

A TABULATION OF THE CRUSTACEA DECAPODA OF BERMUDA¹

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Abstract.—The first list of decapod crustaceans of the northwestern Atlantic oceanic island group of Bermuda compiled since 1922 is presented. Based on published accounts and recent collections, the list includes 276 species in 48 families; of these, 69 species have not been recorded previously from Bermuda. Only 6 species are endemic. An expanded and fully annotated checklist of Bermudian decapods as well as considerations of the zoogeography of that fauna will be published later.

Currently in preparation is a field guide to the "Marine fauna and flora of Bermuda" under the joint editorship of Wolfgang and Christiane Sterrer of the Bermuda Biological Station for Research. It is intended that the field guide, containing illustrations, brief descriptions, and ecological notes for all of the common, endemic or otherwise noteworthy species of marine life from Bermuda being prepared by leading specialists, will be published in 1981. A consequence of that project has been much more intensive collecting in Bermuda than had been undertaken in many years. The present tabulation of the Crustacea Decapoda draws in part on material gathered for the field guide, but, unlike the latter, it is intended to be comprehensive in its coverage and is not a manual for identification. It is essentially a very abbreviated version of a report in preparation to be titled "An annotated checklist of the Crustacea Decapoda of Bermuda," which will constitute a Special Publication of the Bermuda Biological Station. That checklist will include all known citations of decapods in and near Bermuda along with a complete catalog of specimens in the collection of the museum of the Bermuda Biological Station and notes on their taxonomy, ecology, breeding periods, etc. Subsequent papers which we anticipate preparing will deal with the zoogeography of certain species or higher taxa of decapods from Bermuda and other aspects of their biology.

The systematic arrangement used for the higher taxa is mainly that of Glaessner (1969). Families and genera of Caridea follow Holthuis (1955), while families and genera in the Brachyura are ordered after Glaessner

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(1969) and Rathbun (1918, 1925, 1930, 1937). Various authorities were consulted for the arrangements of other groups. All specific names, insofar as possible, have been corrected in light of current opinions.

Bermuda, an oceanic island mass lying some 1,000 km off the eastern coast of North America, stands atop the Bermuda Rise, which extends upward from abyssal depths. For purposes of this account, "Bermuda" is that region from land to a depth of 2,750 m (1,500 fathoms) around the islands of Bermuda. This is an irregularly shaped area very close to 4,000 km², approximately within the latitudes from 32°00' to 32°45'N and longitudes from 64°30' to 65°15'W. It extends roughly northeast-southwest and contains Bermuda and its platform, 2 shallow banks to the southwest (Challenger and Plantagenet [also called Argus] Banks) and a deep bank to the northeast.

Although casual observations on Bermuda Decapoda were made from the time of the first settlement of the islands at the start of the 17th century, catalogs of the decapod fauna first appeared only rather recently. The earliest published list of Bermuda decapods was that of Jones (1859), who cited 12 species assignable to eight families, with some remarks on diagnostic characters and habitats in which they occurred. The names which he used were those of close relatives in Europe and boreal North America, but his accounts were good enough so that it is possible to refer them to known Bermuda species. Godet (1960) mentioned 8 species, also by names of species found elsewhere; because of inadequate characterizations, it is difficult to determine all of the species to which he was referring. Heilprin (1888, 1889) made a carefully documented collection and strove to establish the proper names for the 30 decapod species recorded. Hurdis (1897) apparently copied the list of Jones (1859) directly with no attempts to add or to correct names. Two major oceanographic expeditions, the *Challenger* Expedition (reported by Miers, 1886; Bate, 1888; Henderson, 1888; summarized by Cole, 1901) and the Plankton-Expedition (Ortmann, 1893) collected decapods at and near Bermuda, but there was no effort to make the collections comprehensive. Young (1900), without additional collecting, compiled records from most of the authors listed above. He recorded 27 decapod species in 14 families from Bermuda, for which he presented diagnoses, synonymies and numerous illustrations. Rankin (1900), drawing on very well documented collections of his own plus other material available to him and consulting most of the papers then published, recorded 57 decapod species in 17 families from Bermuda, including several new records. Finally, in what remain the standard references, Verrill (1908, 1922) drew up comprehensive accounts of 119 species of Bermuda decapods in 28 families; he presented full descriptions complete with many good illustrations for all of the species including several described as new or recorded for the first time from Bermuda.

Results

In the list of decapods presented below, the status of many species has been indicated by three symbols. Those whose identification or whose actually documented occurrence in Bermuda is subject to doubt are indicated by question marks (?); there are 10 such species. The 69 species recorded from Bermuda for the first time are labeled with the symbol §. Those species, 6 in number, which are evidently endemic to Bermuda, are denoted with an asterisk (*). New species are also indicated by "n. sp."; all are anomurans and represent perhaps 5 species.

Table 1, on page 1275 following the list, summarizes the decapod crustaceans by infraorder after the removal of 11 questionable records.

CRUSTACEA DECAPODA OF BERMUDA

CLASS CRUSTACEA
 SUBCLASS MALACOSTRACA
 ORDER DECAPODA
 SUBORDER DENDROBRANCHIATA
 INFRAORDER PENAEIDEA
 SUPERFAMILY PENAEOIDEA
 FAMILY PENAEIDAE

<i>Metapenaeopsis goodei</i> (Smith)	<i>Penaeus brasiliensis</i> Latreille
§ <i>M. hobbsi</i> Pérez Farfante	<i>P. duorarum duorarum</i> Burkenroad
<i>M. smithi</i> (Schmitt)	<i>Trachypenaeus constrictus</i> (Stimpson)
	<i>Trachypenaeopsis mobilispinus</i> (Rathbun)

FAMILY SOLENOCERIDAE
Hymenopenaeus laevis (Bate)

FAMILY SICYONIDAE
Sicyonia wheeleri Gurney

FAMILY ARISTEIDAE
Gennadas elegans (Smith)

SUPERFAMILY SERGESTOIDEA
 FAMILY SERGESTIDAE
 SUBFAMILY LUCIFERINAE

<i>Lucifer faxoni</i> Borradaile	<i>L. typus</i> (H. Milne Edwards)
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SUBFAMILY SERGESTINAE

<i>Sergestes arachinpodus</i> (Cocco)	<i>S. japonicus</i> Bate
<i>S. armatus</i> (Krøyer)	<i>S. kroyeri</i> Bate
<i>S. atlanticus</i> H. Milne Edwards	<i>S. pectinatus</i> Sund
<i>S. cornutus</i> (Krøyer)	<i>S. robustus</i> Smith
<i>S. crassus</i> Hansen	<i>S. sargassi</i> Ortmann
<i>S. edwardsi</i> Krøyer	<i>S. splendens</i> Hansen
<i>S. grandis</i> Sund	<i>S. talismani</i> Barnard
<i>S. hanseni</i> (Ortmann)	<i>S. tenuiremis</i> Krøyer
	<i>S. vigilax</i> Stimpson

SUBORDER PLEOCYEMATA
 INFRAORDER STENOPODIDEA
 FAMILY STENOPODIDAE

Stenopus hispidus (Olivier) *S. scutellatus* Rankin
 §*Microprosthema semilaeve* (Von Martens)?

INFRAORDER CARIDEA
 SUPERFAMILY OPLOPHOROIDEA
 FAMILY OPLOPHORIDAE

<i>Oplophorus spinicauda</i> A. Milne Edwards	<i>M. marptocheles</i> (Chace)
<i>O. spinosus</i> (Brullé)	<i>M. miccycla</i> (Chace)
<i>Acanthephyra acutifrons</i> Bate	<i>M. mollis</i> (Smith)
<i>A. brevirostris</i> Smith	<i>M. vesca</i> (Smith)
<i>A. curtirostris</i> Wood-Mason	<i>Notostomus distirus</i> Chace
<i>A. eximia</i> Smith	<i>N. perlatus</i> Bate
* <i>A. gracilipes</i> Chace	<i>N. robustus</i> Smith
<i>A. pelagica</i> (Risso)	? <i>N. westergreni</i> Faxon
<i>A. purpurea</i> A. Milne Edwards	<i>Ephyrina bifida</i> Stephensen
? <i>A. rostrata</i> Bate	<i>E. hoskynii</i> Wood-Mason
<i>A. stylostrata</i> (Bate)	<i>Hymenodora gracilis</i> Smith
* <i>Meningodora compsa</i> (Chace)	<i>Systellaspis braueri</i> (Balss)
	<i>S. debilis</i> (A. Milne Edwards)

SUPERFAMILY PASIPHAEOIDEA
 FAMILY PASIPHAEIDAE

<i>Pasiphaea hoplocerca</i> Chace	<i>P. sulcatifrons</i> Smith
<i>P. loicerca</i> Chace	? <i>P. gilesii</i> Wood-Mason
<i>Parapasiphae macrodactyla</i> Chace	? <i>P. serrata</i> Rathbun
	<i>Leptochela bermudensis</i> Gurney

SUPERFAMILY BRESILIOIDEA
 FAMILY BRESILIIDAE

<i>Lucaya bigelowi</i> Chace	<i>Discias atlanticus</i> Gurney
	<i>D. serratirostris</i> Lebour

FAMILY RHYNCOCINETIDAE
Rhynchocinetes rigens Gordon

SUPERFAMILY PALAEMONOIDEA
 FAMILY PALAEMONIDAE
 SUBFAMILY PALAEMONINAE

<i>Leander tenuicornis</i> (Say)	<i>Palaemon northropi</i> (Rankin)
	<i>Brachycarpus biunguiculatus</i> (Lucas)

SUBFAMILY PONTONIINAE

<i>Periclimenes americanus</i> (Kingsley)	§ <i>P. perlatus</i> Boone
<i>P. anthophilus</i> Holthuis & Eibl-Eibesfeldt	§ <i>Pontonia mexicana</i> Guérin-Méneville
<i>P. harringtoni</i> Lebour	<i>Anchistioides antiguensis</i> (Schmitt)
<i>P. irridescens</i> Lebour	<i>Typton tortugae</i> McLendon
<i>Periclimenaeus bermudensis</i> (Armstrong)	§ <i>Tuleariocaris neglecta</i> Chace

FAMILY GNATHOPHYLLIDAE

- Gnathophyllum americanum* Guérin-Méneville §*Gnathophylloides mineri* Schmitt

SUPERFAMILY ALPHEOIDEA

FAMILY ALPHEIDAE

- | | |
|---|---|
| <i>Alpheopsis labis</i> Chace | <i>A. normanni</i> Kingsley |
| <i>A. trigonus</i> (Rathbun) | § <i>A. nuttingi</i> (Schmitt) |
| § <i>Neopalpheopsis hummelincki</i> (Schmitt) | <i>A. paracrinitus</i> Miers |
| § <i>Automate gardineri</i> Coutière | <i>A. peasei</i> (Armstrong) |
| <i>Salmoneus ortmanni</i> (Rankin) | § <i>A. viridari</i> (Armstrong) |
| § <i>Alpheus armatus</i> Rathbun | <i>A. websteri</i> Kingsley |
| <i>A. armillatus</i> H. Milne Edwards | ? <i>Synalpheus brevicarpus</i> Herrick |
| <i>A. bahamensis</i> Rankin | <i>S. fritzmulleri</i> Coutière |
| <i>A. beanii</i> Verrill | <i>S. goodei</i> Coutière |
| <i>A. bouvieri</i> A. Milne Edwards | <i>S. hemphilli</i> Coutière |
| <i>A. cylindricus</i> Kingsley | ? <i>S. longicarpus</i> (Herrick) |
| § <i>A. floridanus</i> Kingsley | <i>S. minus</i> (Say) |
| <i>A. formosus</i> (Gibbes) | <i>S. townsendi</i> Coutière |
| ? <i>A. heterochaelis</i> Say | <i>Synalpheus</i> spp. |

FAMILY HIPPOLYTIDAE

- | | |
|--|--------------------------------------|
| <i>Trachycaris restrictus</i> (A. Milne Edwards) | § <i>T. manningi</i> Chace |
| <i>Hippolyte coerulea</i> (Fabricius) | <i>Latreutes fucorum</i> (Fabricius) |
| <i>H. zostericola</i> (Smith) | <i>Tozeuma carolinense</i> Kingsley |
| § <i>Thor amboinensis</i> (de Man) | § <i>Lysmata grabhami</i> (Gordon) |
| ? <i>T. floridanus</i> Kingsley | <i>L. intermedia</i> (Kingsley) |
| | § <i>L. moorei</i> (Rathbun) |

FAMILY PROCESSIDAE

- Processa bermudensis* (Rankin) **P. wheeleri* Lebour

SUPERFAMILY PANDALOIDEA

FAMILY PANDALIDAE

- | | |
|---|-------------------------------------|
| <i>Parapandalus richardi</i> (Coutière) | <i>P. martia</i> (A. Milne Edwards) |
| § <i>Plesionika edwardsii</i> (Brandt) | <i>Plesionika</i> sp. |

FAMILY PHYSETOCARIDIDAE

- Physetocaris microphthalmalpa* Chace

INFRAORDER ASTACIDEA

FAMILY NEPHROPIDAE

SUBFAMILY NEPHROPINAE

- Nephropsis rosea* Bate

INFRAORDER PALINURA

SUPERFAMILY PALINUROIDEA

FAMILY PALINURIDAE

- | | |
|---|----------------------------------|
| <i>Justitia longimanus</i> (H. Milne Edwards) | <i>P. guttatus</i> (Latreille) |
| <i>Panulirus argus</i> (Latreille) | <i>P. laevicauda</i> (Latreille) |

FAMILY SYNAXIDAE

Palinurellus gundlachi Von Martens

FAMILY SCYLLARIDAE

§*Arctides guineensis* (Spengler) *Scyllarides aequinoctialis* (Lund)
S. nodifer (Stimpson)

INFRAORDER ANOMURA

SUPERFAMILY THALASSINOIDEA

FAMILY AXIIDAE

§**Axiopsis* n. sp.

FAMILY CALLIANASSIDAE

Callianassa branneri (Rathbun) *C. longiventris* A. Milne Edwards

SUPERFAMILY PAGUROIDEA

FAMILY PAGURIDAE

Pagurus brevidactylus (Stimpson) §*Iridopagurus* n. sp.
 §*P. impressus* (Benedict) §New genus, new species
 §*Iridopagurus violaceus* De Saint Laurent-| §New genus (?), new species
 Dechancé §Unidentified pagurid genus, species

FAMILY PARAPAGURIDAE

Parapagurus pilosimanus Smith

SUPERFAMILY COENOBITOIDEA

FAMILY COENOBITIDAE

Coenobita clypeatus (Herbst)

FAMILY DIOGENIDAE

Allodardanus bredini Haig & Provenzano *C. antillensis* Stimpson
Calcinus tibicen (Herbst) *C. tricolor* (Gibbes)
 **C. verrillii* (Rathbun) §*Dardanus imperator* (Miers)
 §*Cancellus* sp. §*D. insignis* (de Saussure)
 §*Clibanarius anomalus* A. Milne Edwards & *D. venosus* (H. Milne Edwards)
 Bouvier §*Dardanus* sp.
 §*Petrochirus diogenes* (Linnaeus)

SUPERFAMILY GALATHEOIDEA

FAMILY GALATHEIDAE

SUBFAMILY GALATHEINAE

**Munida beanii* Verrill §*M. simplex* Benedict

SUBFAMILY MUNIDOPSINAE

Munidopsis serratifrons (A. Milne Edwards)

FAMILY PORCELLANIDAE

Petrolisthes armatus (Gibbes)

SUPERFAMILY HIPPOIDEA

FAMILY ALBUNEIDAE

Albunea paretii Guérin

FAMILY HIPPIDAE

Hippa testudinaria (Herbst)

INFRAORDER BRACHYURA

SECTION DROMIACEA

SUPERFAMILY DROMIOIDEA

FAMILY DROMIIDAE

Dromia erythropus (Edwards)*Dromidia antillensis* Stimpson

SUPERFAMILY HOMOLOIDEA

FAMILY HOMOLIDAE

§*Homola barbata* (Fabricius)

SUPERFAMILY ?

FAMILY HAPALOCARCINIDAE

Troglocarcinus corallicola Verrill

SUPERFAMILY CALAPPOIDEA

FAMILY CALAPPIDAE

SUBFAMILY CALAPPINAE

§*Calappa angusta* A. Milne Edwards*C. gallus* (Herbst)*C. flammea* (Herbst)*C. ocellata* Holthuis*Cycloes bairdii* Stimpson

SUBFAMILY MATUTINAE

§*Osachila antillensis* Rathbun

FAMILY LEUCOSIIDAE

SUBFAMILY LEUCOSIINAE

§*Iliacantha subglobosa* Stimpson*Callidactylus asper* Stimpson

SUPERFAMILY RANINOIDEA

FAMILY RANINIDAE

§*Symethis variolosa* (Fabricius)

SECTION OXYRHYNCHA

FAMILY MAJIDAE

SUBFAMILY INACHINAE

Stenorhynchus seticornis (Herbst)*Podochela riisei* Stimpson

SUBFAMILY TYCHINAE

§*Pitho* sp.

SUBFAMILY ACANTHONYCHINAE

Acanthonyx petiverii H. Milne Edwards*Epialtus bituberculatus* H. Milne Edwards§*E. longirostris* Stimpson

SUBFAMILY PISINAE

§*Nibilia antilocapra* (Stimpson)*Chorinus heros* (Herbst)? *Libinia emarginata* Leach

SUBFAMILY MAJINAE

- | | |
|--|--|
| <i>Mithrax (Mithrax) acuticornis</i> Stimpson | <i>Stenocionops furcata coelata</i> (A. Milne Edwards) |
| <i>M. (Mithrax) cornutus</i> de Saussure | |
| <i>M. (Mithrax) hispidus</i> (Herbst) | § <i>S. spinosissima</i> (de Saussure) |
| § <i>M. (Mithrax) pleuracanthus</i> Stimpson | <i>Macrocoeloma subparallelum</i> (Stimpson) |
| § <i>M. (Mithrax) spinosissimus</i> (Lamarck) | <i>M. trispinosum nodipes</i> (Desbonne) |
| <i>M. (Mithraculus) forceps</i> (A. Milne Edwards) | § <i>Macrocoeloma</i> sp. |
| | <i>Microphrys bicornutus</i> (Latreille) |

FAMILY PARTHENOPIDAE

SUBFAMILY PARTHENOPINAE

- | | |
|--|--------------------------------------|
| § <i>Parthenope fraterculus</i> (Stimpson) | § <i>P. pourtalesii</i> (Stimpson) |
| <i>P. granulata</i> (Kingsley) | <i>P. serrata</i> (H. Milne Edwards) |

SECTION CANCRIDEA

FAMILY CANCRIDAE

SUBFAMILY CANCRINAE

Cancer borealis Stimpson

SECTION BRACHYRHYNCHA

SUPERFAMILY PORTUNOIDEA

FAMILY PORTUNIDAE

SUBFAMILY PORTUNINAE

- | | |
|---|---|
| <i>Portunus (Portunus) anceps</i> (de Saussure) | <i>Callinectes danae</i> Smith |
| <i>P. (Portunus) sayi</i> (Gibbes) | <i>C. exasperatus</i> (Gerstaecker) |
| <i>P. (Achelous) depressifrons</i> (Stimpson) | <i>C. marginatus</i> (A. Milne Edwards) |
| <i>P. (Achelous) ordwayi</i> (Stimpson) | <i>C. ornatus</i> Ordway |
| <i>P. (Achelous) sebae</i> (H. Milne Edwards) | <i>C. sapidus</i> Rathbun |
| § <i>P. (Achelous) spinicarpus</i> (Stimpson) | <i>Arenaeus cribrarius</i> (Lamarck) |
| <i>P. (Achelous) spinimanus</i> Latreille | § <i>Cronius ruber</i> (Lamarck) |
| | <i>C. tumidulus</i> (Stimpson) |

SUPERFAMILY XANTHOIDEA

FAMILY XANTHIDAE

- | | |
|---|---|
| <i>Carpilius corallinus</i> (Herbst) | <i>Panopeus bermudensis</i> Benedict & Rathbun |
| <i>Paraliomera dispar</i> (Stimpson) | <i>P. herbstii</i> H. Milne Edwards |
| <i>Platypodiella spectabilis</i> (Herbst) | <i>P. occidentalis</i> de Saussure |
| § <i>Actaea acantha</i> (H. Milne Edwards) | <i>Eurypanopeus depressus</i> (Smith) |
| § <i>A. palmeri</i> Rathbun | ? <i>Eurytium limosum</i> (Say) |
| § <i>Actaea</i> ? sp. | § <i>Micropanope sculptipes</i> Stimpson |
| § <i>Allactaea lithostrota</i> Williams | <i>M. spinipes</i> A. Milne Edwards |
| § <i>Paractaea nodosa</i> (Stimpson) | § <i>M. urinator</i> (A. Milne Edwards) |
| <i>Platyactaea setigera</i> (H. Milne Edwards) | § <i>Pilumnus dasypodus</i> Kingsley |
| § <i>Platyxanthus</i> sp. | § <i>P. floridanus</i> Stimpson |
| § <i>Cycloxanthops vittatus</i> (Stimpson) | § <i>P. longleyi</i> Rathbun |
| <i>Cataleptodius floridanus</i> (Gibbes) | § <i>P. miersi</i> A. Milne Edwards |
| § <i>Pseudomedeus agassizi</i> (A. Milne Edwards) | § <i>P. sayi</i> Rathbun |
| § <i>Leptodius</i> sp. | <i>Lobopilumnus agassizii</i> (Stimpson) |
| <i>Xanthodius americanus</i> (de Saussure) | <i>Heteractaea ceratopus</i> (Stimpson) |
| <i>Xantho denticulatus</i> (White) | <i>Eriphia gonagra</i> (Fabricius) |
| | <i>Domecia acanthophora acanthophora</i> (Desbonne & Schramm) |

FAMILY GERYONIDAE

Geryon quinquedens SmithFAMILY GONEPLACIDAE
SUBFAMILY CARCINOPLACINAE§*Pilumnoplax?* sp.

SUBFAMILY EURYPLACINAE

Euryplax nitida StimpsonFAMILY GRAPSIDAE
SUBFAMILY GRAPSINAE

<i>Grapsus grapsus</i> (Linnaeus)	<i>Pachygrapsus gracilis</i> (de Saussure)
<i>Geograpsus lividus</i> (H. Milne Edwards)	<i>P. transversus</i> (Gibbes)
<i>Goniopsis cruentata</i> (Latreille)	<i>Planes minutus</i> (Linnaeus)

SUBFAMILY VARUNINAE

§*Euchirograpsus americanus* A. Milne Edwards

SUBFAMILY SESARMINAE

<i>Sesarma (Holometopus) miersii</i> Rathbun	§ <i>Aratus pisonii</i> (H. Milne Edwards)
<i>S. (Holometopus) ricordi</i> H. Milne Edwards	<i>Cyclograpsus integer</i> (H. Milne Edwards)

SUBFAMILY PLAGUSIINAE

<i>Plagusia depressa</i> (Fabricius)	<i>Percnon gibbesi</i> (H. Milne Edwards)
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FAMILY GECARCINIDAE

<i>Cardisoma guanhumi</i> Latreille	<i>Gecarcinus (Gecarcinus) lateralis lateralis</i> (Freminville)
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SUPERFAMILY OCYPODOIDEA

FAMILY OCYPODIDAE

SUBFAMILY OCYPODINAE

Ocypode quadrata (Fabricius)

SUPERFAMILY ?

FAMILY PALICIDAE

§ <i>Palicus affinis</i> (A. Milne Edwards & Bouvier)	§ <i>P. alternatus</i> Rathbun
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Discussion

The accompanying list includes 276 species (when the "*Synalpheus* spp." are handled as one species) belonging to 48 families. Of these, 69 species (25.0%), including 5 known to be undescribed species, are reported from Bermuda for the first time. Only 6 species (2.2%) are endemic to Bermuda, though if some of the unknown species prove to be new, they may raise that number slightly. With the removal of the 10 dubious species records, the total number becomes 266 species, which are distributed among 7 infraorders as indicated in Table 1.

Table 1.—Crustacea Decapoda of Bermuda—summaries by infraorder after removal of 11 questionable records.

Infraorder	Number of species	% of total	Number of endemics	New records
Penaeidea	29	10.9	0	1
Stenopodidea	3	1.1	0	1
Caridea	89	33.5	3	15
Astacidea	1	0.4	0	0
Palinura	8	3.0	0	1
Anomura	30	11.3	3	14
Brachyura	106	39.8	0	37
TOTALS	266	100.0	6	69

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Literature Cited

- Bate, C. S. 1888. Report on the Crustacea Macrura collected by H. M. S. *Challenger* during the years 1873–76.—Rept. Sci. Results Voy. H. M. S. *Challenger*, Zool. 24(Part 90):i–xc, 1–942.
- Cole, G. W. 1901. Bermuda and the *Challenger* Expedition: A bibliography giving a summary of the scientific results obtained by that expedition at and near Bermuda in 1873.—Printed for private distribution, Boston, pp. 1–16.
- Glaessner, M. F. 1969. Decapoda. In R. C. Moore, ed., Treatise on invertebrate paleontology, Part R Arthropoda 4. Vol. 2.—Geological Society of America and University of Kansas, Lawrence, Kansas, pp. R399–R533.
- Godet, T. L. 1860. Bermuda, its history, geology, climate, products, agriculture, commerce and government.—Smith, Elder & Co., London, xv + 271 pp.
- Heilprin, A. 1888. Contributions to the natural history of the Bermuda Islands.—Proc. Acad. Nat. Sci. Philadelphia 1888:302–328.
- . 1889. The Bermuda Islands: A contribution to the physical history and zoology of the Somers Archipelago, with an examination of the structure of coral reefs. Researches undertaken under the auspices of the Academy of Natural Sciences of Philadelphia. Published by the author, Philadelphia, 231 pp.

- Henderson, J. R. 1888. Report on the Anomura collected by H. M. S. *Challenger* during the years 1873-76.—Rept. Sci. Results Voy. H. M. S. *Challenger*, Zool. 27(Part 69):i-xi, 1-221.
- Holthuis, L. B. 1955. The recent genera of the caridean and stenopodidean shrimps (Class Crustacea, Order Decapoda, Supersection Natantia) with keys for their determination.—Zool. Verhand. 26:1-157.
- Hurdis, J. L. 1897. Rough notes and memoranda relating to the natural history of the Bermudas.—R. H. Porter, London, vi + 408 pp.
- Jones, J. M. 1859. The naturalist in Bermuda; a sketch of the geology, zoology, and botany, of that remarkable group of islands; together with meteorological observations.—Reeves & Turner, London, vi + 200 pp.
- Miers, E. J. 1886. Report on the Brachyura collected by H. M. S. *Challenger* during the years 1873-76.—Rept. Sci. Results Voy. H. M. S. *Challenger*, Zool. 17(Part 49):i-1, 1-362.
- Ortmann, A. 1893. Decapoden und Schizopoden.—Ergebnisse Plankton-Exped. Humboldt-Stiftung 2(G)(b):1-120.
- Rankin, W. M. 1900. The Crustacea of the Bermuda Islands, with notes on the collections made by the New York University Expeditions in 1897 and 1898.—Ann. New York Acad. Sci. 12(12):521-548.
- Rathbun, M. J. 1918. The grapsoid crabs of America.—Bull. U.S. Natl. Mus. 97:i-xxii, 1-461.
- . 1925. The spider crabs of America.—Bull. U.S. Natl. Mus. 129:i-xx, 1-613.
- . 1930. The cancrivora crabs of America of the families Euryalidae, Portunidae, Atelecyclidae, Cancridae and Xanthidae.—Bull. U.S. Natl. Mus. 152:i-xvi, 1-609.
- . 1937. The oxystomatous and allied crabs of America.—Bull. U.S. Natl. Mus. 166:i-vi, 1-278.
- Verrill, A. E. 1908. Decapod Crustacea of Bermuda; I.—Brachyura and Anomura. Their distribution, variations, and habits.—Trans. Connecticut Acad. Arts Sci. 8:299-474.
- . 1922. Decapod Crustacea of Bermuda. Part II. Macrura.—Trans. Connecticut Acad. Arts Sci. 26:1-179.
- Young, C. G. 1900. The stalk-eyed Crustacea of British Guiana, West Indies and Bermuda.—John M. Watkins, London, xix + 514 pp.

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