Holten, 1802. From the discussion of Snyder, 1999, the genus *Clavellofusus* was not accepted by Cossmann, 1904 (p. 234), Wrigley, 1927 (p. 236), and Wenz, 1943 (p. 1252) who instead placed it as a synonym of *Clavilithes*. According to Snyder, 1999, *Fusus (Cyrtulus) parisiensis* Mayer-Eymar, 1876 p. 89 based on the species misidentified as *Fusus longaevus* (Solander in Brander, 1766) by Lamarck, 1803, p. 317, pl. 5, figs. 9, 14.

The following is the conclusion from Snyder, 1999:

1. *Clavilithes* and *Rhopalithes* shared the same type species *Fusus noae* Lamarck. *Rhopalithes* Grabau, 1904 is placed as a junior synonym of *Clavilithes* Swainson, 1840. The genus *Clavilithes* Swainson, 1840 is characterized by fusiform shells with two or more oblique plicae on the columella. The body is ribbed with crossing spiral striae. According to Grabau, 1904 (p. 135) the protoconch consists of one and a half whorls. Listed 19 species either named in or assigned to *Rhopalithes*, all of which are *Clavilithes* sensu stricto.

2. Continued use of the name *Clavellofusus* Grabau, 1904 for species originally placed in *Clavilithes* sensu stricto based upon the mistaken type species designation of *Clavilithes parisiensis*. *C. parisiensis* has a markedly different shell morphology from *C. noae* (Holten, 1802). The general shell form is as in *Clavilithes* sensu stricto but the columella is smooth, lacking plicae. The protoconch has from two and a half to four whorls

(see Grabau, 1904). Listed 30 species to be placed in the genus *Clavellofusus* Grabau, 1904, among others: *Clavellofusus spiratus* Grabau, 1904; *C. parisiensis* (Mayer-Eymar, 1877); *C. deformis* (Solander in Brander, 1766); *C. longaevus* (Solander in Brander, 1766); and *C. fennemai* (K. Martin, 1906).

Snyder, 2003: 295-298, proposed *Clavilithes* group consisting of 9 genera (162 species); added *Fusus verbeeki* K. Martin, 1895 in the genus *Clavilithes* Swainson, 1840. Beu & Marshall, 2011, *Clavellofusus spiratus* Grabau, 1904 = *Clavilithes parisiensis* (Mayer-Eymar, 1877).

Taxonomy Summary

Author	Description
Solander in Brander, 1766	- Describes *Murex deformis* Solander in Brander, 1766, p. 22; pl. 2, figs. 37-38 - Describes *Murex longaevus* Solander in Brander, 1766, p. 22; pl. 2, fig. 40; pl. 6, fig. 73; pl. 8, fig. 93
Lamarck, 1803	- Describes *Fusus clavellatus* Lamarck, *Fusus longaevus* Lamarck, *Fusus noae* Lamarck
Lamarck, 1816	- Provides images for *Fusus clavellatus* Lamarck, *Fusus longaevus* Lamarck, *Fusus noae* Lamarck
Swainson, 1835	- Proposes genus *Clavella* but this name preoccupied, already used by Oken, 1815 for a crustacean genus (Snyder, 1999)
Deshayes, 1836	- *Fusus longaevus* Lamarck = *Murex longaevus* Solander, p. 22; pl. 8, fig. 93 = *Murex deformis* Solander, p. 22; pl. 2, figs. 37-38 - *Fusus noae* Lamarck = *Murex noae* Chemnitz
Swainson, 1840	- Emends the genus name to *Clavilithes*, places four species: *Fusus clavellatus* Lamarck, 1816; *F. longaevus* Lamarck, 1816; *F. noae* Lamarck, 1816; and *Clavilithes ponderosa* Swainson, 1840, see also Lamarck, 1816 (Snyder, 1999)
Herrmannsen, 1846	- Designates type species of *Clavilithes* as *Fusus noae* (Chemnitz) = Holten, 1802 = Lamarck, 1803 (Snyder, 1999)
Gray, 1847	- Designates type species of *Clavilithes* as *Fusus longaevus* (Solander in Brander,1766), followed by H. & A. Adams, 1853 and Cossmann, 1889 (Snyder, 1999)
Mayer-Eymar, 1876	- *Fusus (Cyrtulus) noae* Lamarck = *Fusus noae* Lamarck in Deshayes, 1836 (p. 528; pl. 75, figs. 8-9, 12-13) - *Fusus (Cyrtulus) parisiensis* Mayer-Eymar = *Fusus longaevus* Lamarck in Deshayes, 1836 (p. 523; pl. 74, figs. 18-21) (non Solander)
Cossmann, 1889	- Type species of *Clavilithes* is *Murex longaevus* Solander in Brander, 1766 - *Clavilithes longaevus* (Solander) = *Murex longaevus* Solander, p. 22; pl. 2, fig. 40; pl. 6, fig. 73 (pl. 8, fig. 93 is placed as *Clavilithes deformis* (Solander in Brander, 1766)) - *Clavilithes deformis* (Solander in Brander, 1766) = *Murex deformis* Solander, p. 22; pl. 2, figs. 37-38; pl. 8, fig. 93 (fig. 93 originally *Murex longaevus* Solander) = *Fusus longaevus* Lamarck in Deshayes, 1836 = *Fusus parisiensis* Mayer-Eymar, 1877
Grabau, 1904	- Swainson's description leaves no doubt as to which species belong to his genus, for he gives the characteristics of *F. longaevus* Lamarck (*F. parisiensis* May.) and not those of *F. noae*

	- The type species of *Clavilithes* is *Clavilithes parisiensis* (Mayer-Eymar, 1877) = *Clavilithes longaevus* (Lamarck in Deshayes) (non Solander) - *Clavilithes parisiensis* (Mayer-Eymar, 1877) = *Fusus longaevus* Lamarck, 1803 = *Fusus longaevus* Lamarck, 1816 pl. 425, fig. 4 = *Fusus longaevus* Lamarck in Deshayes, 1836, p. 523; pl. 74, figs. 18, 19 = *Clavilithes longaevus* (Lamarck in Swainson, 1840), p. 304, fig. 72b = *Clavilithes deformis* (Solander) in Cossmann, 1889 (Note: not *Murex longaevus* Solander, p. 22; pl. 2, fig. 40; pl. 6, fig. 73; and not *Murex deformis* Solander, p. 22; pl. 2, figs. 37-38; pl. 8, fig. 93) - Proposes genus *Rhopalithes* Grabau, 1904 with type species *Fusus noae* Lamarck - *Rhopalithes noae* (Chemnitz) = *Murex noae* Chemnitz, 1795 = *Fusus noae* Lamarck, 1803 = *Fusus noae* Lamarck, 1816 = *Fusus noae* Deshayes, 1836 = *Clavilithes noae* (Chemnitz) in Cossmann, 1889 - Proposes *Clavellofusus* as a new genus of species previously united with *Clavilithes parisiensis* (Mayer-Eymar, 1877) with type species *C. spiratus* Grabau, 1904
Cossmann, 1904	- Does not accept the genus *Clavellofusus* Grabau, 1904 - *Clavellofusus spiratus* Grabau, 1904 considered to be wrongly separated from variety of *Fusus longaevus* Lamarck - *Clavellofusus* Grabau, 1904 = *Clavilithes* Swainson, 1840 - *Rhopalithes* can be recognized at most only as a section of *Clavilithes*
Cossmann, 1907	- *Clavellofusus spiratus* is a young specimen of *Clavilithes deformis* (Solander in Brander, 1766) - Choose not to use the name *C. deformis* (Solander) anymore and adopts *C. parisiensis* (Mayer-Eymar, 1877) - Places *Rhopalithes* Grabau, 1904 as a subgenus of *Clavilithe*s Swainson, 1840, followed by Wenz, 1943 - Write notes and provides figures for *Clavilithes longaevus* (Solander), pl. 10, fig. 198-1; *Clavilithes parisiensis* (Mayer), pl. 10, figs. 198-2, 198-2; *Clavilithes (Rhopalithes) noae* (Chemnitz) pl. 10, fig 198-7
Wrigley, 1927	- Rejects *Clavellofusus* as a distinct genus (Snyder, 1999)
Wenz, 1943	- *Clavellofusus* Grabau, 1904 is a synonym of *Clavilithes* Swainson, 1840 - Type species of *Clavilithes* is *Fusus longaevus* (Deshayes) non Solander = *Fusus parisiensis* Mayer-Eymar - Subgenus *Rhopalithes* Grabau, 1904 with type species *Fusus noae* (Chemnitz)
Snyder, 1999	- *Fusus (Cyrtulus) parisiensis* Mayer-Eymar, 1876 based on the species misidentified as *Fusus longaevus* (Solander in Brander, 1766) by Lamarck, 1803 - The genus *Clavilithes* Swainson, 1840 and *Rhopalithes* Grabau, 1904 have the same type species, *Murex noae* Holten, 1802 (Snyder, 1999; Beu & Marshall, 2011) - *Rhopalithes* Grabau, 1904 is placed as a junior synonym of *Clavilithes* Swainson, 1840, lists 19 species - *Clavellofusus* Grabau, 1904 was not accepted by Cossmann, 1904; Wrigley, 1927; Wenz, 1943

	- Continues use of the name *Clavellofusus* Grabau, 1904 for species originally placed in *Clavilithes* sensu stricto based upon the mistaken type species designation of *Clavilithes parisiensis* *C. parisiensis* has a markedly different shell morphology from *C. noae* (Holten, 1802) - *Clavellofusus* Grabau, 1904 with type species *Clavellofusus spiratus* Grabau, 1904. Lists 30 member species including *C. parisiensis* (Mayer-Eymar, 1877); *C. deformis* (Solander in Brander, 1766); *C. longaevus* (Solander in Brander, 1766); *C. fennemai* (K. Martin, 1906)
Snyder, 2003	- Arranges *Clavilithes* group consisting of 9 genera (162 species) - Adds *Fusus verbeeki* K. Martin, 1895 in the genus *Clavilithes* Swainson, 1840 (*Mancorus*)
Beu & Marshall, 2011	- *Clavellofusus spiratus* Grabau, 1904 = *Clavilithes parisiensis* (Mayer-Eymar, 1877)
Dharma	- *Clavilithes fennemai* (K. Martin, 1906), in juvenile or semi-adult shells, 2 columella plicae are present, so the name *Clavilithes fennemai* (K. Martin, 1906) is still used for this species - Protoconch *Clavilithes verbeeki* (K. Martin, 1895) has two and half whorls - Proposes *Indolithes* new genus and describes *Indolithes elvinae* n. sp.

Study Material

In Snyder's list, 1999, only one species from Java is considered to be a member of the genus *Clavellofusus* Grabau, 1904, that is *Clavellofusus fennemai* (K. Martin, 1906). The study material comprised of several lots of *Clavilithes fennemai* (K. Martin, 1906) from Nyalindung, West Java (Middle Miocene) and from Ciodeng, West Java (Late Miocene); the columella of the adult specimens is smooth and covered with thick or very thick callus, although in juvenile or semi adult shells 2 columella plicae are present (Figure 6A). The name *Clavilithes fennemai* (K. Martin, 1906) is currently in use and remains valid for this species. No protoconch was available in the study material. *Clavilithes fennemai* (K. Martin, 1906) has also been reported from West Java and North Kalimantan (K. Martin, 1906, 1921-1922; Vlerk, 1931; Beets, 1941, 1981, 1984, 1986a; Snyder, 1999, 2003; Hoek Ostende *et al*., 2002; Dharma, 2005; Leloux & Wesselingh, 2009).

Several lots of *Clavilithes verbeeki* (K. Martin, 1895) have also been studied. They are from Karas, Central Java (Middle Miocene); Nyalindung, West Java (Middle Miocene); Cijarian, West Java (Late Miocene); and Sangiran, Central Java (Late Pliocene). The species has a smooth columella, and a thick callus, but in juvenile shells 3 columella plicae are visible (Figure 9B). The protoconch has two and a half whorls (Figure 9A), and the body whorl is finely axially and spirally sculptured. *C. verbeeki* (K. Martin, 1895) has also been reported recorded from several other localities in Java, Sumatra, West Papua, and West Timor (K. Martin, 1895; Vlerk, 1931; Wanner & Hahn, 1935; Pannekoek, 1936; Oostingh, 1939; Beets, 1986b; Hoek Ostende *et al*., 2002; Snyder, 2003; Dharma, 2005; Leloux & Wesselingh, 2009; Sufiati, 2012; Harzhauser *et al*., 2018.

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Abbreviations

MZB. Museum Zoologicum Bogoriense, Cibinong, Bogor, Indonesia.
SMF. Senckenberg Forschungsinstitut und Naturmuseum, Frankfurt, Germany.
BD. Bunjamin Dharma Collection.

SYSTEMATICS

Phylum Mollusca Linnaeus,1758
Class Gastropoda Cuvier, 1795
Subclass Caenogastropoda Cox, 1960
Order Neogastropoda Wenz, 1938
Superfamily Buccinoidea Rafinesque, 1815
Family Fasciolariidae Gray, 1853
Genus *Clavilithes* Swainson, 1840

Indolithes Dharma, new genus

Type Species. *Indolithes elvinae* n. sp.

Diagnosis. Shell dextral, moderately large, body whorl inflated, globular, low-spire, medium thickness, siphonal canal moderately long, about 5½ teleoconch whorls. Below the shoulder crest of the body whorl there is a spiral canal. Aperture ovate, smooth, lirae absent. Columella covered by thick to very thick callus, 2–3 plicae are visible in sub-adult specimens, near posterior end has a spiral rib. Umbilicus open and deep.
Discussion. The shell outline of *Indolithes* new genus is globular with a low-spire and a moderately long siphonal canal. This is different from the fusiform shape, tall spire, and usually long siphonal canal of the *Clavilithes* species. Other main morphological character differences from other *Clavilithes* species are that it has a spiral canal below the crest of the shoulder and a spiral rib on the columella near the posterior end (Plate 1, Figure 2).
Species Included. *Indolithes elvinae* n. sp.

Etymology. *Indolithes* is a combination of two words, *Indo* is short for Indonesia where the new fossil species of the new genus were found, and *lithes* from *Clavilithes* Swainson, 1840 as the closest genus.

Indolithes elvinae Dharma, new species
(Plate 1, Figures 1–5)

Description. Shell dextral, moderately large, height up to 87.3 mm, body whorl globular, low-spire, medium thickness, siphonal canal moderately long. Protoconch absent in this study, about 5½ teleoconch whorls. Below the shoulder crest of the body whorl there is a spiral canal, the canal in the preceding whorls above are obscured by spiral grooves striae. Suture impressed; earlier whorls have approximately 7-8 vertical knobs on each whorl, coarsely sculptured with spiral and axial striae crossing like a mesh. On the body whorl, axial striae are coarse; spiral striae are coarse on the shoulders, lower body rings, and siphonal canal; spiral striae in the center are smooth. Aperture ovate, smooth, lirae absent, lip broken on all specimens. Columella covered by thick to very thick callus, while in juvenile or sub-adult specimens the callus is thin, 2-3 plicae are visible; near posterior end is a spiral rib. Umbilicus open and deep.
Type Material. Bengbreng Hill, Bunisari, Agrabinta, Cianjur, West Java: Holotype MZB Moll. Fos. 0058, h= 87.3 mm (Plate 1, Figure 1); paratype MZB Moll. Fos. 0059, h= 54.6 mm; paratype SMF 353508, h= 54.1 mm; two paratypes BD, h= 55.5 mm, 74.8 mm.
Type Locality. Bengbreng Hill, Bunisari, Agrabinta, Cianjur, West Java from the Middle Miocene.
Distribution. Only known from the type locality.
Discussion. The shell profile of the new species resembles a mace. This new species is compared with two species of *Clavilithes* that

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are also from Java, *Clavilithes fennemai* (K. Martin, 1906) and *Clavilithes verbeeki* (K. Martin, 1895). *C. fennemai* (K. Martin, 1906) is relatively larger in size, with thick, strong, and relatively slender shell, has a short siphonal canal, lacks both a spiral canal below the shoulder and a spiral rib on the columella near the posterior end. *C. verbeeki* (K. Martin, 1895) has a different shell shape to the new species by having a slightly higher spire, a long and tapering siphonal canal, no spiral canal below the shoulder, and no spiral rib on the columella near the posterior end.

Etymology. Named after my first daughter Elvina Dharma.

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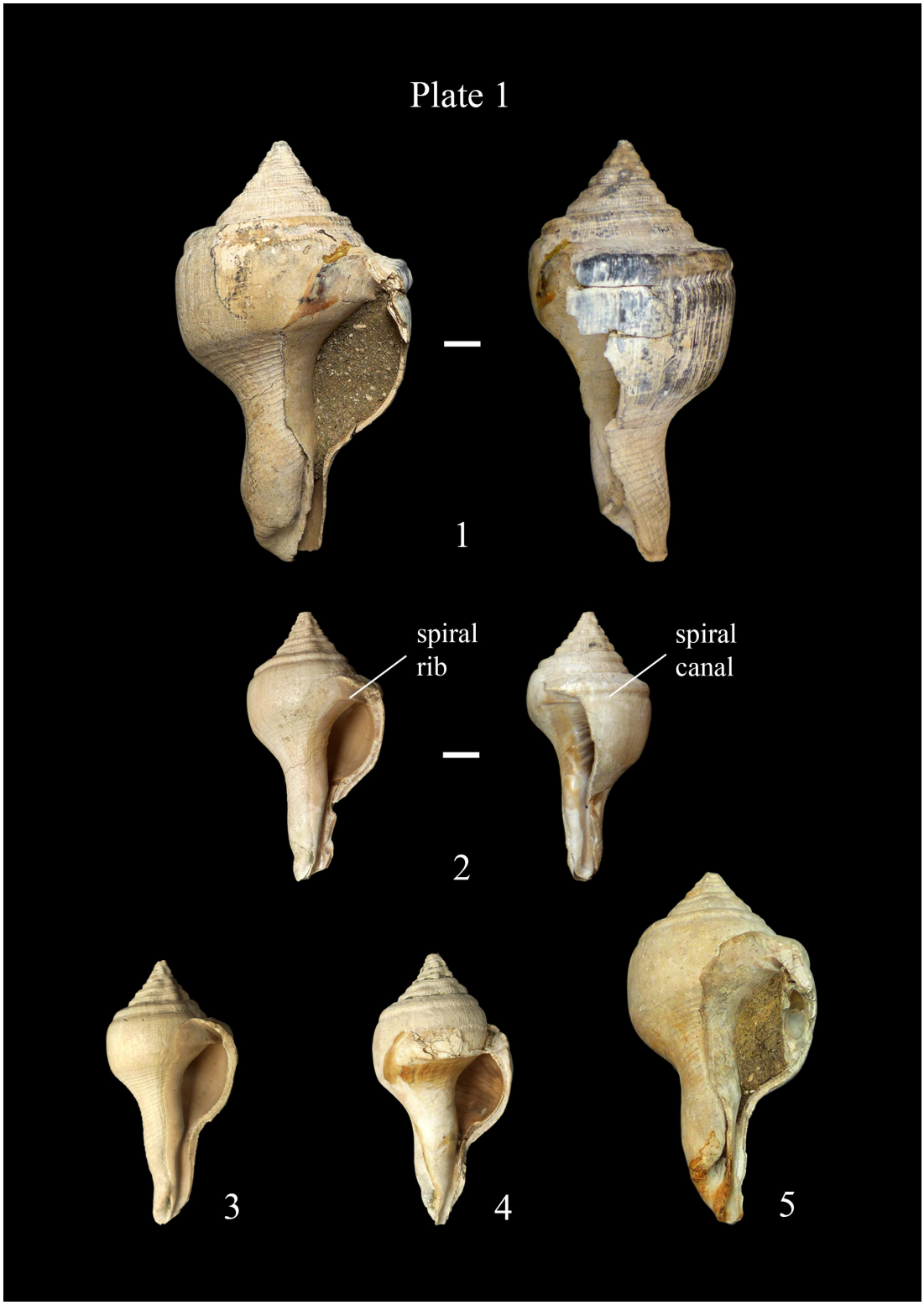

Plate 1. Figures 1–5. ***Indolithes elvinae*** **n. sp.** Bengbreng Hill, West Java: **1**. Holotype MZB Moll. Fos. 0058, h= 87.3 mm; **2**. Paratype MZB Moll. Fos. 0059, h= 54.6 mm; **3**. Paratype SMF 353508, h= 54.1 mm; **4**. Paratype BD, h= 55.5 mm; **5**. Paratype BD, h= 74.8 mm.

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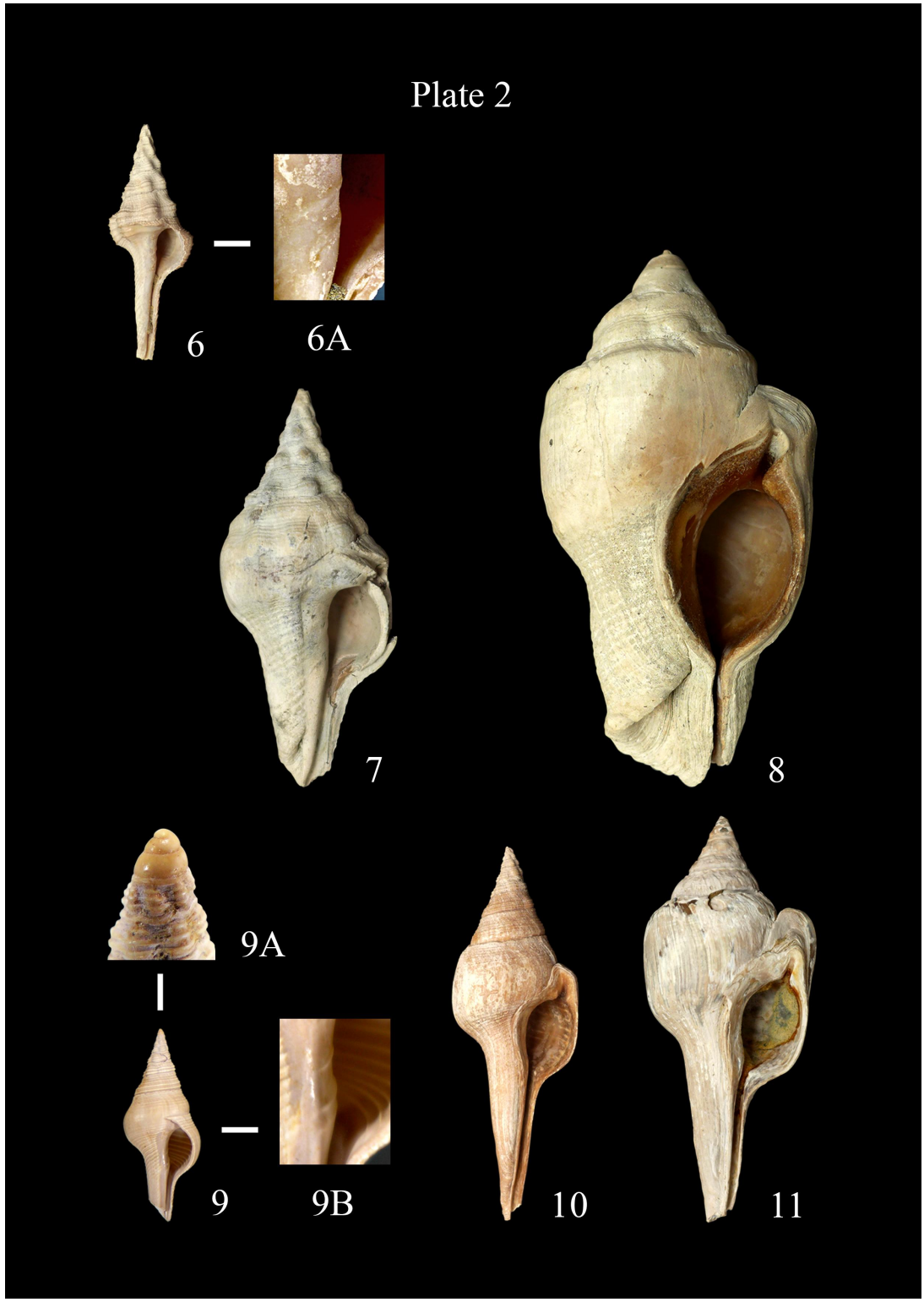

Plate 2. Figures 6–8. ***Clavilithes fennemai***. Nyalindung, West Java: **6, 6A**. Juvenile, h= 45 mm; **7**. Semi adult, h= 79.5 mm; **8**. h= 111.2 mm. **9–11**. ***Clavilithes verbeeki***. **9-10**. Sangiran, Central Java: **9, 9A, 9B**. Juvenile, h= 36.7 mm; **10**. h= 70.6 mm. **11**. Cijarian, West Java: h= 78.7 mm.