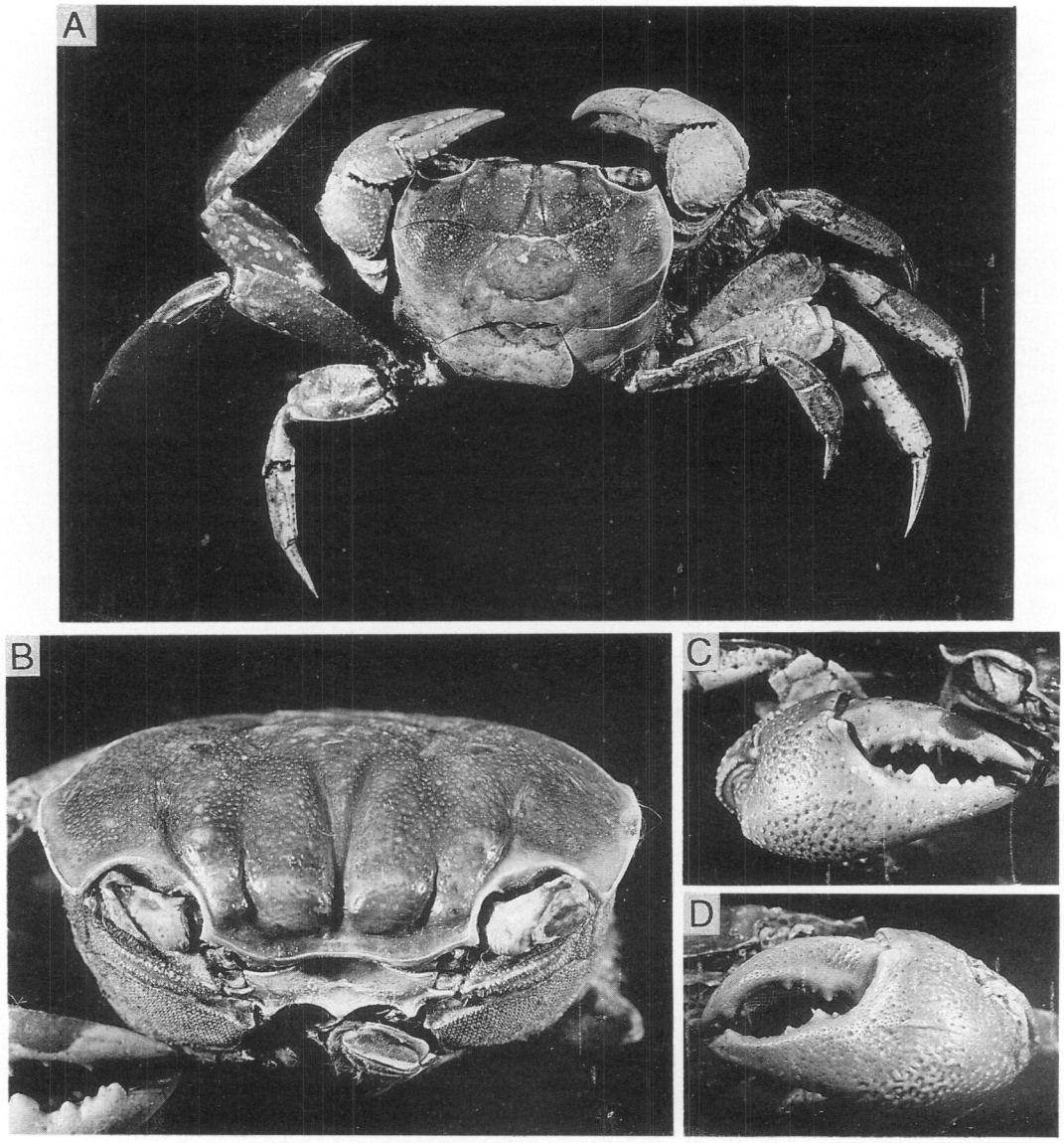

FIG. 6. *Neosarmatium integrum* (A. Milne Edwards, 1873). A-C, paralectotype ♀ (34.6mm carapace breadth); D, lectotype ♀. A, dorsal view; B, frontal margin; C, right chela D, left chela.

Saigon, Vietnam, South China Sea (present record).

Neosarmatium integrum (A. Milne Edwards, 1873)
(Figs 6, 7, 18)

Metagrapsus integer A. Milne Edwards, 1873: 309, pl. 17, fig. 3.

Sarmatium integrum: De Man, 1887: 660; Tesch, 1917: 221.

Sarmatium birói Nobili, 1905: 498-501, text-fig. 2; Tesch, 1917: 213-214 (no specimen).

Neosarmatium biroi: Serène & Soh, 1970: 398, 406 (in list); Forró & Müller, 1985: 78, figs 4-8.

Neosarmatium integrum: Serène & Soh, 1970: 398, 405.

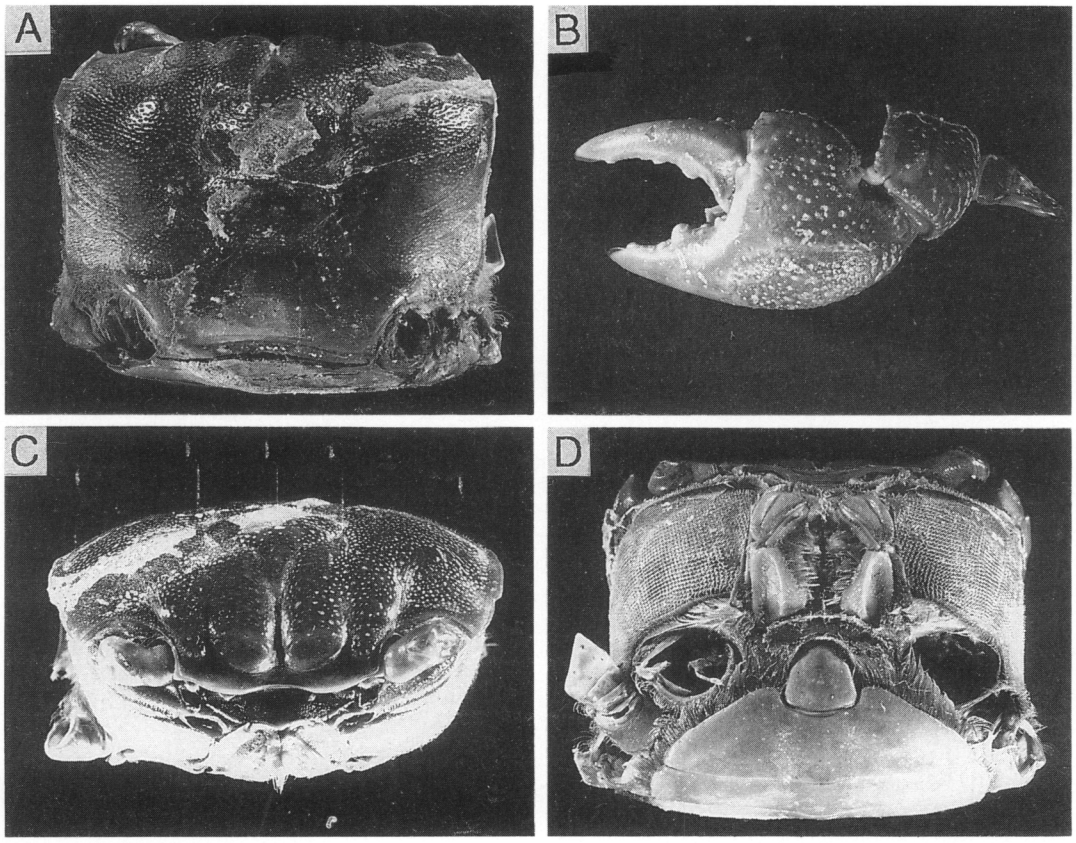

FIG. 7. *Neosarmatium integrum* (A. Milne Edwards, 1873), ♀, holotype of *Neosarmatium biroi* (Nobili, 1905). A, dorsal view; B, left cheliped; C, frontal margin; D, ventral view.

TYPE INFORMATION

Lectotype here designated, ♀ (39.0 x 30.8 mm), paralectotype, ♀ (34.6 x 27.5 mm), MNHN-B3628. Type locality: New Caledonia.

N. biroi: Holotype, Hungarian Natural History Museum, Budapest, Hungary. Type locality: Stephansort, Astrolabe Bay, NE Papua New Guinea.

MATERIAL EXAMINED

TYPES: MNHN-B3628, 2 ♀ (34.6 x 27.5; 39.0 x 30.8 mm), New Caledonia, coll. M. Balansa. The larger female corresponds to the measurements given by A. Milne Edwards (1873) and is designated the lectotype.

OTHER MATERIAL: QMW19557, ♀ (31.7 x 25.7 mm), Nggela Is., Solomon Islands, 17.12.1976.

DESCRIPTION

Carapace. c.1.25 times broader than long. Fronto-orbital width c.1.06 times carapace length. Depth c.0.7 times carapace width. Lateral margins slightly convergent posteriorly; sinuous. Anterolateral margins regularly convex; without teeth, but typical position of first tooth slightly indicated. Exorbital angle triangular. Front c.0.45 times carapace width; c.0.54 times fronto-orbital width; lateral angles obtuse; lateral margins diverging posteriorly. Post-frontal lobes distinct; median lobes distinctly broader than laterals; laterals distinctly separated from inner orbital margin. Branchial ridges moderately prominent; first arising from position where last epibranchial tooth should be, relatively long; second arising from near lateral margin.

Posterior margin c.0.45-0.5 times carapace width. Carapace surface smooth, shining, punctate, without marked setation. Upper orbital border smooth; straight and oblique. Lower orbital border straight; evenly granular. Inter-antennular septum moderately narrow, c.0.3 times width of front.

Third maxilliped. Suture between merus and

ischium horizontal. Accurate measurements not possible on dry types.

Chelipeds. Merus with posterior border minutely striated; without distinct subdistal spine; lower border granulate; anterior border coarsely granulate mesially; carpus with inner angle granular; inner margin granular, with a secondary ventral granular ridge bearing tuft of long setae proximally; granules present on inner face of carpus just below inner angle; outer margin striated. Upper surface of palm not defined anteriorly by a longitudinal ridge. Outer surface of palm punctate, naked; usually with median longitudinal row. Inner surface of palm with low granular vertical crest and patch of granules ventro-proximally, otherwise smooth. Immovable finger slightly flattened on outer surface; moderately long. Length cutting edge c.0.5 times length propodus. Ventral border of chela straight. Dorsal surface of dactyl tuberculate; on female appear to be 4 or 5 forwardly directed tubercles over proximal three-fifths of inner dorsal margin, largest proximally, evenly spaced, with chitinous tips on distal tubercles - these could be expected to be stronger and more prominent on males. Fingers pointed; curved slightly inwards; narrow gape between cutting margins (probable that males would have larger gape).

Walking legs. Second pair slightly the longest; c.1.6 times maximum carapace width. Merus of third leg c.2.4-2.5 times as long as wide. Carpus c.2.4-2.7 times as long as wide. Propodus c.2.3-2.5 times as long as wide. Dactyli c.0.9-1.0 times length of propodus. Carpi and propodi bear a short felt of setae on anterior surfaces and on ventral faces of first three pairs; restricted to a thin band on anterior surface of fourth pair; felt extends onto and encircles dactyli in 6 thin lines.

COLOUR

Purple, with the borders of the carapace, the chelipeds, and the walking legs becoming reddish (A. Milne Edwards, 1873).

REMARKS

This species is easily distinguished by the lack of strongly defined epibranchial teeth. The first epibranchial tooth is only slightly indicated on the lectotype and paralectotype, is small but visible on the specimen from the Solomon Islands, and is better developed on the holotype of *N. biroi* but still lacks the fissure in the anterolateral margin that is typical of other species. The distinct first epibranchial tooth seems to be the major character that separates *N. biroi* from *N. integrum*, however as there are so few specimens available, and the specimen from the Solomon Islands is intermediate in development I am inclined to believe that this character is subject to some individual variation. Despite the fact that all specimens are female and therefore do not show strong chela features, there seems to be no differences in shape or dentition of the chelae between *N. biroi* and *N. integrum*. Nobili (1905) described the meri of legs 1-3, of *N. biroi*, as having the distal third of their posterior border minutely denticulate, and on the Solomon Islands specimen there are also a few small denticles distally on legs 1 and 2. It is still possible that *N. biroi* will prove to be a valid species, however I do not believe it can be reliably separated from *N. integrum* at this time, and feel that until a good series of male and female specimens are available from several localities, it is best to place it into the synonymy of *N. integrum*.

The holotype of *N. biroi* is a poorly preserved dry female with disarticulated limbs (Forró & Müller, 1985), and therefore it could not be loaned for study. The photographs of the holotype are published here through the kindness of Dr László Forró.

The male is so far not known.

HABITAT

In the mangrove forest (A. Milne Edwards, 1873).

DISTRIBUTION

New Caledonia (type locality of *N. integrum*); Solomon Islands (present record); northern coast of Papua New Guinea (*N. biroi*).

Neosarmatium laeve (A. Milne Edwards, 1869)
(Figs 1A, B; 8; 17)

Sesarma laeve A. Milne Edwards, 1869: 27.

Sesarma laevis: De Man, 1887: 649; 1892: 333 (note on type-specimen in the description of *Sesarma moeschi*).

Sesarma (*Sesarma*) *aequifrons* Rathbun, 1914: 76; Tesch, 1917: 129.

Sesarma (*Sesarma*) *laevis*: Tesch, 1917: 164.

Neosesarma laevis: Serène & Soh, 1970: 395, 405.

Neosesarma aequifrons: Serène & Soh, 1970: 395, 405 (in list).

Neosarmatium aequifrons: Serène, 1977b: 758-59, figs 62-64; Haig, 1984: 127.

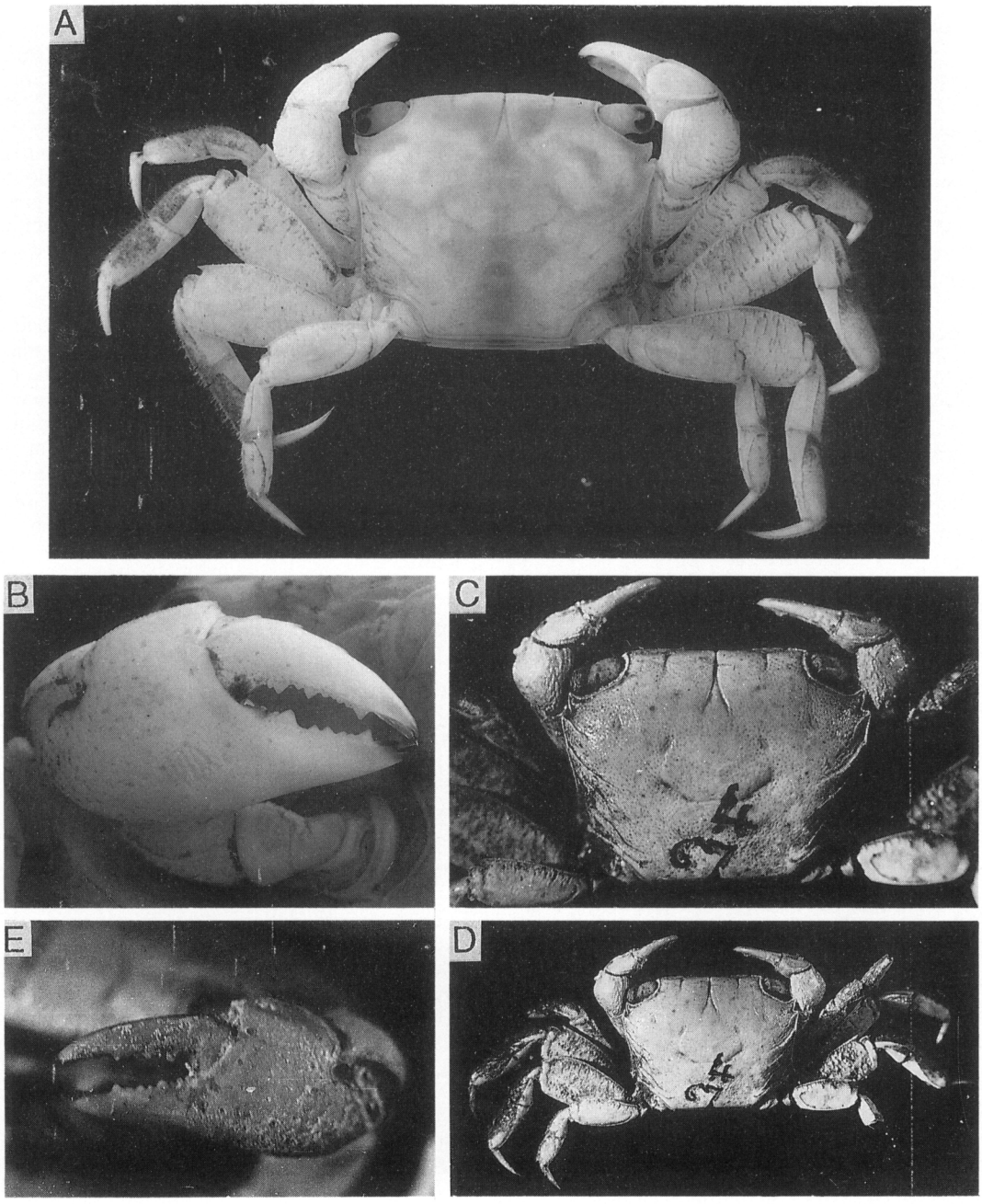

FIG. 8. *Neosarmatium laeve* (A. Milne Edwards, 1869). A, B, holotype of *N. aequifrons* (Rathbun, 1914); C-E, holotype of *N. laeve*. A, C, D, dorsal views; B, right chela; E, left chela.

Neosarmatium ambonensis Serène & Moosa, 1971: 12, pl. 5C, D.

TYPE INFORMATION

N. laeve: holotype, MNHN-3964, Paris. Type locality: Aru Island, southeastern Indonesia.

N. aequifrons: holotype, USNM45754, Washington. Type locality: Pangaman River, Port Colton, Busuanga Island, Philippines.

N. ambonensis: holotype, Institute of Marine Research of Indonesia, Djakarta. Type locality: Ambon, Indonesia.

MATERIAL EXAMINED

USNM45754, *N. aequifrons* holotype ♂ (11.4 x 9.0 mm), paratype ♀ (10.7 x 8.3mm), Pangaman River, Port Colton, Busuanga Island, Philippines, 15.12.1908, U.S. Bureau of Fisheries, Albatross Philippine Expedition of 1907-09; QMW19555, 2 ♂ (10.9 x 8.7; 11.3 x 9.1mm), Nggela Is., Solomon Islands, 17.9.1976.

DIAGNOSIS

(Modified after Serène & Moosa, 1971).

Carapace smooth and punctate, c.1.25 times broader than long. Lateral margins sub-parallel, or slightly convergent; a single prominent epibranchial tooth, second reduced to a trace. Frontal border nearly straight, almost two-thirds carapace width; postfrontal lobes faintly indicated. Posterior border straight and narrower than front. Maximum carapace width across epibranchial teeth. Inner surface of palm of male cheliped with prominent vertical granular crest; outer edge of upper border of palm with finely granular longitudinal rim; superior margin of dactyl with 4 low, distally directed, tubercles; a moderate gape between fingers of mature males. Meri of walking legs broad, anterior borders convex, with acute subdistal spine; short transverse striae; carpi and propodi with dense covering of short setae above lateral accessory carinae. Male abdomen with telson as long as broad at base; segment 6 slightly shorter than telson, and exactly twice as broad (at base) as long.

REMARKS

Although I have not examined the types of *N. ambonensis* and *N. laeve*, I have little doubt of the correctness of the new synonymy presented here. Serène (1977) recognised that *N. ambonensis* and *N. aequifrons* were synonyms. Serène & Soh (1970) had placed *N. aequifrons*, and tentatively, the poorly known *N. laeve*, into their new genus *Neosesarma*. The differences in dentition of the dactyl of the cheliped between *Neosarmatium* and *Neosesarma* are enough however to exclude *N. laeve* from the latter genus. Comparisons of the photographs of the holotypes of *N. aequifrons* (Fig. 8A, B), *N. laeve* (Fig. 8C-E), and *N. ambonensis* (Serène & Moosa, 1971, pl. 5 C, D) show no points of difference. Unfortunately the type of *N. laeve* is immature, and the diagnostic chela characters are not clear; this has no doubt been the cause of its uncertain taxonomic position. The close geographical proximity of the respective type localities further supports the synonymy presented here.

This is one of the smallest of the species of *Neosarmatium*. It is unusual in the genus by being relatively quadrate, with the anterolateral margins not markedly convex, and the carapace being not as deep as in other species. In all other major respects however, their seems no cause to exclude it from the genus. It can be separated from its congenors using the characters presented in the key.

HABITAT

Not recorded.

DISTRIBUTION

From Busuanga Is., in the Philippines, south to Ambon and Aru Islands, in eastern Indonesia; Solomon Islands (present record); and in the Indian Ocean, from Mahé, Seychelles (Serène, 1977b).

Neosarmatium malabaricum (Henderson, 1893)
(Figs 1G, H; 9A, B; 17)

Sesarma indica: Heller, 1865: 64 (in part, the specimens from Ceylon) [Not *Sesarma indicum* H. Milne Edwards, 1837 (= *Tiomanium indicum*)].

Sarmatium indicum malabaricum Henderson, 1893: 393, pl. 36, fig. 17; Tesch, 1917: 220 (no specimen).

Sarmatium punctatum: Thallwitz, 1891: 41, not seen [? = *N. indicum* - not *Metagrapsus punctatus* A. Milne Edwards, 1873 = *Neosarmatium punctatum*].

? *Sarmatium indicum*: Nobili, 1903: 23.

Sesarma (*Sarmatium*) *punctatum*: Pillai, 1951: 37 [? = *N. indicum*].

Neosarmatium indicum malabaricum Serène & Soh, 1970: 398, 405 (in list).

Neosarmatium malabaricum: Serène, 1975: 4-13, pls 1, 2, 3A, B.

TYPE INFORMATION

Lectotype, BMNH1892.7.15.242, designated