

TAXONOMIC STATUS OF THE ORDER ARCOIDA (BIVALVIA) IN VIETNAM

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ABSTRACT

Studies on marine bivalves of Vietnam are mainly related to species composition and distribution. However, most papers have not included descriptions, habitat, or sample sites. Therefore, it is very difficult to confirm the taxonomic status of the bivalves. Based on the collection in the Marine Biology Museum in Nhatrang, this paper provides an annotated check list of the order Arcoida in Vietnam, including synonyms, references, and availability of samples.

INTRODUCTION

Studies on the mollusc fauna of Vietnam started with papers published by Serene (1937) and Dawydoff (1952). Subsequent surveys of Institute of Oceanography have provided mollusc specimens from various marine waters (Gurianova 1972; Dao T.H. 1991 [unpublished list]; Nguyen 1996; Nguyen *et al.* [unpublished list]; WWF and NIO [unpublished list]).

Based on specimens in the Marine Biology Museum in Nhatrang, and other deposited material, this paper provides the first record of species belonging to order Arcoida in Vietnam. The check list includes taxonomic status, synonyms, references, and availability of specimens. References for the species identification were Abbott & Dance (1986), synonyms in Kira (1962); Cernohorsky (1972); Hirase (1984) and Abbott (1991).

TAXONOMIC ACCOUNT

The original records and current classification are listed in Tab. 1 together with matching references.

DISCUSSION

This overview of the order Arcoida shows that taxonomic studies on molluscs in Vietnam are still incomplete. Studies have been carried out in various areas and by various authors. Therefore, this check list compilation has faced a lot of difficulties. Up to the present, 37 species belonging to the order

Arcoida have been recorded in marine waters of Vietnam. Among them the family Arcidae is the most diverse (32 species). The others encompass Glycymeridae (2 species), Cucullaeidae (2 species), and Limopsidae (1 species). Further studies with specialist support are considered very necessary.

Besides having a basic scientific significance, the studies on the order Arcoida are useful to applied research. Some species play an important role in fishery and farming in Vietnam. The species *Anadara granosa*, *A. antiquata*, *A. subcrenata*, *Arca navicularis*,

REFERENCES

- Abbott, R.T. & S.P. Dance. 1986. Compendium of Seashells. American Malacologists, Melbourne, Florida, 411 pp.
- Abbott, R.T. 1991. Seashells of the South East Asia. Tyron Press, Scotland, 145 pp.
- Cernohorsky, W.O. 1972. Marine shells of the Pacific, vol. II. Pacific Publ., Sydney, 411 pp.
- Gurianova, E.F. 1972. Fauna of the Tonking Gulf and its environmental conditions. The Fauna of the Tonking Gulf and conditions of the life in it: Explorations of the Fauna of the sea X (XVIII). - Academy of Sciences of USSR, Zoological Institute, 1972: 22-146.
- Hirase, S. 1984. An illustrated handbook of shells in natural colors from the Japanese islands and adjacent territory. Maruzen Co. Ltd., Tokyo, Japan, 124 pp.

Table 1: Checklist of the order Arcoida in Vietnam. Note: * = specimens available.

Original record	Current classification	References
ORDER ARCOIDA		
FAMILY ARCIDAE		
<i>Acar plicata</i> Dillwyn	<i>Arca plicatum</i> Dillwyn*	VT (1976, unpublished); WWF & NIO (1993-1994, unpublished)
<i>Anadara antiquata</i> Linné	<i>Anadara antiquata</i> Linné*	Dao (1991, unpublished); Nguyen (1996)
<i>Anadara nodifera</i> von Martens	<i>Tegillarca nodifera</i> von Martens	Lukin <i>et al.</i> (1988)
	<i>Anadara subgranulosa</i> Jora*	Lukin <i>et al.</i> (1988); Nguyen <i>et al.</i> (1996, unpublished)
<i>Anadara pilula</i> Reeve	<i>Anadara pilula</i> Reeve*	VT (1976, unpublished)
<i>Arca mortenceni</i> Lingbe	<i>Arca mortenceni</i> Lingbe	Gurianova (1972)
<i>Arca (Barbatia) grayana</i> Dunker	<i>Arca (Barbatia) grayana</i> Dunker	VT (1976, unpublished)
<i>Arca avellana</i> Lamarck	<i>Arca avellana</i> Lamarck	Lukin <i>et al.</i> (1988); Nguyen <i>et al.</i> (1996, unpublished)
<i>Arca boucardi</i> Jousseume	<i>Arca boucardi</i> Jouss	Nguyen <i>et al.</i> (1980).
<i>Arca chalcantum</i> Reeve	<i>Arca chalcantum</i> Reeve*	Lukin <i>et al.</i> (1988); Nguyen <i>et al.</i> (1996, unpublished)
<i>Arca dichotoma gratiosa</i> Lingbe	<i>Arca dichotoma gratiosa</i> Lingbe	Gurianova (1972).
<i>Arca imbricata</i> Bruguiere	<i>Arca imbricata</i> Brug*	Dao (1991).
<i>Arca joussecumei</i>	<i>Arca joussecumei</i>	Nguyen <i>et al.</i> (1980).
<i>Arca navicularis</i> Bruguiere	<i>Arca navicularis</i> Brug*	VT (1976, unpublished); Nguyen (1980, 1988, 1994, unpublished)
	<i>Arca linter</i> Jonas	Gurianova (1972)
<i>Arca olivacea</i> Reeve	<i>Arca olivacea</i> Reeve	Gurianova (1972)
<i>Arca rotundicostata</i> Reeve	<i>Arca rotundicostata</i> Reeve	Gurianova (1972)
<i>Arca scapha</i> Lamarck?	<i>Arca (Anadara) scapha</i> Lamarck	Gurianova (1972)
<i>Arca ventricosa</i> Lamarck	<i>Arca ventricosa</i> Lam*	Nguyen (1978; 1988; 1994, unpublished); Dao (1991, unpublished); WWF (1993-1994, unpublished)
<i>Arcopsis symmetrica</i> Reeve	<i>Striarca symetrica</i> Reeve	VT (1976, unpublished)
<i>Barbatia (Ustularca)</i> <i>bicolorata</i> Dillwyn	<i>Arca fusca</i> Brug*	Gurianova (1972); Nguyen <i>et al.</i> (1988, 1994, unpublished); Dao (1991, unpublished)
	<i>Arca amygdalumtostum</i> Roding	WWF (1993-1994, unpublished)
<i>Barbatia cometa</i> Reeve	<i>Arca cometa</i> Reeve*	Nguyen <i>et al.</i> (1986; 1988; 1994, unpublished); Dao (1991, unpublished)
<i>Barbatia nivea</i> Chemnitz	<i>Barbatia nivea</i> Chemnitz	Dao (1991); Nguyen <i>et al.</i> (1996, unpublished)
	<i>Arca nivea</i> Chemnitz*	Nguyen <i>et al.</i> (1978; 1988; 1994); WWF (1993-1994, unpublished)
<i>Barbatia tenella</i> Reeve	<i>Barbatia tenella</i> Reeve*	WWF (1993-1994, unpublished)
<i>Barbatia velata</i> Sowerby	<i>Barbatia velata</i> Sow*	WWF (1993-1994, unpublished); Nguyen <i>et al.</i> (1996, unpublished list)
	<i>Arca decussata</i> Sow	Nguyen, V.C. <i>et al.</i> (1980)
	<i>Arca lima</i> Reeve*	WWF (1993-1994, unpublished); Dao (1991)
<i>Diluvarca ferruginea</i> Reeve	<i>Arca ferruginea</i> Reeve*	VT (1976, unpublished)
	<i>Arca tricenicosta</i> Nyst	VT (1976, unpublished)

Table 1: (Continued) checklist of the order Arcoida in Vietnam. Note: * = specimens available.

Original record	Current classification	References
<i>Hawaiarca uwaensis</i> Yokoyama	<i>Hawaiarca uwaensis</i> Yokoyama	VT (1976, unpublished)
<i>Scapharca subcrenata</i> Lischke	<i>Arca subcrenata</i> Lischke*	Gurianova (1972); Nguyen <i>et al.</i> (1996, unpublished)
<i>Scapharca vellicata</i> Reeve	<i>Scapharca vellicata</i> Reeve*	Lukin (1988); Nguyen C. <i>et al.</i> (1996, unpublished)
<i>Striarca thielei</i> Schenck et Reihart	<i>Striarca thielei</i> Schenck et Reihart	VT (1976, unpublished)
<i>Tegillarca granosa</i> Linné	<i>Arca granosa</i> L.* <i>Anadara granosa</i> L.	Gurianova (1972) Nguyen <i>et al.</i> (1994)
<i>Trisidos tortuosa</i> L.	<i>Trisidos tortuosa</i> L. A. (<i>Trisidos</i>) <i>tortuosa</i> L.*	VT (1976); Dao (1991); WWF (1993-1994 (unpublished) Gurianova (1972)
<i>Trisidos semitorta</i> Lamarck	<i>Trisidos semitorta</i> Lamarck <i>Arca semitorta</i> Lamarck*	VT (1976, unpublished); WWF (1993-1994, unpublished)
<i>Mabellarca dautzenbergi</i> Lamy	<i>Arca dautzenbergi</i> Lamy	VT (1976, unpublished)
FAM. CUCULLAEIDAE		
<i>Cucullaea concamerata</i> Mortens	<i>Cucullaea concamerata</i> Mortens	Gurianova (1972)
<i>Cucullaea labiata</i> Lightfoot	<i>Cucullaea labiata</i> Lightfoot* <i>C. granulosa</i> Jonas <i>Cucullina auriculifera</i> Bruguiere	Dao (1991); WWF (1993-1994, unpublished) VT (1976, unpublished) Nguyen <i>et al.</i> (1981)
FAM. LIMOPSIDAE		
<i>Limopsis multistriata</i> Forskål	<i>Limopsis multistriata</i> Forskål* <i>Oblimopa soyoae</i> Habe	VT (1976, unpublished)
FAM. GLYCYMERIDAE		
<i>Pectunculus amboinensis</i> Gmelin	<i>Pectunculus amboinensis</i> Gmelin*	Dao (1991, unpublished)
<i>Pectunculus guesi</i> Jousseume	<i>Pectunculus guesi</i> Jousseume*	

Kira, T. 1962. Coloured illustrations of the shells of Japan, 1. Chome uehonmachi higashi-ku, Osaka, Japan, 239 pp.

Lukin, V.L., V.I. Fadeev, S.A. Rostomov & V.C. Nguyen. 1988. Soft bottom communities of the Nha Phu lagoon (South China Sea). Pages 87-110 in: Biology of the coastal and sublittoral zones of Southern Vietnam. Vladivostok, Far East Branch, Academy of Sciences of USSR.

Nguyen, C. 1996. The important commercial molluscs in Vietnam. - Science Technics Publishing House, Hanoi, 132 pp.

Nguyen V.C., O.G. Kursakin & K.L. Gubin. 1988. Intertidal survey in Phu Khanh province. Biology of the Coastal waters of Vietnam: Hydrobiological study of intertidal and sublittoral zones of Southern Vietnam. Vladivostok, Far East Branch, Academy of

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