

## A new species of *Fulgoraria* (Gastropoda: Volutidae) from the East China Sea

I. BONDAREV<sup>1</sup> & P. BAIL<sup>2</sup>

<sup>1</sup> Fadeev street 21b Fl.17, 335057 Sevastopol, Ukraine.

<sup>2</sup> Square La Fontaine 2, F- 75016 Paris, France.

**KEYWORDS.** Gastropoda, Volutidae, East China Sea, *Fulgoraria isabelae* nov. sp.

**ABSTRACT.** *Fulgoraria isabelae* nov. sp. is described from the south of East China Sea. It is compared with related species and particularly with *Fulgoraria (Saotomea) delicata* (Fulton, 1940).

### INTRODUCTION

No paper on the genus *Fulgoraria* Shumacher, 1817 was written since the comprehensive work of SHIKAMA (1967). Even WEAVER & DU PONT (1970) brought only some additional confusions. Only recently, extension of fishing zones as well as deeper dredgings led to the discovery of four new species: one from Viet-Nam waters, *F. (F.) ericarum* Douté, 1997, the second from the South China Sea, *F. minima* Bondarev, 1994, this latter may be linked with the subgenus *Psephaea* Crosse, 1871. The third, still unnamed species, from southern Kyushu, Japan, belongs to the subgenus *Musashia* Hayashi, 1960. The shell characters of the last one, here described as *F. isabelae* nov. sp., seem very close to the monospecific subgenus *Saotomea* Habe, 1943, represented by *F. delicata* (Fulton, 1940).

### SYSTEMATICS

Family **VOLUTIDAE** Rafinesque, 1815

Subfamily **Fulgorarinae** Pilsbry & Olsson, 1954

Genus **Fulgoraria** Schumacher, 1817

*Fulgoraria isabelae* nov. sp.

Figs. 1-6, 10, 12

#### Type Material.

Holotype: length (L): 49.5 mm ; width (W): 17.6 mm, Museum National d'Histoire Naturelle, Paris. (Figs. 1-2)

Paratype 1. L: 46.4 mm. W: 17.2 mm. Bondarev coll.

Paratype 2. L: 48.2 mm. W: 17.9 mm. Bail coll. (Figs. 3-4).

Paratype 3. L: 44.9 mm. W: 17.6 mm. Bail coll. (Figs. 3-4c).

Paratype 4. L: 51.9 mm. W: 16.5 mm. Douté coll.<sup>1</sup>

#### Type locality.

Off Okinawa. The exact type locality still remains uncertain.

According to oral information, specimens have been collected by Japanese fishermen trawling off Okinawa in the south of the East China Sea. The exact geographical range extends probably southwards as it seems to be for *Fulgoraria minima*.

#### Habitat.

Between 100 and 400 m, on the usual fishing banks of the region. No more accurate information is currently available.

#### Description.

Shell small (average length: 46 mm) light, elongate-fusiform. Protoconch small (diameter: 2.3 mm) of two often corroded round whorls slightly tilted from the axis of the shell.

Teleoconch of 4 or 5 convex whorls sculptured with numerous weak axial ribs and hardly visible fine spiral striae.

Axial ribs conspicuous from the suture to the shoulder, disappearing at the mid body whorls: 24-26 faint ribs on the penultimate, 27-29 on the last whorl. Suture indented with very narrow, slightly concave subsutural ramp. Aperture semi-ovate, with lustrous light cream surface inside. Outer lip whitish, smooth and simple. Columella straight, with one oblique distinct plait, a barely visible second adapical one found in one specimen. Siphonal notch and fasciole absent.

Surface uniform, beige or light brown, contrasting with the white columella.

<sup>1</sup> Am Wiesenrain 11, D-79713 Bad-Säckingen-Harpolingen, Germany

**Discussion.**

*Fulgoraria isabelae* may be easily separated from all species of genus *Fulgoraria* except one.

The genus *Fulgoraria* comprises twenty-five species. It is divided in six subgenera.

Five of these subgenera have large shells (from 100 to 250 mm) with very different morphology from *F. isabelae*:

**\* Subgenus *Fulgoraria* s.s.:**

Type species: *F. (F.) rupestris* (Gmelin, 1791).

The shells included in *Fulgoraria* s.s. differ from *F. isabelae* in their elongate shape, globose protoconch, 6-9 columellar plaits, and a pattern of well-defined straight or weavy axial lines.

**\* Subgenus *Kurodina* Rehder, 1969:**

Type species: *F. (Kurodina) smithi* (Sowerby III, 1901).

The species of the subgenus *Kurodina* differ in their large and thin shell with one strong columellar plait. No pattern.

**\* Subgenus *Musashia* Hayashi, 1960:**

Type species: *F. (Musashia) hirasei* (Sowerby III, 1912).

The shells included in *Musashia* have a variable shape, a small protoconch, 1-3 columellar plaits, and a cancellate sculpture. No pattern.

**\* Subgenus *Nipponomelon* Shikama, 1967:**

Type species: *F. (Nipponomelon) prevostiana* (Crosse, 1878).

The shells included in the subgenus *Nipponomelon* have a variable shape, a small protoconch, 2-4 columellar plaits, and a pattern of irregular bad-defined weavy axial lines divided into three bands on the body whorl.

**\* Subgenus *Psephaea* Crosse, 1871:**

Type species: *F. (Psephaea) concinna* (Broderip, 1836).

The shells belonging to *Psephaea* have an elongate shape, a medium sized protoconch, 3-5 Columellar plaits, and a colour pattern of irregular blotches or short axial bands divided into three bands on the body whorl, or reduced to a white central band.

**\* Subgenus *Saotomea* Habe, 1943:**

*Fulgoraria isabelae* nov. sp. and *F. (Saotomea) delicata* (Fulton, 1940), the only species in the subgenus *Saotomea* up to now, are characterized by their similar size, uniform colour, light structure and by the unique (rarely two) columellar plait.

However, *F. (S.) delicata* (Figs. 7-9, 12) is easy to separate from *F. isabelae* by the grey-white duller surface, the deep suture with a narrow flat ramp, slightly angulate shoulders with 15-17 keen axial ribs on the last whorl. The protoconch is narrow (average diameter: 1.8 mm), coarsely subconical (Fig. 11).

*F. isabelae* has a beige to brown glossy surface, suture just indented with a slightly concave ramp, rounded shoulders with 26-29 faint axial ribs on the last whorl. The protoconch is rounded, domeshaped (average diameter: 2.1 mm) (Fig. 12).

*F. isabelae* occurs in the southern East China Sea. It is separated from *F. delicata* by a large gap, which is considerable for the Fulgorarinae whose geographical extension is limited due to the non-planktotrophic larval development.

The sympatric *F. minima* Bondarev, 1994 is also small with numerous axial ribs (24 on the penultimate, 25 on the last whorl), but it differs in its strong spiral striae on the whole shell, in its deep brown-orange colour with a conspicuous white central band, and in the columella with two to four prominent oblique plaits.

**Etymology.**

This taxon is dedicated to the wife of the second author, Isabel Bail whose patience is worthy of great collaboration.

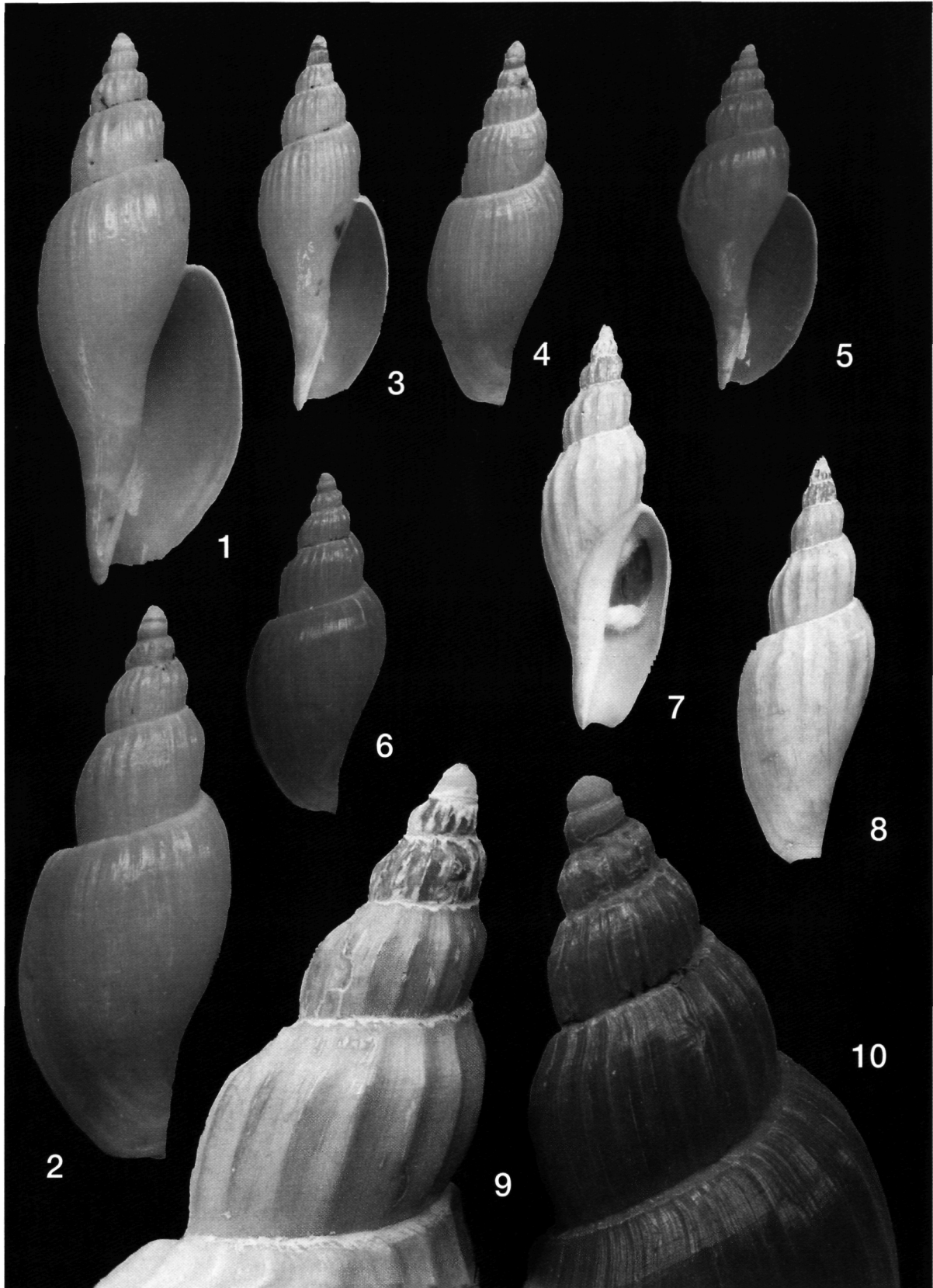
**CONCLUSION**

*Fulgoraria isabelae* nov. sp. is in some characters such as size, shape, texture, and columellar fold, closer to the monospecific subgenus *Saotomea* than to any other subgenus of *Fulgoraria*. It is most probable that *F. isabelae* may belong to this subgenus.

However, the *Saotomea* diagnosis is mainly based on the presence of an operculum. Without animal available for study, allocation to this subgenus is thus only tentative.

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**Figs. 1-6.** *Fulgoraria isabelae* n. sp. Figs. 1-2. Holotype. L: 49.5 mm. W: 17.6 mm. Museum National d'Histoire Naturelle, Paris. Figs. 3-4. Paratype 2. L: 48.2 mm. W: 17.9 mm. Bail coll. Figs. 5-6. Paratype 3. L: 44.9 mm. W: 17.6 mm. Bail coll. **Figs. 7-9.** *Fulgoraria (Saotomea) delicata* (Fulton, 1940). L: 51.5 mm. W: 26.2 mm, Shikoku island, Japan. Bail coll. **Fig. 10.** *Fulgoraria isabelae* n. sp. Paratype 3.



**Fig. 11.** *Fulgoraria isabelae* n. sp. Paratype 3. **Fig. 12.** *Fulgoraria (Saotomea) delicata* (Fulton, 1940).