ON THE SPECIES OF SARMATIUM DANA, 1851
(DECAPODA, BRACHYURA)

BY
R. SERÈNE and C. L. SOH
National Museum, Singapore

Dana (1851) established the genus Sarmatium for the single species S. crassum Dana, 1851. Tesch (1917) included five Indopacific species in Sarmatium and, since then, several authors have suggested that some other species, previously described as belonging to the genus Sesarma, should be included. As originally defined by Dana (1851), the species belonging to the genus Sarmatium have, on the upper outer border of the palm of the male cheliped, a conspicuous structure composed of 3 or 4 transverse grooves (separating 4 or 5 raised striae). A new genus briefly characterized by the absence of such a structure will be established to include all species, other than the two mentioned below, previously considered as referable to Sarmatium.

Sesarma germaini A. Milne Edwards, 1868 is a valid species of Sarmatium and not a synonym of S. crassum as supposed by Tesch (1917). Thus the genus Sarmatium now includes only two species S. crassum Dana, 1851 and S. germaini (A. Milne Edwards, 1868). The present paper reports on specimens of S. germaini collected in Singapore and Malaysia and compares them with specimens of S. crassum.

Sarmatium germaini (A. Milne Edwards, 1868)
Sesarma germaini A. Milne Edwards, 1868: 28; De Man, 1887: 651; De Man, 1891: 51.
Port Swettenham, Malaysia, 1 ♀ (NMS. 1964.9.2.52).
Prai, Malaysia, 1 ♀ (NMS.1964.9.2.54).
Pulau Senang, off Singapore, 1 ♀ (NMS.1964.9.2.59).
The last three lots were identified by Tweedie in 1950 as S. crassum.

History. — Sesarma germaini A. Milne Edwards, 1868 was described from Poulo Condore (South China Sea) after a specimen measuring 16 × 17 mm. From the very short and insufficient description of A. Milne Edwards, we quote: „Les pattes antérieures du mâle sont lisses et portent en dessus six ou sept très petits bourrelets obliques et parallèles“. This description leaves no doubt that the species belongs to Sarmatium, and is sufficiently different from the definition of S. crassum to be characterised as a separate species.

A. Milne Edwards (1868) and De Man (1887) briefly suggested a relation-
ship between *Sarasma germaini* and *S. smithi*. De Man (1891) on re-examining the type specimen of *S. germaini* in the Paris Museum, stated that he "cannot find any important difference" between *S. germaini* and *S. crassum* and that A. Milne Edwards was of the same opinion. However, he wrote: "This species finally at first sight may be recognized by the six or seven parallel, transverse and smooth, characteristic crests or ridges, with which the upper margin of the palm is ornamented"; the italics are from De Man, who identified with some reserve as *S. germaini*, a female measuring $8.40 \times 11.25$ mm. The species has never been illustrated. The senior author of the present paper was able to re-examine the holotype of *S. germaini* in the Paris Museum (April 1970); it is a dry female and not a male as indicated by De Man (1891). The transverse striae on the upper outer surface of the palm are not very strongly marked but clear, the dactylar tubercles are not at all indicated. Two of the specific characters of *S. germaini*,

---

**Figs. 1, 2.** Inner surface of propodus and dactylus of cheliped. 1, *Sarasma germaini* (A. Milne Edwards); 2, *Sarasma crassum* Dana.
as shown by our specimens, are also clear on the cheliped of the type specimen:  
1) the upper part of the outer surface of the carpus is distally ornamented with  
closely arranged, very small, flat tubercles resembling minute vesicles; 2) the  
lower margin of the palm is straight and marked on the outside by a groove.  

Observations. — A comparison of our largest specimen of *S. germaini* with a  
male specimen of *S. crassum* also collected in Singapore (NMS.1970.1.23.14,  
23 × 24 mm) demonstrates that the two species differ in the following respects:  
1. The second anterolateral tooth of the carapace is less well marked in *S. ger-
maini*, being faintly indicated in some specimens and not at all in others. This  
tooth is always distinct in *S. crassum*.  
2. On the upper outer surface of the palm of the cheliped of *S. germaini* there  
are seven transverse grooves separating eight swollen ridges, of which the  
proximal ridge is by far the longest. In *S. crassum* there are only three grooves  
separating four swollen ridges, of which the second (not the proximal) is by  
far the longest. In both species an irregular row of chitinous, comb-like denticles  
is developed on the anterior margin of each of the swollen ridges. Some of  
these rows of denticles are worn down, but that on the distal ridge is always well  
developed. In *S. germaini*, the row of denticles on the first proximal ridge is  
nearly worn down, whereas it is the most developed in *S. crassum*. Between this  
region of grooves and swollen ridges and the upper margin of the palm, there  
is an area which, in the natural condition, is covered with short dark hairs (removed  
in our photograph) and is strongly granular. This area is better developed in  
*S. germaini* than in *S. crassum*.  
3. On the proximal half of the upper edge of the dactylus, in *S. germaini*,  
there are three large, acute, chitinous tubercles, followed immediately by a row  
of 17 closely-set, small, acute tubercles. In *S. crassum* there are four large proximal  
tubercles on the proximal half of the dactylus, followed at some distance, by  
a row of 12 widely-spaced, small, acute tubercles.  
4. In *S. germaini*, on the outer surface of the palm, there is on the lower  
border a longitudinal slight depression. This groove starts near the proximal  
end of the palm, continuing as far as the middle of the fixed finger and delimits  
proximally a somewhat concave area on the outer palmar margin and a flattened  
area on the lower palmar surface. In *S. crassum*, there is no indication on the  
outer surface of the palm of a distinct flattening or of a low longitudinal ridge.  
Moreover, the lower border of the palm is regularly and slightly convex and  
rounded (not flattened) in cross section.  
5. In *S. germaini* there is no trace of a granular line on the inner surface of  
the palm. In *S. crassum* there is a row of 12 rounded granules on the inner palmar  
surface, parallel to the inner border; this row consists of an upper nearly vertical  
half, and a lower nearly longitudinal half.  
6a. In *S. germaini* the inner angle of the carpus of the cheliped is short and  
subacute; in *S. crassum* this angle is much longer and more acute.  
6b. In *S. germaini* there is an area, closely beset with very small vesicular
granules, on the upper outer anterior part of the carpus (into which the upper border of the palm can be fitted). In *S. crassum*, this area is finely striated, the very narrow and parallel salient ridges being placed close together. These structures have not been mentioned in the literature; perhaps they form part of some stridulating apparatus.

7. The colour of the palm of the cheliped is yellowish light brown in *S. germaini* whereas it is brownish red in *S. crassum*.

In both species, the female has no dactylnar tubercles on the cheliped and the transverse ridges on the upper border of the palm are feebly developed or absent. However, the presence of the longitudinal corrugation on the lower border of the palm, which is flattened, enables one to separate the female of *S. germaini* from that of *S. crassum* which has the lower border of the palm more convex and rounded.

**BIBLIOGRAPHY**


Received for publication 4 November 1970.
*Semiaulax geryanus* (A. Milne Edwards), male of 20 × 21 mm (NMS1970.127.9). 1, entire animal; 2, outer surface of cheliped; 3, transverse grooves and ridges of the upper outer surface of carpus; 4, upper outer distal surface of carpus.
Sternatium castrensis Dana male of 25 × 24 mm (NMNS 1970.1.23.1): 1, entire animal; 2, outer surface of chela; 3, transverse grooves and ridges of the upper outer surface of palm; 4, upper outer distal surface of carpus.