

东海陆架区海星一新属*

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中国科学院海洋研究所在东海陆架区调查时所采到的底栖生物样品中, 有两个标本属于蛇海星科 Ophidiasteridae 中的一个新属, 它和该科迄今包括的任何属都完全不同。新属描述如下:

中华飞地海星属(新属) *Sinoferdina* new genus

鉴别特征 属于蛇海星科。盘大, 反口面骨板小而多, 近圆形, 每腕基部约有 10 行这种骨板。骨板排列甚密, 稍规则; 龙骨板明显, 连续, 但缺凸起的裸出板。所有反口面骨板均布满颗粒, 板轮廓被掩盖。皮鳃小, 单个排列。缘板排列规则, 不是大板和小板交错。除起首三个上缘板外, 所有上缘板均有一个小的裸出中央区, 其范围随板向外逐渐增大。口面间辐部宽大, 各具 4—5 行腹侧板; 口面无皮鳃。侧步带板具单行的短钝沟棘, 沟棘外半部不盖颗粒, 且突出在口面延续过来的颗粒上。

模式种 大中华飞地海星(新种) *Sinoferdina gigantea* n. sp.

讨论 新属和飞地海星属 *Ferdina* Gray 1840 相近似。Livingstone (1931)^[1] 对飞地海星属作了限定, 并把飞地海星 *F. cumingi* Gray 和具有明显裸出板的几个种分出, 建立新飞地海星属 *Neoferdina*。Clark (1976)^[2] 发现被 Livingstone 限定过的黄飞地海星 *F. flavescens* Gray 和赫飞地海星 *F. heffernani* Livingstone 并非真的亲缘相近, 且确认这两种不是同属, 并把赫飞地海星置于她所建立的西来海星属 *Celerina* 中。

根据反口面骨板的排列, 和规则排列的缘板以及较宽的口面间辐部, 这个新属很容易和上述近似属区别开。和这个新属亲缘最近的属是新飞地海星属。本文图版内有作者在西沙群岛采的新飞地海星模式种 *Neoferdina cumingi* (Gray) 的两张照片。把新飞地海星的照片(图版 II:3)和中华飞地海星的照片(图版 I:1)作比较, 很易看出, 两者的反口面骨板和上缘板的排列显著不同: 新飞地海星反口面骨板少, 排列不规则, 有凸起的裸出板, 且上缘板是大小交错排列; 而中华飞地海星反口面骨板多, 排列稍规则, 无凸起的裸出板, 上缘板规则, 不是大小交错。另外, 新飞地海星的皮鳃孔要比中华飞地海星的大得多。

大中华飞地海星(新种) *Sinoferdina gigantea* n. sp. (图版 I:1—2; 图版 II:1—2)

正模描述 腕 5, 辐径 R 为 60 毫米, 间辐径 r 为 19 毫米, 腕基部宽 18 毫米。盘大, 稍鼓起; 腕宽短, 均匀地逐渐变细。腕横切面稍带三角形, 龙骨板显著。

反口面骨板小而多, 带圆形; 腕基部约有 10 行这种骨板。龙骨板稍扩大, 横径约为 2—2.5 毫米, 形圆, 稍鼓起, 几乎连续。中侧板或背侧板稍明显。各腕有中等大板组成的

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5—7 横行板列。反口面骨板排列甚密,盖有很细的颗粒,板轮廓亦被掩盖。无明显凸起的裸出板。刷去颗粒的板面平坦,几乎平滑。颗粒密集,多角形,相当均匀一致,在板中央不扩大,每平方毫米约有颗粒 150 个。皮鳃孔周围的颗粒显然较大。皮鳃小,单个排列。

缘板排列规则,不大小交错,侧背位。上缘板数目 17 个,长方形,多数板长大于宽;除起首三板外,所有板都有一个小的中央裸出区,裸出区范围随板向外逐渐增大,最后三板仅板缘有颗粒。下缘板和上缘板相似,但较窄,最后五个下缘板稍突出,且具中央裸出区。缘板界限不清,被一致的颗粒所掩盖。端板小,菱形,稍凸出,裸出且平滑,具一个小端疣。

口面间辐部宽大,盖颗粒,但较反口面的略大。在腕基部各有 5 行腹侧板:第一行腹侧板(和侧步带板相邻)延伸到腕末端;第二行到达第 12 和第 13 下缘板;第三行到第 9 或第 10 下缘板;第四行到第 5 下缘板;第五行在间辐部,仅有 5 板。无口面皮鳃和缘板间皮鳃。完全缺叉棘。所有口面骨板均埋没在软组织之下,因此,板间界限不清。

侧步带板小而多,方形,各板具两个、少数具三个短钝的沟棘,沟棘仅外半部不盖颗粒,并突出在口面延续过来的颗粒之上。侧步带板没有别的棘。

口板小,被颗粒掩盖,各板有四个或五个边缘棘。边缘棘宽扁,钝;最内一个棘为最大。筛板明显,椭圆形,直径约 2.5 毫米,离中心比离边缘近。肛门不明显。从酒精中取出的干标本带黄白色,反口面有许多褐斑。

副模辐径 R33 毫米,间辐径 r10 毫米,反口面完全平。副模颜色和正模不同,反口面灰绿色,口面和边缘带褐色,反口面无褐斑或污块。

研究材料 正模采集号 V469B-81,登记号 IOAS-E00951,东海,北纬 27°30',东经 126°,水深 162 米,细沙底,1975 年 10 月 10 日。副模采集号 V498B-31,登记号 IOAS-E00952,东海,采集地和正模相同,水深 131 米,1976 年 7 月 5 日。正模和副模均保存在中国科学院海洋研究所。

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A NEW GENUS OF STARFISH FROM THE CONTINENTAL SHELF OF THE EAST CHINA SEA*

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ABSTRACT

Among the starfishes collected from the continental shelf of the East China Sea by the Institute of Oceanology, Academia Sinica two specimens representing a new genus of the family Ophidiasteridae were found. The following is the descriptions of the new genus and species.

Sinoferdina new genus

Diagnosis A genus of Ophidiasteridae in which the disk is large, the abactinal plates are small, numerous, roundish in shape; about ten series of these plates are found at the base of the ray. They are closely-placed and somewhat regular in arrangement, the carinal series being distinct, but lacking convex bare plates. All abactinal plates are covered with minute granulations obscuring the outlines of all plates. The papulae are small and isolated. Marginal plates are arranged in regular series, not alternately large and small. All of the superomarginal plates with the exception of the first three have a small naked central area which gradually increases in size distally. Actinal intermediate areas are extensive, each with 4—5 series of actinal plates; no actinal papulae. Adambulacral plates armed with a single row of short blunt furrow spinelets, only the outer halves of which project from the continuous granulation of the under side.

Type species *Sinoferdina gigantea*, new species

Remarks This new genus appears to be related to the Genus *Ferdina* Gray 1840. It was divided by Livingstone (1931) and Clark (1976) into three genera—*Ferdina*, *Neoferdina* and *Celerina*. This new genus may be readily distinguished from any of the above allied genera by the arrangement of the abactinal and regular marginal plates, and by the broader actinal intermediate areas. This new genus is perhaps nearest to *Neoferdina*. I give here two photographs of a specimen of *Neoferdina cumingi* (Gray), which was collected by myself from the Xisha Islands, and now regarded as the type species of *Neoferdina*. If the photograph of *Neoferdina* (Pl. II, fig. 3) is compared with that of *Sinoferdina* (Pl. I, fig. 1), the differences in the arrangement of the abactinal plates would be very obvious. In *Neoferdina* the abactinal plates are few, irregular in arrangement, some of which are naked and very tumid, while in *Sinoferdina* they are numerous, somewhat regular in arrangement, all of which are not naked

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and tumid. The superomarginal plates of *Neoferdina* are irregularly arranged and alternately large and small, whereas those of *Sinoferdina* are regularly arranged and are not alternately large and small. Finally the papulae of *Neoferdina* are much larger than those of *Sinoferdina*.

Sinoferdina gigantea, new species

(Pl. I: 1—2; Pl. II: 1—2)

Description of the holotype Rays 5. $R = 60$ mm., $r = 19$ mm., $R = 3.1 r$; breadth of a ray at base 18 mm. The disk is large, somewhat inflated; the rays are short, broad, evenly tapered, slightly triangular in section, carinal series being distinct. The abactinal plates are small, numerous, roundish in shape; about ten series of these plates are found at the arm base. The carinal plates are slightly enlarged, about 2.0—2.5 mm. in transverse diameter, rounded in outline, somewhat elevated and nearly continuous. The medio-lateral or dorsolateral rows are slightly distinct. A less definite transverse series of median-size plates across the rays, 5 to 7 of these on each ray. All the plates are closely-placed, and obscured by minute granulations. There are no conspicuous convex bare plates. The surface of the denuded plates is flat and almost smooth. The granules are polygonal, close-set, fairly uniform, not enlarged in the center of plates, about 150/sq. mm. The granules surrounding the papulae pore are distinctly larger than those of the plates. The papulae are small and isolated.

Marginal plates are regular in arrangement, laterodorsal in position, not alternately large and small. Superomarginals 17, rectangular, mostly longer than wide, all the plates with the exception of the first three have a very small naked central area which gradually increases in size distally the last 3 plates have only a marginal series of granules. The inferomarginals are similar to the superomarginals, but a little narrower; the last five inferomarginals are slightly convex, and have a central naked area. The limits of the marginal plates are concealed by the uniform granulation covering them. The terminal plate is small, diamond-shaped, somewhat convex, bare and smooth, with a single terminal tubercle.

Actinal intermediate areas are rather extensive and covered with granules slightly coarser than those of abactinal and marginal plates. There are 5 series of actinal plates at the base of the ray. The first series of actinal plates (adjoining the adambulacrals) extends nearly to the tip of the ray. A second series reaches to the twelfth or thirteenth inferomarginal; a third series goes as far as the ninth or tenth; a fourth may reach the fifth inferomarginal; a fifth series, consisting of 5 plates is present in all the interradial areas. There are no actinal and intermarginal papulae. No pedicellariae anywhere. All the actinal plates are embedded in soft tissue, so that their limits are not very clear.

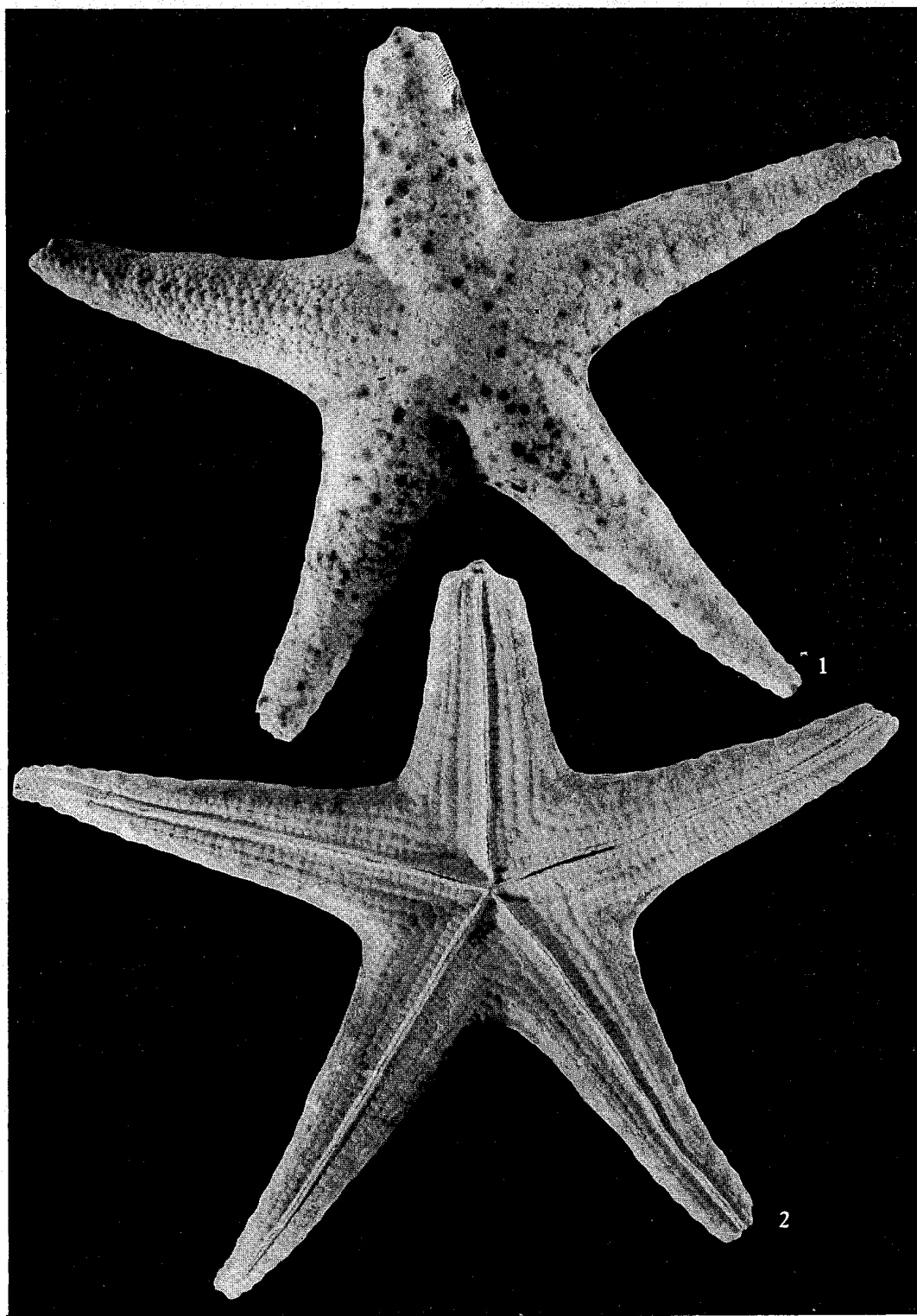
Adambulacral plates are numerous, small, squarish; each carries two, very rarely three, short blunt furrow spinelets, only the outer halves of which project from the continuous granulation of the under side. There are no other spinelets on the adambulacral plates. The oral plates are small and concealed by the granulation; each carries only 4 or 5 marginal spinelets, which are more or less compressed, wide and

blunt, the innermost biggest. The madreporic body is conspicuous, elliptical, about 2.5 mm. in diameter, nearer center of disk than margin. The anus is indistinct. Taken out from alcohol the color is yellowish-white, with many brownish spots on the abactinal surface.

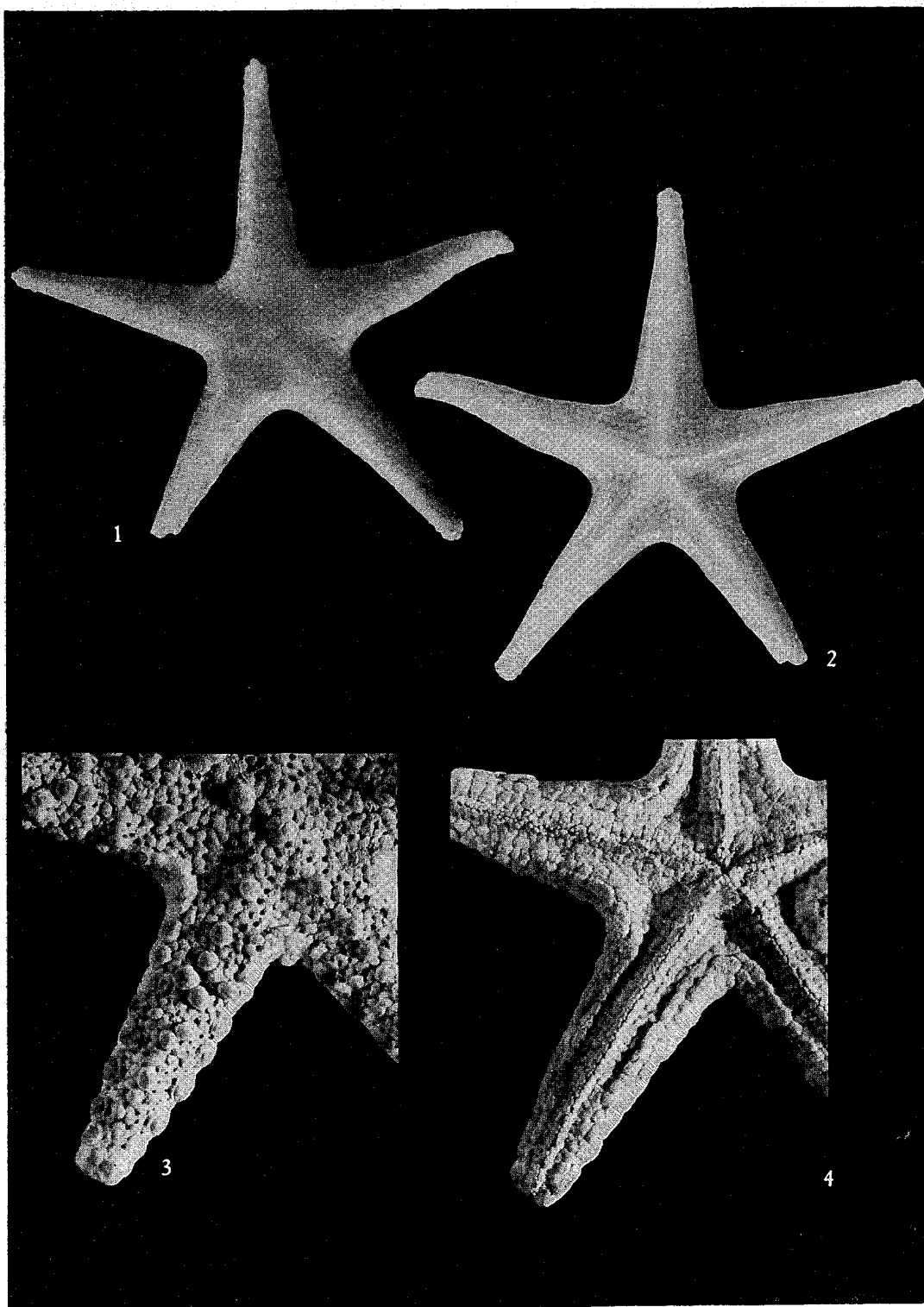
The paratype has $R = 33$ mm., $r = 10$ mm., and is perfectly flat aborally. The color of the paratype is greenish-gray aborally, more or less brownish orally and marginally. There are no spots or blotches on the abactinal surface.

Material examined Holotype (IOAS-E00951), East China Sea, $27^{\circ}30' N.$, $126^{\circ} E.$, 162 m, sandy bottom, 10 October 1975. Paratype, (IOAS-E00952), East China Sea, same station as holotype, 131 m, 5 July 1976.

Both holotype and paratype are deposited in the Institute of Oceanology, Academia Sinica.



1. 大中华飞地海星(新属,新种) *Sinoferdina gigantea* n. g. & n. sp. 正模,上面 2. 同1,下面,略放大



1. 大中华飞地海星(新属, 新种) *Sinoferdina gigantea* n. g. & n. sp. 副模, 上面 2. 同1, 下面, 略放大 3. 新飞地海星 *Neoferdina cumingi* 上面 4. 同3, 下面; $\times 3$