

XI. — ON SACCULINA PUNCTATA, A NEW SPECIES FROM JAPAN
BY H. BOSCHMA. (WITH 2 TEXT-FIGURES).

The present paper contains the chief particulars of a specimen in the collection of the United States National Museum, differing from the hitherto described species of *Sacculina* in its anatomical characters and in those of the cuticle of the mantle.

Sacculina punctata nov. spec.

Kaseda, Satuma, Japan, T. Urita coll. et don., 1 specimen on *Plagusia dentipes* de Haan, U. S. N. M. No. 48337.

Diagnosis. Testes almost entirely in the posterior part of the body, outside the visceral mass, vasa deferentia partially in the visceral mass. The two testes well developed, completely separated, forming more or less globular or somewhat compressed, wide sacs, which are connected with the wide vasa deferentia by a short, narrow tube. Colleteric glands with numerous branched tubes, approximately in the central part of the lateral surfaces of the visceral mass. External cuticle of the mantle without excrescences, or covered with small roundish papillae, or provided with irregular outgrowths which give it a more or less ragged appearance. Surface of the external cuticle with distinct little areas which have a diameter varying from 7 to 18 μ . Usually in these areas there is a central column consisting of chitin which differs in structure from that of its surroundings. Internal cuticle with numerous retinacula, arranged in rows on its surface. Each retinaculum consists of a single spindle which has a length of 7 to 12 μ .

The specimen is comparatively large, its breadth (greater diameter) is 23 mm, its height (the distance from the stalk to the mantle opening) is 16 mm, and its thickness 6 mm. The animal is more or less kidney-shaped, the stalk being found at the concave side, the mantle opening at the convex side.

The peculiar form and situation of the male genital organs is represented in fig. 1. The first section (fig. 1*a*) shows the testes, which are contained in the posterior region of the body, outside the visceral mass. In the second section (fig. 1*b*), a more ventral one than the former, the wide vasa deferentia are visible. The latter are connected with the testes by a short narrow canal which possesses a chitinous internal layer. In this region the male genital organs show a distinct curve, as the dorsal part

of the vasa deferentia lies behind the ventral part of the testes (the region of the stalk is the posterior part of the body). In this section the whole of the male genital organs still lies outside the visceral mass. A still more ventral section (fig. 1c) shows that gradually the mantle cavity is extending farther towards the posterior part of the body, so that the male genital organs become a part of the visceral mass. The most ventral

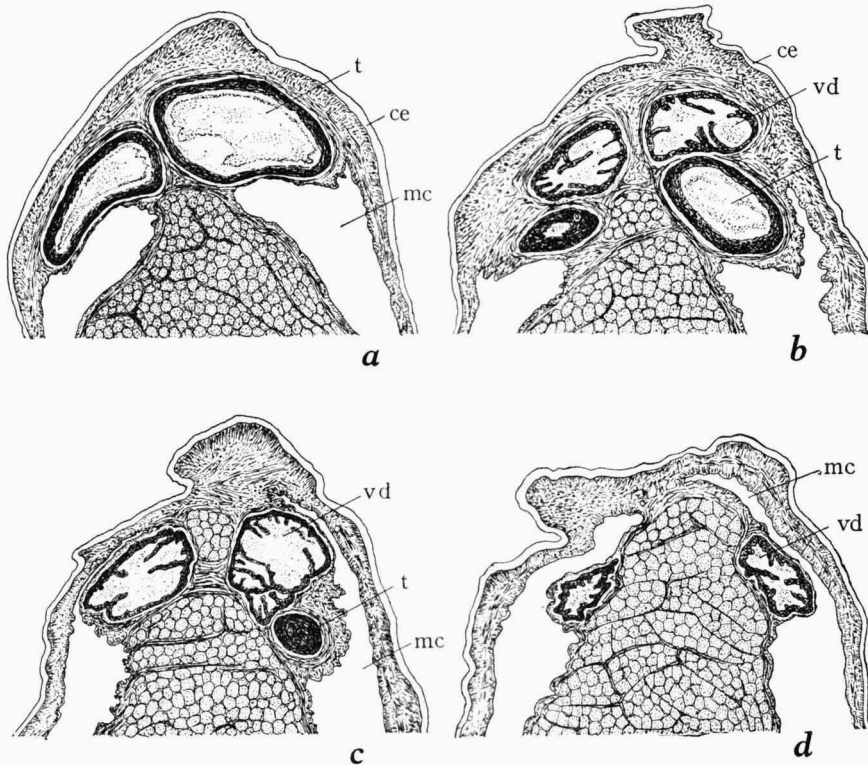


Fig. 1. *Sacculina punctata*, longitudinal sections of the posterior part of the body, *a* from the dorsal region, each following section nearer to the ventral region than its predecessor. *ce*, external cuticle of the mantle; *mc*, mantle cavity; *t*, testis; *vd*, vas deferens. $\times 12$.

part of the vasa deferentia is found at each side of the visceral mass (fig. 1d); here the mantle cavity nearly reaches the posterior part of the body.

As in most of the larger species of the genus the colleteric glands are fairly large. They are present in the central region of each lateral surface of the visceral mass, and contain numerous branched tubes.

The external cuticle of the mantle varies in thickness from 40 to

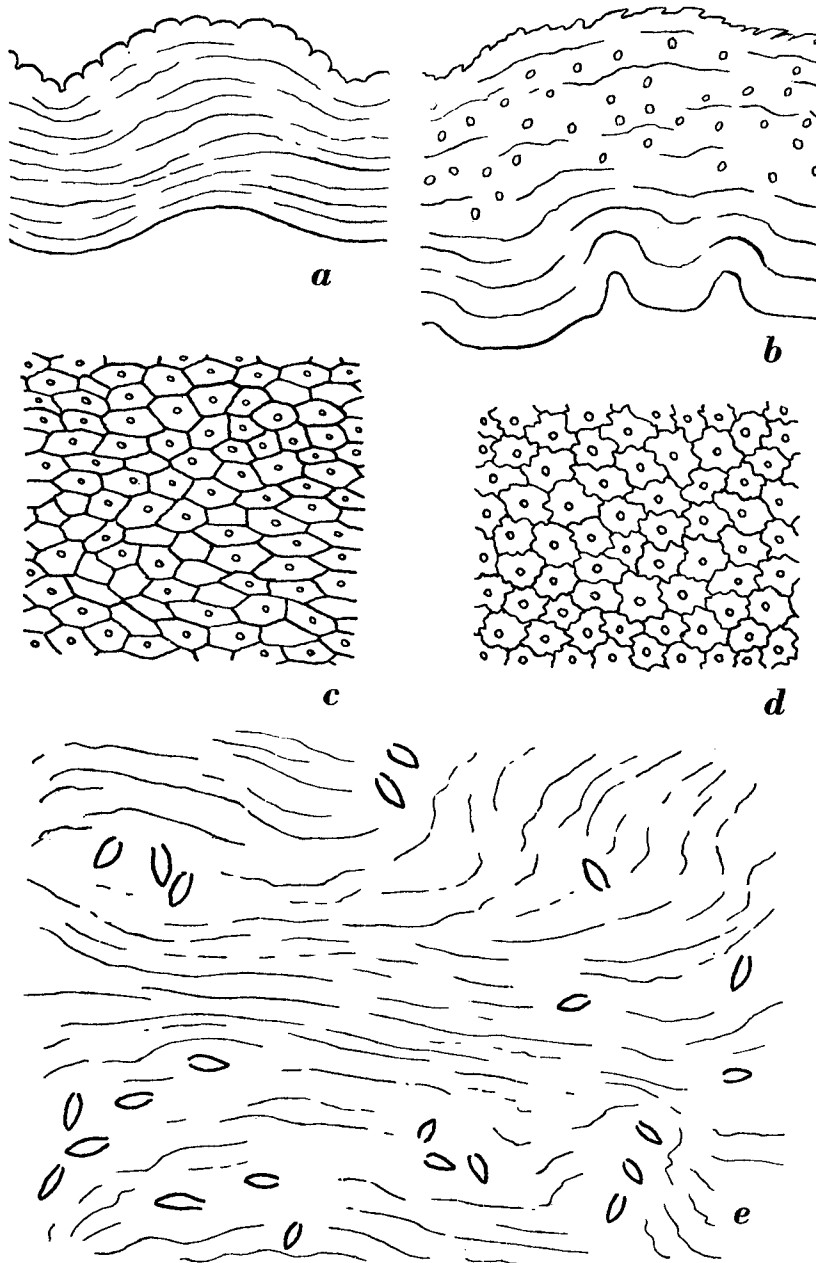


Fig. 2. *Sacculina punctata*. *a*, section of the external cuticle; *b*, somewhat oblique section of the external cuticle from another part of the mantle; *c*, and *d*, surface view of two different parts of the external cuticle; *e*, part of a row of retinacula on the surface of the internal cuticle. $\times 530$.

60 μ approximately. In different parts of this cuticle the areas which are found on its surface have a different shape: they may be more or less polygonal (fig. 2c) or have an irregular sinuous contour (fig. 2d). The central column which consists of a different kind of chitin usually is distinctly visible in surface view. In stained sections these columns often are not visible (fig. 2a), in other parts of the cuticle, especially when the sections are somewhat oblique (fig. 2b) they are distinct, especially in the upper half of the cuticle.

The retinacula are arranged in broad bands on the surface of the internal cuticle. Between these bands, which lie at some distance from each other, not a single retinaculum is found. A part of such a band is represented in fig. 2e, the retinacula, each of which consists of a single spindle, occur here rather crowdedly.

In some respects the structure of the external cuticle of *Sacculina punctata* is similar to that in *S. sulcata* V. K. & B. The two species are easily distinguished by the different shape of the male genital organs. In *S. punctata* both the testes and the vasa deferentia have a wide lumen. On the other hand the testes of *S. sulcata* possess a very narrow lumen, and its vasa deferentia are narrow canals.