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STIMPSON 1858 (DECAPODA, BRACHYURA: OCYPODIDAE)

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NOTE ON THE GENERA AND SPECIES OF THE CAMPTANDRIINAE
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ABSTRACT

The status of Camptandriinae is discussed and its genera are reviewed. The key to the genera of this subfamily and the key to its related subfamilies are presented.

Carapace squarish, rounded or subhexagonal, dorsally generally flattened (not globular) smooth or with some elevations. Margins of carapace oblique, straight or convex, lateral tooth generally at least indicated. Internal suborbital angle small (generally) not joining the front. Antennula oblique with swollen basal article in deep large fossae separated from the orbital hiatus by ventral process of frontal lateral border. Antenna with basal article filling orbital hiatus (when it exists). Third maxiliped squarish, not (or only slightly) gaping. Endognath with ischium quadrate, broader than long; merus quadrate as long as or slightly longer than ischium, auriculated antero-laterally; palp articulated medio-distally. Exognath with palp (without tooth on inner margin) and semi-concealed beneath endognath. Cheliped generally with swollen palm on fully adult male specimen; always small on female. Male abdomen contracted (with sides sinuated at least) in middle. Male pleopod 1 geniculated beyond its middle and contorted towards its extremities.

Type genus: *Camptandrium* STIMPSON 1858

Type species: *Camptandrium sexdentatum* STIMPSON 1858.

SERENE AND MOOSA (1971) in their list of material from Ambon classify *Camptandrium ambonense* in the Camptandriinae of the Ocypodidae. STIMPSON (1858) established the Camptandriidae for the single genus *Camptandrium* considering that it could not be fitted into the Grapsidae or the Goneplacidae. The genus (relatively little known) was further referred with a query by ALCOCK (1900) to the Goneplacidae by RATHBUN (1910) to the Varuninae of the Grapsidae and finally by TESCH (1918) to the Macrophthalminae of the Ocypodidae.

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The characters mentioned by TESCH (1918) (narrowness of front, slender eye stalks, plate-like and scarcely gaping external maxillipeds) to include *Camptandrium* in the Ocypodidae are little questionable. Those given (absence of tufts between the basis of the walking legs, narrow nasal plate separating the oblique antennulae, width of the front) to demonstrate the affinity with Macrophthalminae are less convincing. However he correctly mentions *Paracleistostoma* as nearly allied to *Camptandrium*.

TESCH (1918) separated in this key the genera of Macrophthalminae into two groups: one with *Macrophthalmus*, *Hemiplax* and *Euplax*, the other with *Tylodiplax*, *Cleistostoma*, *Camptandrium* and *Paracleistostoma*. The second group of genera correspond to the Camptandriinae.

BARNES (1967) stated that within the Macrophthalminae "two distinct generic groups are present"; and listed six characters which separate *Macrophthalmus* of the first group from *Cleistostoma* of the second group. The Macrophthalminae s. str. correspond to the first group and the Camptandriinae to the second.

STIMPSON (1858, 1907) did not give any definition of the Camptandriidae; the characters of which being those of *Camptandrium*. Surprising for the period (1858) the form of the male pleopod is indicated among those characters. The Camptandriinae are the Ocypodidae with a male pleopod 1 geniculated beyond its middle, and contorted towards its extremities. A similar form of male pleopod 1 is found in *Mortensenella forceps* RATHBUN 1909, an aberrant genus of the Pinnotheridae.

The forms of the male pleopod 1 of the subfamilies of the Ocypodidae are as follows:

1. Male pleopod 1 strong and nearly straight with distally numerous fine setae and generally chitinous apical formations: *Ocypoda*, *Uca*, *Heloeceus* (Ocypodinae);
2. Male pleopod 1 strong and nearly straight with distally numerous fine setae, and generally chitinous apical formation: *Macrophthalmus*, *Hemiplax*, *Australoplax* (Macrophthalminae);
3. Male pleopod 1 straight or sinuous with distally fine setae or strong spinules: *Scopimera*, *Dotilla*, *Dotillopsis*, *Dotilloplax*, *Potamocypoda*, *Pseudogelasimus*, *Ilyoplax*, ?*Shenius* (Scopimerinae) and Myctyrinae;
4. Male pleopod 1 geniculated beyond the middle, and contorted toward its extremities: *Camptandrium*, *Cleistostoma*, *Paracleistostoma*, *Tylodiplax*, *Leipoecten* (Camptandriinae).

There is no doubt about the value and homogeneity of the Camptan-

driinae as a distinct taxon; its position into the Ocypodidae needs further considerations and perhaps the taxon will have to receive a family level, like originally suggested by STIMPSON (1858).

Key to the subfamilies of Ocypodidae

1. Antennulae longitudinally folded with reduced flagellum. Antennular septum broad. Hairy tufts marking accessory openings of branchial chamber at articulation with border of carapace of some pereopod or abdomen. 2
 Antennulae transversally, obliquely folded with normal flagellum. Antennular septum remarkably narrow. No hairy tufts marking accessory openings of branchial chamber 4

- 2.(1) Carapace quadrangular or trapezoid; no tooth neither incision behind external orbital angle. Orbits deep and broad. Hairy tufts between coxae of pereopods 3 and 4. Male pleopod 1 nearly straight (slightly but evenly convex) with subdistal tufts of fine setae generally concealing chitinous apical process (Species 15) Ocypodinae DANA 1851
 Carapace subglobular or subquadrate; generally an incision (at least an inflexion) marked behind external orbital angle. Orbits generally narrower (Species 15) 3

- 3.(2) Third maxilliped with exognath; hairy tufts between coxae of pereopods 2 and 3. Male pleopod 1 straight or sinuous with subdistal setae or strong spinules . . Scopimerinae ALCOCK 1900
 Third maxilliped without exognath; hairy tufts all along posterior border of carapace. Male pleopod
 Mictyrinae DANA 1851 new combination

- 4.(1) Antennular fossae opening in orbital hiatus. Hiatus more or less developed between third maxillipeds. Male pleopod 1 straight with subdistal hairy tuft concealing short chitinous process
 Macrophthalminae DANA 1851 new combination
 Antennular fossae separated from orbital hiatus. No hiatus between third maxilliped. Male pleopod 1 geniculate with distal half recurved longitudinally; without hairs concealing long apical process Camptandriinae STIMPSON 1858

The genera of the Camptandriinae. To the genera already mentioned (*Camptandrium*, *Tylodiplx*, *Cleistostoma*, *Paracleistostoma* and *Leipocten*) must be added *Baruna* STEBBING 1904 of which *Leipocten* is perhaps synonymous. The fitting of several species into those genera is unsatisfactory and a key for the separation of those genera is hard to establish.

An improved definition of the species as well as the genera is necessary. The new distribution of several species into the genera suggested here is giving a priority as generic character to the form of the male pleopod.

1. **Camptandrium** STIMPSON 1858. Type species *Camptandrium sexdentatum* STIMPSON 1858.

The distal part of the male pleopod 1 is subdivided into two long slim process as illustrated by SHEN (1932, fig. 140e) for *sexdentatum* and SHEN (1935, fig. 10b) for *elongatum* and SERENE and MOOSA (1971, fig.1) for *ambonenses*. By its male pleopod illustrated by BARNES (1967, fig. 16d), *Cleistostoma macneilli* belongs to *Camptandrium*. The male pleopod of *Camptandrium starmuhlneri* is unknown, but the species probably belongs to a different genus than *Camptandrium*.

2. **Tylodiplx** DE MAN 1895. Type species: *Tylodiplx tetralyphoru* DE MAN 1895.

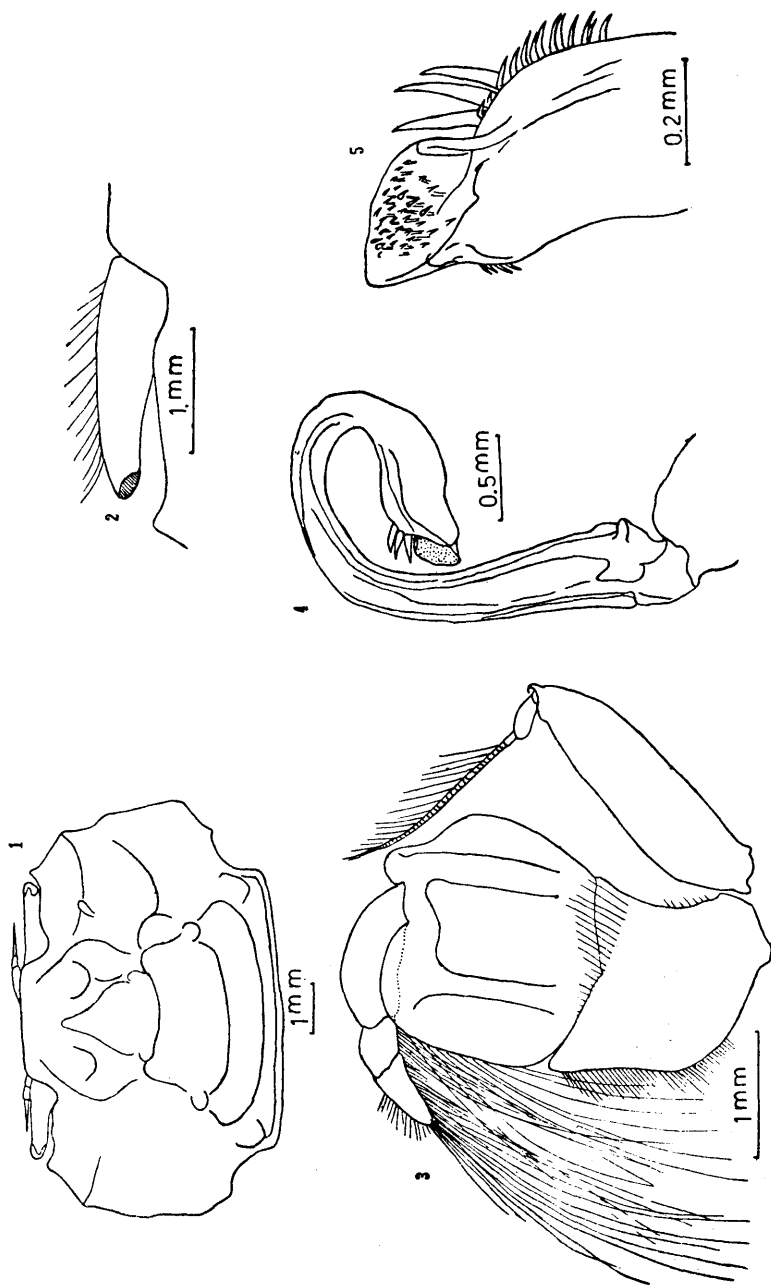
The male pleopod is illustrated here (Figs. 1-5). The other species of *Tylodiplx* apart from other clearly different morphological characters have a different male pleopod and belongs to other genera.

3. **Paratylodiplx** new genus is established with *Cleistostoma blephariskios* STEBBING 1924 as type species.

The male pleopod as illustrated by BARNARD (1955, fig. 7f) is well characterized by a subdistal long sickle-shaped process. The male pleopod of *Tylodiplx derijardi* GUINOT AND CROSNIER 1964 illustrated by GUINOT AND CROSNIER (1964, fig. 256) and that of *Cleistostoma edwardsi* (MACLEAY) 1838 illustrated by BARNARD (1955, fig. 21g) belong to the same form. *Cleistostoma algoense* (BARNARD 1955) in spite of the absence of information on its male pleopod is very probably congeneric with *edwardsi*.

4. **Cleistostoma** DE HAAN 1835. Type species: *Cleistostoma dilatatum* DE HAAN 1835.

The male pleopod illustrated by SHEN (1932, fig. 148) is characterized by an apex acutely triangular with a subdistal group of short strong spinules. The male pleopod of *Tylodiplx indica* (ALCOCK 1900) illus-



Figs. 1—5. *Tylodiplax tetralyphora*, male of 6.5 × 6.8: (1) dorsal view of carapace; (2) eyestalk; (3) third maxilliped; (4 and 5) male pleopod of 5.5 × 6.0.

trated by STEPHENSEN (1945, fig 58E) and that of *Paracleistostoma cristatum* DE MAN 1895 illustrated by GORDON (1931, fig. 29) belong to the same form.

The male pleopod of *Cleistostoma leachi* (AUDOUIN 1828) as illustrated by GORDON (1931, fig. 27) and especially that of *Paracleistostoma japonicum* SAKAI (1934, text-fig. 26c) are slightly of different form but are most closely related to those of *Cleistostoma* than to those of any other genus. The position of *Cleistostoma dotilliforme* ALCOCK 1900 is uncertain until its male pleopod is known.

5. *Paracleistostoma* DE MAN 1897. Type species: *Paracleistostoma depressum* DE MAN 1897.

The male pleopod illustrated by GORDON (1931, fig. 26) is characterized by its distal broadening with a conspicuous apical lobe. The male pleopods of *Paracleistostoma longimanum* TWEEDIE 1937 illustrated by TWEEDIE (1937, fig. 5) and *Cleistostoma wardi* RATHBUN 1926 illustrated by BARNES (1967, fig. 15d) have exactly the same form. The male pleopod of *Paracleistostoma microcheirum* TWEEDIE 1937 illustrated by TWEEDIE (1937, fig. 6d) is only slightly different. The positions of *Paracleistostoma dentatum* TESCH 1918, *fossulum* and *eriphorum* NOBILI 1905 are uncertain. In spite of the absence of information on their male pleopods, I think they belong to different genera. It is possible that *eriphorum* is a *Leipocten* or *Baruna*.

6. *Baruna* STEBBING 1905. Type species: *Baruna socialis* STEBBING 1905.

The male pleopod is unknown.

7. *Leipocten* KEMP 1915. Type species *Leipocten sordidulum* KEMP 1913.

The male pleopod is illustrated by TWEEDIE (1937, fig. 7). A close examination of the type material of *Baruna socialis* shows that *Leipocten* is a synonym of *Baruna*.

In regard to the position generally accepted by author the suggested removal of species in other genera are:

Camptandrium anomalum = *Shenius* SERENE 1970

Camptandrium starmuhlneri = ?*Ilyograpsus*

Tylodiplax blephariskios = *Paratylodiplax* new genus

Tylodiplax derijardi = *Paratylodiplax* new genus

Tylodiplax indicum = *Cleistostoma* DE HAAN 1835

Cleistostoma wardi = *Paracleistostoma* DE MAN 1895

- Cleistostoma edwarsi* = *Paratylo diplax* new genus
Cleistostoma algoense = *Paratylo diplax* new genus
Paracleistostoma cristatum = *Cleistostoma* DE HAAN
Paracleistostoma leachi = *Cleistostoma* DE HAAN
Paracleistostoma japonicum = *Cleistostoma* DE HAAN
Paracleistostoma macneilli = *Camptandrium* STIMPSON 1858

Several of the present removal confirms the suggestions of GUINOT AND CROSNIER (1964), particularly the removal of *macneilli* into *Camptandrium*; the relationship of *edwarsi*, *algoense* and *blephariskios*. But as already noticed by SERENE AND MOOSA (1971) *japonicum* cannot be fitted into *Camptandrium* like it was suggested by those authors.

However, as noticed by GUINOT AND CROSNIER (1964), the two characters, the degree of doming of the carapace and the presence or absence of anterolateral projection on the front, used since TESCH (1918) for the separation of *Cleistostoma* from *Paracleistostoma*, have no generic value.

The present suggestion on the classification of Camptandriinae are summoned up in the following list:

1. *Camptandrium* STIMPSON 1858
 - Camptandrium sexdentatum* STIMPSON 1858
 - Camptandrium elongatum* RATHBUN 1929
 - Camptandrium ambonense* SERENE AND MOOSA 1971
 - Camptandrium macneilli* (WARD 1933)
 - ?*Camptandrium starmuhlneri* PRETZMANN 1968 = ?*Ilyograpsus*
2. *Tylo diplax* DE MAN 1895
 - Tylo diplax tetralyphora* DE MAN 1895
3. *Paratylo diplax* new genus
 - Paratylo diplax blephariskios* (STEBBING 1924)
 - Paratylo diplax derijardi* (GUINOT AND CROSNIER 1964)
 - Paratylo diplax edwarsi* (MACLEAY 1838)
 - Paratylo diplax algoense* (BARNARD 1954)
4. *Cleistostoma* DE HAAN 1835
 - Cleistostoma dilatatum* DE HAAN 1835
 - Cleistostoma indicum* (ALCOCK 1900)
 - Cleistostoma cristatum* (DE MAN 1895)
 - Cleistostoma leachi* (AUDOUIN 1828)
 - Cleistostoma japonicum* (SAKAI 1934)
 - Cleistostoma dotilliforme* ALCOCK 1900

5. *Paracleistostoma* DE MAN 1897*Paracleistostoma depressum* DE MAN 1895*Paracleistostoma longimanum* TWEEDIE 1937*Paracleistostoma microcheirum* TWEEDIE 1937*Paracleistostoma wardi* (RATHBUN 1929)? *Paracleistostoma eriophorum* NOBILI 1903? *Paracleistostoma dentatum* TESCH 1918? *Paracleistostoma fossulum* BARNARD 19556. *Baruna* STEBBING 1904*Baruna socialis* 19047. *Leipocten* KEMP 1915*Leipocten sordidulum* KEMP 1915**Key to the genera of Camptandriinae**

(need to be improved)

1. Male pleopod 1 aberrant being not geniculated. Ambulatory legs elongate and slim. Eye peduncles thick and short; lateral border of carapace dentate. Frontal margin with antennal sulcus. Male abdomen with telson broadened and trilobate and segment 6 strongly narrowed *Shenius* SERENE 1970
Male pleopod 1 geniculated. Male abdomen with normal telson .. 2
- 2.(1) Ambulatory legs short; posterior border of meri denticulate at least on peripods 4-5. Male pleopod with 3 subdistal spinules and a subapical straight process. (? = *Baruna* STEBBING 1904) *Leipocten* KEMP 1915
Ambulatory legs not remarkably short; posterior border of meri not denticulated 3
- 3.(2) Dorsal surface of carapace with emboncement symmetrically arranged or without; in the former case carapace high and pinnotheroid form. Merus of third maxilliped broader and longer than ischium; exognath covered by distal half of merus 4
Dorsal surface of carapace without emboncement, generally flattened and with antero-lateral border regularly convex. 6

- 4.(3) Carapace somewhat flattened, not remarkably high. Lateral border of carapace dentate and convergent backward. Eye peduncles thick and short with distal cornea well developed. Pereiopods 2-5 somewhat flattened. Male pleopod with distal process subdivided into two or three long lacinia *Camptandrium* STIMPSON 1858
Carapace high with lateral border generally diverging backward, somewhat pinnotheroid form; eye peduncles elongate. Pereiopods 2-5 with nearly rounded section 5
- 5.(4) Two pairs of tubercles on posterior part of dorsal surface of carapace around cardiac region. Male pleopod with 3 subdistal spines and short rounded lobular distal process *Tyloidiplax* DE MAN 1895
No tubercles on dorsal surface of carapace. Male pleopod with a subdistal long sickle-shaped process and sometimes a second shorter *Paratyloidiplax* new genus
- 6.(3) Carapace dorsally convex; frontal border with lateral angle rounded (without antero-lateral horns). Male pleopod with apex acutely triangular ornamented with a subdistal cluster of short spinules *Cleistostoma* DE HAAN 1835
Carapace more flattened; frontal border with lateral angle marked. Male pleopod with apex distally broadening in a conspicuous lobe *Paracleistostoma* DE MAN 1895

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