

Distance between external orbital angles distinctly less than the length of the carapace in the median line. 42

- 2 Carapace and legs closely covered with a dense fur amid which are "freely scattered little dense, adherent tufts of hair resembling tubercles" (Alcock); on either side of the carapace two obtuse epibranchial teeth, of the same shape and size as the external orbital angle; sides of carapace parallel. Upper border of palm of cheliped with a longitudinal crest. Meropodites of walking legs broad, though the breadth is less than half the length; apparently without subdistal tooth at the anterior margin. Small species, breadth of carapace about 10 mm. *Ses. lanata* Alcock<sup>1)</sup>.

These characters not combined. 3

- 3 Median postfrontal lobes narrower than outer ones; anterior margin of front nearly straight in the middle; sides of carapace parallel. Upper border of movable finger of cheliped at base with 2—3 smooth, oblique pliae, elsewhere smooth; upper border of palm with some oblique rows of granules. Small species with a breadth of carapace of less than 10 mm. *Ses. nannophyes* de Man.

These characters not combined. 4

- 4 Upper border of palm provided with longitudinal pectinated crest, consisting of minute, horny-coloured teeth, placed close together. 5

Upper margin of palm without such a pectinated crest, in some cases with a longitudinal row of granules. 6

- 5 Carapace flattened, subquadrate, with nearly parallel sides, and very small tufts of hair on the anterior part; second epibranchial tooth scarcely indicated. Pectinated crest at upper border of palm of cheliped consisting of about 35 teeth; upper border of movable finger with about 25 transverse tubercles, each of which is provided with a smooth stripe along the longitudinal axis of the tubercle. Walking legs rather long and slender, dactyli short. Middle-sized species, maximum breadth of carapace reaching to about 26 mm.

*Ses. brockii* de Man.

Carapace flattened, much more broad than long, with sides con-

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1) It is with some doubt, that this species is included here, for the whole appearance of the animal reminds one strongly of *Clistocoeloma* rather than of *Sesarma*. On the other hand it must not be forgotten that in the preceding subgenus *Ses. villosa* A. Milne-Edwards. that is a true *Sesarma*, bears a similar resemblance to *Clistocoeloma*.

vergent posteriorly; numerous tufts of hair on anterior parts of carapace; anterior epibranchial tooth well developed, acutely prominent; a second very small one may be present. Pectinated crest at upper border of palm of cheliped consisting of about 60 teeth; upper border of movable finger very regularly and transversely milled by minute grooves; in this way a longitudinal row of about 60 transverse, horny-coloured tubercles is formed; inner surface of palm with transverse granulated crest, that is very prominent in ♂. Large species, distance between external orbital angles reaching to about 40 mm.

*Ses. taeniolata* White <sup>1)</sup>.

- 6 Upper border of palm of cheliped with longitudinal row of granules, that of movable finger either regularly transversely milled or with a longitudinal keel (near base of finger) or groove. Walking legs very robust, meropodites foliaceous, their breadth being about half their length. Large species, distance between external orbital angles 30—40 mm. 7

These characters not combined. 9

- 7 Upper border of movable finger with about 25 transverse grooves, leaving the distal third of the finger free. Sides of carapace distinctly convergent posteriorly. *Ses. palawanensis* Rathbun.

Upper border of movable finger with a longitudinal keel near base or a groove. Sides of carapace (at least in adult specimens) nearly parallel. 8

- 8 Upper border of movable finger with a longitudinal keel.

*Ses. lafondi* Jacquinet et Lucas.

Upper border of movable finger with a longitudinal groove, in which 9—10 small tubercles are placed. *Ses. tetragona* (Fabricius).

- 9 Posterior margin of meropodites of walking legs with one larger tooth, and between this and the carpal joint 2—3 smaller teeth. Sides of carapace much convergent posteriorly. Wrist and outer surface of palm of chelipeds covered with a woolly fur. Small species, distance between external orbital angles 5 mm. *Ses. minuta* de Man.

Posterior margin of meropodites of walking legs always without any tooth, at most faintly crenulate. 10

1) The subspecies *crebrestriata* described by me in this paper (p. 203) may be distinguished especially by the number of the transverse tubercles at upper border of movable finger (85—90), that are much smaller and narrower than those of the genuine *taeniolata*. I have already referred (l. c.) to the probability of this subspecies being the ♂ of *Ses. lafondi* Jacquinet et Lucas.

- 10 Outer surface of palm of cheliped with a brush of longer hair. Carapace and legs covered with short hairs and tufts of longer hairs, as in *Ses. lanata* Alcock; sides of carapace nearly parallel, somewhat convergent posteriorly. Small species, distance between external orbital angles 5 mm.; in the Red Sea. *Ses. jousseaumei* Nobili.  
Outer surface of palm of cheliped without a brush of hair. 11
- 11 Sides of carapace very strongly divergent posteriorly. Walking legs very much elongated, penultimate pair of legs 3—4 times as long as distance between external orbital angles. 12  
Sides of carapace much less divergent posteriorly. Walking legs much shorter, at least less than 3 times the distance between external orbital angles. 13
- 12 Penultimate pair of walking legs about 4 times as long as the distance between the external orbital angles; propodite about 5 times as long as broad. A longitudinal row of 8—10 acute tubercles along the middle of the external surface of the immobile finger. Two epibranchial teeth on either side of the carapace behind external orbital angle; anterior margin of front rather deeply emarginate in the middle. Middle-sized species, greatest breadth of carapace about 18 mm.  
*Ses. kraussi* de Man.  
Penultimate pair of walking legs about 3 times as long as the distance between the external orbital angles; propodite about 3 times as long as broad. A longitudinal row of about 10 tubercles along the inferior border of the immobile finger. One single epibranchial tooth on either side of the carapace behind external orbital angle; anterior margin of front nearly straight. Middle-sized species, of the size of the preceding.  
*Ses. longipes* Krauss.
- 13 Two epibranchial teeth behind external orbital angle on either side of the carapace, the posterior still very distinct, prominent and acute; carapace very convex in longitudinal direction, and covered with dark tufts of hair on the anterior parts, distinctly broader between external orbital angles than long. Upper margin of arm of cheliped armed with an acute, very strong tooth near the distal end; inner angle of wrist produced into a spine. Large species, distance between external orbital angles 35—40 mm. 14  
These characters not combined. 15
- 14 Mesogastric region of carapace smooth. Anterior margin of front with a deep and narrow exargination. *Ses. indica* H. Milne-Edwards.

Mesogastric region of carapace with a median ridge. Anterior margin of front with a faint and broad emargination.

*Ses. tiomanensis* Rathbun.

- 15 Walking legs slender; meropodites of penultimate pair at least  $2\frac{1}{2}$  times as long as broad. Mostly small species. 16

Walking legs shorter, more robust; meropodites of penultimate pair about twice as long as broad. 32

- 16 Epibranchial teeth on either side of carapace, behind external orbital angle, very minute, not prominent, scarcely indicated by a thickening of the margin, both of equal shape; sides of carapace parallel, at least in their posterior half. Upper border of palm of cheliped defined by a longitudinal row of minute granules, that is, however, sometimes discontinuous. Postfrontal lobes sharpened anteriorly; front with nearly straight anterior margin. Walking legs very long and slender. 17.

Sides of carapace generally divergent posteriorly, rarely subparallel; distance between external orbital angles thus in most cases less than breadth of carapace at the level of the penultimate pair of legs; external orbital angle always defined posteriorly by a distinct incision, so that an epibranchial teeth, of the same general shape as the preceding tooth, though generally smaller and less acute, is formed; generally a trace of a second epibranchial tooth is present. 18

- 17 Superior and anterior border of arm of cheliped without subdistal tooth; outer surface of palm granulated, in the middle of the outer surface generally some tubercles unite to form an acuminate, prominent knob, that gives a characteristic appearance to the palm when looked at from above; upper border of palm with a granulated row, which is, however, often disconnected and interrupted at one or more places; upper border of movable finger with a longitudinal row of 12—16 acute spines with horny-coloured tips in ♂, with 5—6 sharpened granules only in ♀.

*Ses. gracilipes* H. Milne-Edwards.

Superior and anterior border of arm of cheliped with an acute tooth; outer surface of palm granulated, regularly convex, upper border "traversed, fore and aft . . . . . by a fine and finely milled ridge" (Alcock).

*Ses. finni* Alcock.

- 18 Sides of carapace subparallel; width of front distinctly more than half the distance between external orbital angles. Middle-

sized species, distance between external orbital angles 18—22 mm.; in Chinese and Japanese seas. 19

Sides of carapace always more or less divergent posteriorly; width of front generally equal to half the distance between external orbital angles. Small species, distance between external orbital angles generally less than 14 mm. 20

- 19 A trace of a second epibranchial tooth present. Outer surface of palm of cheliped granulate, with an obliquely-longitudinal line in the middle, and beneath this line a defined group of larger granules. Meropodites of walking legs only  $2\frac{1}{2}$  times as long as broad.

*Ses. intermedia* de Haan.

No trace of a second epibranchial tooth. Outer surface of palm of cheliped finely granulate. Meropodites of walking legs more slender, three times as long as broad. *Ses. sinensis* H. Milne-Edwards.

- 20 Protogastric region of the carapace smooth and shining, not tuberculate, only finely punctate; median postfrontal lobes twice as broad as the external. Outer surface of palm of cheliped perfectly smooth, inner surface without transverse crest; upper border of movable finger wholly covered with irregularly-arranged, minute granules.

*Ses. thelxinoë* de Man.

Protogastric region of the carapace, like the rest, granulate, tuberculate, or hairy; median postfrontal lobes only  $1\frac{1}{2}$  times as broad as the external. Outer surface of palm of cheliped generally granulate. 21

- 21 Width of front (between eye-stalks) distinctly more than half the distance between external orbital angles. 22

Width of front (between eye-stalks) about exactly equal to or less than distance between external orbital angles. 24

- 22 Surface of carapace roughly pitted, with tufts of hair in most of the pits; behind each postfrontal lobe a tubercle, with a bunch of hair, the external of nearly the same size as the lobes and farther forward than the median ones. Inner surface of palm of cheliped smooth. Meropodites of walking legs  $2\frac{1}{2}$  times as long as broad.

*Ses. mindanaoensis* Rathbun.

Surface of carapace granulate, with some very small tufts of hair, but no larger, tufted tubercle behind each postfrontal lobe. Inner surface of palm of cheliped with transverse, sometimes even prominent,

row of granules. Meropodites of walking legs nearly 3 times as long as broad, in ♀ apparently somewhat broader than in the ♂. 23

- 23 Lateral margins of external orbital angles subparallel, longer than those of the epibranchial teeth; anterior margin of front with a deep emargination. Inner surface of palm of cheliped with prominent transverse crest, the edge of which is granulate.

*Ses. angustifrons* A. Milne-Edwards.

Lateral margins of external orbital angles much converging posteriorly, shorter than those of epibranchial teeth; anterior margin of front with a shallow emargination, not visible in front view; a transverse ridge on the surface of the front, on either side of the median emargination, about as broad as the inner postfrontal lobes, and near to the lower margin of the front. Inner surface of palm of cheliped with granular, transverse, not prominent row.

*Ses. amphinome* de Man.

- 24 Upper border of movable finger of cheliped very minutely transversely grooved. 25  
Upper border of movable finger of cheliped mostly with a longitudinal row of spinules. 26

- 25 Carapace punctate, with isolated small tufts of hair; lateral margin of external orbital angle longer than that of epibranchial tooth; distance between external orbital angles always less than length of carapace in the median line. Upper border of movable finger of cheliped granulate at base and with about 50 transverse grooves.

*Ses. weberi* de Man.

Carapace very strongly and closely granulate; lateral margin of external orbital angle shorter than that of epibranchial tooth; distance between external orbital angles equal to or slightly exceeding the length of the carapace in the median line. Upper border of movable finger of cheliped with numerous transverse grooves, at the inside of which a longitudinal row of 6—7 denticles is found.

*Ses. leprosa* Schenkel.

- 26 Upper border of movable finger of cheliped rather irregularly granulate, the granules occupying the proximal two-thirds of the finger, 8—10 of which are dentiform; under margin of immobile finger dentate; inner surface of palm with transverse row of granules.

*Ses. perraccae* Nobili.

- Upper border of movable finger of cheliped with a longitudinal row of spinules or tubercles. 27
- 27 Distance between external orbital angles larger than that between anterior epibranchial teeth. 28  
Distance between external orbital angles equal to that between anterior epibranchial teeth. 31
- 28 Upper margin of movable finger of cheliped armed with a longitudinal row of 5—6 spinules, at its proximal half only; outer surface of palm nearly smooth, punctate, near upper border sharply granulated and provided with obliquely-longitudinal and discontinuous lines of granules. *Ses. vicentensis* Rathbun.  
Upper margin of movable finger of cheliped armed with a longitudinal row of 9—13 spinules or tubercles (less in ♀), occupying the larger part of the finger; outer surface of palm granulate. 29
- 29 Upper border of movable finger of cheliped with 12—13 knob-like tubercles (somewhat less in ♀), each of which tubercles is surrounded by an ovoid patch. Eggs of ♀ few in number and large (subg. *Geosarma* de Man). Species living on Java. *Ses. nodulifera* de Man <sup>1)</sup>.  
Upper border of movable finger of cheliped with a row of acute spinules. 30
- 30 Carapace finely granulate, flattened. Upper border of movable finger of cheliped at inside with a row of 9—10 acute tubercles (somewhat less in ♀ and in young specimens). Dactyli of walking legs, save in the case of the last pair, shorter than the preceding joints. *Ses. aranea* Nobili.  
Carapace much more strongly granulate, rugose, convex in longitudinal direction. Upper border of movable finger of cheliped with a row of 13—15 acute denticles. Dactyli of walking legs about as long as preceding joints. *Ses. ocyropa* Nobili <sup>2)</sup>.
- 31 Upper border of movable finger of cheliped with a longitudinal row of 6—7 acute denticles. Posterior margin of penultimate segment

1) The subspecies *conferta* Ortmann is distinguished by more numerous and more crowded tubercles on the movable finger.

2) The subspecies *gracillima* de Man is distinguished by less numerous spinules on the movable finger, the proximal 4—5 of which are not directed obliquely forward, but perpendicularly to the long axis of the finger. Besides, the emargination of the front is deeper and narrower.

of abdomen of ♂ very broad, somewhat less than three times the length of this segment. Eggs of ♀ few in number and large (subg. *Geosesarma* de Man). *Ses. sylvicola* de Man.

Upper border of movable finger of cheliped with a longitudinal row of 9—10 acute denticles. Posterior margin of penultimate segment of abdomen of ♂ short, less than twice the length of this segment. Eggs of ♀ small and numerous. *Ses. maculata* de Man.

- 32 Outer surface of palm of cheliped concave or at least much flattened in dorsal view, so that a sharpened edge is formed near the carpal joint; palm very high, closely granulate. Carapace convex; with rather prominent, sharp postfrontal lobes; sides subparallel.

*Ses. bocourti* A. Milne-Edwards.

Outer surface of palm of cheliped regularly convex in dorsal view. 33

- 33 Carapace strongly vaulted in longitudinal direction, with bunches of black hairs on the anterior part; epibranchial teeth nearly always reaching much farther outward than external orbital angles (especially so in the case of ♀); side margins of carapace distinctly converging posteriorly. Penultimate segment of abdomen of ♂ narrow, only slightly broader at the posterior margin than long. Superior and anterior border of arm of cheliped wholly unarmed. Meropodites of walking legs rather slender, more than twice as long as broad. Large species, distance between external orbital angles reaching to 40 mm. 34

Carapace either naked or with sparse tufts of hair, in the neighbourhood of the postfrontal lobes and on the hepatic regions; distance between external orbital angles about equal to that between epibranchial teeth. 35

- 34 Posterior margin of carapace shorter than breadth of front, at least in the ♂; ratio of greatest breadth of carapace to length as 100 : 83.7<sup>1)</sup>.

*Ses. meinerti* de Man.

Posterior margin of carapace longer than breadth of front; ratio of greatest breadth of carapace to length as 100 : 79.4<sup>2)</sup>.

*Ses. rotundifrons* A. Milne-Edwards.

1) See de Man, Zool. Jahrb. Syst., Bd. 2, 1887 p. 669 (2 ♂).

2) See A. Milne-Edwards, Nouv. Arch. Mus. Paris, t. 5, 1869, Bull. p. 30 (1 ♂).

The difference between this species and the preceding remains doubtful, so long as nothing more definite is known about the species of Milne-Edwards, On p. 173 of the present paper I have pointed out, that also in the ♀ of *Ses. meinerti* the length of the posterior margin of the carapace may be longer than the width of the front between the eyes.



- 35 Sides of carapace parallel in their anterior half (slightly concave behind epibranchial teeth); distance between external orbital angles larger than or equal to that between epibranchial teeth. Middle-sized species, distance between external orbital angles 15—20 mm. 36  
 Sides of carapace not parallel; distance between external orbital angles nearly always less than that between anterior epibranchial teeth. 37
- 36 Anterior margin of front with a rather narrow and deep emargination; abdomen of ♂ very broad, posterior margin of penultimate segment more than three times the length of this segment (save in subsp. *crassimana* de Man). Wrist of cheliped produced at inner angle; inner surface of palm granulate, without transverse crest.  
*Ses. edwardsi* de Man<sup>1)</sup>.  
 Anterior margin of front nearly without median emargination; abdomen of ♂ much narrower, posterior margin of penultimate segment about twice the length of this segment. Inner angle of wrist of cheliped obtuse; inner surface of palm with transverse granular crest.  
*Ses. moeschii* de Man.
- 37 Carapace flattened, smooth and shining, with indistinct regions. Small species, distance between external angles 10—11 mm. 38  
 Carapace vaulted, granulate or hairy, with distinct regions. 39
- 38 Ratio of breadth of carapace to length as 100 : 70; anterior margin of front nearly wholly straight. *Ses. laevis* A. Milne-Edwards.  
 Ratio of breadth of carapace (at anterior epibranchial teeth) to length as 100 : 84.2; anterior margin of front emarginate; side margins of carapace converging posteriorly. "Upper surface of palm flattened,

1) This species has been subdivided in no less than five subspecies, that may be distinguished by the following key (only the ♂):

- |   |  |   |
|---|--|---|
| 1 | Terminal segment of abdomen of ♂ not at all inserted in penultimate segment.   | 2 |
|   | " " " " " " somewhat " " " " "   | 4 |
| 2 | Outer surface of palm distinctly granulate.  | 3 |
|   | " " " " feebly " or smooth. subsp. <i>laevimana</i> Zehntner.  |   |
| 3 | Penultimate segment of abdomen of ♂ more than three times as broad at posterior margin as long. subsp. <i>edwardsi</i> de Man.   |   |
|   | Penultimate segment of abdomen of ♂ less than three times as broad at posterior margin as long. subsp. <i>crassimana</i> de Man.   |   |
| 4 | Legs rather slender, as in typ. <i>edwardsi</i> ; propodites of walking legs about 2½ times as long (in the middle line) as broad. subsp. <i>philippinensis</i> Rathbun. |   |
|   | Legs rather robust, shortened and thick; propodites of walking legs about twice as long (in the middle line) as broad. subsp. <i>brevipes</i> de Man.                    |   |

limited outwardly by a smooth, blunt ridge and inwardly by an uneven granulated margin" (Rathbun); inner surface of palm with a transverse row of granules. *Ses. aequifrons* Rathbun.

- 39 Lateral margin of external orbital angle shorter than that of anterior epibranchial tooth. Small species, breadth of carapace about 10—13 mm.; in Celebes. 40

Lateral margin of external orbital angle at least equal to or longer than that of anterior epibranchial tooth. Inner angle of wrist of cheliped dentate. Large or middle-sized species, breadth of carapace 20—40 mm. 41

- 40 Meropodites of walking legs very broad, club-like, less than twice as long as broad, with very convex anterior border, and the greatest breadth lying near the distal end. *Ses. clavicuris* Schenkel.

Meropodites of walking legs slightly more than twice as long as broad, with feebly arcuate anterior border. Eggs of ♀ large and few in number (subg. *Geosesarma* de Man). *Ses. celebensis* Schenkel.

- 41 Anterior margin of front scarcely emarginate in the middle; post-frontal lobes in a straight line, the outer lobes being not more advanced than the inner; distance between external orbital angles always distinctly more than length of carapace in the median line. Superior border of arm of cheliped with an obtuse prominence near the distal end; outer surface of palm with many confluent and irregular wrinkles (at least in ♂), inner surface without transverse row of granules; mobile finger at outer surface without concavity near base. Middle-sized species, breadth of carapace about 20 mm.

*Ses. modesta* de Man.

Anterior margin of front with a narrow and deep emargination; external postfrontal lobes slightly more advanced than the median ones (at least in adult specimens); distance between external orbital angles not rarely equal to or even less than length of carapace in the median line. Superior border of arm of cheliped with an acute tooth near the distal end; outer surface of palm strongly granulate, inner surface with a transverse row of granules; outer surface of immobile finger with a large depression, that of mobile finger with a narrow, but rather deep, longitudinal concavity near base. Large species, breadth of carapace reaching to nearly 40 mm.

*Ses. impressa* H. Milne-Edwards.

- 42 Sides of carapace parallel, upper surface very much flattened, smooth and shining; postfrontal lobes much prominent, sharply spinulous at their anterior margin. *Ses. polita* de Man.  
Sides of carapace convexly arched or divergent posteriorly, surface uneven. 43
- 43 Chelipeds and walking legs much hairy; meropodites of the latter very broad, their length being only  $1\frac{1}{2}$  times their greatest breadth, which is lying at the distal end. Postfrontal lobes very slightly pronounced, each of them tufted by long hairs. Very small species, breadth of carapace about 7—8 mm. *Ses. pontianacensis* de Man.  
Chelipeds not hairy at all, at least not at the outer surface of wrist, palm and fingers. Postfrontal lobes well indicated, sometimes rounded off at their anterior margin. 44
- 44 Sides of carapace convexly arched in their anterior half only, concave in their distal half; anterior epibranchial tooth with a very long lateral margin; second epibranchial tooth well indicated, prominent. Adult ♂ with two black, blunt spines at upper border of mobile finger. *Ses. smithi* H. Milne-Edwards.  
Sides of carapace convexly arched along their whole course, or divergent posteriorly; second epibranchial tooth, if present at all, very minute. Upper margin of movable finger in adult ♂ often with a longitudinal row of transverse tubercles or rounded knobs. 45
- 45 Greatest breadth of carapace lying at the level of the posterior epibranchial teeth; sides of carapace rather regularly convexly arched. 46  
Greatest breadth of carapace lying at the level of the penultimate part of legs; sides of carapace straight or even slightly concave, but always more or less divergent posteriorly. 47
- 46 Carapace flattened; inner postfrontal lobes nearly 3 times as broad as the outer ones. Inner angle of wrist of cheliped produced; upper margin of palm with a coarsely serrulate longitudinal crest. Dactyli of walking legs thickly tomentose, as also the outer border of the propodites. *Ses. rotundata* Hess.  
Carapace more vaulted; inner postfrontal lobes nearly as broad as the outer ones. Walking legs with only some few isolated hairs. *Ses. cruciata* Bürger.
- 47 Upper border of mobile finger of cheliped with a rather sharp,

but smooth keel, at the base of which some acute granules are found; at the inner side of this finger a longitudinal row of 9 tubercles (especially distinct in ♂); inner surface of palm with a transverse row of granules. Postfrontal lobes sharpened, and, like the anterior margin of the front, denticulate anteriorly. *Ses. demani* Bürger.

Upper border of mobile finger of cheliped without a longitudinal keel, in adult ♂ regularly transversely milled or provided with a row of tubercles. 48

- 48 Sides of carapace very strongly divergent posteriorly; lateral margin of external orbital angle as long as that of anterior epibranchial tooth; ocular peduncles short, corneae small. Outer surface of palm of cheliped smooth; upper border of movable finger with a longitudinal row of 9—10 widely-separated knobs. Walking legs robust, but with much elongated carpo- and propodite (save in the first pair); dactyli of two last pairs of legs very long and slender, nearly as long as anterior (outer) margin of the preceding joints. Species living in subterranean rivers at south coast of Java. *Ses. jacobsoni* Ihle.

Sides of carapace much less strongly divergent posteriorly, nearly parallel. Upper border of movable finger of cheliped (in adult ♂) with regular transverse grooves. Postfrontal lobes much prominent and sharp at anterior margin. 49

- 49 Carapace flattened, smooth, shining. Outer surface of palm of cheliped (in adult ♂) with a violet hue and a few very large, rounded, white tubercles; upper border of movable finger with a longitudinal row of 25—30 small, smooth, transverse ribs (in the ♀ the outer surface of the palm is light brown, and there are a great many more tubercles, that are much smaller; upper border of movable finger with some irregular granules). Walking legs robust; dactyli long, scarcely shorter than the preceding joints. *Ses. atrorubens* Hess.

Carapace more convex, with more distinct regions. Outer surface of palm of cheliped with some irregular granules; upper border of movable finger in adult ♂ regularly and transversely milled (40—50 minute grooves), in ♀ smooth. Walking legs slender; propodites much elongated; dactyli very slender, though shorter than propodites (in the individual variation *longitarsis* de Man this difference is however only very feebly marked). *Ses. trapezoidea* Guérin.

3. *Parasesarma* <sup>1)</sup>.

1. Posterior border of meropodites of walking legs with some spines near the distal end. 2  
 Posterior border of meropodites of walking legs without spines. 6
2. Fingers externally covered with woolly tufts of dark brown hair; upper border of movable finger with a row of 12 transverse tubercles. *Ses. batavica* Moreira.  
 (= *Ses. barbimana* de Man nec Cano).  
 Fingers glabrous, without hairs. Margins of carapace rather strongly convergent posteriorly. 3
3. Upper border of palm of cheliped (in ♂) with 2—3 oblique pectinated ridges, that near the base of the movable finger being the longer. Carapace hairy. 4  
 Upper border of palm of cheliped (in ♂) with more than 3 oblique pectinated ridges. Carapace glabrous and shining. 5
4. Distance between external orbital angles  $1\frac{1}{2}$  times the length of the carapace in the median line. Upper border of movable finger of cheliped with a row of 11—13 transverse tubercles. Walking legs very short and thickened; carpo- and propodite nearly as broad as long; dactyli very short, strongly curved. *Ses. edamensis* de Man.  
 Distance between external orbital angles only slightly more than length of carapace in the median line. Upper border of movable finger of cheliped smooth, with a sharpened, longitudinal keel. Walking legs moderately long; dactyli very slender. *Ses. vestita* Stimpson.
5. Carapace smooth, punctate; sides not much convergent posteriorly; a trace of an anterior and even of a posterior epibranchial tooth may be seen on either side behind the external orbital angle <sup>2)</sup>. Upper border of palm of cheliped (in ♂) with two larger pectinated ridges and no less than 7—8 smaller ones; upper border of mobile finger with a longitudinal row of 13—14 transverse ridges. Meropodites of walking legs with 4—5 teeth at the posterior margin near the carpal joint, diminishing in size distally. *Ses. andersoni* de Man.

1) The key to this subgenus has been constructed in the main after that of de Man (Notes Leyden Museum, v. 12, 1890, p. 97, and Zool. Jahrb. Syst., Bd. 9, 1895, p. 181). Of course the species described after the latter date are inserted.

2) By this character the species is approached to the subgenus *Chiromantes*, but here the epibranchial tooth is prominent and acute.

Carapace with numerous transverse striae, oblique on the branchial regions. Sides strongly convergent posteriorly, without a tooth behind the external orbital angle. Upper border of palm of cheliped with a longitudinal line, with a number of oblique lines on the inner, and some fainter ones on the outer sides; all these lines not pectinated, but beaded; upper border of mobile finger with some fine, oblique, beaded lines near the base. Meropodites of walking legs with 2—3 strong teeth at the posterior margin; meropodites of hinder legs moreover with 2 teeth, placed side by side, near the proximal end.

*Ses. murrayi* Calman.

- 6 Sides of carapace parallel. Transverse tubercles on upper border of mobile finger of cheliped smooth.

Sides of carapace convergent distally.

8

- 7 Upper border of mobile finger of cheliped with a row of 16 transverse tubercles, symmetrical with respect to the longer axis of the latter; inner surface of palm with a transverse row of granules. Width of front between the eyes only very slightly longer than half the distance between external orbital angles. Middle-sized species, distance between external orbital angles 20 mm.

*Ses. picta* de Haan.

Upper border of mobile finger of cheliped with only 5—6 obscure, low tubercles, that (according to the figure of Lanchester) are not symmetrical with respect to the longer axis of the tubercles, as the proximal slope is longer than the distal one; inner surface of palm without transverse row of granules, smooth. Width of front between the eyes distinctly more than half the distance between external orbital angles. Small species, distance between external orbital angles about 9 mm.

*Ses. fasciata* Lanchester.

- 8 Transverse tubercles on upper border of movable finger of cheliped symmetrical with respect to their longer axis, numbering 11—14, each of which has a narrow smooth stripe in its longer axis („*Chiton*”-like). Meropodites of walking legs very broad, not exactly twice as long as broad.

*Ses. plicata* (Latreille).

Transverse tubercles on upper border of movable finger of cheliped not symmetrical with respect to their longer axis, so that the proximal slope is longer or shorter than the distal one.

9

- 9 Proximal slope of the said transverse tubercles longer than distal one.

10

- Proximal slope of the said transverse tubercles shorter than distal one. 18
- 10 Both fingers of cheliped at base of outer and inner surface and along cutting margins with numerous short hairs; upper border of movable finger with 4—5 elongated, longitudinal, oval tubercles, each of which is finely and transversely milled. *Ses. catenata* Ortman.  
Cheliped not hairy; tubercles at upper border of movable finger separated from each other and transverse. 11
- 11 Upper border of movable finger of cheliped with 9—10 tubercles in ♂ (7—8 in ♀), that are smooth, rounded off. Dactyli of walking legs only a third of the length of the very much elongated and slender preceding propodites.  
*Ses. leptosoma* Hilgendorf.  
Dactyli of walking legs longer, not very much shorter than the preceding joints. 12
- 12 Pectinated ridge near upper border of palm of cheliped one, running obliquely-longitudinal, not nearly transverse; tubercles at upper border of movable finger 7 in the proximal half, "each one is divided by a transverse line into a large proximal, and a small tuberculiform distal portion" (Rathbun). *Ses. dumacensis* Rathbun<sup>1)</sup>.  
Pectinated ridges near upper border of palm of cheliped generally two, running obliquely-transverse. 13
- 13 Inner surface of palm of cheliped with a transverse crest (in adult ♂ at least) or with a row of granules. 14  
Inner surface of palm of cheliped without trace of a transverse crest. 16
- 14 Tubercles at upper border of movable finger 12—13 in ♂ (9—10 much smaller ones in ♀), the proximal slope of which is transversely vaulted and provided with 3—4 somewhat prominent, transverse ridges, the distal slope has likewise 2—3 of these ridges. Mero-podites of penultimate pair of walking legs broadened, twice as long as broad.  
*Ses. calypso* de Man<sup>2)</sup>.

1) Of this species only the ♀ is known, and it cannot be said whether in the ♂ also only one pectinated ridge is found on the palm of the cheliped; frequently in the ♀ of *Parascarma* these pectinated ridges are greatly reduced in size, especially the hind one, and may be replaced even by granulate rows.

2) The subspecies *kükenthali* de Man is distinguished by a smaller number of tubercles (only 9 in the ♂), that are larger, and provided with 5—6 transverse ridges; moreover the transverse row of granules at the inner surface of the palm is quite absent.

Tubercles at upper border of movable finger 20—25, not conspicuously transversely vaulted on the proximal part, but longitudinally striated. 15

- 15 Anterior margin of front faintly concave. Upper border of arm of cheliped ending in an obtuse angle, anterior border with a denticulate prominence near the distal end; inner surface of palm with a prominent, transverse crest; pectinated ridges running parallel to the oblique posterior margin of the upper surface of the palm; outer surface of immobile finger without longitudinal rim.

*Ses. erythroductyla* Hess<sup>1)</sup>.

Anterior margin of front widely but profoundly emarginate. Upper border of arm of cheliped terminating in an acute tooth, anterior border with a triangular spine; inner surface with a very short, granulate, transverse crest of 6—7 granules (in ♂); pectinated ridges running nearly parallel to the joint of the palm and the movable finger; proximal part of outer surface of immobile finger with a longitudinal rim.

*Ses. bataviana* de Man.

- 16 Meropodites of penultimate pair of legs slender, about 3 times as long as broad. "Outer postfrontal lobes scarcely more than half as wide as inner ones, their anterior margin being continued downward toward the lower outer angle of the front" (Rathbun); width of front between the eyes not reaching to half the distance between external orbital angles. Near the upper border of the palm of the cheliped there are three longitudinally-oblique ridges, nearly parallel to the oblique posterior margin of the palm; upper border of movable finger with about 11 very small and low tubercles on the proximal half.

*Ses. pangauranensis* Rathbun<sup>2)</sup>.

Meropodites of penultimate pair of legs broader, twice as long as broad. Tubercles at upper border of movable finger of cheliped numbering 13—15. 17

1) The subspecies *africana* Ortman is distinguished by the lesser development of the prominent transverse crest at the inner surface of the palm, by the presence of an obtuse dentate lobe at the anterior (inner) border of the arm of the cheliped and by longer dactyli of the ambulatory legs, these dactyli being nearly as long as the preceding joints.

2) Of this small species only the ♀ is known; the ♂ will perhaps present much more characteristic features. On the whole it may be said, that it is very difficult to insert the species of Miss Rathbun (described in the Proc. U. S. Nat. Museum, v. 47, 1914) in the present keys, as no figures have as yet been published.



- 17 Anterior margin of front only faintly concave.

*Ses. carolinensis* Rathbun.

Anterior margin of front wavy, with three emarginations, the median one the larger; outer postfrontal lobes only slightly narrower than the inner ones; width of front between the eyes  $57-60\%$  of the distance between the external orbital angles. *Ses. lenzii* de Man.

- 18 Transverse tubercles on upper border of movable finger of cheliped 8—10, scalariform, distal slope vaulted, dull, not shining.

*Ses. moluccensis* de Man<sup>1)</sup>.

Transverse tubercles on upper border of movable finger of cheliped 15—16, smooth, bright, horse-shoe shaped (distal portion concave).

*Ses. melissa* de Man.

#### 4. *Chiromantes*.

- 1 Tubercles at upper borders of movable finger of cheliped numbering 12—13, large, prominent, „*Chiton*”-like (with a smooth stripe along their long axis, perpendicular to the longitudinal axis of the finger; outer surface of immovable finger flattened, with a longitudinal rim; anterior margin of arm with a subdistal, acute prominence, which is itself denticulate. Posterior margin of penultimate segment of abdomen of ♂ not yet  $1\frac{1}{2}$  times the length of this segment. Species living at the east coast of Africa. *Ses. guttata* A. Milne-Edwards.

Tubercles at upper border of movable finger of cheliped without a smooth stripe along their long axis. 2

- 2 Chelipeds equal: upper border of movable finger with a row of 12—13 tubercles, that are scalariform, flattened above and more or less declivous at their distal margin; inner surface of palm with very large spiniform granules, the largest of which are found in the middle of the inner surface; forming an indistinct, transverse row; anterior (inner) margin of arm armed with a prominent, triangular tooth, the margins of which are denticulate; superior border of arm unarmed; outer surface of immo-

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1) In the subspecies *jamelensis* Rathbun the carapace is a little narrower in proportion to its length and the front is also narrower in proportion to the distance between the external orbital angles; moreover the 9—10 tubercles on the upper border of the movable finger are obliquely-transverse.

- bile finger regularly convex, without longitudinal rim. Species found in British India. *Ses. dussumieri* H. Milne-Edwards<sup>1)</sup>.  
 These characters not combined 3
- 3 Tubercles at upper border of movable finger of cheliped scalari-form, flattened above, asymmetrical with respect to their long axis (which is perpendicular to the long axis of the finger), proximal slope longitudinally striated. 4  
 Tubercles at upper border of movable finger of cheliped symmetrical, proximal slope not longer than distal one, sometimes replaced by a row of spines. 6
- 4 Chelipeds unequal; upper border of movable finger with 18—19 tubercles; outer surface of immobile finger with longitudinal rim, parallel to the under border; length of immobile finger exceeding that of palm. *Ses. haswelli* de Man.  
 Chelipeds equal; upper border of movable finger with only 7—10 tubercles; length of immobile finger less than that of palm. 5
- 5 Said tubercles numbering 7—9, proximal slope elongated, with a small, smooth, quadrangular portion in the middle, in the shape of a human finger-nail, last tubercle very long, occupying more than one-fifth of the whole length of the finger.  
*Ses. onychophora* de Man.  
 Said tubercles numbering 9—10, somewhat oblique with respect to longitudinal axis of finger and arranged in 4—5 groups, each of which is composed of two tubercles of different aspect: the proximal tubercle of each group is horse-shoe shaped, with the concavity turned towards the tip of the finger, and the distal tubercle is straight, the proximal slope being vaulted transversely and striated longitudinally.  
*Ses. livida* A. Milne-Edwards.
- 6 Sides of carapace somewhat diverging posteriorly. Upper

1) In his „Materials for a carcinological fauna of India” (Journ. As. Soc. Bengal, v. 69, prt. 2. 1900, p. 415) Alcock unites *Ses. dussumieri*, *haswelli* and *livida* with *Ses. bidens*. It is true, that these four species present a striking resemblance to each other, but before more specimens and especially adult ones of each are examined, we are not justified to accept Alcock's synonymy. Moreover, among other characteristics, the size of the abdomen of the ♂ distinguishes *Ses. dussumieri* from *Ses. bidens*, as in the former species the posterior margin of the penultimate segment is  $1\frac{1}{2}$  times its length, in the latter twice this length.

border of movable finger of cheliped with a row of 6—7 acute spines, occupying the proximal two-thirds of the finger.

*Ses. siamensis* Rathbun.

Sides of carapace converging posteriorly. Upper border of movable finger of cheliped always with a row of obtuse tubercles. 7

- 7 Said tubercles numbering about 23, each of which is about  $2\frac{1}{2}$  times as long as broad (at least in the middle of the row, where they are largest), with a broad groove along its longer axis, the rim of which groove is ornamented by transverse striae, perpendicular to the longer axis of the tubercle; on the distal tubercles this groove disappears and the proximal slope becomes longer than the distal one, though the fine longitudinal striation remains, save on the 3—4 last tubercles near tip of finger.

*Ses. eumolpe* de Man.

Said tubercles numbering 7—13, not grooved along their longer axis. 8

- 8 Said tubercles numbering 7, strongly prominent, dome-shaped. Carapace strongly convex, smooth and shining. *Ses. semperi* Bürger.

Said tubercles numbering 12—13, less prominent, broader than long, proximal slope striated. *Ses. bidens* (de Haan) <sup>1)</sup>

#### B. *Metasesarma*.

- 1 Sides of carapace convergent posteriorly. Outer surface of palm of cheliped covered with spiniform granules. *Metases. trapezium* (Dana).

Sides of carapace convexly arched in their anterior part or parallel to each other. Outer surface of palm of cheliped smooth, punctate. 2

- 2 Inner infra-orbital lobe often in contact with the lateral processus of the anterior margin of the front, in such a way, that the orbital lobe in outer view is concealed by the frontal processus (though also the reverse may be observed); not rarely, however, there is a more or less wide gap between this orbital lobe and the frontal processus, so that the outer antenna is not excluded from the orbit; width of front always more than half the greatest breadth of the carapace. *Metases. rousseauri* H. Milne-Edwards.

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1) In the subspecies *indica* de Man there are only 11 tubercles on the upper border of the movable finger of cheliped; these tubercles are approximately quadrate, with both axes nearly equally long, and the finely-striated proximal slope is somewhat longer than the distal one; the posterior margin of the penultimate segment of the abdomen of the ♂ is somewhat less than twice the length of this segment, whereas it is more than twice this length in the typical species.

Inner infra-orbital lobe usually meeting the lateral processus of the anterior margin of the front, in such a way that the frontal processus in outer view is concealed by the orbital lobe; the contact is not always present, and a more or less wide gap between the antennar cavity and the orbit exists in this case; width of front always half the greatest breadth of the carapace.

*Metases. aubryi*. A. Milne-Edwards.

C. *Sarmatium* <sup>1)</sup>.

- 1 Sides of carapace with one or two epibranchial teeth behind the external orbital angle. 2

Sides of carapace entire, not toothed at all.

*Sarm. integrum* (A. Milne-Edwards).

- 2 Palm of cheliped smooth at outer surface. 3

Palm of cheliped roughly granulate at outer surface. 4

- 3 Carapace smooth, regions indistinct. Palm of cheliped (of ♂) at upper surface with 6—7 transverse, parallel crests; upper border of movable finger with 4 short spines in the ♂, none in the ♀.

*Sarm. crassum* Dana.

Carapace areolate, regions distinct (at least the mesogastric area). Palm of cheliped at upper surface quite smooth, and the same is true for the upper border of the movable finger, in both sexes; inner surface of palm with a transverse row of granules.

*Sarm. inerme* de Man.

- 4 Inner surface of palm of cheliped without transverse row of granules.

*Sarm. indicum* (A. Milne-Edwards) <sup>2)</sup>.

Inner surface of palm of cheliped with transverse row of granules. 5

- 5 Anterior margin of front with a deep median emargination, width of front between eye-stalks about half the distance between external orbital angles. Superior border of arm of cheliped without subdistal tooth; upper border of movable finger with 4—5 spines. Meropodites

1) This key has been based upon that given by Kingsley in his revision of the Grapsidae (Proc. Ac. Nat. Sc. Philadelphia, 1880, p. 212), and the new species have been inserted.

2) There is a subspecies *malabaricum* Henderson of this species, but I have had no occasion to study its main characters.

of walking legs (at least in the case of the penultimate pair) more than twice as long as broad. 6

Anterior margin of front nearly straight in dorsal view, width of front between eye-stalks  $\frac{1}{4}$  of the distance between external orbital angles; surface of carapace smooth and shining, without hairs, finely punctate; side margins much divergent posteriorly in their anterior half. Superior border of arm of cheliped with rectangular, subdistal tooth; upper border of movable finger with two thick, cone-shaped teeth (especially developed in the ♂). Meropodites of walking legs (at least in the case of the penultimate pair) exactly twice as long as broad; carpo- and propodite thickly hairy.

*Sarm. punctatum* (A. Milne-Edwards).

- 6 Lateral margins of external orbital angles subparallel to each other, only slightly diverging posteriorly, separated from the next tooth by a narrow incision; lateral margins of epibranchial teeth convergent posteriorly and shorter than those of outer orbital angles; no trace of a second (posterior) epibranchial tooth; postfrontal lobes very unequal, the inner more than twice as broad as the outer ones.

*Sarm. birói* Nobili.

Lateral margins of external orbital angles strongly divergent posteriorly, separated from the next tooth by a very deep incision; lateral margins of epibranchial teeth subparallel to each other, somewhat convex and distinctly longer than those of external orbital angles; a second (posterior) epibranchial tooth indicated; median postfrontal lobes only  $1\frac{1}{2}$  times as broad as the outer ones.

*Sarm. fryatti* Tesch.

#### D. *Clistocoeloma*.

- 1 Distance between external orbital angles distinctly more than length of carapace in the median line; external postfrontal lobes not subdivided by a short longitudinal groove. Last segment of abdomen of ♂ much longer than broad at the base, twice as long as the preceding segment.

*Cl. merguense* de Man.

Distance between external orbital angles about equal to length of carapace in the median line; external postfrontal lobes subdivided anteriorly by a very short longitudinal groove into two tubercles. 2

- 2 Superior orbital border convex in its inner part. 5<sup>th</sup> segment of abdomen of ♂ longer than 6<sup>th</sup> (penultimate) segment; terminal seg-

ment twice as long as preceding segment, posterior margin of the latter nearly three times the length of this segment.

*Cl. balansae* A. Milne-Edwards.

Superior orbital border regularly concave in its inner part; surface of carapace with regularly-distributed large, tufted tubercles. 5th segment of abdomen of ♂ as long as 6th (penultimate) segment; terminal segment only slightly longer than the preceding segment, posterior margin of the latter  $2\frac{1}{2}$  times the length of this segment.

*Cl. tectum* (Rathbun).

Leiden Museum, September 29, 1916.

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### EXPLANATION OF PLATES.

#### Pl. XV.

- Fig. 1. *Sesarma lafondi* Jacquinet et Lucas, ♀, natural size. 1a, front view of carapace, enl.  $1\frac{1}{2}$ . 1b cheliped, dorsal view, enl. 2.

#### Pl. XVI.

- Fig. 1. *Sesarma modesta* de Man, ♀, enl. 2.  
 Fig. 2. *Sesarma palawanensis* Rathbun, ♀, natural size. 2a cheliped, dorsal view, enl. 2.  
 Fig. 3. *Sesarma taeniolata* White, cheliped of ♂, dorsal view, enl.  $1\frac{1}{2}$ .  
 Fig. 4. *Sesarma taeniolata crebrestriata* n. subsp., cheliped of ♂, dorsal view, enl. 2.

#### Pl. XVII.

- Fig. 1. *Sesarma ocypoda gracillima* de Man, ♂, enl. 2. 1a front of carapace, obliquely-anterior and dorsal view, enl. 3. 1b chela, outer surface, enl. 3.  
 Fig. 2. *Sesarma villosa* de Man, ♀, enl. 3.  
 Fig. 3. *Clistocoeloma tectum* (Rathbun), ♀, enl. 2. 3a cheliped of ♂, dorsal view, enl. 3. 3b outer view of chela of the same ♂, enl. 3. 3c abdomen of the same ♂, enl. 3.
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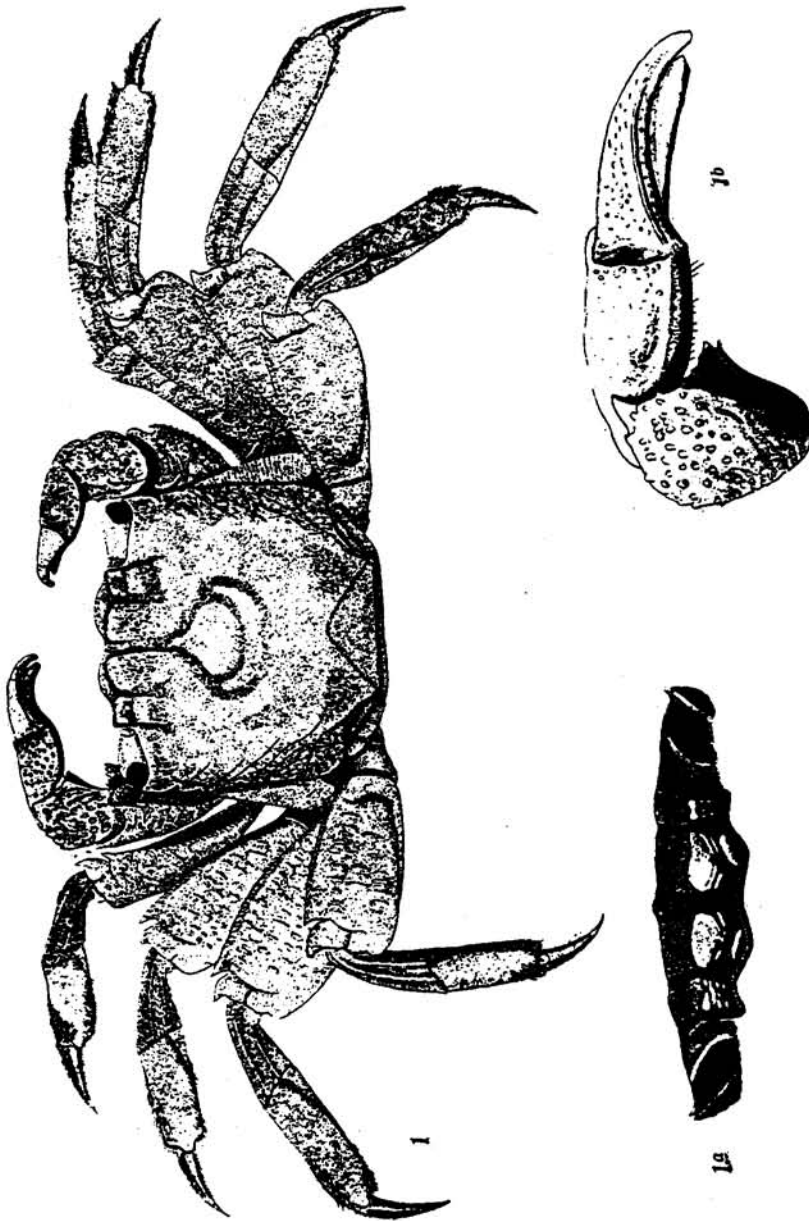


Fig. 1. *Sesarma (Sesarma) lafondi* H. M. Edw. ♀, nat. size.  
a 1a, front view of carapace, magn.  $1\frac{1}{2}$ .  
b 1b, cheliped, dorsal view, magn. 2.

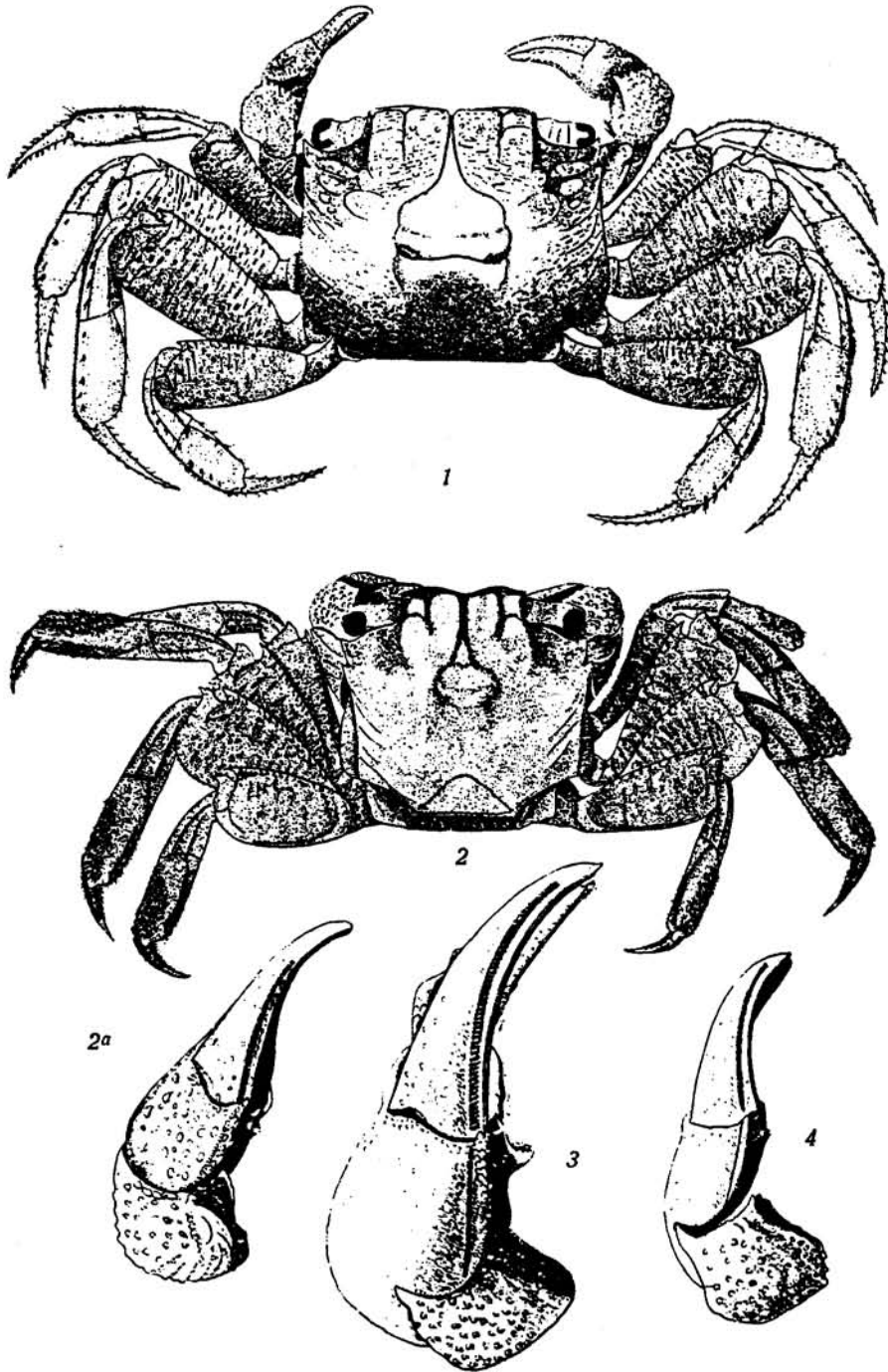


Fig. 1. *Sesarma (Sesarma) modesta* de Man. ♀, magn. 2.  
 » 2. *Sesarma (Sesarma) palawanensis* Rathbun. ♀, nat. size. Fig. 2a cheliped, of ♀, magn. 2.  
 » 3. *Sesarma (Sesarma) taeniolata* White, cheliped of ♂, magn. 1½.  
 » 4. *Sesarma taeniolata* subsp. *crebrestriata* Tesch, cheliped of ♂, magn. 2.



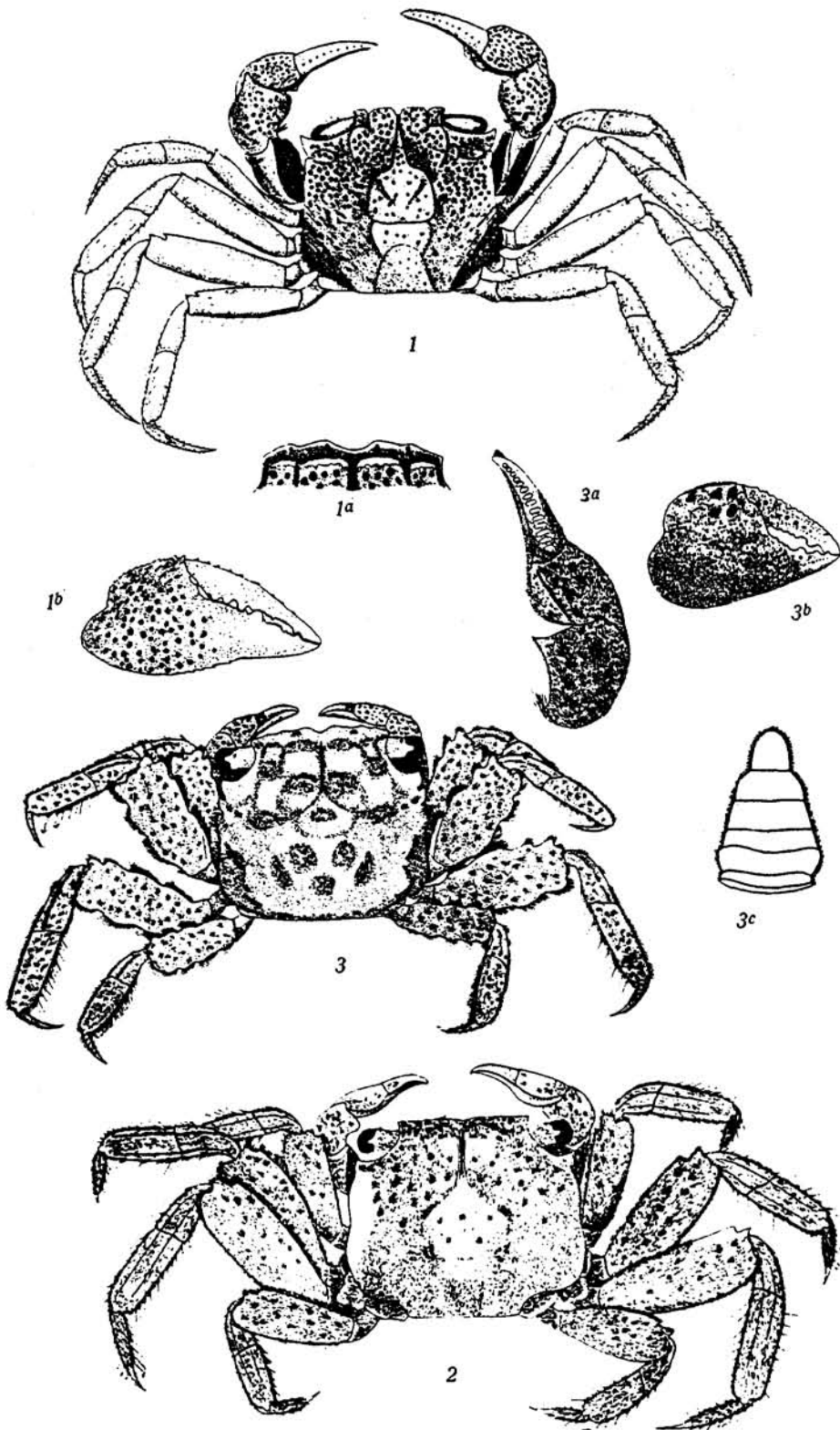


Fig. 1. *Sesarma (Sesarma) ocyпода Nobili subsp. gracillima* de Man, ♂, magn. 2.  
 Fig. 1a, front, seen obliquely from above, magn. 3. Fig. 1b, outer surface of chela, magn. 3.  
 » 2. *Sesarma (Holometopus) villosa* de Man, ♀, magn. 3.  
 » 3. *Clistocoeloma tectum* (Rathbun), ♀, magn. 2. Fig. 3a, cheliped of ♂, dorsal view, magn. 3. Fig. 3b, outer surface of chela of ♂, magn. 3. Fig. 3c, abdomen of ♂, magn. 3. DT by Mr. Koenigsdam