

HISTORIÆ NATURALIS CLASSICA, VIII

HISTORIÆ NATURALIS CLASSICA

EDIDERUNT

J. CRAMER ET H. K. SWANN

TOMUS VIII

BIBLIOGRAPHY OF THE
LARVAE OF DECAPOD
CRUSTACEA

AND

LARVAE OF DECAPOD
CRUSTACEA

BY

ROBERT GURNEY

WITH 122 FIGURES IN THE TEXT

REPRINTED 1960

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BIBLIOGRAPHY OF THE LARVAE OF DECAPOD CRUSTACEA

BY

ROBERT GURNEY, M.A., D.Sc., F.L.S.

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PREFACE

It has been my intention to publish a monograph of Decapod larvae which should contain a bibliography, a part dealing with a number of general questions relating to the post-embryonic development of Decapoda and Euphausiacea, and a series of sections describing the larvae of all the groups, so far as they are known.

I have always assumed that such a monograph would have to be produced at my own expense, and the possibility of its ever appearing is becoming, for obvious reasons, very remote. I therefore welcome the acceptance of the bibliography by the Ray Society for publication in their series as a separate work. Much of the proposed monograph has already been prepared, but it is most unlikely that it will ever appear.

As regards this bibliography, it is too much to hope that it is complete or free from error, and I ask forbearance for its shortcomings. Many of the references to older literature are now of little or no interest, but it is impossible to pick and choose what shall be included and what left out. I am, of course, greatly indebted to the bibliography compiled by Faxon in 1881, and some of the older references have been taken from it without verification; but the proportion of papers which I have not actually seen is small. I must express my thanks to Mr. F. C. Sawyer, Assistant Librarian in the British Museum (Natural History), who has cross-checked the references in the systematic part and corrected the titles of journals to conform with the World List of Scientific Periodicals.

All papers have been included which have come to my notice up to May, 1939; but I am aware that some may have been overlooked, since the Zoological Record, upon which one relies so much, has not yet dealt with the publications of 1938. It has been difficult, and in some cases impossible, to see a few of the papers listed. This is particularly true for papers published in

Japan, and the task of the bibliographer is also made unnecessarily hard by the fact that these papers may be entirely in Japanese, including title, description of plates, and name of journal.

The omission of the Euphausiacea from this bibliography cannot easily be justified; since they should, without doubt, be included in the Decapoda. On the other hand, they have so long been regarded as distinct and are, in fact, such a sharply separated group, that it is more convenient to keep them apart.

No attempt has been made to deal exhaustively with the literature of the artificial propagation of the Lobster and Crayfish, but a sufficient number of references is given for the subject to be followed up if desired.

ROBERT GURNEY.

Bayworth Corner,
Boars Hill, Oxford;
May, 1939.

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Icotopus, p. 886, pl. 144 (*arcurostris*).

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Interpretation of species according to H. J. Hansen.

Name.	Corrected.
<i>S. frisia</i> , Kr., p. 235.	<i>S. atlanticus</i> , Kr., adult.
<i>S. arcticus</i> , Kr., p. 240.	<i>S. arcticus</i> , Kr.
<i>S. oculatus</i> , Kr., p. 243.	<i>S. edwardsi</i> , Kr., Mastigopus.
<i>S. edwardsi</i> , Kr., p. 246.	<i>S. edwardsi</i> , Kr.
<i>S. cornutus</i> , Kr., p. 249.	<i>S. cornutus</i> , Kr.
<i>S. corniculum</i> , Kr., p. 252.	<i>S. corniculum</i> , Kr., Mastigopus.
<i>S. tenuiremis</i> , Kr., p. 255.	<i>S. tenuiremis</i> , Kr., Mastigopus.
<i>S. obesus</i> , Kr., p. 257.	<i>Petalidium obesum</i> , Kr., Mastigopus.
<i>S. armatus</i> , Kr., p. 260.	<i>S. armatus</i> , Kr., Mastigopus.
<i>S. ancyllops</i> , Kr., p. 262.	<i>S. atlanticus</i> , H. M.-Edw., Mastigopus.
<i>S. rinkii</i> , Kr., p. 265.	<i>S. arcticus</i> , Kr., Mastigopus.
<i>S. serrulatus</i> , Kr., p. 268.	<i>Acetes</i> sp.
<i>S. caudatus</i> , Kr., p. 270.	<i>Penaeus</i> sp.
<i>S. brachyorrhos</i> , Kr., p. 272.	<i>S. edwardsi</i> , Kr., Mastigopus.
<i>S. laciniatus</i> , Kr., p. 274.	<i>S. corniculum</i> , Kr., Mastigopus.

- 1861. Et Bidrag til Kundskab om Krebsdyr-familien Mysidae. Naturh. Tidsskr., ser. 3, i, pp. 1–75. 2 pls. (*Dymas typus* (= *Pandalus borealis*), pp. 63–69.)
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- LEACH, W. E. 1815. Malacostraca Podophthalmata Britanniae. London. (*Megalopa*, pl. xvi.)
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- 1925a. Young Anglers in captivity and some of their enemies. A study in a plunger jar. J. Mar. biol. Ass. U.K., xiii, pp. 721-734. 7 figs. (*Phyllosoma* catching young fish.)
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- 1928a. Studies of the Plymouth Brachyura. II: The larval stages of *Ebalia* and *Pinnotheres*. J. Mar. biol. Ass. U.K., xv, pp. 109-118. 2 pls.
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- figs. 120-125; *Crangon vulgaris*, p. 431, figs. 191, 191a; *Jaxea nocturna*, p. 454, fig. 225; *Galathea strigosa*, p. 463, figs. 250-253; *Pilumnus hirtellus*, p. 490, figs. 314-316; *Carcinus maenas*, p. 507, fig. 369; *Hyas coarctatus*, p. 528, figs. 426-429; *Porcellana longicornis*, p. 553, figs. 488-491; *Porcellana platycheles*, p. 555, figs. 494-497; *Ebalia* sp., p. 557, figs. 503-511; *Megalopa niga*, n. sp., p. 568, figs. 527-529.)
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CLASSIFIED LIST
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 PENAEIDEA

PENAEIDAE

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 Bate. 1888. p. 231. pls. 47, 48.
 Gurney. 1924c. p. 49.

ARISTAEINAE

BENTHESICYMUS, Bate.

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GENNADAS, Bate (including AMALOPENAEUS, Smith).

- Monticelli & Lo Bianco. 1900.
 Lo Bianco. 1901, 1903, 1904. *A. elegans*.
 Stephenson. 1923. p. 21.
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 Heldt. 1938. *G. elegans*. Protozoa to post-larval.

HEPOMADUS, Bate.

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ARISTAEOMORPHA, Wood-Mason.

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SOLENOCERINAE

SOLENOCERA, Lucas.

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 Lo Bianco. 1901, 1903. p. 183. 1904. p. 435.
 Stephenson. 1923. p. 16.
 Gurney. 1924c. p. 73.
 Heldt. 1938. Protozoa to post-larval.
 See OPISTHOCARIS, PLATYSACUS.

PENAEINAE

PENAEUS, Fabricius.

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 Brooks. 1882b.
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 in plankton.
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 Heldt. 1938. *P. trisulcatus*, from egg to post-larval.

PARAPENAEUS, Smith.

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 Lo Bianco. 1901, 1904. *P. membranaceus* = *P. longirostris*.
 Gurney. 1924c. p. 64.
 Heldt. 1938. *P. longirostris*, from egg to post-larval.

FUNCHALIA, Johnson.

- Bouvier. 1905c. p. 981. *Grimaldiella*.
 Bouvier. 1907. *Grimaldiella* = *Funchalia*.
 Bouvier. 1908. p. 96. *Grimaldiella*.
 Lenz & Strunck. 1914. *Grimaldiella*. p. 307.
 Stephenson. 1923. p. 26. Mysis stage?
 Gurney. 1924c. p. 68.
 Burkenroad. 1936. p. 135.

PENAEOPSIS, Bate.

- Gurney. 1924c. p. 67.
 Gurney. 1927. p. 233. *P. stebbingi*. (= *Metapenaeus*.)

SICYONINAE.

SICYONIA, H. M.-Edw.

Monticelli & Lo Bianco. 1900. *S. sculpta*.

Lo Bianco. 1909. p. 616. *S. sculpta*.

Gurney. 1924c. p. 51.

Antonucci. 1930. Development of sexual characters.

Heldt. 1938. *S. sculpta*, from egg to post-larval.

LARVAL GENERA REFERRED TO PENAEIDEA.

CERATASPIS, Gray.

Gray. 1828. p. 7. *C. monstruosus*.

Milne-Edwards H. 1837. In Cuvier's Règne An. pl. 54 bis.

Cryptopus defrancei.

Quoy. 1839. *Lepsia tuberculosa*.

Guérin. 1844. *Cerataspis petiti*.

Dohrn. 1871a. p. 360. *C. longiremis*.

Boas. 1880. pp. 42, 169. *C. longiremis*, *C. monstruosus*, larvae of unknown Penaeid.

Claus. 1885. p. 49. A larval Penaeid.

Bate. 1888. p. 323. *Peteinura gubernata* (= *C. longiremis*).

Bate. 1889. *Ophthalmeryon*.

V. Beneden. 1891.

Giard & Bonnier. 1892a, b. *C. petiti*.

Bonnier. 1899. *Cerataspides*. p. 48. n.g. for *C. longiremis*.

Pesta. 1916. p. 80. *C. longiremis*. fig.

Bouvier. 1917. p. 31. *Ophthalmeryon* = *Cerataspis*.

Burkenroad. 1936. p. 85. *Cerataspis* spp. are larvae of *Aristaeomorpha* and *Plesiopenaeus*.

HOPLITES, Philippi. (= Mysis stage of *Gennadas*?)

Philippi. 1857. p. 320. *H. longirostris*.

EUPHEMA, H. M.-Edw. (= Mysis stage of *Gennadas*.)

Milne-Edwards. 1837. II, p. 420. *E. armata*.

Bate. 1881. p. 192. Suggests E. is a Penaeid larva.

Ortmann. 1893. p. 76. *E. polyacantha*.

Stephensen. 1923. p. 20 = *Gennadas*?

PETEINURA, Bate. (= *Cerataspis longiremis*).

Bate. 1888. p. 323. pl. 53. *P. gubernata*.

Korschelt & Heider. 1892. p. 457. Compared with *Cerataspis longiremis*.

Pesta. 1916. fig. 16.

OPISTHOCARIS, Ortmann.

- Ortmann. 1893. p. 77. *O. mülleri*. fig.
Lo Bianco. 1901. p. 438. Referred to *Solenocera*.

LOXOPIS, Dana.

- Dana. 1852. Pl. 44, fig. 4a, b. *L. tridens*.

RACHITIA, Dana.

- Dana. 1852. Pl. 44, fig. 8. *R. spinalis*. (Protozoa of *Penaeopsis* or allied genus.)

PLATYSACUS, Bate.

- Bate. 1888. p. 363. *P. crenatus*. (= *Solenocera*.)

OPHTHALMERYON, Bate.

- Bate. 1889. *O. transitionalis*. (= *Cerataspis*.)

PENAEID LARVAE NOT IDENTIFIED.

- Müller, F. 1863, 1877. Nauplius, etc.
Müller, F. 1869. p. 51.
Claus. 1876. p. 10. Protozoa, etc.
Bate. 1878, 1888. p. 231.
Giard. 1878.
Brooks. 1882b.
Conn. 1884. p. 12. Protozoa.
Gourret. 1884. p. 54. Reference to zoea of *Penaeus caramoto* and *P. antennatus*.
Claus. 1885. p. 43. Gills. figs. 24-28.
Kishinouye. 1900. Nauplius.

SERGESTIDAE

SERGESTES, H. M.-Edw.

- Thompson, J. V. 1829. p. 59. pl. 7. *Podopsis*.
Leuckart. 1853, 1859. Otocyst of *Mastigopus*.
Kröyer. 1859. *Mastigopus* stage.
Claus. 1863. *Acanthosoma*.
Dohrn. 1870c. p. 622. fig. 28. *Elaphocaris*.
Claus. 1876. p. 35. *Elaphocaris*, *Acanthosoma* and *Mastigopus* figured. Referred to *Sergestes*.
Willemoës-Suhm. 1876a, c. *Elaphocaris* is a larva of *Sergestes*.
Brooks. 1882d. p. 114.

- Conn. 1884. fig. 18. Telson.
 Claus. 1885. p. 91.
 Chun. 1888. Mastigopus stage.
 Bate. 1888. p. 333. Many larvae described, and mastigopus stages, the synonymy of which will be found on p. 5, from Hansen, 1919, 1922, and Illig, 1927.
 Brooks & Herrick. 1892. pl. 12. (As *Stenopus*.)
 Ortmann. 1893. p. 66. *S. sargassi* acanthosoma. p. 69.
 König. 1895. Acanthosoma and mastigopus. *S. oculus*, *S. corniculum*.
 Hansen. 1896. Characters of mastigopus as compared with adult.
 Lo Bianco. 1903. p. 180, 182. 1904.
 Senna. 1903. Mastigopus of *S. vigilax* and *S. corniculum*.
 Wasserloos. 1908. *S. arcticus*.
 Kemp. 1910a. p. 25. *S. robustus*, *S. arcticus*. Mastigopus.
 Illig. 1914, 1927. Larvae of many species described.
 Nakazawa. 1915, 1916. *S. prehensilis*. Development from nauplius.
 Hansen. 1919. *S. challengerii*, *S. seminudus*, *S. orientalis*.
 Sund. 1920b. *S. cornutus*, *S. robustus*, *S. splendens*.
 Hansen. 1922. Metamorphosis. p. 24. *S. atlanticus*, *S. cornutus*, *S. arcticus*, *S. tenuiremis*, *S. crassus*, *S. robustus*, *S. corniculum*, *S. pectinatus*, *S. sargassi*, *S. vigilax*, *S. diapontius*, *S. armatus*, *S. edwardsi*, *Petalidium obesum*.
 Gurney. 1924c. p. 77. *S. crassus* acanthosoma.
 Cecchini. 1928a, b. 1933.
 Nakazawa. 1932. Nauplius described.
 Yokoya. 1935.

PETALIDIUM, Bate?

- Thompson, J. V. 1828. pl. 1. fig. 4.
 Dohrn. 1871a. Taf. xxix, xxx. figs. 62-67.
 Claus. 1876. p. 17. pl. 4. fig. 2.
 Hansen. 1896. *Sergestes obesus* (= *S. sanguineus*, Chun) provisionally referred to mastigopus of *Petalidium*.
 Lister. 1898. Protozoa referred to Stomatopoda.
 Hansen. 1922. p. 194. *P. obesum*. Mastigopus.
 Gurney. 1924c. p. 95.

ACETES, H. M.-Edw.

- Müller, F. 1869. p. 63. figs. 32, 33.
 Brooks. 1882d. p. 109.
 Soejima. 1926. pl. 4. *A. japonicus*.
 Menon. 1933. *A. erythraeus*.

LUCIFER, Vaughan Thompson.

Dana. 1852. *Erichthina* and *Sceletina* (part).

Claus. 1863. p. 433.

Claus. 1876. p. 40. fig. *Erichthina* (*Lucifer* a persistent mastigopus.)

Willemoës-Suhm. 1876*a, c.*

Brooks. 1880*a, b.* 1882*d.*

Bate. 1888. p. 449. pl. 79, 82, 85.

Ortmann. 1893. p. 71.

Rosenstadt. 1896.

Illig. 1914. *L. reynaudi*. Mysis stage.

Gurney. 1924*c.* p. 102.

Gurney. 1927. p. 246. *L. hanseni*.

LARVAL GENERA ATTRIBUTED TO SERGESTIDAE.

ACANTHOSOMA, Claus.

Claus. 1863. p. 433.

ELAPHOCARIS, Dohrn.

Dohrn. 1870*c.* p. 622. fig. 28.

ERICHTHINA, Dana.

Dana. 1852. *E. demissa*. pl. 42. fig. 3. (= *Lucifer*.)

MASTIGOPUS, Leuckart.

Leuckart. 1853. p. 258.

PODOPSIS, Thompson.

Thompson, J. V. 1829. p. 59. pl. vii.

Dana. 1852. p. 639.

Brooks & Herrick. 1892. Wrongly referred to *Stenopus*

SCELETINA, Dana.

Dana. 1852. *S. laticeps*, *S. orientalis*. pl. 44. figs. 5, 6.
(= *Lucifer*.)

SCIACARIS, Bate.

Bate. 1888. p. 438. *S. telsonis*.

Hansen. 1896. p. 967. Referred to *Sergestes*.

XYLAPHOCARIS, Bate.

Bate. 1888. p. 218. Protozoa of *Sergestes*.

CARIDEA

HOPLOPHORIDAE

ACANTHEPHYRA, A. M.-Edw.

- Coutière. 1905d. p. 15. Post-larval. (*A. parva*). 1906a.
 Kemp. 1906. p. 9. Post-larval. *A. purpurea*.
 Kemp. 1907. p. 206. Larval stages.
 Murray & Hjort. 1912. p. 622. *A. multispina*.
 Stephensen. 1923. p. 47.
 Gurney. 1924c. p. 107.

SYSTELLASPIS, Bate.

- Coutière. 1905d. p. 8. *S. bouvieri*, n. sp. (= Larva of *S. debilis*.)
 Coutière. 1906a. Development.
 Kemp. 1907. p. 214. Post-larval. *S. debilis*.
 Kemp. 1910a. Large eggs. Larva described. p. 60-62.
S. debilis.

HYMENODORA, Sars.

- Sars. 1885. *H. glacialis*. pl. 5. Large eggs.
 Kemp. 1910a. p. 74. Young specimens.
 Stephensen. 1935. p. 68. *H. glacialis*. figs.

LARVAL GENERA ATTRIBUTED TO HOPLOPHORIDAE.

BENTHEOCARIS, Bate.

- Bate. 1888. p. 723. *B. exuens*, *B. stylostratus*.
 Coutière. 1907c. pp. 10, 62. *B. stylostratus* attributed to
Hymenodora.
 Lenz & Strunck. 1914. p. 325.
 Calman. 1925. *B. stylostratus* = *Acanthephyra*.

HOPLOCARICYPHUS, Coutière.

- Coutière. 1907c. p. 7. *H. similis*.
 Murray & Hjort. 1912. *H. similis* attributed to *Acanthephyra*
multispina. p. 622.

PASIPHAEIDAE

PASIPHAEA, Savigny.

- Sars, M. 1868. p. 56. *P. tarda*. Young of 10 mm.
 Calman. 1903. p. 418. Young stage.
 Kemp. 1910a. p. 46. Post-larval.
 Björck. 1911. *P. tarda*.
 Sund. 1913. *P. principalis*. Large eggs.
 Stephensen. 1916. p. 270. *P. tarda*.
 Stephensen. 1923. p. 38. *P. sivado*. Growth, etc.
 Gurney. 1924c. p. 112.

PARAPASIPHÆ, Smith.

- Kemp. 1910a. p. 49. *P. sulcatifrons*.
 Stephensen. 1935. p. 65. figs. *P. sulcatifrons*.

LEPTOCHELA, Stimpson.

- De Man. 1920. p. 24. *L. robusta*. Eggs very numerous and small.
 Gurney. 1924c. p. 171. (As Thalassinid.)
 Gurney. 1936a. *L. robusta*, *L. carinata*?
 Menon. 1937. *L. aculeocaudata*. p. 5. figs. 15-45.
 Gurney. 1939b. *L. bermudensis*. Post-larval growth.

LARVAL GENUS ATTRIBUTED TO PASIPHAEIDAE.

ANISOCARIS, Ortmann.

- Ortmann. 1893. p. 74. *A. dromedarius*.
 Coutière. 1907a. *A. puerilis*.
 Coutière. 1907c. p. 12. *A. puerilis* and general characters of Pasiphaeid larvae.
 Gurney. 1936a. p. 791.

ATYIDAE

ATYAËPHYRA, Brito Capello.

- Joly. 1842, 1843. *A. desmaresti*.
 Annandale & Kemp. 1913. p. 244. *A. desmaresti*.
 Gauthier. 1924. *A. desmaresti*.

PARATYA, Miers.

- Ishikawa. 1885. (*Atyaëphyra compressa*).
 Yokoya. 1922, 1931. *P. compressa*.

CARIDELLA, Calman.

- Sars. 1912c. p. 430. pl. 58. *C. cunningtoni*?

LIMNOCARIDINA, Calman.

Sars. 1912c. p. 426. pls. 57, 59, 60. *L. spinipes*, *L. parvula*?

TROGLOCARIS, Dormitzer.

Stammer. 1932. p. 604. fig. 16. Young post-larval stage.

Fage. 1937. Size of eggs.

CARIDINA, H. M.-Edw.

Roux. 1904. Size of eggs.

Bouvier. 1905a. Size of eggs.

Daday. 1907. *C. wyckii*.

Bordage. 1908. Mutation to *Ortmannia*.

Bouvier & Charmoy. 1919. Mutation to *Ortmannia*.

Bouvier. 1925. p. 207. *C. richtersi*. p. 337.

Gurney. 1927. p. 252. *C. nilotica*.

Edmondson. 1935. p. 17. *C. nilotica* var. *brachydactyla* and *C. weberi*. figs.

ORTMANNIA, Rathbun.

Bouvier & Charmoy. 1919.

Bouvier. 1925. *O. edwardsi*. p. 267. *O. alluaudi*. p. 335

Bordage. 1908.

Edmondson. 1929. Relation to *Atya*, and development.

Woltereck. 1937. p. 246.

ATYA, Leach.

Bate. 1888. p. 692. fig. 71. *A. bisulcata*. Larva from egg.

Edmondson. 1929. Relation to *Ortmannia*.

Edmondson. 1935. p. 17. *A. serrata*. figs.

NEMATOCARCINIDAE

NEMATOCARCINUS, A. Milne-Edwards.

Smith. 1887. *N. ensifer*. Size of eggs.

Kemp. 1907. p. 213. "Larva allied to *Caricyphus*."

Kemp. 1910a. p. 79. *N. ensifer*.

RYNCHOCINETIDAE

RYNCHOCINETES, H. M.-Edw.

Burkenroad. 1939. *R. rigens*.

PANDALIDAE

PANDALUS, Leach.

Kröyer. 1861. *Dymas typus* = *P. borealis*.

Dohrn. 1870c. p. 621. figs. 24-26. *P. narval*.

Boas. 1880. p. 172. Reference to embryo.

- Möbius. 1887. p. 113.
 Sars. 1900. *P. borealis* (part), *P. montagui*, *P. bonnieri*.
 Lo Bianco. 1909. p. 613. *P. heterocarpus*.
 Stephensen. 1912b. p. 117. *P. propinquus* (= *P. borealis*).
 Jackson. 1913a.
 Williamson. 1915. pp. 368, 371.
 Stephensen. 1916. p. 268. *P. propinquus* (= *P. borealis*).
 Webb. 1921. p. 387.
 Gurney. 1924c. p. 113.
 Berkeley. 1930. *P. borealis*, *P. danae*, *P. hypsinotus*,
P. platyceros.
 Stephenson. 1935. *P. borealis*, *P. propinquus*. p. 57.
 fig. 21.
 Frost. 1936. p. 14. *P. montagui*, *P. borealis*.
 Needler. 1938. *P. stenolepis*.
- PANDALOPSIS, Bate.
 Berkeley. 1930. p. 109. *P. dispar*.
- PANDALINA, Calman.
 Sars. 1900. p. 27. *P. brevirostris*.
 Webb. 1921. p. 388.
- CHLOROTOCUS, A. M.-Edw.
 Lo Bianco. 1909. p. 604. *Eretmocaris* larva.
- CHLOROTOCELLA, Bals.
 Gurney. 1937c. p. 330.

LARVAL GENERA ATTRIBUTED TO PANDALIDAE.

- ATLANTOCARIS, Ortmann.
 Ortmann. 1893. p. 80. *A. gigas*, *A. longirostris*. figs.
 Coutière. 1907c. p. 20. = larva of *Thalassocaris*?
 Lenz & Strunck. 1914. p. 334. *P. atlanticus*.
- BOREOCARIS, Ortmann.
 Möbius. 1887. p. 113 pl. vii.
 Ortmann. 1893. p. 84. *B. möbiusi*. fig. (= *Pandalus montagui* ?.)
- COPIOCARIS, Thiele.
 Thiele. 1905. *C. messinensis*.
- DYMAS, Kröyer.
 Kröyer. 1861. *D. typus*.
 Stephensen. 1912a. p. 515.
 Stephensen. 1935. p. 58. = *Pandalus borealis*, stage 4.

ICOTOPUS, Bate.

- Bate. 1888. p. 886. pl. 144. *I. arcurostris*.
 Coutière. 1906b.
 Coutière. 1907c. p. 23. *I. amplissimus*. fig. 7. *I. approx-
 ima*. fig. 8.
 Gurney. 1924c. p. 116.

KYPTOCARIS, Bate.

- Bate. 1888. p. 690. pl. 121. *K. stylofrontalis*.
 Coutière. 1907c. p. 29. *K. oligodon*. fig. 9. Attributed
 to Pandalidae.

OLIGOCARIS, Ortmann.

- Ortmann. 1893. p. 85. *O. bispinosa*. fig.
 Vanhöffen. 1897. p. 198.
 Coutière. 1907c. p. 32. fig. 10. *O. brevirostris*.

PANDACARIOYPHUS, Coutière.

- Coutière. 1907c. p. 21. fig. 6. *P. pandaliformis*.

PROCLETES, Bate. (Syn. *Atlantocaris*.)

- Bate. 1888. *P. biangulatus*. p. 884. pl. 127. *P. ellioti*.
 p. 885.
 Coutière. 1907c. p. 20. Pandalidae?
 Lenz & Strunck. 1914. p. 334. pl. 22. *P. atlanticus*.
 (*P. atlanticus* = *Heterocarpus ensifer*, R. G.)

HIPPOLYTIDAE

(Gurney. 1937b.)

SARON, Thallwitz.

- Gurney. 1937b. p. 390. *S. marmoratus*.

CARIDION, Goës.

- Sars. 1900. (As *Pandalus borealis* [in part] and *P. bonnieri*).
 Lebour. 1930a. *C. gordonii*, *C. steveni*.

SPIRONTOCARIS, Bate.

- Krøyer. 1842. p. 247. pl. vi. *S. polaris*. Abbreviated
 development.
 Claus. 1884. p. 299. *S. cranchii*.
 Stephensen. 1912a. p. 516. *S. groenlandica*. p. 518 other
 species.

- Stephensen. 1912b. p. 126.
 Williamson. 1915. p. 376. *S. cranchii*.
 Stephensen. 1916. p. 252.
 Lebour. 1932a. p. 133. *S. cranchii*, *S. spinus*.
 Needler. 1933. *S. paludicola*, *S. tridens*, *S. herdmani*,
S. brevisrostris.
 Stephensen. 1935. p. 53. *S. polaris*?, *S. turgida*?, *S. fabricii*?
 Lebour. 1936a. *S. cranchii*, *S. occulta*.
 Frost. 1936. *S. fabricii*. p. 15. *S. groenlandica*. p. 18.
 Lebour. 1937. *S. spinus* var. *lilljeborgii*.

CHORISMUS, Bate.

- Coutière. 1907c. p. 16, 65.
 Gurney. 1937b. p. 384. *C. antarcticus*.

HIPPOLYTE, Leach.

- Agassiz. 1849, 1856.
 Bate. 1856. *H. varians*.
 Stuxberg. 1874. p. 14. *H. varians*.
 Boas. 1880. p. 172.
 Keeble & Gamble. 1904. p. 313. *H. varians*. Colour.
 Sars. 1912b. *H. varians*.
 Williamson. 1915. p. 385. *H. varians*.
 Webb. 1921. p. 389.
 Gurney. 1927. p. 272. *H. orientalis* (= *H. proteus*).
 Lebour. 1931b. *H. varians*. p. 7. *H. prideauxi*. p. 8.
 Needler. 1933. p. 241. *H. californiensis*.
 Gurney. 1936b. p. 28. *H. pleuracantha bermudensis*, *H. acuminata*. p. 31.

VIRBIUS, Stimpson. (=HIPPOLYTE.)

- Smith, S. I. 1873a.
 Czerniawsky. 1884. fig. 28.
 Claus. 1884. Taf. vi.

LATREUTES, Stimpson.

- Gurney. 1936a. p. 792. *L. fucorum*.
 Frost. 1936. p. 18. *L. fucorum*. (Post-larval.)
 Gurney. 1937b. p. 398. *L. mucronatus*?

TOZEUMA, Stimpson (= ANGASIA, Bate).

- Kemp. 1916. p. 400. fig. 4. *T. armatum*. Larva of
 31 mm.
 Gurney. 1937b. p. 377. *T. carolinense*, etc.

LYSMATA, Risso.

- Chun. 1888. p. 34. *Miersia clavigera*.
 Lo Bianco. 1901. p. 439. 1904, 1909. p. 609. *Miersia*
 an Hippolytid.
 Thiele. 1905. p. 454. *Merhippolyte clavigera*.
 Coutière. 1907c. p. 17. Post-larval.
 Caroli. 1918. p. 177. *M. clavigera* is larva of *Lysmata*
seticaudata.
 Caroli. 1921c. p. 16. Larva hatched from egg.
 Gurney. 1924c. p. 119.
 Gurney. 1937b. p. 357.

HIPPOLYSMATA, Stimpson.

- Kemp. 1916. p. 403. fig. 5. *H. ensirostris*. Last larva.
 Gurney. 1937b. p. 354.

LIGUR, Sarato.

- Lo Bianco. 1909. p. 609. Larva = *Miersia clavigera*.

BYTHOCARIS, Sars.

- Sars. 1885. p. 35. *B. payeri*. Abbreviated development.
 Sars. 1912a. *B. simplicirostris*. Abbreviated development.

CRYPTOCHELES, Sars.

- Sars. 1912a. *C. pygmaea*. Abbreviated development.

LARVAL GENERA ATTRIBUTED TO HIPPOLYTIDAE.

ERETMOCARIS, Bate.

- Willemoës-Suhm. 1876c. p. cvi. As *Amphionid*.
 Bate. 1888. p. 895. pl. 145. (*E. remipes*, *longicaulis*,
Stylorostris corniger).
 Brooks & Herrick. 1892. pls. ix, x. (As larva of *Stenopus*.)
 Ortmann. 1893. p. 78. *E. stylorostris*, *E. corniger*, *E. dolichops*, n. sp. fig.
 Coutière. 1907c. p. 20. Doubtfully referred to Pandalidae.
 Lo Bianco. 1909. pp. 604, 609. = *Chlorotocus*, *Lysmata*.
 Gurney. 1924c. p. 119. Referred to *Lysmata*.
 Gurney. 1937b. p. 353.

HIPPOCARICYPHUS, Coutière.

- Coutière. 1907c. p. 14. *H. acutus*, *H. bigibbosus*. fig. 4.

MIERSIA, Chun.

- See *Lysmata*.

PROCESSIDAE

PROCESSA, Leach.

- Czerniawsky. 1884. p. 60. pl. 2. fig. 6. Post-larval.
 Caroli. 1921c. p. 17. *P. canaliculata*.
 Gurney. 1923b. *P. canaliculata*.
 Gurney. 1936d. p. 625. *P. bermudensis*.
 Lebour. 1936b. *P. edulis* and *P. canaliculata*.
 Gurney. 1937a. p. 92. *P. aequimana*.

NIKOIDES, Paulson.

- Gurney. 1937a. p. 94. *N. danae*.

LARVAL GENUS REFERRED TO PROCESSIDAE.

HECTARTHROPUS, Bate.

- Bate. 1888. p. 889. pl. 144. (*H. compressus, expansus, tenuis*).
 Coutière. 1906b, 1907c. p. 34. figs. 11, 12. *H. nikiiformis*.
 Referred to Processidae.
 Gurney. 1937a. p. 96. *H. expansus*, Bate.

ALPHEIDAE

ALPHEUS, Fabricius. (Syn. CRANGON, Weber.)

- Bate. 1877. *A. ruber*.
 Packard. 1881. *A. heterochelis*.
 Brooks. 1882a.
 Herrick. 1888. Abbreviated development.
 Bate. 1888. p. 538. pl. 122. *A. neptunus*. Abbreviated development.
 Brooks & Herrick. 1892. p. 361. *A. saulcyi*, *A. minus*, *A. heterochelis*.
 Coutière. 1898b. *A. minus*. (= *Synalpheus*).
 Coutière. 1899. p. 414. 1909. Egg larva of many species of *Alpheus* and *Synalpheus*.
 Lo Bianco. 1901. p. 438. 1909. p. 602. *A. ruber*.
 Coutière. 1907c. p. 51. *A. ruber*.
 Webb. 1921. p. 390. *A. ruber*.
 Gurney. 1927. p. 263. *A. audouini*.
 Lebour. 1932b. p. 464. *A. ruber*, *A. macrocheles*. figs.
 Miyazaki. 1937. *A. brevicristatus*. De Haan.
 Gurney. 1938b. *A. ventrosus*, *A. audouini*, *A. pacificus*.
 p. 44-47.

SYNALPHEUS, Bate.

- Coutière. 1898a. *S. laevimanus*.
 Coutière. 1909. Size of egg of several species.
 Gurney. 1927. p. 261. *S. gravieri*.
 Gurney. 1938b. p. 48. *S. triunguiculatus*.

ALPHEOPSIS, Coutière.

- Coutière. 1906c. *A. haugi*. Fresh water. Small eggs.
 Sollaud. 1932a. *A. monodi*. Fresh water. Small eggs.

ATHANAS, Leach.

- Sars. 1906. *A. nitescens*.
 Webb. 1921. p. 392. *A. nitescens*. pl. 1. figs. 4, 8.
 Gurney. 1924c. p. 131.
 Gurney. 1927. p. 260. *A. dimorphus*.
 Lebour. 1932b. p. 462. figs. *A. nitescens*.
 Gurney. 1938b. p. 54. *A. djiboutensis*.

LARVAL GENERA REFERRED TO ALPHEIDAE.

ANEBOCARIS, Bate.

- Bate. 1888. p. 722. pl. 123. *A. quadroculus*.
 Coutière. 1907a. p. 41. *A. ancylifer*.
 Coutière. 1907c. pp. 39-55. *A. ancylifer* and other forms.
 Characters of Alpheid larvae.
 Gurney. 1938b. p. 56. *A. ancylifer*.

DIAPHOROPUS, Bate.

- Bate. 1888. p. 686. pl. 107. *D. versipellis*. p. 688.
D. longidorsalis.
 Lo Bianco. 1901. p. 438. 1904, 1909. Identified as
 Alpheid larvae.
 Coutière. 1907c. p. 51.

PARATHANAS, Bate.

- Bate. 1888. p. 530. pl. 89.
 Coutière. 1907c. p. 40. A late Alpheid larva.

PALAEMONIDAE

(Gurney. 1938b.)

PALAEMONINAE

PALAEMON, Fabricius.

- Müller, F. 1869. p. 56.
 Müller, F. 1880. *P. potiuna*.
 Müller, F. 1892a. *P. potiuna*.

Aurivillius, C. 1898. *P. olfersi*.

Coutière. 1900. Poecilogony suggested in *P. ritsemae*.

Henderson, J. R., & Matthai, G. 1910. p. 301. *P. lamarrei*.

Direct développement.

Icho, H. 1914.

Kemp, S. W. 1915. p. 113. *P. lamarrei*, *P. rudis*.

Sollaüd, E. 1923*b*. Progressivé abbreviation of development.

Gurney. 1924*c*. p. 123. 1938*b*. p. 12.

Menon. 1938. *P. rudis*, *P. carcinus*. Normal free-swimming larvae.

PSEUDOPALAEEMON, Sollaüd.

Sollaüd. 1923*b*. p. 579. *P. bouvieri*.

BRACHYCARPUS, Spence Bate.

Gurney. 1938*b*. p. 8. *B. biunguiculatus*.

LEANDER, Desmarest.

Thompson, J. V. 1836*b*. *L. serratus*.

Rathke. 1837.

Couch. 1844. *L. serratus*.

Agassiz, L. 1849, 1856.

Warrington. 1857.

Bate. 1869, 1879. *L. serratus*.

Stuxberg. 1874. p. 16. *L. squilla*.

Claus. 1876. p. 47.

Mayer, P. 1877. *L. serratus*, telson. fig. 49.

Czerniawsky, 1884. *L. rectirostris*. pl. vii. fig. 30, 31.

Mortensen. 1897. *L. fabricii*.

Kalichevsky. 1904. *L. rectirostris*.

Keeble & Gamble. 1904. p. 316. *L. squilla*, *L. serratus*.

Colour.

Sollaüd. 1912*b*, 1916. *L. serratus*.

Sollaüd. 1914*a*. *L. mani*. Abbreviated development.

Sollaüd. 1923*b*. p. 530. *L. serratus* and other species.

Gurney. 1924*c*. p. 121.

Gurney. 1924*d*. *L. longirostris*, *L. squilla*.

Yokoya. 1931. *L. paucidens*.

Wimpenny & Titterington. 1936. *L. squilla* var. *elegans*.

Gurney. 1938*b*. p. 3. *L. pacificus*. p. 4. *L. tenuicornis*.

Gurney. 1939*a*. *L. tenuicornis*.

PALAEEMONETES, Heller.

De Cane. 1839*a*. *P. varians*.

Joly. 1843. p. 80.

Smith. 1873*a*. *P. vulgaris*.

Smith. 1873*b*. p. 377, footnote. *P. vulgaris*.

- Faxon. 1879*b*. *P. vulgaris*.
 Boas. 1880. p. 171. *P. varians*. figs. 4, 44, 79, 80, 158, 160, 192.
 Mayer, P. 1880. *P. varians*. Fresh-water form.
 Boas. 1889. Comparison of fresh- and brackish-water forms.
 Weldon. 1890. *P. varians*.
 Allen, E. J. 1893*a, b*. Nephridia and coelom.
 Lyon. 1906. Heliotropism.
 Sollaud. 1912*c*. *P. mesogenitor* from Tunisia.
 Sollaud. 1914*b*. Effect of increased yolk.
 Sollaud. 1919. Influence of temperature, etc.
 Sollaud. 1921. Phototropism.
 Gurney. 1923*a*. p. 119. Breeding habits, etc.
 Sollaud. 1923*b*. p. 527. *P. varians*, *P. vulgaris*, *P. punicus*.
 P. cubensis, *P. sinensis*.
 Sollaud. 1924. Poecilogeny.
 Gurney. 1924*a*. *P. varians*.
 Sollaud. 1930. *P. varians*. Poecilogeny.
 Sollaud. 1932*b*. *P. mesopotamicus*.
 Meehean. 1936. *P. paludosa* (= *P. exilipes*).
- ALLOCARIS, Sollaud. (= PALAEMONETES, Heller.)
 Sollaud. 1911. *A. sinensis*. Larva from egg.
 Sollaud. 1923*b*. p. 589. *A. sinensis*.
- DESMOCARIS, Sollaud.
 Sollaud. 1912*a*. *D. trispinosus*.
- COUTIERELLA, Sollaud.
 Sollaud. 1914*a*. Abbreviated development. *C. tonkinensis*.
 Sollaud. 1923*b*. p. 578.

ANCHISTIOIDINAE

- ANCHISTIOIDES, Paulson.
 Gurney. 1936*d*. p. 619. *A. antiquensis*.
 Gurney. 1938*b*. p. 41.

PONTONIINAE

(Gurney. 1924*c*. p. 127.)

- PONTONIA, Latreille.
 Gourret. 1884. p. 17. 1888. *P. phallusiae*. First larva.
 Caroli. 1926. *P. tyrrhena*.
 (Herrick, in Brooks & Herrick, 1891, p. 371, states that he has followed development of *P. domestica*.)

PERICLIMENES, Costa.

- Coutière. 1905*d*. p. 34. Post-larval.
 Coutière. 1907*c*. p. 59. Post-larval.
 Caroli. 1926. *P. scriptus*.
 Gurney. 1927. p. 264. *P. calmani*.
 Gurney. 1936*d*. p. 620. *P. americanus*.
 Gurney. 1938*b*. p. 16. *P. grandis*, *P. agag*, *P. diversipes*.

TYPTON, Costa.

- Cano. 1893*b*. p. 570. (Reference only.)
 Lebour. 1925*b*. *T. spongicola*.
 Caroli. 1926. *T. spongicola*.

HARPILIUS, Dana.

- Gurney. 1938*b*. p. 18. *H. beaupresi*, *H. gerlachei*.

CORALLIOCARIS, Stimpson.

- Gurney. 1938*b*. p. 20. *C. graminea*.

PONTONIINAE UNIDENTIFIED

- Müller, F. 1869. fig. 27. "Palaemon" residing upon *Rhizostoma*.
 Gurney. 1924*c*. p. 127.

LARVAL GENERA REFERRED TO PALAEMONIDAE.

CORONOCARIS, Ortmann.

- Ortmann. 1893. p. 81. *C. gracilis*, *C. brevis*. figs.
 Coutière. 1907*c*. p. 58. *C. humilis*. Attributed to
 Palaemonidae.

MESOCARIS, Ortmann.

- Ortmann. 1893. p. 82. *M. recurva*. fig.
 Coutière. 1907*c*. p. 6. Attributed to Palaemonidae.
 Gurney. 1936*d*. p. 621. *M. recurva*.
 Gurney. 1938*b*. p. 29.

ODONTOLOPHUS, Bate.

- Bate. 1888. p. 665. Footnote. *O. serratus*.

RETROCARIS, Ortmann.

- Ortmann. 1893. p. 83. *R. contraria*, *R. spinosa*. figs.
 Nobili. 1906. p. 54. *R. serrata*.
 Coutière. 1907*a*. *R. antarcticus*.
 Coutière. 1907*c*. p. 57. *R. antarcticus*. fig. 20.
 Gurney. 1924*c*. p. 23.
 Gurney. 1938*b*. p. 9.

CRANGONIDAE

CRANGON, Fabricius. (Syn. CRAGO, Lamarck.)

Rathke. 1837.

Du Cane. 1839a.

Agassiz, L. 1852, 1856.

Claus. 1861. p. 38. (*P. sculptus* ?)

Gerbe. 1866a.

Bate. 1869.

Smith, S. I. 1873a.

Claus. 1876. p. 46.

Bate. 1879, 1888. p. 483. pls. 85, 89.

Claus. 1884. figs. 31-42, 47.

Ehrenbaum. 1890. *C. vulgaris*.

Sars. 1890. p. 135. *C. vulgaris*, *C. allmani*.

Williamson. 1901. *C. vulgaris*.

Keeble & Gamble. 1904. p. 310. Colour.

Calman. 1907. p. 6. *C. antarcticus*. Abbreviated development.

Redeke. 1907. p. 12. *C. vulgaris*. Records of larvae.

Daniel. 1930. Musculature.

Lebour. 1931b. p. 3. *C. vulgaris*, *C. allmanni*.

Israel. 1936. *C. franciscorum*, *C. nigricauda*.

PONTOPHILUS, Leach, and PHILOCHERAS, Stebbing.

Claus. 1861. p. 38. *P. sculptus* ?

Sars. 1869. *P. norvegicus*, young stage.

Sars. 1890. p. 147. *P. echinulatus*, *P. nanus*. p. 153.

P. norvegicus, *P. spinosus*.

Gurney. 1903a, b. *P. trispinosus*, *P. fasciatus*.

Williamson. 1910. p. 17. *P. trispinosus*.

Kemp. 1910a. p. 161. Post-larval.

Lebour. 1931b. p. 4. *P. sculptus*, *P. fasciatus*, *P. trispinosus*, *P. bispinosus*.

AEGEON, Risso.

Caroli. 1921c. p. 16. *A. cataphractus*.

SABINEA, Owen.

Kröyer. 1845. p. 476. (*Myto gaimardi*, the mysis stage of *S. septemcarinata*.)

Kröyer. 1846 ? In Gaimard. pl. vii. fig. 1. *Myto gaimardi*.

Sars. 1890. p. 168. *S. septemcarinata*. Abbreviated development.

- Wollebaek. 1908. *S. sarsii*, eggs. *S. septemcarinata*, young of 3 mm. p. 39.
 Stephensen. 1916. p. 247. Post-larval.
 Stephensen. 1935. p. 50. *Myto gaimardi* type in Copenhagen Museum.

SCLEROCRANGON, Sars.

- Sars. 1885. p. 25. *S. salebrosus*. Young.
 Koelbel. 1886. *S. ferox*. Young clinging to parent.
 Sars. 1890. p. 180. *S. boreas*. Abbreviated development.
 Wollebaek. 1906, 1908. p. 32.

NECTOCRANGON, Brandt. (=ARGIS, Kröyer.)

- Stephensen. 1916. p. 244. *N. lar*. Post-larval.

GLYPHOCRANGONIDAE

GLYPHOCRANGON, A. Milne-Edwards.

- Bate. 1888. pp. 506, 515. pl. 92. Young from egg. Abbreviated development.

AMPHIONIDAE

AMPHION, H. M.-Edw.

- Milne-Edwards, H. 1832. *A. reynaudi*.
 Dohrn. 1870c. p. 607. *A. reynaudi*.
 Claus. 1876. p. 47. fig.
 Boas. 1879. (Larva of *Polycheles*.) 1880. p. 185. figs.
 Bate. 1888. pp. 347, 901. pls. 146-148. *A. reynaudi*, *A. provocatoris*.
 Willemoës-Suhm. 1876a.
 Ortmann. 1893. p. 90.
 Koepfel. 1902.
 Sund. 1915a.
 Bouvier. 1917. p. 30. (Larva of *Polycheles*.)
 Gurney. 1924c. p. 104.
 Gurney. 1936c. p. 392.

AMPHIONIDES, Zimmer.

- Zimmer. 1904. *A. valdiviae*.
 Gurney. 1936c. p. 397.

LARVAL GENERA OF CARIDEA NOT AT PRESENT IDENTIFIED.

ANISOCARIS.

- Ortmann. 1893. p. 74. *A. dromedarius*.
 Gurney. 1936a. p. 791. *A. dromedarius* = *Discias* ?

CAMPTOCARIS, Ortmann.

Ortmann. 1893. p. 81. *C. maxima*.

CARICYPHUS, Bate.

Bate. 1888. p. 712. *C. cornutus*. Hippolytidae ?

Bate. 1888. p. 714. *C. serratmarginis*. Hoplophoridae ?

Bate. 1888. p. 716. *C. gibberosus*. Hoplophoridae.

Bate. 1888. p. 717. *C. turgidus*. Hoplophoridae.

Bate. 1888. p. 718. *C. angulatus*. Hoplophoridae ?

Ortmann. 1893. p. 74. *C. edentulus*. fig. (= Hoplophoridae.)

C. gibberosus, Bate.

Coutière. 1905c, d. p. 21. 1906b. *C. acutus*. *C. bigibbosus*.

(= Hippolytidae ?)

Calman. 1903. (= Acanthephyra ?)

Kemp. 1907. p. 213. 1910a. p. 54. *C. angulatus*, Bate.

p. 81. *Caricyphus* sp. (= Nematocarcinidae ?)

Lenz & Strunck. 1914. *C. gibberosus*, *C. cornutus*, Bate.

p. 334. Reference only.

FALCICARIS, Ortmann.

Ortmann. 1893. p. 74. *F. tenuis*. (= Pasiphaeidae ?)

RHOMALEOCARIS, Bate.

Bate. 1888. p. 720. pl. 123. *R. hamulus*. (= Palaemonidae?)

MACRURA REPTANTIA

NEPHROPSIDEA

NEPHROPSIDAE

HOMARUS, H. M.-Edw.

Thompson, J. V. 1831.

Brightwell. 1835.

Rathke. 1840.

Krøyer. 1842. p. 251.

Erdl. 1843.

Couch. 1844, 1845.

Thompson, W. 1853.

Valenciennes. 1858.

Beneden, P. J. v. 1861.

Gerbe. 1866a.

Boeck. 1869.

Bate. 1869, 1873.

- Smith, S. I. 1873*b*.
 Rasch. 1875.
 Sars, G. O. 1875.
 Claus. 1876. p. 49.
 Boas. 1880. p. 175.
 Faxon. 1882*b*.
 Kent, S. 1884.
 Ryder. 1886*a, b*.
 Herrick. 1890, 1891, 1894*a, b*, 1896, 1911.
 Bumpus. 1891.
 Fullarton. 1896.
 Appellöf. 1899, 1903, 1904, 1909.
 Waite. 1899. Development of antennal gland.
 Prentiss. 1901. p. 193. Otocyst development.
 Fabre Domergue. 1903.
 Chadwick. 1905.
 Bohn. 1905*a*. Phototropism.
 Hadley. 1905*a*. Phototropism, etc. 1907. Galvanotaxis
 and influence of light. 1908, 1910. Behaviour and food.
 Williamson. 1905, 1915. p. 437.
 Ehrenbaum. 1907, 1908.
 Barnes. 1911.
 Anderton. 1912.
 McIntosh. 1920.
 Johnstone. 1922.
 Jorgensen. 1925*b*. Development of pleopod I.
 Templeman. 1936*a*. Additional stage.
 Templeman. 1936*b*. Influence of conditions on growth.
 Templeman. 1937. Vertical distribution and colour.

LOBSTER CULTURE

- Coste. 1861.
 Moquin Tandon and Subeiran, J. L. 1865.
 Rasch. 1875.
 Kent. 1884.
 Dannevig, G. M. 1887
 Rathbun, R. 1886.
 Weldon & Fowler. 1890.
 Wilmot. 1891.
 Garman. 1895.
 Allen, E. J. 1895.
 Mead. 1901-1910.
 Williams, A. D. and L. W. 1901-1903.
 Scott, A. 1902.
 Appellöf. 1903, 1904.
 Ehrenbaum. 1903-1908.

- Herdman. 1904.
 Sherwood. 1905.
 Gorham. 1905.
 Chadwick. 1905.
 Barnes. 1906-1911.
 Williams, L. W. 1907.
 Emmel. 1908.
 Hadley. 1910, 1912.
 Meek. 1911.
 Anderton. 1912.
 Sund. 1915b.
 Storrow. 1916.
 Knight. 1916.
 Johnstone. 1922.
 McKay. 1926, 1929.
 Poulsen. 1927.
 Dannevig, A. 1928, 1936.
 Smith, W. C. 1933, 1935.

NEPHROPS, Leach.

- Bate & Rowe, 1880. *Nephropsis cornubiensis*. Possibly a young *Nephrops*.
 Claus. 1861. p. 43. pl. ii. figs. 20-23.
 Sars. 1884. p. 159. 1889. p. 191.
 Nordgaard. 1911. Eggs.
 Jackson. 1913a. Seasonal appearance.
 Jorgensen. 1925b.
 Santucci. 1926a, d, e. 1927a.
 Gurney. 1938c. p. 294.

PHOBERUS, A. M.-Edwards.

- Bate. 1888. p. 177. *Nephropsis suhmi*. May be a young stage.

ASTACIDAE

ASTACUS, H. M.-Edw.*

- Bree. 1835.
 Lereboullet. 1862.
 Subeiran. 1865.
 Carbonnier. 1869.
 Chantran. 1870, 1871.
 Steffenberg. 1872.
 Huxley. 1880.
 Reichenbach. 1886.

* For bibliography of Crayfish culture, see Šmolian, 1925.

- Laguesse. 1891.
 Andrews. 1907*b*.
 Drouin de Bouville. 1910*a, b*.
 Skorikow & Radikorzew. 1911. Glands in telson.
 Calman. 1911. p. 76. fig. 30.
 Terao. 1925. Dorsal organ.
 Piatakov. 1925. Dorsal organ.
 Smolian. 1925.
 Baumann. 1932.
 Zehnder. 1934.

CAMBARUS, Erichson.

- Hagen. 1870.
 Faxon. 1885.
 Steele. 1902.
 Andrews. 1904, 1907, 1908.
 Ortmann. 1906.

PARASTACIDAE

ASTACOPSIS, Huxley.

- Gurney. 1935. Attachment of young. *A. serratus*.*

ASTACOIDES, Guérin.

- Wood-Mason. 1876. *A. zealandicus*.

CHAERAPS, Erichson.*

- Gurney. 1935. *C. preissii*. Attachment of young.

PARACHAERAPS, G. W. Smith.

- Hale. 1927. p. 73. *P. bicarinatus*. fig. Attachment of young.
 Gurney. 1935. Attachment of young.

PARANEPHROPS, White.

- Wood-Mason. 1876. Attachment of young. *P. setosus*.
 Gurney. 1935. Attachment of young. *P. planifrons*.

ENGAEUS, Erichson.

- Smith, G. W. 1913. p. 118.
 Gurney. 1935. Attachment of young. *E. fossor*.

* According to Clark, 1936, Mem. Nat. Mus., Melbourne, No. 10, *Astacopsis serratus* should be transferred to *Euastacus*, Clark, while for *Chaeraps* should be read *Cheraz*.

ERYONIDEA

STEREOMASTIS, Bate.

De Man. 1916. p. 13. Eggs small.

POLYCHELES, Heller. ERYONEICUS, Bate.

Boas. 1879. *Amphion* the larva of *Polycheles*.

Bate. 1888. p. 122. pl. 12e. *E. coecus*. (Possibly the young of a species allied to *Polycheles*. p. 125).

Faxon. 1895. p. 108. *Eryoneicus*.

Selbie. 1914. p. 40. *Eryoneicus*.

Sund. 1915a. *Eryoneicus* the larva of *Polycheles*. 1920a.

Bouvier. 1915c. p. 30. *Amphion* is larva of *Polycheles*.

De Man. 1916. p. 6. List of species of *Eryoneicus*. p. 25. *Polycheles*. Eggs small.

Bouvier. 1917. p. 56. *Amphion* is larva of *Polycheles*.

Schmitt. 1921. p. 105. *E. agassizi*.

Stephensen. 1923. p. 65. Distribution, etc.

Balss. 1925. p. 193. Accepts Sund's view.

Calman. 1925. p. 20. *Eryoneicus* stage of *Stereomastis suhmi*.

Stephensen. 1935. p. 45. *E. groenlandicus*, n. sp.

WILLEMOESIA, Grote.

Bate. 1888. *W. leptodactyla*. p. 163. pl. 20. Embryo in egg.

Doflein. 1904. p. 244. Abbreviated development.

SCYLLARIDEA

PALINURIDAE

PALINURUS, Fabricius.

Couch. 1844, 1845. Larva from egg. Not referred to *Phyllosoma*.

Couch. 1858. Larva referred to *Phyllosoma*.

Coste. 1858.

Gerstaecker. 1858.

Bate. 1868b, 1869.

Claus. 1863. p. 433. 1876. p. 51.

Boas. 1880. p. 182. Natant stage.

Bate. 1888. pl. xii.

Cunningham. 1891.

Powell. 1908.

- Calman. 1909a. *Puerulus*.
 Bouvier. 1913a, b. Natant stage.
 Bouvier. 1914a. *P. vulgaris*.
 Bouvier. 1917. p. 82, 84. Natant stage.
 Bouvier. 1928.
 Santucci. 1925a, 1926b, c.
 Fedele. 1926. Natant stage.
 Fage. 1927. Natant stage.
 Dawydoff. 1929. Natant stage.
 Bonde. 1932. p. 8. *P. gilchristi*.
 Orton & Ford. 1933. Post-*puerulus*. *P. vulgaris*.
 Gurney. 1936c. p. 401. *P. gilchristi*, etc.
 Legendre. 1936. *P. vulgaris*.

JASUS, Parker.

- Thomson. 1907. p. 484.
 Gilchrist. 1913. Naupliosoma stage. 1916.
 Pesta. 1915. p. 5. *Puerulus*.
 Archey. 1916. Naupliosoma stage.
 Gilchrist. 1920. Post-*puerulus*.
 Bonde. 1936, 1938. Bonde & Marchand. 1935.
 Gurney. 1936c. p. 420.

PANULIRUS, White.

- Bate. 1888. pl. xiii. fig. 3?
 Allen, B. M. 1913. *P. interruptus*.
 De Man. 1916. p. 61. *P. versicolor*. Natant stage.
 Nakazawa. 1917. *P. japonicus*.
 Crawford & Smidt. 1923. *P. argus*.
 Schmitt. 1926. *P. regius*. *Puerulus*. fig. 67. p. 43.
 Santucci. 1927b. (Red Sea).
 Terao. 1929. *P. japonicus*. Embryonic.
 Bonde. 1932. p. 17.
 Boone. 1927. p. 89. *P. argus*.
 Kinoshita. 1934. *P. japonicus*. Artificial propagation.
 Gurney. 1936c. p. 405.

PALINURELLUS, v. Martens.

- Gurney. 1936c. p. 425 (?).

SCYLLARIDAE

SCYLLARUS, Fabricius.

- Risso. 1826. p. 88. *Chrysoma mediterranea*.
 Costa. 1829, 1840. *Phyllosoma parthenopaeum*.
 Guérin. 1829, 1833. *Phyllosoma mediterraneum*.
 Claus. 1863. p. 425. 1876. p. 51.

- Dohrn. 1870a. p. 251.
 Richters. 1873. p. 638.
 Boas. 1880. p. 88. Natant stage.
 Sarato. 1885. "Nisto" stage.
 Bate. 1888. pl. xiib, c, d. p. 73. *Arctus pygmaeus*,
Phyllosoma from egg.
 Cunningham. 1891. p. 146.
 Ortmann. 1893. p. 89. fig.
 Hornell. 1894b.
 Bouvier. 1913c. p. 1647. Post-larval.
 Bouvier. 1915a, b, d. *S. arctus.*, *S. paradoxus*.
 Bouvier. 1917. p. 99. Nisto stage of *S. paradoxus*, *S.*
pygmaeus, *S. americanus*. *Arctus immaturus*, Bate, is
 Nisto stage of *S. pygmaeus*.
 Stephensen. 1923. p. 68.
 Santucci. 1925b, 1926c, 1927b.
 Fedele. 1926.
 Bouvier. 1928.
 Gurney. 1936c. p. 426.
 Legendre. 1936. *S. arctus*.

SCYLLARIDES, Gill.

- Guérin. 1855. *Pseudibacus varanyi* (= natant stage of *S.*
latus).
 Bate. 1888. pl. xiid. *Phyllosoma furcicaudatum*.
 Bouvier. 1915d. Natant stage.
 Bouvier. 1917. p. 101. *Pseudibacus* is natant stage.
 Stephensen. 1923. p. 76. *S. latus*. Stage 4.
 Santucci. 1925b, 1929b. *S. latus*.
 Bonde. 1932. p. 27. *S. elizabethae*.
 Gurney. 1936c. p. 427.

IBACUS, Leach.

- Haswell. 1879. *I. peronii*.
 Bals. 1914. p. 81. *I. ciliatus* = *Phyllosoma guerinii*. (fig.)

PSEUDIBACUS, Guérin.

- P. varanyi*, Guérin. See above, *Scyllarides*.

PARRIBACUS, Dana.

- Natant stage. Boas. 1880. p. 88. Bouvier. 1917. p. 99.
 Gurney. 1936c. p. 437.

THENUS, Leach.

- Stephensen. 1923. p. 77. figs. (Identification uncertain.)
 Santucci. 1926c, 1927b.
 Gurney. 1936c. p. 432.

PHYLLOSOMA, Leach.

- Forster. 1782. *Cancer cassideus*.
 Leach. 1817. Genus founded.
 Quoy & Gaimard. 1824. *P. australe*.
 Desmarest. 1825. p. 253.
 Guérin. 1826, 1829, 1833, 1855.
 Costa. 1829.
 Milne-Edwards, H. 1830b.
 Lukis. 1835.
 Milne-Edwards, H. 1837. ii. p. 472.
 Costa. 1840. *P. parthenopaeum* (= *Scyllarus*).
 Couch. 1844, 1845.
 Gegenbaur. 1853, 1858.
 De Haan. 1850. *P. guerini*.
 Couch. 1858a, b.
 Coste. 1858.
 Gerstaecker. 1858.
 Claus. 1863.
 Gerbe. 1864, 1865, 1866a.
 Bate. 1868b, 1869.
 Dohrn. 1870a.
 Richters. 1873.
 Claus. 1876. p. 50.
 Haswell. 1879. *Ibacus*.
 Claus. 1884. p. 286. Circulatory system. pls. 3-5.
 Bate. 1888. p. 95.
 Cunningham. 1891. Historical.
 Ortmann. 1893. p. 88. fig.
 Hornell. 1894b.
 Stebbing. 1901. *P. duperreyi*. 22 mm. p. 609.
 Stebbing. 1910. *P. longipes*. p. 376.
 Gardiner & Cooper. 1907. p. 24.
 Balss. 1914. p. 81. *Ibacus*?
 Lebour. 1925a. p. 728. fig. 6. Eating young fish.
 Straelen. 1925. Fossil, *P. priscum*.

PHYLLAMPHION, Reinhardt.

- Reinhardt. 1850. (= *Cancer cassideus*, Forster.)

STENOPIDEA

(Gurney. 1936c.)

STENOPUS, Latreille.

- Bate. 1888. p. 212. Young in egg. fig. 40.
 Brooks & Herrick. 1892. *S. hispidus*.
 Cano. 1892a. *S. spinosus*.

Cano. 1893a. p. 13.

Ortmann. 1893. p. 85. fig. *Embryocaris stylicauda* = late larva of *Stenopus*.

Ortmann. 1901. p. 1104.

Gurney. 1924c. p. 133.

Gurney. 1936c. p. 380. *S. hispidus*, etc.

RICHARDINA, A. M.-Edw.

Lo Bianco. 1903. p. 250. *R. fredericii*. Large eggs.

Kemp. 1910a. p. 168. *R. spinicincta*. Young ready to hatch.

SPONGICOLA, De Haan.

Bate. 1888. p. 216. pl. 29. *S. venusta*. Larva from egg.

Kemp. 1910b. p. 409. *S. koehleri*. Young just hatched.

SPONGICOLOIDES, Hansen.

Hansen. 1916. p. 44. *S. profundus*. Eggs large and few.

THALASSINIDEA

AXIIDAE

(Gurney. 1924c. p. 143. 1938c. p. 299.)

AXIUS, Leach. (*Axius*, Cano. 1891 = *Callianassa*.)

Boas. 1880. p. 188. Post-larval.

Webb. 1921. p. 406. *A. stirhynchus*.

Caroli. 1921a.

Hale. 1927. p. 84. *A. plectorhynchus*. Direct development.

Gurney. 1938c. p. 303. *A. plectorhynchus*.

CALOCARIS, Bell.

Sars. 1884. pl. 2. Late larva. (Earlier stages = *Callianassa*.)

Björck. 1913a.

Webb. 1921. p. 401.

Caroli. 1921a.

Bull. 1934.

EICONAXIUS, Bate.

Bate. 1888. p. 44. Larva of *E. parvus* from egg.

ENOPLOMETOPUS, A. M.-Edw.

Gurney. 1938c. p. 297.

LAOMEDIIDAE

JAXEA, Nardo (= CALLIAXIS, Heller):

- Claus. 1884. pl. 8.
 Claus. 1885. p. 61. fig. 45.
 Brook. 1889. p. 420. "Trachelifer" larva.
 Cano. 1891c. p. 16.
 Scott, T. 1899, 1900, 1902.
 Scott, A. 1905. p. 214.
 Norman & Scott. 1906.
 Bouvier. 1914b.
 Williamson. 1915. p. 455.
 Issel. 1918.
 Boraschi. 1921.
 Caroli. 1921b. Post-larval.
 Caroli. 1921c, 1924.
 Gurney. 1924c. p. 150. 1938c. p. 333.
 Tattersall. 1938.

NAUSHONIA, Kingsley. (Syn. HOMORISCUS, Rathbun.)

- Thompson, M. 1902, 1903a.
 Gurney. 1926. p. 23. 1938c. p. 334.

CALLIANASSIDAE

CALLIANASSA

CALLIANASSA, Leach.

- Slabber. 1781. pl. v. fig. 5.
 Costa. 1829.
 Claus. 1861. p. 32. *C. subterranea*, (as *Hippolyte*.)
 Smith. 1873a. *C. stimpsoni*.
 Claus. 1876. p. 44 (as *Hippolyte*). figs. 14-18. p. 54. 1885.
 pl. 5.
 Mayer. 1877. Telson. figs. 53-56.
 Sars. 1884. As *Calocaris macandreae*, early stages. pls. 6, 7.
 Gourret. 1884. p. 23.
 Cano. 1891c. p. 11. As *Axius stirhynchus* and *C. subterranea*.
 Brooks & Herrick. 1892. As *Stenopus*, stage 2. p. 345.
 pl. 8.
 Lo Bianco. 1901. p. 438. 1904. taf. xi. *Oodeopus* larva.
 Caroli. 1921a. Sars' *Calocaris* and Cano's *Axius* = *Callianassa*.
 Webb. 1921. p. 400. Sars' *Calocaris* and Cano's *Axius* = *Callianassa*.

- Boraschi. 1921. *C. subterranea*.
 Caroli. 1921c. p. 18. Larva from egg of subgenus *Trypaea*.
 Gurney. 1924c. p. 158.
 Menon. 1933. p. 17.
 Miyazaki. 1937. *C. subterranea* var. *japonica*, Ortm.
 Gurney. 1937c. p. 326. 1938c. p. 325.
 Lebour. 1938. *C. affinis*.

UPOGEBIIDAE

UPOGEBIA, Leach (and GEBIOPSIS, A. Milne-Edwards).

- Smith. 1873a. *Gebia affinis*.
 Mayer. 1877. Telson. fig. 57.
 Sars. 1884. p. 182. *U. littoralis* (= *U. deltaura* ?).
 Claus. 1884. p. 304. *U. littoralis*. figs. Arterial system.
 Cano. 1891c. p. 7. *U. littoralis*.
 Webb. 1919. *U. deltaura*, *U. stellata*. 1921. p. 402.
 Menon. 1933. p. 24. Upogebiinae sp. ?
 Gurney. 1924c. p. 165. (*U. danai*).
 Miyazaki. 1937. *U. major*, De Haan.
 Gurney. 1937a. p. 98. *U. savignyi*.
 Hart. 1937. p. 197. *U. pugettensis*.
 Gurney. 1938c. p. 330.

LARVAE ATTRIBUTED TO THALASSINIDEA.

OODEOPUS, Bate.

- Bate. 1888. p. 875. pls. 142, 143. Several species, belonging partly to Axiidae and partly to Callianassidae.
 Ortmann. 1893. p. 75. *O. intermedius*, Bate. (fig.)
 Zehnter. 1895.
 Lo Bianco. 1901. p. 438. 1904. Referred to *Callianassa*.
 Gurney. 1938c. pp. 302, 306, 315.

SESTERTIUS, Bate.

- Bate. 1888. p. 477. pl. 85.

ANOMALOCARIS, Ortmann.

- Ortmann. 1893. p. 87. fig. *A. macrotelsonis*. Callianassidae.

UROZOA, Ortmann.

- Ortmann. 1893. p. 92. *U. cruciata*. fig.

UNNAMED.

- Yokoya. 1935. Axiid ? Gebiid ?