

In male, abdomen granulate, basio-lateral regions of fused segments inflated; lateral margins of sixth abdominal segment convex. Male first pleopod sigmoid, tip involute.

Remarks.— *A. muricata* differs from *A. novemspinosa* and *A. elongata* in having the marginal anterolateral spine distinct rather than tuberculiform. *A. muricata* differs from *A. brevifrons* and *A. undecimspinosa* in having the first male pleopod distally sigmoid.

Distribution.— Known only from the type series – Arafura Sea, Australia, Vietnam.

Etymology.— From *muricatus* L. spiny like a Murex shell, for the long, upcurved spines that adorn its carapace posteriorly.

Arcania novemspinosa (Lichtenstein, 1816)

(fig. 2F; 6C)

Leucosia novemspinosa Lichtenstein, 1816: 143.

Iphis novemspinosa White, 1847: 51; White, 1861, pl. 2; Adams & White, 1849: 56, pl. 13, fig. 1.

Arcania novemspinosa; Bell, 1855a: 367; Bell, 1855b: 309; Bell, 1855c: 21; Herklotz, 1861: 28; Haswell, 1880: 58; Haswell, 1882: 131; de Man, 1887: 392; Alcock, 1896: 267; Ihle, 1918: 265; Estampador, 1937: 513; Buitendijk, 1939: 229; Lin, 1949: 14; Tyndale-Biscoe & George, 1962: 76; Serène, 1968: 45; Jones, 1990: 188; Huang, 1994: 579; Tan, 1996: 1027, fig. 2p-r; Naiyanetr, 1998: 58.

Arcania novemspinosa var. *aspera* Miers, 1880: 317; Miers, 1886: 299; Alcock & Anderson, 1894: 203; Ihle, 1918: 313; Serène, 1968: 45.

Arcania elongata; Tan, 1996, fig. 1b [not *A. elongata* Yokoya, 1933].

not *Arcania novemspinosa*; Campbell & Stephenson, 1970: 250, fig. 13; Hill, 1982: 201, pl. 4d; Dai & Yang, 1991: 74, fig. 33.2-3 [= *A. undecimspinosa* de Haan, 1841].

Holotype.— **Malaysia**: 1 ♀ ovigerous (24.4 mm cl), NHM 1880.6, Holotype of *Arcania novemspinosa* var. *aspera* Miers, 1880.

Additional material.— **Australia**: 1 ♂ (17.0 mm cl), AMS P16660, 19°08'S 146°50'E, Magnetic Island, Horseshoe Bay, iv.1967, coll. C. Wilson. **Papua New Guinea**: 1 ♀ (28.9 mm cl), AMS P15632, Mouth of Sepik River, 03°50'S 144°34'E, 18 m depth, ix.1963, coll. R. Eginton. **Taiwan Straits**: 1 ♂ (25.2 mm cl), MNHN 10764, Pescadores Is., 1903, coll. A. Milne Edwards. **Indonesia**: 1 ♀ (23.1 mm cl), SMF 68, Mollucas, Amboina, vii-ix.1885, coll. Dr J. Brock, det. J.G. de Man; 1 ♀ (18.4 mm cl), ZMC cru3651, 6°38'S, 105°21'E, Sunda Strait, 35 m depth, 30.vii.1922; 1 ♂ (18.0 mm cl), 1 juvenile, RMNH D 4207, Timor, near Koepang, 'Snellius' Expedition, 2.xii.1929, det. A.M. Buitendijk; 1 ♂ (21.3 mm cl), ZMA, Great Kei Island, 'Siboga' Expedition, stn 261, 27 m depth. **Philippines**: 1 ♂ (17.8 mm cl), NHM 729, Mindoro Island, coll. H. Cumings, det. A. White as *Iphis novemspinosa*, [preserved dry]; 2 ♂ (12.4, 14.4 mm cl), USNM 234264, Zambales prov., Nasasa Bay, 9-33 m depth, 30.i-8.ii.1960, colls F.G. Dayrit & J.E. Norton; 1 ♂ (21.2 mm cl), USNM, Mariveles, Luzon, coll. A.M. Reese; 1 ♂ (16.3 mm cl), WAM c10501, Sulu Archipelago, Tawitawi Group, 16.5-31 m depth, 29.ii.1964, coll. B.R. Wilson. **Singapore**: 1 ♂ (19.8 mm cl), ZMA, off Changi, 15 m depth, 2.ii.1926; 1 ♀ (16.3 mm cl), ZMA, Siglap, vii.1934. **Thailand**: 1 ♂ (19.8 mm cl), 1 ♀ (27.7 mm cl), 1 ♀ ovigerous (25.6 mm cl), 1 juvenile, RMNH D 36625, between Naklua and Si Racha, Chonburi Prov., 18-25.xi.1980, coll. A.C.J. Burgers & L.B. Holthuis; 2 ♂ (15.5, 16.9 mm cl), 3 ♀ (11.7-24.1 mm cl), RMNH D 38675, Chonburi Prov., Naklua, 10 m depth, 9.i.1991, coll. A.C.J. Burgers & L.B. Holthuis; 1 ♂ (19.4 mm cl), RMNH D 42488, Chonburi Prov., Naklua, N. of Pattaya, 10-35 m depth, 15-19.i.1993, coll. A.C.J. Burgers & L.B. Holthuis; 2 ♀ (17.6, 19.7 mm cl), RMNH D 42044, Chonburi Prov., Naklua, 30 m depth, 28.i.1992, coll. A.C.J. Burgers & L.B. Holthuis; 1 ♀ ovigerous (22.8 mm cl), RMNH D 37331, Chonburi Prov., between Si Racha and Pattaya, 28-30.xii.1987, coll. A.C.J. Burgers & L.B. Holthuis; 1 ♂ (19.4 mm cl), 2 ♀ (23.7, 24.1 mm cl), 2 ♀ ovigerous (22.8, 24.9 mm cl), RMNH D 37578, Chonburi Prov., between Si Racha and Pattaya, 0-40 m depth, 3-5.xi.1988, coll. A.C.J. Burgers & L.B. Holthuis; 22 ♂ (11.3-22.9 mm cl), 20 ♀ (13.7-30.2 mm cl), 5 ♀ ovigerous (21.4-30.3 mm cl), RMNH D 37969, between Si Racha and Pattaya, 10-40 m depth, 24.xii.1989-24.i.1990, coll. A.C.J. Burgers & L.B.

Holthuis; 1 ♂ (15.6 mm cl), RMNH D 37550, Rayong Prov., Sattahip, 0-40 m depth, 16.xii.1988, coll. A.C.J. Burgers & L.B. Holthuis; 1 ♀ ovigerous (25.0 mm cl), USNM 273770, 07°53.09'N 98°50.07'E, 16-20 m depth, 15.ii.1966.

Description.— Carapace globose, longitudinally ovate in male, nearly rounded in adult female, set with anteriorly curved spinules of uneven size, regions indistinct. Frontal lobes triangular, closely set anteriorly with flat-topped granules. Margins of carapace bearing nine granulate spines: one spine each on subhepatic, midlateral, posterolateral and posterior margins, single spine on intestinal region. Anterolateral margin bearing granulate tubercle medially between subhepatic and midlateral spines, indistinct in adults. Subhepatic spine prominent, pointing anteriorly; midlateral spine upcurved; posterolateral, intestinal spines long, upcurved, longer in adult males than in females; posterior spines dorso-ventrally flattened. Hepatic, intestinal regions indistinctly inflated, demarcated by shallow grooves.

Outer denticle on anterior margin of efferent branchial channel denticle larger than inner denticle, infraorbital lobe spinose. Thoracic sternites granulate.

Cheliped merus in adult male longer than carapace, thickly set with conical granules, proximal tubercle on lower margin prominent. Carpus and propodus minutely granulate; propodus thickened basally; fingers longer than palm. Pereiopodal meri, carpi, and propodi minutely granulate.

In male, abdomen granulate, basio-lateral regions of fused segments inflated, lateral margins of sixth abdominal segment straight. Male first pleopod sinuous, tip attenuate.

Colour.— “spirit material: uniform pale pink, fingers white” (Tyndale-Biscoe & George, 1962: 76).

Remarks.— Lichtenstein's (1816: 143) description of *Leucosia novemspinosa* is all too brief: “testa ovata scabra, margine spinulis novem, tribus posticis majoribus”.

Miers (1880: 317) distinguished his *Arcania novemspinosa* var. *aspera* “in the broader and much more closely granulated carapace, and the relatively shorter spines of the posterior and posterolateral margins”. Examination of the holotype (NHM 1880.6) proved it to be *A. novemspinosa*.

Bell (1855b: 309) found *A. novemspinosa* “resemblance to *A. undecim-spinosa* of de Haan is very close. In fact it scarcely differs excepting in the number of spines”. Alcock (1896: 268) reiterated “it seems doubtful whether *A. 9-spinosa* is really distinct from *A. 11-spinosa*”.

Tan (1996: 1027) believes “A direct comparison of the types will probably show both species to be synonymous”. *A. novemspinosa* is easily distinguished from *A. undecimspinosa* in having the anterolateral spine greatly reduced or indistinct; the posterolateral, intestinal spines prominent, longer than posterior spines; and the cheliped merus in adult male longer than the carapace.

Distribution.— Australia, Taiwan Str., Indonesia, Philippines, Malaysia, Singapore, Thailand, Andamans; 9-40 m depth.

Arcania sagamiensis Sakai, 1969
(fig. 3A, 7A)

Arcania sagamiensis Sakai, 1969: 247, textfig 1a, a'; Sakai, 1976: 93, textfig. 50a, b; Dai & Yang, 1991: 75, pl. 8, fig. 4, textfig. 35; Iuangu, 1994: 579.

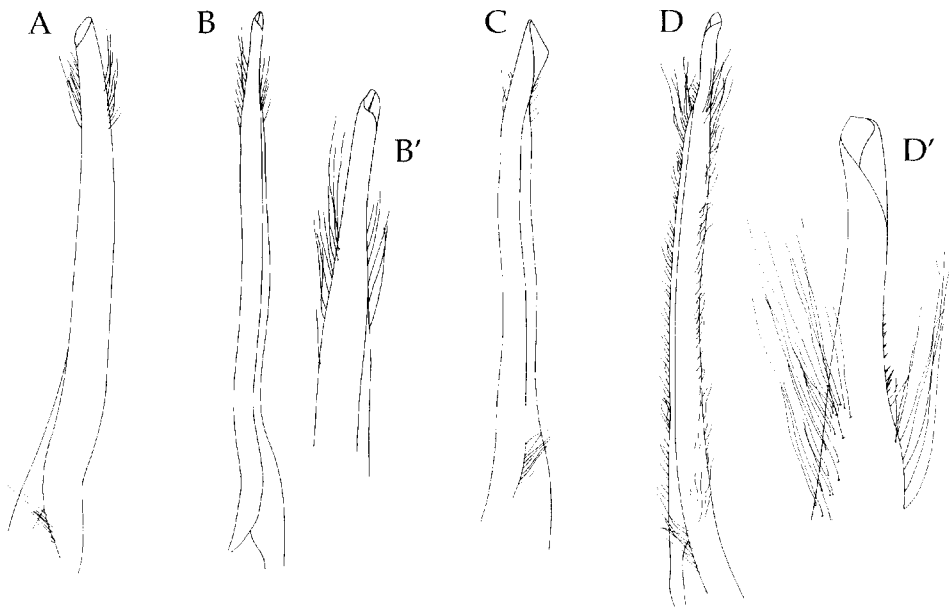


Fig. 7. First male pleopod. A, *Arcania sagamiensis* Sakai, 1969, 10.1 mm cl, (USNM 125881); B, *Arcania septemspinosa* (Fabricius, 1787), 16.2 mm cl, (USNM 65366); C, *Arcania tuberculata* Bell, 1855, 7.4 mm cl, (MNHN B27488); D, *Arcania undecimspinosa* de Haan, 1841, 26.6 mm cl, (USNM 57711).

Holotype.— **Japan:** 1 ♂ (10.1 mm cl), USNM 125881, Honshu Island, Sagami Bay, intertidal, coll. T. Sakai. Additional material.— **Western Samoa:** 1 ♀ (9.4 mm cl), ZMC ex. Museum Godeffroy, Upolu, coll. S. Wroblewsky. **Fiji Is:** 1 ♀ (11.5 mm cl), USNM, Ongea Levu, 5.5-9 m depth, 10.iv.1938, coll. F.E. Lewis.

Description.— Carapace globose, pyriform, regions indistinct, set with squat granules, fourteen granulate tubercles medially. Front produced, frontal lobes triangular, closely set with flattened granules. Margins of carapace bearing eleven granulate denticles: one denticle each on subhepatic, anterolateral, midlateral, posterolateral and posterior margins, single denticle on intestinal region; midlateral and posterolateral denticles longest, upcurved. Hepatic and intestinal regions faintly demarcated by shallow grooves, hepatic tubercle conical, more prominent than subhepatic denticle.

Outer denticle on anterior margin of efferent branchial channel larger than inner denticle, infraorbital lobe pine-cone like, closely set with granules. Thoracic sternites granulate.

Cheliped merus less than half as long as carapace, set with periform granules. Carpus and propodus minutely granulose; carpus with prominent ridge medially on upper margin. Fingers bearing minutely granulate longitudinal costae. Pereiopods minutely granulate.

Male abdomen granulate, lateral margins of sixth segment straight, basal-lateral regions indistinctly inflated. Male first pleopod straight.

Remarks.— *A. sagamiensis* differs from the closely allied *A. fungilifera* in having 14 granulate tubercles dorsally on the carapace rather than 16 fungiferous tubercles, and a uniformly granulose exopod and endopod of the third maxilliped rather than

with a longitudinal row of contiguous fungiform granules.

Distribution.— Western Samoa, Fiji, Japan, China (Hainan Is.); intertidal to 9 m depth.

Arcania septemspinosus (Fabricius, 1787)
(fig. 3B, 7B)

Cancer septemspinosus Fabricius, 1787: 325; Fabricius, 1793: 462; Zimsen, 1964: 647.

Leucosia septemspinosus; Fabricius, 1798: 351; Latreille, 1802: 119; Lichtenstein, 1816: 143; Bosc, 1830: 288; H. Milne Edwards, 1838: 413; Zimsen, 1964: 647.

Iphis septemspinosus; Leach, 1817: 25; Desmarest, 1825: 170; H. Milne Edwards, 1837b: 139; White, 1847: 51; H. Milne Edwards, 1849: 79, pl. 25, fig. 4; Bell, 1855a: 367; Bell, 1855b: 311; Bell, 1855c: 22; Miers, 1880: 317; Sluiter, 1881: 159, fig. 1; Serène, 1937: 77.

Iphis longipes Dana, 1852: 396, pl. 25, fig. 4; Bell, 1855b: 312; Bell, 1855c: 22.

Arcania septemspinosus; Miers, 1886: 300; Alcock, 1896: 265; Annandale & Lloyd, 1908: pl. 5, fig. 6; Rathbun, 1910: 314; Stebbing, 1910: 337; Bals, 1915: 15; Laurie, 1915: 410; Laurie, 1922: 132; Ihle, 1918: 265; Gee, 1925: 160; Kellogg, 1928: 353; Chopra, 1934: 43, textfig. 5; Suvatti, 1937: 56; Suvatti, 1950: 147; Stephensen, 1945: 73; fig. 7f; Barnard, 1950: 375, fig. 71 f, g; Dawydoff, 1952: 138; Chhappgar, 1957: 10, pl. 3a-c; Serène, 1968: 45; Kensley, 1981: 38; Tirmizi & Kasmi, 1986: 72, fig. 21; Devi et al., 1988: 25, fig. 7; Chen, 1989: 206, fig. 9, pl. 2 fig. 6; Dai & Yang, 1991: 71, pl. 7, fig. 8, fig. 32.3; Huang, 1994: 579; Zarenkov, 1994: 111; Tan, 1996: 1029, fig. 2a, 1d; Naiyanetr, 1998: 58; Ng et al., 2001: 9, pl. 2, fig. a, h.

Arcania siamensis Rathbun, 1909: 108; Rathbun, 1910: 314, pl. 1, fig. 2 (part); Ihle, 1918: 313; Suvatti, 1937: 56; Suvatti, 1950: 147; Dawydoff, 1952: 138.

Arcania longipes; Ihle, 1918: 313; Serène, 1968: 45.

Arcania (?) *heptacantha*; Campbell, 1971: 40, pl. 3B.

Arcania heptacantha; Serène & Vadon, 1981: 124; Naiyanetr, 1998: 58.

not *Arcania septemspinosus*; White, 1847: 50; Bell, 1855a: 367; Bell, 1855b: 310, pl. 34, fig. 7; Bell, 1855c: 21 [=*Ixa pulcherrima* Haswell, 1880].

not *Iphis septemspinosus*; Stimpson, 1858: 161; Stimpson, 1907: 157 [= *A. heptacantha* de Man, 1907].

not *Arcania septemspinosus*; Rathbun, 1902: 30 [= *A. heptacantha* de Man, 1907].

Material.— **Fiji**: 1 ♀ (19.6 mm cl), AMS P12047, Mouth of Labasa River; 15 ♀ (9.7-21.8 mm cl), 7 ♀ ovigerous (15.2-22.9 mm cl), 10 ♀ (10.0-21.7 mm cl), MNHN Na 27552, Viti Levu lagoon, SUVA 2, stn CP 57, 17°43.4'S 177°22.8'E, 17 m depth, 20.x.1998; 1 ♀ (12.0 mm cl), MNHN Na 27551, Viti Levu lagoon, SUVA 2, stn CP 67, 17°44.1'S 177°18.3'E, 28 m depth, 21.x.1998; 5 ♂ (11.7-19.6 mm cl), 3 ♀ (13.9-19.8 mm cl), 4 ♀ ovigerous (17.9-20.5 mm cl), MNHN Na 27553, Viti Levu lagoon, SUVA 2, stn CP 69, 17°48.4'S 177°19.3'E, 17 m depth, 21.x.1998; 1 ♀ (21.5 mm cl), MNHN Na 27555, Viti Levu lagoon, SUVA 2, stn CP 80, 17°38.0'S 177°19.7'E, 36 m depth, 22.x.1998; 9 ♀ (9.9-22.7 mm cl), 1 ♀ ovigerous (19.8 m cl), 3 juveniles, MNHN Na 27554, Viti Levu lagoon, SUVA 2, stn CP 84, 17°39.9'S 177°22.2'E, 22 m depth, 22.x.1998. **Australia**: 1 ♀ (14.1 mm cl), QM w3359, Queensland, 26°30'S 153°15'E, 48 m depth, 26.vii.1968, coll. A.J. Bruce; 1 ♀ ovigerous (15.4 mm cl), QM w17392, Gulf of Carpentaria, 13°02.6'S 139°12.1'E, 56 m depth, 28.xi.1990; 3 ♂ (10.2-13.1 mm cl), 1 ♀ ovigerous (17.1 mm cl), WAM c8660, New Year I., 55 m depth, xi.1962, coll. W. Goode. **Indonesia**: 1 ♂ (14.8 mm cl), 1 juvenile, ZMC cru3645, Java Sea, 5°53'S 107°02'E, 27 m depth, 8.viii.1922; 1 ♂ (14.3 mm cl), 1 ♀ (10.3 mm cl), ZMC cru3647, Java Sea, 6°0'S 106°47'E, 22 m depth, 7.viii.1922; 1 ♂ (17.2 mm cl), ZMC cru3644, Sunda strait, 5°55'S 105°31'E, 38 m depth, 11.vii.1922; 1 ♂ (16.5 mm cl), 2 juveniles, ZMC cru3646, Sunda strait, 6°22'S 105°44'E, 30 m depth, 29.vii.1922; 1 ♀ ovigerous (15.4 mm cl), RMNH D 3133, Poeloe Weh, N. Sumatra, v.1923, coll. A. P. Buitendijk; 1 ♀ (19.1 mm cl), NHM 1880.6, Celebes, Macassar, Sulawesi; 1 juvenile, 1 ♀ (16.9 mm cl), ZMA, Java, 'Siboga' Expedition, stn 4, 7°42'S 114°12.6'E, 9 m depth; 1 ♂ (11.5 mm cl), ZMA, Badjo Bay, west coast of Flores, 'Siboga' Expedition, stn 50, 40 m depth, 16-18.iv.1899. **Malaysia**: 2 ♂ (12.2, 18.6 mm cl), RMNH D 48573, Batu Maung,

Penang, 5°17'N 100°17'E, 30 m depth, 16.i.1983, colls L.B. Holthuis & W.T. Meng. **Philippines:** 1 ♀ (17.7 mm cl), USNM 65347, Corregidor Light, off Luzon, 14°24'30"N 120°33'40"E, 'Albatross' stn 5107, 51 m depth, 9.i.1908; 1 ♂ (13.8 mm cl), USNM 65349, Mariquitdaquit I., off Leyte, 'Albatross' stn 5204, 11°04'18"N 125°05'30"E, 27 m depth, 11.iv.1908; 1 ♂ (13.8 mm cl), USNM 65349, Taratara I., 11°45'53"N 124°42'50"E, 'Albatross' stn 5208, 47 m depth, 14.iv.1908; 1 ♂ (16.2 mm cl), USNM 65366; 2 ♂ (17.2, 17.3 mm cl), 1 ♀ (18.4 mm cl), 1 ♀ ovigerous (18.3 mm cl), USNM, Taratara Island, 11°45'25"N 124°48'05"E, 'Albatross' stn 5209, 37 m depth, 14.iv.1908; 1 ♂ (14.9 mm cl), USNM 65368, Luzon, S. Fernando Pt., 16°30'36"N 120°11'06"E, 'Albatross' stn 5442, 82 m depth, 10.v.1909; 1 ♀ ovigerous (18.2 mm cl), USNM 322873, Nouongcasto, Balayan Bay, 146-157 m depth, 25.vi.1966; 1 ♀ (9.8 mm cl), WAM 226-70, Sulu Sea, off Sandarkan, Berhala Channel, 3.iii.1964, coll. B.R. Wilson; 1 ♀ ovigerous (20.1 mm cl), MNHN B18856, 14°02.8'N 120°18.8'E, MUSORSTOM, stn 2, 187-182 m depth, 19.iii.1976. **South China Sea:** 1 ♂ (16.5 mm cl), USNM 65367, off Hong Kong, 21°42'N 114°50'E, 'Albatross', stn 5302, 70 m depth, 9.viii.1909. **Vietnam:** 1 ♂ (21.5 mm cl), MNHN B9277, coll. R. Serène. **Gulf of Thailand:** 1 ♀ damaged, 1 ♀ ovigerous (15.8 mm cl), USNM 39664, S. Koh Krit, 31-37 m depth, 28.i.1900, coll. Th. Mortensen; 1 ♂ (16.0 mm cl), 1 ♀ (12.2 mm cl), USNM 39665, S. Koh Samit, 37 m depth, 31.i.1900, coll. Th. Mortensen; 1 ♀ ovigerous (15.4 mm cl), USNM 134197, SW Ko Tao I., 9.xi.1957. **India:** 1 ♀ ovigerous (17.2 mm cl), MNHN B20030, Pondicherry, det. Lucas as *Iphis septemspinosa*; 2 juveniles, NHM 1890.1.31.8,9, Bay of Bengal; 1 ♂ (18.1 mm cl), NIHM 1892.7.15.400, Madras, coll. J.R. Henderson; 1 ♂ (19.4 mm cl), 5 ♀ (17.2-19.9 mm cl), 2 ♀ ovigerous (18.7, 19.0 mm cl), 13 juveniles, ZMC, Bay of Bengal, 20°51'N 87°58'E, 'Galathea', stn 305, 43-52 m depth, 26.iv.1951. **Madagascar:** 1 ♂ (14.8 mm cl), 1 juvenile, ZMC cru3643, Bay at Cape Diego, 'Galathea' stn 225, 6-8 m depth, 3.iii.1951; 1 juvenile, MNHN B18735, Tuléar, coll. B. Thomassin; 1 ♀ (16.1 mm cl), MNHN B18601, between Majunga and Narendry Bay, 7-40 m depth, 15.iv.1970; 3 ♂ (7.5-11.8 mm cl), 4 ♀ (12.5-13.0 mm cl), MNHN B18602, Mitsio Is., 46 m depth, 28.vii.1958, coll. A. Crosnier; 1 ♂ (13.0 mm cl), MNHN B 18604, 16°16'S 44°02'E, "FAO 60", stn 73/115, 36 m depth; 1 ♀ ovigerous (18.1 mm), MNHN B18335, 'ORSTOM I', NE Mitsio Is., 46 m depth, 28.vii.1958, coll. A. Crosnier; 2 ♂ (9.6, 9.3 mm cl), 1 ♀ ovigerous (11.0 mm cl), MNHN B18603, Banc de Pracel, 65 m depth, vi.1959, coll. A. Crosnier. **South Africa:** 4 ♂ (12.4 - 13.1 mm cl), 1 ♀ (13.2 mm cl), 1 ♀ ovigerous (13.6 mm cl), 1 damaged, SAM; 1 ♂ (10.1 mm cl), 1 ♀ (10.2 mm cl), SAM, 23°19'S 43°34'E, 82 m depth, 6.viii.1964. **Gulf of Aden:** 1 ♂ (9.5 mm cl), MNHN B13437, Djibouti, 1897, coll. F. P. Jousseau; 2 juveniles, MNHN B13438, Obock, 1897, coll. F. P. Jousseau.

Description.— Carapace set with minute flattened granules. Frontal lobes subquadrate, separated by slight notch, minutely granulate anteriorly, setose. Subhepatic margin mammillate, medially bearing small tubercle; anterolateral margin sinuous, closely granulate. Lateral spine robust, slightly upcurved, two thirds as long as carapace, granulate throughout, granules smaller distally. Posterolateral margin medially set with short, upcurved, granulate spine. Intestinal spine long, upcurved, granulate. Posterior spines slender, dorso-ventrally flattened, granulate. Closely granulate ridge, half as long as carapace, running medially from intestinal spine; shorter, less prominent ridges running from posterolateral, and lateral spines.

Outer denticle on anterior margin of efferent branchial channel larger than inner denticle, infraorbital lobe spinose.

Chelipeds slender, long, granulate, granules larger basally. Cheliped merus in male up to 1.4 as long as carapace. Carpus and propodus minutely granulate; fingers slender, as long as palm. Pereiopods filiform; smooth, subcylindrical.

In male, lateral margins of sixth abdominal segment straight, basio-lateral regions of fused segment inflated. Male first pleopod slightly sinuous, slender distally.

Colour.— "streaky and patchy red" (Alcock, 1896: 265).

Remarks.— *A. septemspinosa* differs from *A. heptacantha* in having a granulate

ridge, half as long as the carapace, running on the dorsal surface of the carapace to the intestinal spine; and the cheliped merus longer than the carapace. The distinguishing characters suggested by Chen (1989: 208) are inaccurate.

Fabricius' description of *Cancer septemspinosus* (1793: 462) - "thorace utrinque spina elongata acutissima, postice quinque spinoso, chelis filiformibus" - fits both *A. septemspinosa* and *A. heptacantha*. However, in Herbst's drawing (1792: 259, pl. 20, fig. 112) the mid-dorsal granulate ridge can be discerned as well as the relative lengths of the marginal spines and the cheliped merus. Dana's specimen of *Iphis longipes* (1852: 396, pl. 25, fig. 4) is lost, however his drawing depicts clearly the obtuse frontal lobes, the marginal posterolateral spines and the elongate cheliped characteristic of *A. septemspinosa*.

Distribution.— Fiji, Australia, Indonesia, Philippines, Vietnam, Gulf of Thailand, India, Madagascar, Mozambique Channel, South Africa, Persian Gulf, Gulf of Aden, Red Sea; 7-182 m depth.

Arcania tuberculata Bell, 1855

(fig. 3C, 7C)

Arcania tuberculata Bell, 1855a: 367; Bell, 1855b: 310, pl. 34, fig. 8; Bell, 1855c: 21; Alcock, 1896: 268; Borradaile, 1903: 438; Laurie, 1906: 366; Lenz, 1910: 545; Ihle, 1918: 264; Sankarankutty, 1962:154; Serène, 1968: 45.

Arcania laevisimana White, 1847: 50 (nom. nud.); Bell, 1855a: 367; Bell, 1855b: 310, pl. 34, fig. 10; Bell, 1855c: 22; A. Milne Edwards, 1874: 48, pl. 3, fig. 4; Alcock & Anderson, 1894: 203; Ihle, 1918: 264.

Arcania laevisimana Serène, 1968: 45 [erroneous spelling].

Arcania globata; Tan, 1996: 1027, fig. 1c.

not *Arcania tuberculata*; Tyndale-Biscoe & George, 1962: 76 [= *A. fungilifera* spec. nov.].

Holotype of *A. tuberculata*.— 1 ♂ (9.4 mm cl), NHM, Borneo, 44 m depth [preserved dry].

Holotype of *A. laevisimana*.— 1 ♀ (8.8 mm), NHM 721, Philippines, Corregidor Island, coll. H. Cum-
ing [preserved dry].

Additional materia.— **New Caledonia**: 3 specimens, preserved dry, MNHN B3982, coll. B. Balansa, ex. coll. A. Milne Edwards; 2 ♂ (6.2, 6.1 mm cl), MNHN B27465, 22°19.9'S 166°20.4'E, stn 10, 15 m depth, v.1984; 1 ♂ (7.0 mm cl), MNHN B21135, 22°26'S 166°27.4'E, stn 66, 15 m depth, viii.1984; 1 ♀ (7.3 mm cl), MNHN B21170, 22°31'S 166°30'E, stn 83, 22 m depth, viii.1984; 1 ♀ (6.3 mm cl), MNHN B19222, 22°31'S 166°46'E, stn 127, 55 m depth, viii.1984; 2 ♀ (6.0, 7.0 mm cl), MNHN B21225, 22°30'S 166°47'E, stn 128, 52 m depth, viii.1984; 1 ♀ (7.5 mm cl), MNHN B19216, 22°17'S 166°24'E, stn 261, 19 m depth, xi.1984; 1 ♂ (7.8 mm cl), MNHN B21181, 22°44'S 166°44'E, stn 306, 38 m depth, xi.1984; 1 ♂ (6.5 mm cl), MNHN B21187, 22°31.4'S 167°05.2'E, stn 358, 50 m depth, xi.1984; 1 ♀ (7.9 mm cl), MNHN B21224, 22°30'S 167°09'E, stn 374, 70-72 m depth, 21.i.1985; 1 ♀ ovigerous (8.2 mm cl), MNHN B19203, 22°32'S 167°08'E, stn 375, 67-71 m depth, 21.i.1985; 1 ♀ ovigerous (7.5 mm cl), MNHN B27466, 22°36'S 167°10E, stn 385, 75 m depth, 22.i.1985; 1 ♂ (5.9 mm cl), MNHN B21186, 22°33'S 167°17'E, stn 402, 40 m depth, 23.i.1985; 1 ♀ ovigerous (7.8 mm cl), MNHN B19197, 22°37'S 167°16'E, stn 414, 60 m depth, 24.i.1985; 1 ♂ (6.2 mm cl), 1 ♀ (6.2 mm cl), MNHN B18426, 18°26.4'S 163°09.7'E, stn 468, 40 m depth, 1.iii.1985; 1 ♀ ovigerous (6.6 mm cl), 1 juvenile, MNHN B21192, 18°28'S 163°07'E, stn 471, 42 m depth, 1.iii.1985; 1 ♀ ovigerous (6.8 mm cl), 1 juvenile, MNHN B21165, 18°26'S 163°05'E, stn 472, 48 m depth, 1.iii.1985; 1 ♀ ovigerous (8.3 mm cl), MNHN B18422, 18°57'S, 163°32'E, stn 481, 33 m depth, 02.iii.1985; 1 ♀ ovigerous (7.5 mm cl), MNHN B27467, 19°11.2'S 163°24.9'E, stn 535, 45 m depth, 6.iii.1985; 2 ♂ juveniles, 1 ♀ ovigerous (6.9 mm cl), 1 ♀ juvenile, MNHN B27468, 19°06'S 163°16'E, stn 540, 40 m depth, 6.xi.1985; 1 ♀ ovigerous (7.8 mm cl), MNHN B18303, 22°17.9'S 167°04.4'E, stn 600, 62-65 m depth, 5.viii.1986; 1 ♂ (5.6 mm cl), MNHN

B18306, 22°01'S 166°50.5'E, stn 623, 32-40 m depth, 6.viii.1986; 1 ♂ (5.8 mm cl), 1 ♀ ovigerous (6.0 mm cl), MNHN B18301, 21°57.9'S 166°52.5'E, stn 626, 47-48 m depth, 6.viii.1986; 1 juvenile, MNHN B18304, 21°57.3'S 166°49.6'E, stn 632, 44-45 m depth, 6.viii.1986; 1 juvenile, MNHN B18299, 21°54.2'S 166°42.2'E, stn 642, 47-44 m depth, 7.viii.1986; 1 ♂ (6.2 mm cl), MNHN B18305, 21°30.2'S 166°05.9'E, stn 700, 45 m depth, 10.viii.1986; 1 ♂ (7.3 mm cl), MNHN B18216, 21°24.0'S 166°02.5'E, stn 710, 30-31 m depth, 10.viii.1986; 1 ♂ (5.2 mm cl), MNHN B18302, 21°22.6'S 166°00.7'E, stn 713, 34-35 m depth, 11.viii.1986; 1 juvenile, MNHN B18300, 21°18.7'S 165°53.5'E, stn 729, 42-45 m depth, 12.viii.1986; 1 ♂ (6.8 mm cl), MNHN B27469, 21°0.0'S 165°29.3E, stn 801, 29 m depth, 9.i.1987; 1 ♀ ovigerous (6.9 mm cl), MNHN B27470, 21°52.6'S 165°25.4'E, stn 816, 31 m depth, 10.i.1987; 1 ♂ (5.4 mm cl), MNHN B27471, 20°28.8'S 164°47.5'E, stn 881, 27 m depth, 13.i.1987; 1 ♀ ovigerous (6.4 mm cl), MNHN B27472, 20°44.9'S 164°14.9'E, stn DW933, 90-100 m depth, 27.iv.1988; 1 ♀ ovigerous (8.5 mm cl), MNHN B27473, 20°43'S 164°16.8'E, stn DW934, 10 m depth, 27.iv.1988; 1 ♀ (9.1 mm cl), MNHN B27474, 20°32.2'S 164°08.8'E, stn DW948, 16 m depth, 28.iv.1988; 1 ♂ (5.6 mm cl), MNHN B27475, 20°20.3'S 163°57.9'E, stn DW 985, 15-17 m depth, 30.iv.1988; 2 juveniles, MNHN B27476, 20°08.9'S 163°57.2'E, stn DW1010, 16 m depth, 3.iv.1988; 1 ♂ (7.4 mm cl), MNHN B27488, 20°08.7'S 163°58.4'E, stn DW1014, 22-23 m depth, 3.iv.1988; 1 ♂ (5.7 mm cl), MNHN B27477, 20°06.7'S 163°48.6'E, stn DW1025, 25-28 m depth, 3.04.1988; 1 ♀ ovigerous (7.3 mm cl), MNHN B27478, 19°51.7'S 163°42.5'E, stn DW1097, 34 m depth, 24.x.1989; 1 ♀ (8.4 mm cl), MNHN B27479, 19°31.3'S 113°34.6'E, stn DW1134, 40 m depth, 20.x.1989; 1 ♀ ovigerous (6.1 mm cl), MNHN B27480, 19°23.9'S 163°14.7'E, stn DW 1181, 45 m depth, 31.x.1989; 1 ♀ (9.7 mm cl), MNHN B27481, Maitre Island, 6 m depth, 24.iii.1993, coll. P. Bouchet; 1 ♂ (5.8 mm cl), 1 ♀ (6.1 mm cl), MNHN B27482, Touho Bank, 20°44.20'S 165°14'E, 51-59 m depth, 15.ix.1993; 1 ♂ (8.0 mm cl), MNHN B27480, 22°37.79'S 167°09.71'E, BATHUS 2, stn DW 714, 124 m depth, 10.v.1993. **Chesterfield-Bellona Plateau:** 1 ♀ (6.2 mm cl), MNHN B21266, 20°48.93'S 158°30.21'E, 'CHALCAL 1', stn D 45, 50 m depth, 12-31.vii.1984; 1 ♂ (7.3 mm cl), 1 ♀ ovigerous (8.6 mm cl), MNHN B21265, 21°42.40'S 159°29'E, 'CHALCAL 1', stn D 61, 50 m depth, 12-31.vii.1984. **Chesterfield Islands:** 1 ♀ ovigerous (8.4 mm cl), MNHN B27484, 19°11.96'S 159°58.84'E, 'Corail 2', stn DW 82, 62 m depth, 25.viii.1988; 1 juvenile, MNHN B27485, 19°08.99'S 158°26.24'E, 'Corail 2', stn DW 101, 37 m depth, 27.viii.1988; 1 ♂ (5.3 mm cl), MNHN B27486, 19°9.0'S 158°49.10'E, 'Corail 2', stn DW 108, 68 m depth, 27.viii.1988; 2 ♂ (6.0, 7.1 mm cl), MNHN B27487, 19°28'S 158°24.33'E, 'Corail 2', stn DW 125, 54 m depth, 29.viii.1988. **Indonesia:** 1 ♂ (6.3 mm cl), ZMA, 1°42.5'S 130°47.5'E, 'Siboga' Expedition, stn.164, 32 m depth, 20.viii.1899, det. Ihle as *A. laevimana*; 1 ♂ (4.6 mm cl), 2 ♀ (5.7, 7.4 mm cl), ZMA, Haingsisi, Samau I., SW of Timor, 'Siboga' Expedition, stn 303, 36 m depth, 3.ii.1900, det. Ihle as *A. laevimana*; 1 ♂ (8.2 mm cl), ZMA, Solor Str., off Kampong Menanga, 10°27.9'S 123°28.7'E, 'Siboga' Expedition, stn 305, 113 m depth, 8.ii.1900, det. Ihle as *A. laevimana*; 1 ♂ (5.8 mm cl), ZMC cru3660, Celebes [=Sulawesi], Makassar, 35 m depth, 27.vi.1922. **Philippines:** 1 ♂ (7.7 mm cl), SMF 50, Parawan Island, Taliban near Bohol, 1876, coll. C. Semper; 1 ♀ ovigerous (8.8 mm cl), 1 ♀ (7.7 mm cl), SMF 49, Pandaman Island, 1876, coll. C. Semper; 2 ♀ (7.1, 12.5 mm cl), SMF 48, Pandaman Island, 1876, coll. C. Semper; 1 ♀ (10.8 mm cl), USNM 134196, Sulu Archipelago, 06°09'S, 120°58' E, 'Albatross' stn 5141, 53 m depth, 15.ii.1908. **South China Sea:** 1 ♂ (6.3 mm cl), ZMA, Horsburgh lighthouse, iv.1934, coll. M.W.F. Tweedie, det. Ihle as *A. laevimana*. **Sri Lanka:** 1 ♀ ovigerous (10.0 mm cl), NHM 1907.5.22.79, Gulf of Manaar, coll. W.A. Herdman; 1 ♀ ovigerous (9.3 mm cl), NHM 1934.1.16.53, coll. Miss Herdman. **Seychelles Islands:** 1 ♀ ovigerous (8.3 mm cl), MNHN B18999, 4°37.4'S 54°20.7'E, 'REVES II', stn 31, 50 m depth, 9.ix.1980; 1 ♂ (8.0 mm cl), MNHN B18995, 3°56.1'S 55°40.5'E, 'REVES II', stn 50, 45-50 m depth, 15.ix.1980. **Madagascar:** 1 ♀ (8.2 mm cl), MNHN B18733, Fort Dauphin; 1 ♂ (5.9 mm cl), MNHN B18753, Nosy Iranja, 25 m depth, 28.vi.1965, coll. R. Plante.

Description.— Carapace globose, pyriform, regions indistinct, bearing small acute or flattened granules, few larger, acute or claviform tubercles. Frontal lobes triangular, closely granulate. Margins of carapace bearing eleven granulate spines: one spine each on subhepatic, anterolateral, midlateral, posterolateral and posterior margins, single spine on intestinal region; subhepatic, anterolateral, and midlateral spines

subequal, posterolateral longest, upcurved. Hepatic and intestinal regions faintly demarcated by shallow grooves.

Outer margin of efferent branchial channel margin inflated anteriorly, closely set with flattened granules, outer denticle larger than inner denticle, infraorbital lobe bulbiform, closely set with flattened granules. Thoracic sternites set with periform granules.

Cheliped merus two thirds as long as carapace, prominently granulate. Carpus and propodus minutely granulate; carpus with prominent knob medially on upper margin. Fingers bearing minutely granulate longitudinal costae. Pereiopodal meri, carpi, and propodi minutely granulate; dactyls closely setose anteriorly.

Male abdomen granulate, lateral margins of sixth segment straight, basio-lateral regions indistinctly inflated. Male first pleopod straight, tip funnel-shaped.

Colour.— Carapace and chelipeds light brown to light orange, posterolateral and posterior spines paler; light-coloured band running from frontal region to cardiac region; pereiopods whitish.

Remarks.— *A. tuberculata* differs from other pyriform *Arcania* species, *A. sagamiensis* and *A. fungilifera* spec. nov., in having prominent posterolateral marginal spines, bispinose posterior margin of the carapace, and the cheliped merus two thirds as long as the carapace.

Bell (1855b: 310, pl. 34, figs 8,10) illustrated *A. tuberculata* and *A. laevimana* as covered with claviform tubercles - the latter differing from *tuberculata* in having "simple" marginal spines. In fact, examination of Bell's type specimen (NHM 721) showed the posterior marginal spines granulate, as in *A. Milne Edwards'* (1874: pl. 3, fig. 4) illustration of *A. laevimana*. Alcock (1896: 268) synonymized *laevimana* with *tuberculata*.

In Tan's photograph (1996: fig. 1c), the knobbed cheliped carpus and deeply notched front identify the specimen as *A. tuberculata*.

Distribution.— New Caledonia, Australia, Indonesia, Philippines, South China Sea, Andamans, Sri Lanka, Maldives, Seychelles, Madagascar; 10-124 m depth.

Arcania undecimspinosa de Haan, 1841
(fig. 3D, 7D)

Arcania undecimspinosa de Haan, 1841: 135, pl. 33, fig. 8; Bell, 1855a: 367; Bell, 1855b: 309; Bell, 1855c: 21; Herklots, 1861: 28; Walker, 1887: 111; Ives, 1891: 216; Ortmann, 1892: 577; Henderson, 1893: 404; Alcock, 1896: 266; Rathbun, 1902: 30; Rathbun, 1910: 314; Parisi, 1914: 296; Ihle, 1918: 265; Balss, 1922: 132; Shen, 1931: 107, pl. 10 fig. 1; Yokoya, 1933: 132; Sakai, 1934: 288; Sakai, 1935: 58, pl. 10, fig. 1; Sakai, 1937: 123, fig. 15a, pl. 14, fig. 2; Shen, 1937: 284; Estampador, 1937: 514; Serène, 1937: 77; Suvatti, 1937: 55; Lin, 1949: 14; Uchida, 1949: 720, fig. 2084; Suvatti, 1950: 147; Dawydoff, 1952: 138; Utinomi, 1956: 72, pl. 36, fig. 7; Miyake, 1961a: 14; Miyake, 1961b: 170; Miyake et al., 1962: 126; Sankarankutty, 1962: 155; Chang, 1963: 2; Park, 1964: 16; Shen & Dai, 1964: 19, fig. 1; Utinomi, 1964: 72, pl. 36, fig. 7; Sakai, 1965: 40, text-fig. 6a, pl. 16, fig. 3; Romimohtarto, 1967: 11, pl. 2, fig. b; Serène, 1968: 45; Zarenkov, 1969: 23; Holthuis & Sakai, 1970: 119, pl. 11, fig. 2; Takeda & Miyake, 1970: 223; Campbell, 1971: 41; Gurjanova & Chang, 1972: 156; Kim, 1973: 295, 611, pl. 11, fig. 60, textfig. 91; Yamaguchi et al., 1976: 34; Sakai, 1976: 91, pl. 28, fig. 1; Kensley, 1978: 250; Takeda, 1979: 153; Kensley, 1981: 38; Takeda, 1982a: 18; Takeda, 1982b: 97, fig. 284; Miyake, 1983: 60, pl. 20, fig. 6; Takeda, 1985: 122, fig.; Takeda, 1987: 10; Serène & Vadon, 1981: 119, 124; Tirmizi & Kazmi, 1986: 76, fig. 22; Chen, 1989: 204, fig. 8, pl. 2 fig. 4; Huang, 1989: 305, fig. 267; Jones, 1990: 188; Dai & Yang, 1991: 73, pl. 8, fig. 1, fig. 33.1; Yamaguchi & Baba, 1993: 318, fig. 101;

Huang, 1994: 579; Zarenkov, 1994: 111; Fransen et al., 1997: 87; Naiyanetr, 1998: 58; Ng et al., 2001: 9.

Arcania granulosa Miers, 1877: 240, pl. 38, fig. 29; Miers, 1879: 44; Haswell, 1880: 58; Haswell, 1882: 131 [= *A. undecimspinosa* fide Miers, 1879: 44].

Arcania novemspinosa; Campbell & Stephenson, 1970: 250, fig. 13; Hill, 1982: 201, pl. 4d; Dai & Yang, 1991, fig. 33.3.

Arcania erinaceus; Tirmizi & Kasmi, 1986: 72, fig. 20.

not *Arcania undecimspinosa*; Miers, 1884: 548 [= *A. brevifrons* Chen, 1989].

not *Arcania undecimspinosa* André, 1931:642 [= *A. muricata* spec. nov.].

Lectotype and paralectotypes of *A. undecimspinosa*.— **Japan**: 5 specimens, RMNH D 790, 1825-1834, coll. H. Bürger; 1 ♂ (16.2 mm cl), 4 ♀ (15.6-20.9 mm cl), RMNH D 42114, same data as above; 1 ♂ (18.7 mm cl), RMNH D 42115, 1823-1829, coll. P.F. von Siebold. Lectotype and paralectotypes of *A. undecimspinosa* de Haan selected by Yamaguchi & Baba (1993: 318).

Holotype of *A. granulosa*.— 1 juvenile, NHM 52.71, Australia, Queensland, Moreton Bay, [preserved dry].

Additional material.— **Marquesas Islands**: 1 ♂ (17.0 mm cl), 4 juveniles, MNHN B27489, Hiva Oa Island, 9°44.5'S 138°50.9'W, MUSORSTOM 9, stn DW 1218, 125-135 m depth, 30.viii.1997; 2 juveniles, MNHN B27490, 9°42'S 139°03'W, MUSORSTOM 9, stn DW 1235, 105-285 m depth, 31.viii.1997. **Loyalty Islands**: 1 ♀ (24.5 mm cl, parasitized), MNHN B27491, 20°47.32'S 167°04.60'E, MUSORSTOM 6, stn DW 392, 340 m depth, 13.ii.1989. **Australia**: 1 ♀ (25.9 mm cl), QM w3346, Queensland, Bowen, ii.1934, coll. J. MacGregor; 1 ♀ ovigerous (23.0 mm cl), QM w17030, off Tully Heads, 18°00.1'S 147°01.3'E, 224-228 m depth, 9.i.1986; 1 ♀ ovigerous (22.9 mm cl), QM w17029, 18°01.7'S 147°01.7'E, 220 m depth, 17.i.1986; 2 ♂ (15.5, 19.5 mm cl), 1 ♀ (23.4 mm cl), AMS P15384, off Cape Moreton, 36 m depth, ix.1966, coll. J.M. Thomson; 1 ♀ damaged, QM w3647, Moreton Bay, 27.xi.1942; 1 ♂ (17.3 mm cl), 1 ♀ (23.9 mm cl), AMS P48883, E. Swains Reef, 21°43.23'S 152°57.06'E, 179 m depth, 10.ix.1995, colls J.K. Lowry & K. Dempsey. **Japan**: 1 ♂ (17.6 mm cl), MNHN B13452, 1909; 1 ♀ (11.6 mm cl), USNM 18873; 1 ♂ (15.9 mm cl), NHM 1906.2.2.1; 2 ♀ (15.9, 24.3 mm cl), ZMC cru3642), Kyushu Island, Nagasaki, 1.vii.1911, coll. J. Jordan; 1 ♀ ovigerous (24.0 mm cl), USNM 63676, Kyushu Island, Misaki, 1930, det. M.J. Rathbun; 1 ♂ (18.8 mm cl), 1 ♀ (19.3 mm cl), 1 ♀ ovigerous (17.8 mm cl), USNM 26280, Kyushu Island, Nagasaki, Hizen, 1900; 1 ♀ ovigerous (17.8 mm cl), USNM 45833, Kyushu Island, Nagasaki; 2 ♂ (20.0, 24.0 mm cl), 2 ♀ (25.7, 26.9 mm cl), NNM D41930, Kyushu Island, Amakusa Archipelago, Tomioka, 60-70 m depth, viii.1983, coll. K. Harada; 1 ♂ (17.7 mm cl), NHM 1961.6.5.33, Tosa Bay, iv.1961, coll. K. Sakai; 1 ♂ (11.8 mm cl), USNM, Honshu Island, off Seno Umi, 'Albatross' stn 3702, 57-74 m depth, 7.v.1900; 1 ♀ (18.1 mm cl), USNM 134198, Honshu Island, off Nome Saki, 'Albatross' stn 3725, 24 m depth, 15.v.1900; 2 ♀ (16.8, 21.4 mm cl), SMF 22566, Honshu Island, Kii Peninsula, Tanabe, 3-4.x.1988, coll. K. Sakai; 1 ♂ (19.3 mm cl), 4 ♀ (14.8-24.3 mm cl), SMF 22575, Shikoku Island, Tosa Bay, 90 m depth, 10.v.1990. **China**: 2 ♂ (20.7, 26.6 mm cl), 1 ♀ (27.9 mm cl), 1 ♀ damaged, USNM 57711, Tsimei, vi.1923; 1 ♀ ovigerous (28.8 mm cl), NHM 1933.3.19.134, Amoy, coll. C.J. Shen; 1 ♀ (22.9 mm cl), MNHN 160, Canton, coll. M. Barby. **Taiwan**: 1 ♀ ovigerous (25.3 mm cl), NTOU, Tai Shi, 3.ii.1983. **Philippines**: 1 ♂ (22.8 mm cl), MNHN B18142, 14°02.2'N 120°17.7'E, MUSORSTOM, stn 32, 193-184 m depth, 23.iii.1976; 1 ♀ (8.0 mm cl), MNHN B18145, 14°02.2'N 120°18.1'E, MUSORSTOM, stn 61, 202-184 m depth, 27.iii.1976; 1 ♂ (11.0 mm cl), MNHN B18147, 13°45'N 120°37'E, MUSORSTOM 2, stn CP 80, 178-205 m depth date; 1 ♂ (12.0 mm cl), MNHN B18038, 14°00'N 120°18'E, MUSORSTOM 3, stn CP 86, 187-192 m depth, 31.v.1985; 5 ♀ (12.8-17.8 mm cl), MNHN B18042, 14°00'N 120°18'E, MUSORSTOM 3, stn CP 96, 190-194 m depth; 1.vi.1985; 1 ♂ (18.7 mm cl), 1 ♀ (13.0 mm cl), USNM 322873, Batangas, Balayan Bay, 220-420 m depth 19.vii.1966. **South Africa**: 1 ♂ (16.8 mm cl), 1 ♀ (17.0 mm cl), 2 juveniles, SAM, 29°35'S 31°38'E, 150 m depth, 9.ix.1964; 1 ♀ (23.2 mm cl), NHM 1883.1a; 1 ♂, ZMC, Durban, 22.viii.1929, coll. Th. Mortensen; 1 ♂ (15.5 mm cl), ZMC, Durban, 27.viii.1929, coll. Th. Mortensen.

Description.— Carapace globose, longitudinally ovate in male, nearly rounded in adult female, regions nearly indistinct, covered with spinules of uneven size. Frontal lobes triangular, closely set anteriorly with flat-topped granules. Margins of carapace bearing eleven spines: one spine each on subhepatic, anterolateral, midlateral, posterolateral and posterior margins, single spine on intestinal region. Anterolateral spine shortest; midlateral, posterolateral, and intestinal spines squat, upcurved, granulate; posterior spines dorso-ventrally flattened, granulate. Hepatic and intestinal regions somewhat inflated, demarcated by shallow grooves.

Outer denticle on anterior margin of efferent branchial channel larger than inner denticle, infraorbital lobe conical. Thoracic sternites prominently granulate.

Cheliped merus in male four fifths as long as carapace, thickly set with conical granules, proximal meral tubercle indistinct. Carpus and propodus minutely granulate, propodus dorso-ventrally flattened, thicker basally, fingers slender, longer than palm. Pereiopodal meri, carpi and propodi minutely granulate; dactylar margins setose.

Male abdomen prominently granulate, basio-lateral regions of fused segments inflated, lateral margins of sixth abdominal segment slightly convex. Male first pleopod sinuous, distally attenuate.

Colour.— “Dorsally the carapace is brownish with many small yellow dots, ventrally it is yellowish white. The legs also are yellowish white.” (Holthuis & Sakai, 1970: 119, after Bürger).

Remarks.— *A. undecimspinosa* differs from *A. novemspinosa* and *A. elongata* in having a distinct marginal anterolateral spine. *A. undecimspinosa* differs from *A. brevifrons* in having the lateral margins of the male sixth abdominal segment straight rather than convex, and the first male pleopod nearly straight rather than distally bent. It differs from *A. muricata* spec. nov. in having shorter midlateral, posterolateral and posterior spines, and the first male pleopod straight rather than distally sigmoid.

The short, subequal spines depicted by Hill (1982, pl. 4d), and Dai & Yang (1991, fig. 33.3), clearly identify their specimens as *A. undecimspinosa*.

Distribution.— Marquesas Islands, Loyalty Islands, Australia, Japan, Korea, China, Hong Kong, Taiwan, Philippines, India, Andamans, Seychelles, Mascarene Basin, South Africa; 14-420 m depth.

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