

CRUSTACEA: BRANCHIOPODA-OSTRACODA

Phylum **ARTHROPODA**

Sub-Phylum CRUSTACEA

Class **BRANCHIOPODA**

Order DIPLOSTRACA

Sub-Order CLADOCERA

Family **Polyphemidae****EVADNE NORDMANNI** Lovén [*Apstein*, 1901, p. 12]

1892, appeared beginning of July, still present in Oct. (E.J.B.): 1895, constantly present in Aug.; disappeared early Oct. (T.V.H.): April-May, 1899 (P.T.C.): May, July, Sept. 1903; March-June 1904 (L.H.G.): 1916, began in the end of April and grew very common in May; was common through the summer until the middle of Sept. when it disappeared; 1917-28, might be common any time between March and Oct., very abundant July 1919, 1928, June 1925; inside and outside Sound and Station E.1 (M.V.L.): Hamoaze No. 12 Buoy, in plankton, 20.7.28 (E.P.)

Breeding: Aug. (T.V.H.): winter eggs produced about mid-Sept. (E.J.B.)

PODON INTERMEDIUS Lilljeborg [*Apstein*, 1901, p. 14]

1892, became less abundant in July and disappeared about mid-Sept. (E.J.B.): 1895, constantly present in Aug., disappeared early in Oct. (T.V.H.): Plymouth neighbourhood, April-Sept. 1903; April-July 1904 (L.H.G.): very similar in occurrence to *Evadne*, but is more frequent in Aug. and Sept. 1916, April-Aug. 1917-18; present March-Oct. 1920-8; very abundant Aug. 1922, July 1928; inside and outside Sound, Station E.1 (M.V.L.): River Tamar as far as Black Buoy opposite River Tavy, in plankton; River Lynher, 100 yds. above Antony Creek, Aug.-Sept. 1928 (E.P.): carrying ova, Aug. (T.V.H.)

PODON LEUCKARTI Sars [*Apstein*, 1901, p. 13]

Plymouth neighbourhood, April 1905, rare (L.H.G.)

Class **OSTRACODA**

Order MYODOCOPA

Family **Cypridinidae****PHILOMEDES INTERPUNCTA** (Baird) [*Brady and Norman*, 1896, II, p. 656]

Sound and near Eddystone (A.M.N.*): in mud, Mewstone or Rame, June 1938 (Elofson, 1940, p. 495)

ASTEROPE MARIAE (Baird) [*Sars*, 1922, p. 17; *Brady and Norman*, 1896, II, p. 630]

Plymouth (A.M.N.)

* These records of Crustacea are taken from Norman and T. Scott, 1906

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Order CLADOCOPA

Family **Polycopidae**

POLYCOPE ORBICULARIS G. O. Sars [*Sars*, 1922, p. 31; *Brady and Norman*, 1896, II, p. 706]
Plymouth (A.M.N.)

POLYCOPE AREOLATA Sars, 1923, p. 33
Mewstone mud, Plymouth (R.G.): June 1938 (Elofson, 1940, p. 495)

POLYCOPSIS COMPRESSA (Brady and Robertson) [*Sars*, 1923, p. 37]
Plymouth Sound (R.G.)

Order PODOCOPA

Family **Cypridae**

PONTOCYPRIS TRIGONELLA G. O. Sars [*Sars*, 1923, p. 48; *Brady and Norman*, 1889, I, p. 109]
Plymouth (A.M.N.): in mud, Mewstone or Rame, June 1938 (Elofson, 1940, p. 495)

ERYTHROCYPRIS MYTILOIDES (Norman) [*Sars*, 1923, p. 50; *Brady and Norman*, 1889, I, p. 107, as *Pontocypris*]
In mud, Mewstone or Rame, June 1938 (Elofson, 1940, p. 495)
SALCOMBE. (A.M.N.)

ANCHISTROCHELES ACEROSA (Brady) [*Brady and Norman*, 1889, I, p. 110]
Off Eddystone, rare (G.S.B.)

ARGILLOECIA CYLINDRICA G. O. Sars [*Sars*, 1923, p. 54; *Brady and Norman*, 1889, I, p. 111]
Off Eddystone (G.S.B.)
SALCOMBE (A.M.N.)

BAIRDIA INFLATA (Norman) [*Sars*, 1923, p. 67; *Brady and Norman*, 1889, I, p. 112]
Devonshire coast (Spence Bate's dredgings): Plymouth (A.M.N.): in mud, Mewstone or Rame, June 1938 (Elofson, 1940, p. 495)

BAIRDIA ACANTHIGERA Brady [*Brady and Norman*, 1889, I, p. 113]
Devonshire coast (Spence Bate's dredgings): Plymouth (A.M.N.)

Family **Cytheridae**

CYTHERIDEA ANGUSTATA (Münster) [*Brady and Norman*, 1889, I, p. 172, as *C. elongata*]
Borough Island.
SALCOMBE (A.M.N.)

EUCYTHERE DECLIVIS (Norman) [*Sars*, 1925, p. 163; *Brady and Norman*, 1889, I, p. 178]
Plymouth (A.M.N.)

CYHERE LUTEA O. F. Müller [*Sars*, 1925, p. 167; *Brady and Norman*, 1889, I, p. 125]
A common tide-mark species: Plymouth (A.M.N.)

CYHERE SEMIPUNCTATA Brady [*Brady and Norman*, 1889, I, p. 130]
Near Eddystone (G.S.B. and D.R. *fide* A.M.N. and T.S.)

CYHERE ALBOMACULATA Baird [*Sars*, 1925, p. 169; *Brady and Norman*, 1889, I, p. 138]
A common species between tide-marks all round the coast (A.M.N.)

LEPTOCYHERE PELLUCIDA (Baird) [*Sars*, 1925, p. 172; *Brady and Norman*, 1889, I, p. 127, as *Cythere confusa*]
Plymouth (A.M.N.)

LEPTOCYHERE MACALLANA (Brady and Robertson) [*Sars*, 1925, p. 173; *Brady and Norman*, 1889, I, p. 128, as *Cythere*]
SALCOMBE (A.M.N.)

XENOCYHERE CUNEIFORMIS (Brady) [*Sars*, 1925, p. 179]
In mud, Mewstone or Rame, June 1938 (Elofson, 1940, p. 495)

HEMICYHERE VILLOSA (G. O. Sars) [*Sars*, 1925, p. 182; *Brady and Norman*, 1889, I, p. 146, as *Cythere*]
Plymouth (A.M.N.): in mud, Mewstone or Rame, June 1938 (Elofson, 1940, p. 495)
SALCOMBE (A.M.N.)

HEMICYHERE QUADRIDENTATA (Baird) [*Sars*, 1925, p. 186; *Brady and Norman*, 1889, I, p. 159; as *Cythere*]
Plymouth (A.M.N.)

HEMICYHERE OBLONGA (Brady) [*Sars*, 1925, p. 190; *Brady and Norman*, 1889, I, p. 138, as *Cythere*]
Plymouth (A.M.N.)

CYHEREIS MARGINATA (Norman) [*Brady and Norman*, 1889, I, p. 142, as *Cythere*]
SALCOMBE (A.M.N.)

CYHEREIS FUDICULA (Brady and Robertson) [*Brady and Norman*, 1889, I, p. 143, as *Cythere navicula*]
Plymouth (A.M.N.)
SALCOMBE (A.M.N.)

CYHEREIS EMACIATA (Brady) [*Elofson*, 1940, p. 498]
Plymouth (A.M.N.): near Eddystone (G.S.B. and D.R. *fide* A.M.N. and T.S.): in mud Mewstone or Rame, 1938
(Elofson, 1940, p. 495)

CYHEREIS RUNCINATA (Baird) [*Elofson*, 1940, p. 495]
Plymouth Sound, 1889 (A.M.N.): in mud, Mewstone or Rame, 1938 (Elofson, 1940, p. 495)

CYHEREIS TUBERCULATA (G. O. Sars) [*Brady and Norman*, 1889, I, p. 161 as *Cythere*]
Plymouth (A.M.N.)

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- CYHEREIS FINMARCHICA (G. O. Sars) [*Brady and Norman*, 1889, I, p. 163, as *Cythere*]
Near Eddystone (G.S.B. and D.R. *fide* A.M.N. and T.S.)
- CYHEREIS ANTIQUATA (Baird) [*Brady and Norman*, 1889, I, p. 168, as *Cythere*]
Plymouth (A.M.N.) near Eddystone (G.S.B. and D.R.): in mud, Mewstone, or Rame, 1938 (Elofson, 1940, p. 495)
- CYHEREIS JONESI (Baird) [*Sars*, 1925, p. 196; *Brady and Norman*, 1889, I, p. 169]
Off Eddystone (G.S.B. and D.R. *fide* A.M.N. and T.S.): in mud, Mewstone or Rame, 1938 (Elofson, 1940, p. 495)
- CYTHERURA CORNUTA Brady [*Brady and Norman*, 1889, I, p. 192]
SALCOMBE (A.M.N.)
- CYTHERURA SELLA G. O. Sars [*Sars*, 1925, p. 204; *Brady and Norman*, 1889, I, p. 194]
Plymouth (A.M.N.)
SALCOMBE (A.M.N.)
- CYTHERURA ACUTICOSTATA G. O. Sars [*Sars*, 1926, p. 210; *Brady and Norman*, 1889, I, p. 195]
Plymouth (A.M.N.)
- CYTHERURA STRIATA G. O. Sars [*Sars*, 1926, p. 208; *Brady and Norman*, 1889, I, p. 196]
Plymouth (A.M.N.)
SALCOMBE (A.M.N.)
- CYTHERURA ANGULATA Brady (*Brady and Norman*, 1889, I, p. 197)
Plymouth (A.M.N.)
SALCOMBE (A.M.N.)
- CYTHERURA PRODUCTA Brady [*Sars*, 1926, p. 209; *Brady and Norman*, 1889, I, p. 199]
Off Eddystone (G.S.B. and D.R.)
- CYTHERURA NIGRESCENS (Baird) [*Sars*, 1925, p. 202; *Brady and Norman*, 1889, I, p. 200]
Everywhere between tide-marks (A.M.N.)
- CYTHERURA CONCENTRICA Norman, Crosskey and Robertson [*Brady and Norman*, 1889, I, p. 201]
SALCOMBE (A.M.N.)
- CYTHERURA FULVA Brady and Robertson [*Sars*, 1926, p. 214; *Brady and Norman*, 1889, I, p. 205]
Off Eddystone (G.S.B. and D.R.)
SALCOMBE (A.M.N.)
- CYTHERURA CELLULOSA (Norman) [*Sars*, 1926, p. 216; *Brady and Norman*, 1889, I, p. 206]
SALCOMBE (A.M.N.)

- LOXOCONCHA IMPRESSA (Baird) [*Sars*, 1926, p. 218; *Brady and Norman*, 1889, I, p. 183]
In mud, Mewstone or Rame, 1938 (Elofson, 1940, p. 495)
SALCOMBE (A.M.N.)
- LOXOCONCHA GUTTATA (Norman) [*Elofson*, 1940, p. 500]
Plymouth (A.M.N.): in mud, Mewstone or Rame, 1938 (O.E.)
- LOXOCONCHA TAMARINDUS (T. R. Jones) [*Sars*, 1926, p. 221 ; *Brady and Norman*, 1889, I, p. 186]
Off Eddystone (G.S.B. and D.R. *vide* A.M.N. and T.S.): in mud, Mewstone or Rame, 1938 (Elofson, 1940, p. 495)
- LOXOCONCHA MULTIFORA (Norman) [*Brady and Norman*, 1889, I, p. 185]
Plymouth (A.M.N.): off Eddystone (G.S.B. and D.R.)
- CYTHEROPTERON NODOSUM Brady [*Sars*, 1926, p. 232; *Brady and Norman*, 1889, I, p. 208]
Eddystone (G.S.B. and D.R.)
SALCOMBE (A.M.N.)
- CYTHEROPTERON DEPRESSUM Brady and Norman [*Brady and Norman*, 1889, I, p. 218]
Off Eddystone (G.S.B. and D.R.)
SALCOMBE (A.M.N.)
- CYTHEROPTERON HUMILE Brady and Norman, 1889, I, p. 219
In the burrows of *Limnoria* and *Chelura*, Plymouth (H.G.C.)
- BYTHOCYTHERE CONSTRICTA G. O. Sars [*Sars*, 1926, p. 235; *Brady and Norman*, 1889, I, p. 220]
Off Eddystone (G.S.B. and D.R.)
SALCOMBE (A.M.N.)
- BYTHOCYTHERE TURGIDA G. O. Sars [*Sars*, 1926, p. 233; *Brady and Norman*, 1889, I, p. 221]
Off Eddystone (G.S.B. and D.R.): in mud, Mewstone or Rame, 1938 (Elofson, 1940, p. 495)
- PSEUDOCYTHERE CAUDATA G. O. Sars [*Sars*, 1926, p. 239; *Brady and Norman*, 1889, I, p. 225]
Off Eddystone (G.S.B. and D.R. *vide* A.M.N. and T.S.)
- XESTOLEBERIS AURANTIA (Baird) [*Sars*, 1928, p. 243; *Brady and Norman*, 1889, I, p. 188]
Near Eddystone (G.S.B. and D.R.)
SALCOMBE (A.M.N.)
- XESTOLEBERIS LABIATA Brady and Robertson [*Brady and Norman*, 1889, I, p. 189]
Plymouth (A.M.N.)
SALCOMBE (A.M.N.)

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- XESTOLEBERIS DEPRESSA G. O. Sars [*Sars*, 1928, p. 244]
In mud, Mewstone or Rame, 1938 (Elofson, 1940, p. 495)
- PARACYTHEROIS FLEXUOSA (Brady) [*Sars*, 1928, p. 250; *Brady and Norman*, 1889, I, p. 236, as *Paradoxostoma*]
Plymouth (A.M.N.)
- SCLEROCHILUS CONTORTUS (Norman) [*Sars*, 1928, p. 247; *Brady and Norman*, 1889, I, p. 225]
Plymouth (A.M.N.)
- CYTHERIDEIS SUBULATA Brady [*Brady and Norman*, 1889, I, p. 226]
Plymouth (A.M.N.)
- CYTHEROIS FISCHERI (G. O. Sars) [*Sars*, 1928, p. 252; *Brady and Norman*, 1889, I, p. 228]
SALCOMBE (A.M.N.)
- PARADOXOSTOMA VARIABLE (Baird) [*Sars*, 1928, p. 256; *Brady and Norman*, 1889, I, p. 229]
Everywhere between tide-marks and in shallow water (A.M.N.)
- PARADOXOSTOMA ENSIFORME Brady [*Sars*, 1928, p. 258; *Brady and Norman*, 1889, I, p. 229]
Plymouth (A.M.N.): in mud, Mewstone or Rame, June 1938 (Elofson, 1940, p. 495)
- PARADOXOSTOMA ABRREVIATUM G. O. Sars [*Sars*, 1928, p. 263; *Brady and Norman*, 1889, I, p. 230]
Plymouth (A.M.N.)
SALCOMBE (A.M.N.)
- PARADOXOSTOMA OBLIQUUM G. O. Sars [*Sars*, 1928, p. 259; *Brady and Norman*, 1889, I, p. 230]
SALCOMBE (A.M.N.)
- PARADOXOSTOMA, NORMANI Brady [*Sars*, 1928, p. 264; *Brady and Norman*, 1889, I, p. 231]
Plymouth (A.M.N.)
SALCOMBE (A.M.N.)
- PARADOXOSTOMA PULCHELLUM G. O. Sars [*Sars*, 1928, p. 262; *Brady and Norman*, 1889, I, p. 231]
SALCOMBE (A.M.N.)
- PARADOXOSTOMA HIBERNICUM Brady [*Sars*, 1928, p. 261; *Brady and Norman*, 1889, I, p. 232]
SALCOMBE (A.M.N.)
- SPHAEROMICOLA DUDICHI Klie, 1938, p. 317
In the burrows of *Limnoria* and *Chelura*, Plymouth (J.P.H.)

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Class **COPEPODA**

Order EUCOPEPODA

Sub-Order CALANOIDA

Family **Calanidae****CALANUS FINMARCHICUS** (Gunnerus) [Sars, 1901, IV, p. 9]

Frequent in tow-nets, Plymouth (A.M.N. and T.S.): Plymouth, 1899, more or less common, April-Aug., Oct. (P.T.C.): 1903-4, common in summer (L.H.G.): 1916, common on and off from end of April to beginning of Nov., generally present in small numbers at other times (M.V.L.): 1917-18. (G.E.W.): 1919-20-21, Jan. Dec., very common April, May, July, Oct.; 1922, Jan.-Dec., very common May-Oct.; 1925, Jan.-Dec., very common, Jan., April, July, Aug.; 1928, Jan.-Dec., very common May-July, inside and outside Sound, Station E.1 (M.V.L.): Station L.4, many July 15/16, 24, June-July 1925 (F.S.R.): Cremyll Battery in plankton, 17.8.28 (E.P.)

All specimens in inshore waters examined in June 1950 were of the subspecies *helgolandicus* Claus (J.P.H.): a re-examination of collections of *Calanus* made off Plymouth showed that only a small percentage of the specimens were *finmarchicus*, the remainder being *helgolandicus* (Russell, 1951)

SALCOMBE (A.M.N. and T.S.)

Breeding: 1920, eggs and nauplii in plankton, April, May, June, July; 1921, July, Aug. (M.V.L.)

Family **Paracalanidae****PARACALANUS PARVUS** (Claus) [Sars, 1901, IV, p. 17]

In plankton from Sound; near Eddystone (A.M.N. and T.S.): Plymouth, 1888-9, in great abundance except from Sept.-March, when it appeared absent (G.C.B.): 1899, March-April, more or less rare, Sept.-Oct., more or less abundant, Nov., rare Dec., more or less rare (P.T.C.): 1903, abundant all the year round except during May and July; 1904, abundant Jan.-July (L.H.G.): unusually scarce in 1916 except at certain times, very common in May, common parts of Aug., Sept., and Oct., very common for part of Nov., then rare or absent; 1919, Feb.-Sept.; 1920, Sept.-Oct.; 1921, Feb. Dec., very common Nov.; 1922, March-Oct., very common May, June; inside and outside Sound, Station E.1 (M.V.L.)

Family **Pseudocalanidae****PSEUDOCALANUS ELONGATUS** Boeck [Sars, 1901, IV, p. 20]

One of the commonest species, in immense numbers during autumn, winter and spring, 1888-9 (G.C.B.): 1899, Feb.-April, more or less rare (P.T.C.): very common in 1903 and 1904 (L.H.G.): 1916, perhaps the commonest copepod, exceedingly common all through the year except from the middle of May to the end of July, when it became rarer and was sometimes absent (M.V.L.): 1917-18, present most of the year (G.E.W.): 1919, Jan.-Sept., common April-Aug.; 1920, June-Dec., common Oct.; 1921, Jan.-Dec.,

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very common May, July, Aug., huge numbers at Station E.1 in Aug.; 1922, Jan.-Dec., very common Jan., May, June, Oct.; 1925, Jan.-Aug., very common Feb., March, Aug., common April, May; 1928, present most of the year; inside and outside Sound, Station E.1 (M.V.L.): Hamoaze, No. 12 buoy in plankton, 20.7.28 (E.P.)

Family **Euchaetidae**

EUCHAETA. HEBES Giesbrecht, 1892, p. 246, 263, 741

Widely distributed off the South coasts of Devon and Cornwall (L.H.G. *vide* A.M.N. and T.S.): rare, at any rate since 1931 (F.S.R.)

Family **Stephidae**

STEPHOS SCOTTI Sars, 1902, IV, p. 63

Asia Shoal (R.G.)

Family **Centropagidae**

CENTROPAGES TYPICUS Krøyer [*Sars*, 1902, IV, p. 75]

Plymouth, 1888-9, abundant except during winter, when it is scarce (G.C.B.): near Plymouth, Aug. 1889 (A.M.N. and T.S.): 1899, Jan.-Feb., rare, March-April in fair numbers, May rare, June more or less rare, July and Aug. rare, Sept. very rare (P.T.C.): 1903, Jan., Feb., April-June, Aug. Oct.; 1904, Jan., July (L.H.G.): common in Sept. and Oct. 1915, scarce or absent through the winter; 1916, rather more abundant in May, becoming scarcer in Aug. (M.V.L.): 1917, common Sept and Oct.; 1918, March-Oct. (G.E.W.): 1919, Feb.-Sept.; 1920, June-Oct.; 1921, Jan.-Dec., common April-July; 1922, Jan.-Oct., common Aug.; 1925, Feb.-Aug.; 1928, April-Dec., common Aug.; inside and outside Sound Station E.1 (M.V.L.): River Lynher, off Rat Island, River Tamar up to Black Buoy opposite Tavy, June-Oct., 1928 (E.P.)

CENTROPAGES HAMATUS (Lilljeborg) [*Sars*, 1902, IV, p. 76]

Taken on several occasions near Plymouth, Aug. 1903 (A.M.N. and T.S.): common in Sept., Oct. 1915, then absent until Aug., when it was very common on the 16th; 1919, June-Aug.; 1920, Sept.; inside and outside Sound (M.V.L.)

ISIAS CLAVIPES Boeck [*Sars*, 1902, IV, p. 79]

Near Plymouth in 20 fm., Aug. 1889 (A.M.N. and T.S.): Plymouth, June 1899 (P.T.C.): Dec. 1902; Sept. 1903; March-June 1904 (L.H.G.): 1916, fairly common in May, rare in June (M.V.L.): 1925, July 16, 2-3 m. E. of Eddystone (F.S.R.)

SALCOMBE. Common in surface gatherings near Salcombe, July 1875 (A.M.N. and T.S.)

Family **Temoridae**

TEMORA LONGICORNIS (O. F. Müller) [*Sars*, 1902, IV, p. 97]

Frequent in a gathering from 20 fm. near Plymouth, 1882 (A.M.N. and T.S.): Plymouth, 1888-9, scarce during winter months, becoming more

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common in April, and reaching maximum abundance Aug.-Sept. (G.C.B.): 1899, March somewhat rare; April very common, June-Oct. rare (P.T.C.): 1903-4, rare in winter (L.H.G.): 1915-16, very common all through summer and in middle of Feb., common in parts of Nov., but rather rare in winter (M.V.L.): 1918, present Jan.-Oct., very common May (G.E.W.): 1919, Feb.-Sept., very common July; 1920, May-Oct., very common June, Sept.; 1921, Jan.-Oct.; 1922, Feb. to Sept. very common May; 1925, April-Aug., very common July; 1928, very common June, July, common Aug., Oct.; inside and outside Sound, Station E.1 (M.V.L.): River Tamar as far as Black Buoy opposite Tavy, June-Oct. 1928 (E.P.)

EURYTEMORA VELOX (Lilljeborg) [*Sars*, 1902, IV, p. 100]

Shallow pool in marsh above St. Germans, Cornwall, 25.6.28 (E.P.)
SALCOMBE. July 1875 (A.M.N. and T.S.)

EURYTEMORA AFFINIS (Poppe) [*Giesbrecht* and *Schmeil*, 1898, p. 103]

Several specimens, male and female and juveniles, from brackish water near Plymstock, 1903; females with ova (A.M.N. and T.S.): River Tamar and Lynher, fine tow-net, all depths; in Tamar up as far as Morwellham Quay, especially abundant between Hole's Hole and Calstock; found along length of estuary from Cremyll Battery up to fresh water, rare below Saltash; carrying ova throughout year, especially reproductive, 7.11.28 (E.P.)

Family **Metridiidae****METRIDIA LUCENS** Boeck [*Sars*, 1902, IV, p. 113]

One specimen from neighbourhood of Plymouth, Aug. 1889; not rare from Whitsand Bay, Aug. 1903 (A.M.N. and T.S.): occasionally outside Sound (M.V.L.): 1925, April-Aug., below 15 m., 2-3 m. E. of Eddystone (F.S.R.)

Family **Arietellidae****PARAMISOPHRIA CLUTHAE** Scott, [*Sars*, 1902, IV, p. 128]

Mewstone (R.G.)

Family **Pseudocyclopidae****PSEUDOCYCLOPS OBTUSATUS** Brady and Robertson [*Sars*, 1902, IV, p. 131]

Very rare in gatherings from the Cattewater, Plymouth, Aug. 1899; in another from Sound, Aug. and in a third from Salcombe, 9.9.03 (A.M.N. and T.S.): off Drake's Island, bottom (R.G.)

Family **Candaciidae****CANDACIA ARMATA** Boeck [*Sars*, 1902, IV, p. 135]

Off Penlee Point, Aug. 1889; Whitsand Bay, Aug. 1903 (A.M.N. and T.S.): 1916, rare through the winter, common July, Sept. (M.V.L.): 1918, June Oct (G.E.W.): 1919, March, Sept.; 1920, Sept.; 1921, April-Dec.; 1922, Jan.-July; 1925, Jan.-Sept.; 1928, Oct. common; inside and outside Sound Station E.1, near bottom (M.V.L.): 1925, April-Aug., usually below 20 m. in the daytime, largest catch Aug. 6th (F.S.R.)

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Family **Pontellidae****ANOMALOCERA PATERSONI** Templeton [*Sars*, 1902, IV, p. 139]

Off Penlee Point, Aug. 1889 (A.M.N. and T.S.): Plymouth, 1888-9, abundant in autumn and late summer, absent in winter (G.C.B.): 1904, July (L.H.G.): 1915, from Sept. to beginning of Nov., not common (M.V.L.): 1918, Jan., March, July, Sept. (G.E.W.): 1919, June-Sept.; 1920, July-Oct.; 1921, May-Oct.; 1922, May-Aug.; 1925, April-Aug., very common Aug.; 1928, common June-Aug.; inside and outside Sound, Station E.1 (M.V.L.): shows a decided preference for surface layers, sometimes deeper down; June-Aug. 1925, largest catch Aug. (F.S.R.)

LABIDOCERA WOLLASTONI (Lubbock) [*Sars*, 1902, IV, p. 142]

Off Breakwater, Aug. 1903 (A.M.N. and T.S.): Plymouth, 1902, Dec.; 1904, April-July (L.H.G.): near Eddystone in small numbers, Aug. and Oct. 1888 (G.C.B.): 1916, not common, in July (M.V.L.): 1918, April-Oct., common April and May (G.E.W.): 1919, April-Sept.; 1920, Sept.; 1921, March July; 1922, May-Oct.; 1925, April-June; 1928, June; inside and outside Sound (M.V.L.)

Family **Parapontellidae****PARAPONTELLA BREVICORNIS** (Lubbock) [*Sars*, 1903, IV, p. 145]

Mewstone and Whitsand Bay, Aug. 1880 (A.M.N. and T.S.): near Eddystone, few specimens, Sept. 1888, the Cattewater, March 1889 (G.C.B.): Plymouth, rare, March-April 1889 (P.T.C.): 1903, May-July; 1904, Feb. May, July; rare in winter (L.H.G.): 1916, common in Feb. and March, and occasionally in May, otherwise rare; absent from Oct. 1915 to Feb. 1916; 1918, April-June abundant, present Aug., Sept. (G.E.W.): inside and outside Sound (M.V.L.): Hamoaze, No. 12 Buoy, plankton, 9.10.28 (E.P.)

SALCOMBE. July 1875 (A.M.N. and T.S.)

Family **Acartidae****ACARTIA CLAUSI** Giesbrecht [*Sars*, 1903, IV, p. 150]

Common (A.M.N. and T.S.): Plymouth, 1899, Jan. rare, March-April more or less abundant, June-Aug. common, Sept.-Oct. in fair numbers, Nov.-Dec. very rare (P.T.C.): 1903, except during March and May; 1904, Jan.-July (L.H.G.): the only *Acartia* noted in 1916, exceedingly abundant most of the year, very common on and off from May to the beginning of Jan., and very seldom absent altogether; 1917-18, Feb.-Dec., common Sept.-Oct.; 1919, Jan.-Sept., very common April-Sept.; 1920, May-Dec., very common June; 1921, Jan.-Aug., very common April-July; 1922, Jan.-Dec., very common March-Oct. except Sept.; 1923, Station E.1 exceedingly abundant; 1928; common almost the whole year; inside and outside Sound, Station E.1 (M.V.L.): Hamoaze No. 1 Buoy, plankton off Neille Point, Black Buoy, River Tamar, 20.7.28, 7.11.28 (E.P.)

ACARTIA DISCAUDATA (Giesbrecht) [*Sars*, 1903, IV, p. 152]

Plymouth, 1903 (A.M.N. and T.S.): West Channel, surface, 2 specimens, females, 29.3.07 (W.B.): occasionally in Sound (M.V.L.)

SALCOMBE. Sparingly, 1875 (A.M.N. and T.S.)

CRUSTACEA: COPEPODA

ACARTIA BIFILOSA (Giesbrecht) [*Giesbrecht and Schmeil*, 1898, p. 153]

River Tamar, rare off River Tavy, increasing in abundance towards and disappearing about 1 mile below Calstock, 11.7.28, 7.11.28 (E.P.)

PARACARTIA GRANI G. O. Sars [*Sars*, 1919, VII, p. 16]

Three specimens, 2 females, 1 male, Cawsand Bay, 5-6 fm., 17.8.03 (A.M.N. and T.S.)

Sub-Order HARPACTICOIDA

Family **Misophriidae****MISOPHRIA PALLIDA** Boeck [*Sars*, 1903, V, p. 6]

Sound, Aug. 1903 (A.M.N. and T.S.): Asia Shoal, 2.5.29, very rare (R.G.)

SALCOMBE. Taken sparingly, 1875 (A.M.N. and T.S.)

Family **Longipediidae****LONGIPEDIA SCOTTI** G. O. Sars, 1903, V, p. II

Sound, Cawsand Bay, Aug. 1903, moderately frequent (A.M.N. and T.S.): Plymouth (G.C.B.): 1916, once only in Feb., beyond Breakwater (M.V.L.)

SALCOMBE. From weeds, 1875 (A.M.N. and T.S.)

LONGIPEDIA MINOR Scott [*Sars*, 1903, V, p. 12]

Sound, Aug. 1903 (A.M.N. and T.S.): 1916, once in tow-net and once centrifuge, outside Breakwater (M.V.L.): River Tamar, Hole's Hole; among *Bowerbankia imbricata*, Neille Point in pool, 9.10.28 (E.P.)

SALCOMBE. 1875 (A.M.N. and T.S.): larvae of *Longipedia* spp. in tow-nets, July, Aug. (Gurney, 1930, p. 461)

CANUELLA PERPLEXA Scott [*Sars*, 1903, V, p. 17]

Whitsand Bay, Aug. 1903 (A.M.N. and T.S.)

SUNARISTES PAGURI Hesse [*Sars*, 1903, V, p. 15]

Mewstone, in *Eupagurus* shells (whelks) (R.G.): several in upper whorl of a *Buccinum* shell tenanted by *Eupagurus*, 19.1.56 (G.M.S.)

Family **Cerviniidae****ZOSIME TYPICA** Boeck (*Sars*, 1903, V, p. 27)

Sparingly from Jennycliff Bay, 14.8.03 (A.M.N. and T.S.)

Family **Ectinosomidae****ECTINOSOMA MELANICEPS** Boeck [*Sars*, 1904, V, p. 34]

Mouth of Yealm, Aug. 1889; Plymouth (A.M.N. and T.S.): Cargreen landing, River Tamar, 17.8.28 (E.P.): among *Zostera*, Cawsand Bay, July 1929, abundant (R.G.)

SALCOMBE. Moderately frequent, July 1875 (A.M.N. and T.S.)

ECTINOSOMA SARSI Boeck [*Sars*, 1904, V, p. 30]

Cawsand Bay, Whitsand Bay, Aug. 1903.

SALCOMBE 1875 (A.M.N. and T.S.)

CRUSTACEA: COPEPODA

ECTINOSOMA CURTICORNE Boeck [*Sars*, 1904, V, p. 36]

Whitsand Bay and Plymouth, Aug. 1903 (A.M.N. and T.S.)

ECTINOSOMA ERYTHROPS Brady, 1880, II, p. 12

Plymouth, 12.8.03 (A.M.N. and T.S.)

SALCOMBE. Rare, 1875 (A.M.N. and T.S.)

ECTINOSOMA HERDMANI T. and A. Scott [*Sars*, 1904, V, p. 33]

Sparingly from Sound, 12.8.03 (A.M.N. and T.S.)

ECTINOSOMA NORMANI T. and A. Scott [*Sars*, 1904, V, p. 35]

Plymouth, 11 and 31.8.03; near Chequer Buoy; Cawsand Bay; near Drake's Island; Millbay; 3 m. N.W. of Eddystone (A.M.N. and T.S.)

SALCOMBE. June, July 1875 (A.M.N. and T.S.)

ECTINOSOMA GRACILE T. and A. Scott, 1896, p. 429

In sand, near low-water mark, very common (J.S.C.)

BRADYA TYPICA Boeck [*Sars*, 1904, V, p. 46]

Cattewater, Aug. 1889; among weed at low water, Plymouth, 22.8.03 (A.M.N. and T.S.)

SALCOMBE. June 1875 (A.M.N. and T.S.)

PSEUDOBRADYA HIRSUTA (T. and A. Scott) [*Sars*, 1910, V, p. 356]

SALCOMBE. 1875, 1 specimen, in a surface tow-net (A.M.N. and T.S.)

PSEUDOBRADYA FUSCA (T. and A. Scott) [*Sars*, 1910, V, p. 357]

Sound, near Chequer Buoy, 14.8.03.

SALCOMBE. 30.6.75, rare (A.M.N. and T.S.)

PSEUDOBRADYA MINOR (T. and A. Scott) [*Sars*, 1904, V, p. 41]

Near Drake's Island; River Tamar, in brackish water and in Millbay, Aug. 1903 (A.M.N. and T.S.)

MICROSETELLA NORVEGICA (Boeck) [*Sars*, 1904, V, p. 44]

Plymouth, 23.8.03 (A.M.N. and T.S.): Jan.-Feb. 1899, rare (P.T.C.)

Family **Harpacticidae**

HARPACTICUS CHELIFER (O. F. Müller) [*Sars*, 1904, V, p. 49]

West Channel, surface, 24.11.06, 1 specimen (W.B.): New Grounds, July 1929 (R.G.): River Tamar, Black Buoy, opposite River Tavy, in weed, 1.8.28 (E.P.)

HARPACTICUS GRACILIS Claus [*Sars*, 1904, V, p. 521]

River Tamar, Halton Quay, near surface, and downstream on shore and on buoys; River Lynher up to shore 100 yds. above Antony Creek, June Oct. 1928 (E.P.)

HARPACTICUS FLEXUS Brady [*Sars*, 1904, V, p. 53]

River Tamar, up to Hole's Hole on shore, on buoys and on weeds, June Oct. 1928 (E.P.)

CRUSTACEA: COPEPODA

PORCELLIDIUM VIRIDE (Philippi, 1840, p. 190; 1841, p. 87, as Thyone)

Among weeds at low water of spring tides, 22.8.03 (A.M.N. and T.S.). Possibly identical with *P.fimbriatum* (see Sars, 1904, V, pp. 76 and 77)

Family **Idyidae**

IDYA FURCATA (Baird) [Sars, 1905, V, p. 88]

Generally distributed, Plymouth (A.M.N. and T.S. as Tisbe): West Channel, surface, 1.2.07, single specimen, female with ovisac (W.B.): River Tamar, common on buoys, and on shore, also in tow-net, up to Hole's Hole; River Lynher, up to shore above Ince Castle, 1928 (E.P.)

SALCOMBE. Generally distributed (A.M.N. and T.S.)

IDYA GRACILIS T. Scott, 1895 [Sars, 1905, V, p. 94]

Wembury Bay among *Ascophyllum*, July 1930, 1 specimen (J.S.C. and R.G.)

IDYA LONGICORNIS T. and A. Scott [Sars, 1905, V, p. 92]

Cawsand Bay; off Jennycliff, Aug. 1903 (A.M.N. and T.S., as Tisbe)

IDYA ENSIFERA (Fischer, 1860) [Sars, 1905, V, p. 90]

Wembury Bay among *Laminaria digitata* holdfasts, 27.8.30, 3.4.31 (J.S.C. and R.G.)

IDYA MINOR T. and A. Scott [Sars, 1905, V, p. 90]

Plymouth (A.M.N. and T.S., as Tisbe)

SALCOMBE (A.M.N. and T.S.)

IDYA ELONGATA A. Scott, 1896, p. 151

Gill chamber of lobster, Plymouth, 1930 (R.C.): nauplius V to adult stages on gills of *Homarus vulgaris* throughout the year (R.U.G.)

IDYA GRACILOIDES G. O. Sars, 1920, VII, p. 50

Shore beneath the Laboratory, Aug. 1950 (A.G.L.)

PSAMATHE LONGICAUDA Philippi [Sars, 1905, V, p. 83]

Plymouth (A.M.N. and T.S.)

SALCOMBE (A.M.N. and T.S.)

ASPIDISCUS FASCIATUS Norman [Sars, 1905, V, p. 81]

What appears to be this species, Plymouth (A.M.N. and T.S.)

ASPIDISCUS LITTORALIS G. O. Sars, 1904, V, p. 79

Wembury Bay among weeds (J.S.C.): near Breakwater, 9.3.36 (J.L.T.)

MACHAEROPUS MINUTUS G. O. Sars, 1905, V, p. 86

Wembury Bay among *Fucus vesiculosus*, 15.7.30 (J.S.C.)

Family **Thalestridae**

THALESTRIS LONGIMANA Claus [Sars, 1905, V, p. 104]

Sound, 1903 (A.M.N. and T.S.): on buoys up to Black Buoy opposite mouth of Tavy, June-Oct. 1928 (E.P.): Breakwater, dredged seaweeds, 9.3.36 (J.L.T.)

SALCOMBE. 1875 (A.M.N. and T.S.)

THALESTRIS PURPUREA G. O. Sars, 1905, V, p. 109

Wembury Bay among *Ascophyllum nodosum* and *Fucus vesiculosus*, July 1930 (J.S.C. and R.G.)

PARATHALESTRIS CLAUSI (Norman) [*Sars*, 1905, V, p. 111]

Plymouth Sound and other places near Plymouth (A.M.N. and T.S.): on buoys among weed up to Black Buoy opposite mouth of Tavy, June-Oct. 1928 (E.P.)

SALCOMBE (A.M.N. and T.S.)

PARATHALESTRIS HARPACTICOIDES (Claus) [*Sars*, 1905, V, p. 112]

No. 15 Buoy, Hamoaze, in weed, very common, 19.7.28 (E.P.)

PARATHALESTRIS HIBERNICA (Brady and Robertson) [*Sars*, 1905, V, p. 113]

Near Drake's Island; mouth of River Yealm (A.M.N. and T.S.)

SALCOMBE. Sparingly, 1875 (A.M.N. and T.S.)

PHYLLOTHALESTRIS MYSIS (Claus) [*Sars*, 1905, V, p. 116]

The Cattewater, March 1889 (G.C.B.): mouth of River Yealm, 7.7.89; Whitsand Bay, Cawsand Bay, near Drake's Island, Aug. 1903 (A.M.N. and T.S.): New Grounds, 20.7.29 (R.G.)

HALITHALESTRIS CRONI (Krøyer) [*Sars*, 1905, V, p. 118]

West Channel, Sound, 20.2.19, single specimen, female (G.E.W.)

RHYNCHOTHALESTRIS RUFOCINCTA (Norman) [*Sars*, 1905, V, p. 120]

Cawsand Bay, near Duke Rock Buoy, July 1889 (A.M.N. and T.S.): Duke Rock, 30.7.29 (R.G.)

SALCOMBE. Sparingly, June 1875 and Sept. 1903 (A.M.N. and T.S.)

MICROTHALESTRIS FORFICULA (Claus) [*Sars*, 1905, V, p. 123]

Rock pools at and above H.W. mark, Plymouth, 22.8.03, rather rare (A.M.N. and T.S.)

AMENOPHIA PELTATA Boeck [*Sars*, 1906, V, p. 136]

SALCOMBE, One or two specimens, 30.6.75, rare (A.M.N. and T.S.)

DACTYLOPUSIA TISBOIDES (Claus) [*Sars*, 1905, V, p. 126]

Plymouth (A.M.N. and T.S.): River Tamar up to Black Buoy opposite River Tavy; Rat Island; on shore, 1.8.28, 27.9.28 (E.P.)

SALCOMBE (A.M.N. and T.S.)

DACTYLOPUSIA VULGARIS G. O. Sars, 1905, V, p. 128

Sparingly in Cattewater and mouth of River Yealm; Sound, near Chequer Buoy (A.M.N. and T.S.): in pool at high tide, Neille Point, River Tamar, opposite mouth of Tavy, 1928 (E.P.)

SALCOMBE. Sept. 1903 (A.M.N. and T.S.)

DACTYLOPUSIA BREVICORNIS (Claus) [*Sars*, 1905, V, p. 130]

Mouth of River Yealm, Aug. 1889; one or two other localities near Plymouth, Aug. 1903 (A.M.N. and T.S.)

SALCOMBE. 1875 (A.M.N. and T.S.)

CRUSTACEA: COPEPODA

- DACTYLOPUSIA VALIDA** Norman and T. Scott, 1905, p. 293
Near Rat Island, Plymouth, apparently not very common, no females observed (A.M.N. and T.S.)
- DACTYLOPODELLA FLAVA** (Claus) [*Sars*, 1905, V, p. 132]
Mouth of River Yealm, Aug. 1889 (A.M.N. and T.S.): Rat Island, on shore, 19.7.28 (E.P.)
- VALLENTINIA ORNATA** (Norman and T. Scott, 1905, p. 294, as *Dactylopusia*; 1906, p. 172)
Mouth of River Yealm, Aug. 1889; Sound, near Chequer Buoy (A.M.N. and T.S.)
SALCOMBE. Aug., Sept. 1903 (A.M.N. and T.S.)
- MEGARTHURUM PURPUROCINCTUM** (Norman and T. Scott, 1905, p. 295, as *Dactylopusia*; 1906, p. 174)
SALCOMBE. One specimen, June 1875 (A.M.N. and T.S.)
- WESTWOODIA NOBILIS** (Baird) [*Sars*, 1906, V, p. 140]
Rat Island, near Plymouth, 1889; Sound, Aug. 1903 (A.M.N. and T.S.)
- WESTWOODIA ANDREWI** (T. Scott, 1894, p. 257, as *Pseudowestwoodia*)
Sparingly near Chequer Buoy and other places in Sound (A.M.N. and T.S.)
- WESTWOODIA PYGMAEA** (T. and A. Scott) [*Sars*, 1906, V, p. 143]
SALCOMBE. 7.7.1887 (A.M.N. and T.S.)
- Family Diosaccidae**
- DIOSACCUS TENUICORNIS** (Claus) [*Brady*, 1880, II, p. 68; *Sars*, 1906, V, p. 146]
Near Rat Island, near Drake's Island and other localities in the neighbourhood of Plymouth (A.M.N. and T.S.):
Cawsand Bay (R.G.)
SALCOMBE (A.M.N. and T.S.)
- AMPHIASCUS SIMILIS** (Claus) [*Sars*, 1906, V, p. 151]
Mouth of River Yealm; Cawsand Bay, few specimens (A.M.N. and T.S., as *Dactylopusia*): 1916, rare, Sept., Oct.,
outside Breakwater (M.V.L.)
- AMPHIASCUS MINUTUS** (Claus) [*Sars*, 1906, V, p. 154]
SALCOMBE. 1875, rare; 1903 (A.M.N. and T.S., as *Dactylopusia*)
- AMPHIASCUS DEBILIS** (Giesbrecht) [*Sars*, 1906, V, p. 162]
Plymouth (A.M.N. and T.S., as *Dactylopusia*)
SALCOMBE. Sparingly, 1875 (A.M.N. and T.S.)
- AMPHIASCUS NORMANI** Sars, 1911, V, p. 383
SALCOMBE. 1875 (A.M.N. and T.S., as *Stenhelia longirostris*)
- AMPHIASCUS SIMULANS** (Norman and T. Scott) [*Sars*, 1911, V, p. 442; *Norman* and *T. Scott*, 1906, p. 143, as *Stenhelia*]
Sound, near Chequer Buoy, 14.8.03 (A.M.N. and T.S.)
- AMPHIASCUS HISPIDUS** (Brady) [*Sars*, 1906, V, p. 166]
Mouth of River Yealm, Aug. 1889; near Drake's Island, near Chequer Buoy, Millbay, Aug. 1903, rare (A.M.N. and
T.S., as *Stenhelia*)
SALCOMBE. July 1875, rare (A.M.N. and T.S.)

AMPHIASCUS IMUS (Brady) [*Sars*, 1906, V, p. 156]

Very sparingly from Cattewater, 1889 (A.M.N. and T.S., as *Stenhelina*)
SALCOMBE. 1875 (A.M.N. and T.S.)

STENHELIA NEGLECTA Norman and T. Scott, 1905, p. 286; 1906, p. 144

Millbay, among Hydrozoa, Aug. 1903 (A.M.N. and T.S.)
SALCOMBE. 1875 (A.M.N. and T.S.)

STENHELIA PALUSTRIS (Brady) [*Sars*, 1906, V, p. 185]

Neighbourhood of Plymouth, Aug. 1903 (A.M.N. and T.S., as *Delavalina*)
SALCOMBE. 9.7.75 (A.M.N. and T.S.)

STENHELIA GIESBRECHTI (T. and A. Scott) [*Sars*, 1906, V, p. 188]

Jennycliff Bay, Cawsand Bay, Sound near Chequer Buoy, Aug. 1903 (A.M.N. and T.S., as *Delavalina*)
SALCOMBE. Rare, June 1875 (A.M.N. and T.S.)

STENHELIA NORMANI (T. Scott) [*Sars*, 1906, V, p. 189]

Sound, near Chequer Buoy, Cawsand Bay, Aug. 1903 (A.M.N. and T.S., as *Delavalina*)
SALCOMBE. 2.7.75 and Sept. 1903 (A.M.N. and T.S.)

STENHELIA PYGMAEA Norman and T. Scott, 1905, p. 284; 1906, p. 142

Near Eddystone, 31.8.03; apparently not common; no males observed (A.M.N. and T.S.)

STENHELIA REFLEXA (Brady) [*Sars*, 1906, V, p. 186]

SALCOMBE. 1875 (A.M.N. and T.S.)

STENHELIA GIBBA Boeck [*Sars*, 1906, V, p. 181 = *Beatricella mimica* (T. Scott)]

Cattewater and near Duke Rock Buoy, 1889; Cawsand Bay, Jennycliff Bay, Sound, near Chequer Buoy, Aug. 1903
(A.M.N. and T.S.)
SALCOMBE. June 1875 (A.M.N. and T.S.)

STENHELIA AEMULA (T. Scott, 1893, p. 204, as *Delavalina*)

Jennycliff Bay and near Chequer Buoy, Aug. 1903 (A.M.N. and T.S., as *Beatricella*)
SALCOMBE. Very sparingly, June 1875 and Sept. 1903 (A.M.N. and T.S.)

Family **Canthocamptidae**

NITOCRA TYPICA Boeck [*Sars*, 1907, V, p. 212]

Brackish water, Plymouth (A.M.N. and T.S., as *Canthocamptus palustris*)
SALCOMBE (A.M.N. and T.S., as *N. oligochaeta*)

NITOCRA TAU Giesbrecht, 1882, p. 117

Cattewater, 1889; rock pools and above H.W. mark, Plymouth, Aug. 1903 (A.M.N. and T.S.)
SALCOMBE. 1875 and Sept. 1903 (A.M.N. and T.S.)

MESOCHRA RAPIENS (Schmeil) [*Sars*, 1907, V, p. 210 = *M. hirticornis* (T. Scott)]

Rock pools near Plymouth, at and above H.W. (A.M.N. and T.S., as *Canthocamptus hirticornis*)

MESOCHRA PYGMAEA (Claus) [*Sars*, 1907, V, p. 209]

Near Drake's Island and rock pools at and above H.W., Plymouth, Aug. 1903 (A.M.N. and T.S., as *Canthocamptus parvus*)

SALCOMBE. 1878 (A.M.N. and T.S.)

MESOCHRA LILLJEBORGI Boeck [*Sars*, 1907, V, p. 208]

Rock pools at and above H.W., Plymouth, 22.8.03, in brackish water, Plymstock, 29.8.03 (A.M.N. and T.S.)

AMEIRA LONGIPES Boeck [*Sars*, 1907, V, p. 215]

Sound, near Chequer Buoy; 3 m. N.W. of Eddystone and two other places near Plymouth (A.M.N. and T.S.)

SALCOMBE. June 1875 (A.M.N. and T.S.)

AMEIRA EXIGUA T. Scott, 1894, p. 243

A variety near Plymouth, Aug. 1903 (A.M.N. and T.S.)

AMEIRA TENUICORNIS T. Scott, 1902 [*Sars*, 1907, V, p. 217]

Wembury Bay, among Ascophyllum and in nest of *Amphithoë rubricata*, July 1930 (J.S.C. and R.G.)

Family **Laophontidae****LAOPHONTE SIMILIS** (Claus) [*Sars*, 1908, V, p. 244]

Shore adjoining Ince Castle, River Lynher, 1.8.28 (E.P.)

LAOPHONTE PROXIMA G. O. Sars, 1908, V, p. 250

River Tamar, Hole's Hole, among *Bowerbankia imbricata*, Cargreen Hard, 3/9.10.28 (E.P.)

LAOPHONTE STRÖMI (Baird) [*Sars*, 1908, V, p. 251]

On Black Buoy opposite mouth of Tavy; Bull Point, Hamoaze; No. 15 Buoy, Hamoaze, 1.8.28, 19.9.28 (E.P.)

LAOPHONTE ABBREVIATA G. O. Sars, 1920, VII, p. 72

On mud ½ mile above Cargreen, River Tamar, 17.8.28 (E.P.)

LAOPHONTE CORNUTA Philippi [*Sars*, 1907, V, p. 235]

Plymouth Sound (R.G.)

LAOPHONTE SERRATA (Claus) [*Sars*, 1907, V, p. 237]

Mouth of River Yealm, 1889; more recently in Sound; Duke Rock Buoy in 6 fm., Aug. 1889; Cawsand Bay, Aug. 1903 (A.M.N. and T.S., as *L. propinqua*): Plymouth Sound (R.G.)

SALCOMBE. 1875 (A.M.N. and T.S.)

LAOPHONTE DEPRESSA T. Scott [*Sars*, 1907, V, p. 239]

SALCOMBE. One specimen, 30.6.75 (A.M.N. and T.S.)

LAOPHONTE INORNATA A. Scott, 1902, p. 413 [*Norman and Scott*, 1906, p. 157]

Sound, near Chequer Buoy (A.M.N. and T.S.)

SALCOMBE (A.M.N. and T.S.)

- LAOPHONTE HERDMANI A. Scott, 1902, p. 414 [*Norman and Scott*, 1906, p. 159]
 Drake's Island, and other places in the neighbourhood of Plymouth, not uncommon (A.M.N. and T.S.)
 SALCOMBE. 1875 (A.M.N. and T.S.)
- LAOPHONTE BREVIROSTRIS (Claus) [*Sars*, 1908, V, p. 256]
 Wembury Bay among *Ascophyllum nodosum*, 15.7.30 (J.S.C. and R.G.)
- LAOPHONTE LITTORALIS T. and A. Scott [*Sars*, 1908, V, p. 255]
 Wembury Bay, among *Ascophyllum nodosum* and *Fucus spiralis*, July 1930 (J.S.C. and R.G.)
- LAOPHONTE CURTICAUDA Boeck [*Sars*, 1908, V, p. 252]
 Sparingly from mouth of River Yealm, 1889, from one or two localities near Plymouth (A.M.N. and T.S.)
 SALCOMBE. 1875 (A.M.N. and T.S.)
- LAOPHONTE THORACICA Boeck [*Sars*, 1907, V, p. 240]
 In 6 fm. near Duke Rock Buoy, Aug. 1889; Sound, near Chequer Buoy and 3 m. N.W. of Eddystone, Aug. 1903
 (A.M.N. and T.S.)
 SALCOMBE. 1875 (A.M.N. and T.S.)
- LAOPHONTE ELONGATA Boeck [*Sars*, 1908, V, p. 241]
 Plymouth Sound (R.G.)
- LAOPHONTE LONGICAUDATA Boeck [*Sars*, 1908, V, p. 243]
 3 m. N.W. of Eddystone, 31.8.03, frequent (A.M.N. and T.S.)
 SALCOMBE. 1875, rare (A.M.N. and T.S.)
- LAOPHONTE HISPIDA (Brady and Robertson) [*Brady*, 1880, II, p. 85]
 Cawsand Bay, Sound, near Chequer Buoy, Aug. 1903 (A.M.N. and T.S.)
 SALCOMBE. 1875 (A.M.N. and T.S.)
- LAOPHONTE INOPINATA T. Scott [*Sars*, 1908, V, p. 263]
 Plymouth in rock pools at and above high-water mark, 31.8.03, 1 specimen (A.M.N. and T.S.)
- LAOPHONTOPSIS LAMELLIFERA (Claus) =LAOPHONTE LAMELLIFERA Brady [*Sars*, 1908, V, p. 266]
 Whitsand Bay, Jennycliff Bay, Sound, near Chequer Buoy, Aug. 1903, not uncommon (A.M.N. and T.S.): Mewstone
 (R.G.)
 SALCOMBE. 1875 (A.M.N. and T.S.)
- LAOPHONTODES BICORNIS A. Scott, 1896, p. 147
 Sound, rare (A.M.N. and T.S.)
- LAOPHONTODES TYPICUS T. Scott, 1894, p. 249
 Cawsand Bay, Sound, near Chequer Buoy (A.M.N. and T.S.)
- NORMANELLA DUBIA (Brady and Robertson) [*Sars*, 1909, V, p. 278, as *N. minuta*]
 3 m. N.W. of Eddystone (A.M.N. and T.S.)
 SALCOMBE (A.M.N. and T.S.)
- PLATYCHELIPUS LITTORALIS Brady [*Sars*, 1908, V, p. 274]
 Whitsand Bay, 31.8.03, rare (A.M.N. and T.S.)

CRUSTACEA: COPEPODA

Family **Cletodidae**

- CLETODES LONGICAUDATUS** (Boeck) [*Sars*, 1909, V, p. 286]
Near Eddystone in 30 fm., 30.7.89; Whitsand Bay, 31.8.03, rare (A.M.N. and T.S.)
SALCOMBE. 30.6.75 (A.M.N. and T.S.)
- CLETODES LIMICOLA** Brady [*Sars*, 1909, V, p. 283]
Near Eddystone in 30 fm., 30.6.89; Sound, in Jennycliff Bay, near Chequer Buoy, Aug. 1903, not common (A.M.N. and T.S.)
SALCOMBE. 30.6.75 (A.M.N. and T.S.)
- CLETODES PERPLEXUS** T. Scott [*Sars*, 1920, VII, p. 78]
In a gathering from the neighbourhood of Plymouth, 14.8.03 (A.M.N. and T.S.)
SALCOMBE. 30.6.75 (A.M.N. and T.S.)
- CLETODES CURVIROSTRIS** T. Scott, 1894, p. 250
Sound, in 4-6 fm., 12.8.03, very rare (A.M.N. and T.S.)
- CLETODES TENUIPES** T. Scott [*Sars*, 1909, V, p. 284]
Cawsand Bay, off Batten Pier, rare (A.M.N. and T.S.)
SALCOMBE (A.M.N. and T.S.)
- EURYCLETODES LATUS** (T. Scott) [*Sars*, 1909, V, p. 294]
3 m. N.W. of Eddystone, 31.8.03 (A.M.N. and T.S.)
- EURYCLETODES SIMILIS** (T. Scott) [*Sars*, 1909, V, p. 295]
Very sparingly at Plymouth (A.M.N. and T.S.)
SALCOMBE. Very sparingly (A.M.N. and T.S.)
- ENHYDROSOMA PROPINQUUM** (Brady) [*Sars*, 1909, V, p. 300]
Sparingly from Plymouth (A.M.N. and T.S., as *Cletodes*): Hamoaze and No. 12 Buoy; River Lynher, 100 yd. above Antony Creek, 27.9.28, 20.7.28 (E.P.)
SALCOMBE. Sparingly (A.M.N. and T.S.)
- ENHYDROSOMA CURTICAUDATUM** Boeck [*Sars*, 1909, V, p. 298]
Sound, 4-6 fm., 12.8.03, very rare (A.M.N. and T.S., as *Cletodes hirsutipes*)
- RHIZOTHRIX CURVATA** Brady and Robertson [*Sars*, 1909, V, p. 303]
Whitsand Bay (A.M.N. and T.S., as *Enhydrosoma*)
SALCOMBE. 1875 (A.M.N. and T.S.)
- RHIZOTHRIX GRACILIS** (T. Scott) [*Sars*, 1911, V, p. 430]
Whitsand Bay (A.M.N. and T.S., as *Enhydrosoma*)
- HETEROPSYLLUS CURTICAUDATUS** T. Scott, 1894, p. 252
Duke Rock Buoy, 1889; off Jennycliff Bay, near Chequer Buoy, 1903 (A.M.N. and T.S.)
SALCOMBE. 1875, 1903 (A.M.N. and T.S.)

Family **Cylindropsyllidae**

- CYLINDROPSYLLUS LAEVIS** Brady [*Sars*, 1909, V, p. 321]
Mewstone mud (R.G.)

CRUSTACEA: COPEPODA

Family **Metidae**

METIS IGNEA Philippi [*Sars*, 1910, V, p. 345]

Rock pools, Plymouth, 22.8.03, rare (A.M.N. and T.S., as *Ilyopsyllus coriaceus*)

SALCOMBE. Two fine specimens, male and female in surface tow-net, July 1875 (A.M.N. and T.S., as *Ilyopsyllus coriaceus*)

Family **Tachidiidae**

TACHIDIUS BREVICORNIS Lilljeborg [*Sars*, 1909, V, p. 328]

SALCOMBE. 9.7.75, rare (A.M.N. and T.S., as *T. discipes*)

TACHIDIUS LITTORALIS Poppe [*T. Scott*, 1892, p. 250, as *T. crassicornis*]

River Tamar, 17.8.03 (A.M.N. and T.S.)

DANIELSSENIA TYPICA Boeck [*Sars*, 1909, V, p. 336]

From 6 fm., near Duke Rock Buoy, Aug. 1889 (A.M.N. and T.S.)

THOMPSONULA HYAENAE (I.C. Thompson) [*T. Scott*, 1893, p. 202, as *Jonesiella*]

Whitsand Bay, 31.8.03 (A.M.N. and T.S.)

ROBERTSONIA TENUIS (Brady and Robertson) [*Sars*, 1909, V, p. 334; *Brady*, 1880, II, p. 25]

Plymouth Sound, near Chequer Buoy and Jennycliff Bay, Aug. 1903 (A.M.N. and T.S.)

SALCOMBE. 1875 (A.M.N. and T.S.)

EUTERPINA ACUTIFRONS (Dana) [*Sars*, 1921, VII, p. 97]

Sound; 2½ m. off Breakwater and near Mewstone, 1903 (A.M.N. and T.S.): 1889, very abundant late winter and spring (G.C.B.): 1899, Jan.-Feb. rare, March-May somewhat rare, July fairly plentiful, Aug. rare, Sept. fairly common, Oct.-Dec. more or less rare (P.T.C.): 1916, rare Oct.-Dec. (M.V.L.): 1917, Sept., Dec. (G.E.W.): 1919, Jan.; 1920, common Aug., Sept.; 1921, Nov.; 1922, common, Nov.-Jan.; inside and outside Sound, Station E.1 (M.V.L.): River Tamar in plankton as far up as near Halton Quay, June Oct. 1928 (E.P.)

Family **Clytemnestridae**

CLYTEMNESTRA ROSTRATA (Brady) [*Giesbrecht*, 1892, pp. 566, 572]

Cattewater, Aug. 1889 (A.M.N. and T.S.): near Eddystone (L.H.G.)

Sub-Order CYCLOPOIDA

Family **Oithonidae**

OITHONA PLUMIFERA Baird [*Giesbrecht*, 1892, pp. 537, 548]

Very abundant, Feb.-April, practically absent during late summer and autumn, 1888-9 (G.C.B.): West Channel surface, 30.11.06, single specimens (W.B.): 1916, rare, Feb.-May, Sept. (M.V.L.): 1917, Oct.-Nov., beyond Breakwater (G.E.W.): 1921, Oct. (M.V.L.)

CRUSTACEA: COPEPODA

OITHONA HELGOLANDICA Claus = **OITHONA SIMILIS** Claus [*Sars*, 1913, VI, p. 8]

Plymouth district (A.M.N. and T.S.): 1899, more or less common throughout the year (P.T.C.): 1915-16, more or less common throughout the year except from Nov-Jan., very common in the middle of Feb., and the middle of May (M.V.L.): 1917, July-Oct., common July; 1918, Feb.-April (G.E.W.): 1919, March-Sept.: 1920, May-Oct.; 1921, Jan.-Dec., very common April, common Aug.; 1921, at Station E1; 1922, Jan.-Dec., common July; 1925, March-Aug.; 1928, July-Oct., common July; inside and outside Sound, Station E.1 (M.V.L.): as far as Black Buoy off Tavy, River Tamar; as far as Antony Passage, River Lynher, June-Oct. 1928 (E.P.)

SALCOMBE. 1875 (A.M.N. and T.S.)

OITHONA NANA Giesbrecht, 1892, pp. 528 and 549

Plymouth and Whitsand Bay, 1903 (A.M.N. and T.S.): 1916, rare, Jan. May, outside Breakwater (M.V.L.)

Family **Cyclopinidae****CYCLOPINA LONGICORNIS** Boeck [*Sars*, 1913, VI, p. 12]

Sound, near Chequer Buoy, Cawsand Bay, 1903 (A.M.N. and T.S., as *C. littoralis*): Plymouth, few specimens, April 1889 (G.C.B.): Hamoaze, opposite Lynher in plankton from various depths; St. John's Lake, 20.7.28, 16.9.28 (E.P.)

SALCOMBE. 1875 (A.M.N. and T.S.)

CYCLOPINA GRACILIS Claus [*Sars*, 1913, VI, p. 11]

Sound, near Chequer Buoy; off Batten Pier and rock pools in Sound (A.M.N. and T.S.)

SALCOMBE. 1875, 1903 (A.M.N. and T.S.)

CYCLOPINA PYGMAEA Sars, 1918, VI, p. 210

Plymouth Sound (R.G.)

Family **Cyclopidae****EURYTE LONGICAUDA** Philippi [*Sars*, 1913, VI, p. 24]

Off Duke Rock Buoy; mouth of Yealm, Aug. 1899; Millbay, Cawsand Bay and other gatherings from Plymouth, Aug. 1903, nowhere common (A.M.N. and T.S.)

SALCOMBE. June, 1875 (A.M.N. and T.S.)

EURYTE MINOR T. Scott [*Sars*, 1921, VII, p. 106]

One ovigerous female Asia Shoal, 14.3.55 (R.U.G.)

HALICYCLOPS AEQUOREUS (Fischer) [*Brady*, 1880, I, p. 119]

Cattewater, Aug. 1889; brackish water Plymstock; Millbay and in rock pools at and above high water at Plymouth (A.M.N. and T.S.)

Family **Ascomyzontidae****ASCOMYZON LATUM** (Brady) [*Sars*, 1915, VI, p. 90]

Sparingly from mouth of River Yealm, 1889; holdfasts of *Laminaria*

CRUSTACEA: COPEPODA

and among Hydrozoa at extreme low water in the neighbourhood of Plymouth, Aug.; found living on *Echinus esculentus* and sponges (A.M.N. and T.S., as *Asterocheres echinicola*)
SALCOMBE. Sept. 1903 (A.M.N. and T.S.)

ASCOMYZON BOECKI (Brady) [*Sars*, 1915, VI, p. 88]
With *A. latum* from mouth of River Yealm, 1889 (A.M.N. and T.S.)
SALCOMBE. 8.9.03; apparently rare (A.M.N. and T.S.)

ASCOMYZON SUBERITIS (Giesbrecht, 1899, p. 100)
Its usual habitat is the water passages of *Suberites domuncula* and probably other sponges (A.M.N. and T.S., as *Asterocheres*)
SALCOMBE. 9.9.03 (A.M.N. and T.S.)

ASCOMYZON VIOLACEUM (Claus) [*Sars*, 1915, VI, p. 93, as *Echinocheres*]
Adults very frequent on every *Echinus esculentus* examined throughout the year; stages copepodid II to adult, March and April 1955; some females with egg sacs at all times (R.U.G.)

DERMATOMYZON NIGRIPES (Brady and Robertson) [*Sars*, 1915, VI, p. 95]
Mouth of River Yealm, Aug. 1889; also in Sound at a later date (A.M.N. and T.S.)
SALCOMBE. June 1875 (A.M.N. and T.S.)

RHYNCHOMYZON PURPUROCINCTUM (T. Scott) [*Sars*, 1915, VI, p. 98]
SALCOMBE. One specimen, June 1875; another Sept. 1903 (A.M.N. and T.S.)

COLLOCHERES GRACILICAUDA (Brady) [*Sars*, 1915, VI, p. 101]
One specimen, Sound, 19.8.03 (A.M.N. and T.S.)
SALCOMBE. One specimen 9.9.03 (A.M.N. and T.S.)

ACONTIOPHORUS SCUTATUS (Brady and Robertson) [*Sars*, 1915, VI, p. 110]
Near Duke Rock, 1889; Jennycliff Bay, Aug. 1903 (A.M.N. and T.S.): New Grounds, July 1929 (R.G.)
SALCOMBE. 1875 and 1903 (A.M.N. and T.S.)

SCOTTOCHERES ELONGATUS (T. and A. Scott) [*Sars*, 1915, VI, p. 107]
One specimen from *Corallina* near L.W. at Plymouth; one from material washed from *Chlamys opercularis* from same place, Aug. 1903 (A.M.N. and T.S.)

MESOCHERES ANGLICUS Norman and T. Scott [*Sars*, 1915, VI, p. 103; *Norman and Scott*, 1906, p. 194]
Sound, 1 specimen, 12.8.03, appears to be a parasite (A.M.N. and T.S.)

NICOTHOË ASTACI Audouin and Milne Edwards [*Leigh-Sharpe*, 1926a, p. 148]
Plymouth, on gills of lobster (A.M.N. and T.S.); on the gills of lobster, 12.9.11; during September egg sacs with embryos well advanced; one female lobster examined with 100 parasites on each side, Plymouth (G.W.S.)

CRUSTACEA: COPEPODA

Family **Micropontidae****MICROPONTIUS OVOIDES** Gooding, 1957, p. 198

Adults very frequent on every *Spatangus purpureus* examined; occasional on *Echinocardium* spp; various localities; females with ovisacs present at all times (R.U.G.)

Family **Dyspontidae****DYSPONTIUS STRIATUS** Thorell [*Sars*, 1915, VI, p. 118]

Dredged at mouth of River Yealm, 1889; 3 m. N.W. of Eddystone, 31.8.03 (A.M.N. and T.S.)
SALCOMBE. Dredged, 30.6.75 (A.M.N. and T.S.)

BRADYPONTIUS MAGNICEPS (Brady) [*Sars*, 1915, VI, p. 124]

One specimen, near Duke Rock, July 1889 [A.M.N. and T.S.]

Family **Artotrogidae****ARTOTROGUS ORBICULARIS** Boeck [*Sars*, 1915, VI, p. 133]

One specimen in tow-net, carrying clusters of eggs, Aug. 1929 (D.A.)

Family **Cancerillidae****CANCERILLA TUBULATA** Dalyell [*Sars*, 1915, VI, p. 139]

One specimen from mouth of Yealm, Aug. 1889 (A.M.N. and T.S., as *Caligidium vagabundum* Claus)

Family **Clausidiidae****HEMICYCLOPS PURPUREUS** Boeck [*Sars*, 1917, VI, p. 146]

One specimen about 3 m. N.W. of Eddystone, 31.8.03 (A.M.N. and T.S., as *Hersiliodes littoralis*)

Family **Ergasilidae****BOMOLOCHUS BELLONES** Burmeister [*Oorde de Lint* and *Stekhoven*, 1936, p. 104]

Gills of *Belone acus* (W.H.L.-S.)

BOMOLOCHUS CONFUSUS Stock, 1953, p. 5

Females frequent in nostrils of *Gadus luscus*, less common in those of *G. merlangus* and *G. callarias*; almost all with ovisacs, males rather rare (R.U.G.)

Family **Lichomolgidae****LICHOMOLGUS FORFICULA** Thorell [*Sars*, 1917, VI, p. 153]

In the branchial chamber of *Phallusia mamillata*, Plymouth, Aug. 1903 (A.M.N. and T.S.)

LICHOMOLGUS FURCILLATUS Thorell [*Brady*, 1880, III, p. 49]

Dredged 3 m. N.W. of Eddystone in 20-5 fm., 31.8.03 (A.M.N. and T.S., as *Pseudanthessius*)

LICHOMOLGUS AGILIS (Leydig) [Sars, 1917, VI, p. 161]

Gills of *Archidoris tuberculata*,* 30.8.32 (W.H.L.-S.): seen commonly on *Archidoris britannica** between 1933 and 1949 (J.E.F.); several on *Jorunna tomentosa* from Rum Bay, 10.4.33 (J.E.F.)

LICHOMOLGUS LEPTODERMATUS Gooding, 1957, p. 207

Females (mostly with ovisacs) males and copepodids V in swellings of gill tissue of *Laevicardium crassum*, Looe-Eddystone Grounds, 8.3.55 (R.U.G.)

MACROCHEIRON FUCICOLUM Brady [Sars, 1917, VI, p. 163]

Mouth of River Yealm, 1889, rare; very sparingly in gatherings from Sound; off Jennycliff Bay; 3 m. N.W. of Eddystone in 20-5 fm., Aug. (A.M.N. and T.S. as Lichomolgus)
SALCOMBE. Sept. 1903 (A.M.N. and T.S.)

PSEUDANTHESSIUS GRACILIS Claus [Sars, 1917, VI, p. 167]

Sound, near Chequer Buoy, Aug. 1903 (A.M.N. and T.S.)
SALCOMBE. 1875 and Sept. 1903, sparingly (A.M.N. and T.S.)

PSEUDANTHESSIUS THORELLI (Brady and Robertson) [Brady, 1880, III, p. 47, as Lichomolgus]

Very rare in material washed from the animals of *Chlamys opercularis*, Plymouth, 2.9.03 (A.M.N. and T.S.)
SALCOMBE. 9.9.03 (A.M.N. and T.S.)

PSEUDANTHESSIUS LIBER (Brady and Robertson) [Sars, 1917, VI, p. 169]

Females and males occasional on *Echinus esculentus*, Jan. and Feb. 1955 (R.U.G.)

ENTEROGNATHUS COMATULAE Giesbrecht, 1901, p. 61

In the gut of *Antedon bifida* (H.G.V.)

MYTILICOLA INTESTINALIS Steuer, 1902, p. 635

Noss Mayo Creek in *Mytilus edulis*, 21.3.50 (L.R.F.)

HERMANNELLA MAXIMA (Thompson, 1893, p. 208, as Lichomolgus)

One or two specimens from *Chlamys opercularis*, Plymouth, 2.9.03 (A.M.N. and T.S.)

HERMANNELLA ARENICOLA (Brady, 1880, III, p. 46, as Lichomolgus)

SALCOMBE. A single specimen, not fully mature, dredged, 30.6.75 (A.M.N. and T.S.)

HERMANNELLA PARVA Norman and T. Scott [Sars, 1918, VI, p. 176]

Sound, among Hydrozoa, near low water, Aug. 1903 (A.M.N. and T.S.)

PARANTHESSIUS ROSTRATUS (Canu, 1892, p. 236, as Hermannella)

Mantle and testis of *Cardium edule*, Millbrook, 28.8.32; gonad of *Venerupis pullastra*, March 1934 (W.H.L.-S.)
Breeding: egg sacs attached to female, 3.8.33 (Atkins, 1934)

* Now *Archidoris pseudoargus* (see p. 308),

CRUSTACEA: COPEPODA

Family **Clausidiidae**

CONCHYLIURUS CARDII Gooding, 1957, p. 213

Ovigerous females associated with *Cardium echinatum*, Bigbury Bay, 23.5.55 and 6.7.55, not very common (R.U.G.)

Family **Oncaeiidae**

ONCAEA MEDITERRANEA (Claus) [*Giesbrecht*, 1892, pp. 591, 602]

Plymouth, Aug. 1903 (A.M.N. and T.S.): Plymouth (G.C.B., P.T.C.)

ONCAEA MINUTA Giesbrecht [*Sars*, 1918, VI, p. 217]

Plymouth, 1899, very rare Jan.-March, rare Dec. (P.T.C.)

ONCAEA SUBTILIS Giesbrecht, 1892, pp. 591, 603

Plymouth, March 1899, very rare (P.T.C.)

ONCAEA VENUSTA Philippi [*Giesbrecht*, 1892, pp. 590, 602]

In tow-net off S. coasts of Devon and Cornwall (L.H.G.)

ONCAEA ORNATA Giesbrecht, 1892, pp. 591, 604

In tow-net off S. coasts of Devon and Cornwall (L.H.G.)

LUBBOCKIA ACULEATA Giesbrecht, 1892, pp. 606, 611

Off coasts of Devon, 1903 (L.H.G.)

LUBBOCKIA SQUILLIMANA Claus [*Giesbrecht*, 1892, pp. 606, 611]

Off the S. coast of Devon, 1903 (L.H.G.)

Family **Corycaeiidae**

CORYCAEUS ANGLICUS Lubbock [*Sars*, 1918, VI, p. 196]

Plymouth (G.C.B., P.T.C., T.V.H., A.M.N. and T.S.): 1915-16, present most of the year but rarest in summer; through Oct. and Nov. it agrees with *Pseudocalanus* in abundance, but becomes scarce in Dec. (M.V.L.): 1917-18, Jan.-Oct., common March 1917 (G.E.W.): 1920, Aug.-Dec., common Nov.; 1921, Jan.-Dec., common Nov.; 1922, Jan.-Dec., common April, Nov., Dec.; 1924, common Nov.; 1925, March-July; 1928, common July-Oct.; inside and outside Sound, Station E.1 (M.V.L.): 6 fm. depth, No. 12 Buoy in Hamoaze, opposite mouth of Lynher, abundant, 9.9.28 (E.P.)

CORYCAEUS VENUSTUS Dana [*Giesbrecht*, 1892, pp. 659, 674]

Plymouth, Nov. 1889, very rare (P.T.C.)

Sub-Order MONSTRILLOIDA

Family **Monstrillidae**

MONSTRILLA LONGICORNIS Thompson [*Sars*, 1921, VIII, p. 11]

One specimen, 18.11.07, one specimen, 29.11.07, Sound, tow-nets (W.DE M.)

MONSTRILLA HELGOLANDICA Claus [*Sars*, 1921, VIII, p. 18]

Plymouth, tow-net, July-Sept., 2 specimens, 1902 (R.G.): 6.11.47 (E.M.B.)

CYMBASOMA LONGISPINOSUM (Bourne) [*Sars*, 1921, VIII, p. 24]

Plymouth (G.C.B.): tow-net, off Penlee Point, 21.10.08, carrying eggs (A.J.S.): tow-net, Sound, 1 specimen, 2.10.11 (J.H.O.): once only, Sept. 1915, with eggs (M.V.L.): River Lynher, above Antony Passage, mid-water in main channel; River Tamar, as far as 100 yd. above Antony Creek; midstream off Neille Point, 1.8.28, most of eggs shed; no eggs, 9.10.28; not abundant but regularly present (E.P.)

CYMBASOMA THOMPSONI (Giesbrecht) [*Sars*, 1921, VIII, p. 23]

Off Drake's Island, bottom (R.G.)
SALCOMBE. 1875 (A.M.N. and T.S., as *Thaumaleus*)

CYMBASOMA FILOGRANARUM (Malaquin, 1901, p. 110, as *Haemocera*)

Internal parasite of *Filograna implexa*, Mewstone Ground, 10.8.28; constantly 1924-8. Although *Filograna* is abundant round Plymouth this is the only place where the parasite occurs, and it is the operculate variety of *Filograna* on this ground (G.H.F.)

CYMBASOMA RIGIDUM Thompson [*Sars*, 1921, VIII, p. 21]

One male near Breakwater at night with lamp, June 1950 (J.P.H.)

Sub-Order NOTODELPHYOIDA

Family **Notodelphyidae**NOTODELPHYS ALLMANI Thorell [*Sars*, 1921, VIII, p. 31]

Plymouth, Sept. 1903, in branchial chambers of large ascidians (A.M.N. and T.S.): in *Ascidiella aspersa*, beach at L.W., 100 yd. above Antony Creek, and shore above Ince Castle, River Lynher; Hole's Hole, River Tamar; St. John's Lake, opposite Rifle Range; Sept.-Oct. 1928, carrying eggs (E.P.)
SALCOMBE. Sept. 1903, in ascidians (A.M.N. and T.S.)

NOTODELPHYS PRASINA Thorell [*Sars*, 1921, VIII, p. 37]

Plymouth, in the branchial chamber of *Phallusia mamillata*, Aug. 1903 (A.M.N. and T.S.)

AGNATHANER TYPICUS Canu [*Sars*, 1921, VIII, p. 39]

Plymouth Sound, July 1929 (R.G.)

Family **Doropygidae**DOROPYGUS PULEX Thorell [*Sars*, 1921, VIII, p. 42]

Plymouth, in the branchial chambers of *Polycarpa*, 3.9.03 (A.M.N. and T.S.)

DOROPYGUS NORMANI Brady [*Brady*, 1878, I, p. 136]

SALCOMBE. Salstone, one female carrying embryos, in branchial sac of *Pyura microcosmus*, 26.3.52 (D.B.C.)

PACHYPYGUS GIBBER (Thorell) [*Sars*, 1921, VIII, p. 51]

In branchial sacs of about 2 per cent. *Ciona intestinalis* attached to ship's bottom, about 2 in. below water line, Millbay Docks, Plymouth, 26.10.51

CRUSTACEA: COPEPODA

Breeding: mainly mature and ripe, some with embryos in brood pouch, 26.10.51 (D.B.C.)

BOTACHUS CYLINDRATUS Thorell [*Sars*, 1921, p. 59]

Occasional specimens in branchial sacs of *Ciona intestinalis* from Millbay dock and from Drake's Island buoy, 26.10.51 and 23.11.53 (D.B.C.)

Breeding: mainly mature and ripe, some with embryos, 26.10.51 and 23.11.53 (D.B.C.)

NOTOPTEROPHORUS PAPILIO Hesse [*Sars*, 1921, VIII, p. 55]

Plymouth, Sept. 1903, sometimes not uncommon in the branchial chamber of large ascidians (A.M.N. and T.S.): in branchial cavity of *Ascidia mentula*, Revelstoke Point, embryos being liberated, 26.4.29 (D.A.)

GUNENTOPHORUS GLOBULARIS Costa [*Sars*, 1921, VIII, p. 57]

SALCOMBE. Salstone, one female carrying embryos in branchial sac of *Polycarpa fibrosa*, 26.3.52 (D.B.C.)

ASCIDICOLA ROSEA Thorell [*Sars*, 1921, VIII, p. 64]

In *Ascidiella aspersa* from beach at L.W., 100 yd. right bank, above Antony Creek, River Lynher, 30.9.28 (E.P.)

SALCOMBE. 9.9.03 (A.M.N. and T.S.)

Family **Botryllophilidae****BOTRYLLOPHILUS RUBER** Hesse [*T. Scott*, 1901b, p. 242]

SALCOMBE. Several specimens from fragments of Botryllus, Kingsbridge Estuary (A.M.N. and T.S.)

Family **Enterocolidae****ENTEROCOLA FULGENS** Van Beneden [*Canu*, 1892, p. 216]

SALCOMBE. A few specimens from fragments of Botryllus and small ascidians, with Botryllophilus as above (A.M.N. and T.S.)

Sub-Order CALIGOIDA

Family **Caligidae****CALIGUS RAPAX** Milne Edwards [*T. and A. Scott*, 1913, T, p. 48]

Plymouth (A.M.N. and T.S.): W. Channel, surface, tow-net, one male, 27.10.06; this species although a parasitic form frequently leaves its host and becomes free swimming; 20.11.06, tow-net, 1 specimen (W.B.): often found in tow-nets, both sexes, females with eggs; inside and outside Sound (M.V.L.): on scales of *Salmo trutta* (with *Lepeophtheirus stromi*) in mouth of *Gadus callarias*, rarely on surface of Mugil, male generally with female, but in smaller numbers (P.W.B.-s.): on *Gobius sp.* (L.H.M.)

CALIGUS MINIMUS Otto [*T. and A. Scott*, 1913, I, p. 46]

Mouth and pharynx of *Morone labrax*, both sexes, June and Oct. (P.W.B.-S.)

CALIGUS CURTUS O. F. Müller [*T. and A. Scott*, 1913, I, p. 45]

Frequently in mouth of *Gadus callarias*, surface of body of *Gadus minutus* (P.W.B.-S.)

- CALIGUS CENTRODONTI Baird [*T. and A. Scott*, 1913, I, p. 50]
Tail and fins of *Pagellus centrodontus* (P.W.B.-S.)
- CALIGUS DIAPHANUS Nordmann [*T. and A. Scott*, 1913, I, p. 60]
In quantities on inner surface of operculum of *Trigla lucerna* and *T.cuculus* (P.W.B.-S., L.H.M.)
- CALIGUS GURNARDI Krøyer [*T. and A. Scott*, 1913, I, p. 52]
One specimen from gill cavity of *Trigla cuculus*, June (P.W.B.-S.): 8 specimens on 10 *T. lineata*, 30.5.36 (C.L.O.)
- CALIGUS PELAMYDIS Krøyer [*T. and A. Scott*, 1913, I, p. 57]
Inner surface of operculum of *Scomber scombrus* (P.W.B.-S., L.H.M.): gills of *Sarda sarda*, 4.9.33 (W.H.L.-S.)
- CALIGUS ZEI Norman and T. Scott [*T. and A. Scott*, 1913, I, p. 54]
Surface of body of *Zeus faber* (W.H.L.-S.)
- CALIGUS LABRACIS T. Scott, 1902 [*T. and A. Scott*, 1913, I, p. 53]
On *Labrus ossifagus* 4 m. off Port Wrinkle, July 1933 (A.E.J.W.): on *Labrus bergylta* gills, Sept. 1932 (W.H.L.-S.)
- PSEUDOCALIGUS BREVIPEDES (Bassett-Smith) [*T. and A. Scott*, 1913, I, p. 61]
Gill cavity and inner side of operculum of *Onos tricirratu*s* (P.W.B.-S.): *Onos mustelus* from Wembury, 1.9.32 (W.H.L.-S.)
- LEPEOPHTHEIRUS PECTORALIS (O. F. Müller) [*T. and A. Scott*, 1913, I, p. 64]
Pectoral fins of *Pleuronectes platessa*, *Platichthys flesus*, *Limanda limanda* (P.W.B.-S., L.H.M.)
- LEPEOPHTHEIRUS NORDMANNI Milne-Edwards [*T. and A. Scott*, 1913, I, p. 66]
On *Mola mola*, Plymouth (C.S.B. in Norman coll. Brit. Mus.): surface of body of *Mola mola* (P.W.B.-S.)
- LEPEOPHTHEIRUS HIPPOGLOSSI (Krøyer) [*T. and A. Scott*, 1913, I, p. 67]
Surface of body of *Scophthalmus rhombus* (L.H.M.)
- LEPEOPHTHEIRUS THOMPSONI Baird [*T. and A. Scott*, 1913, I, p. 69]
Gills of *Scophthalmus maximus* and *S. rhombus*, as many as 30 from 1 fish (P.W.B.-S., L.H.M., W.H.L.-S.)
- LEPEOPHTHEIRUS POLLACHII Bassett-Smith [*T. and A. Scott*, 1913, I, p. 73]
Palate and back of tongue of *Gadus pollachius* and gills of *Molva molva*, both sexes in quantity (P.W.B.-S., L.H.M.)
- LEPEOPHTHEIRUS SALMONIS (Krøyer) [*T. and A. Scott*, 1913, I, p. 71]
Both sexes in quantity on surface of body of *Salmo salar* and *Salmo trutta*, Plymouth, June and July (P.W.B.-S., L.H.M.)
- TREBIUS CAUDATUS Krøyer [*T. and A. Scott*, 1913, I, p. 81]
Dorsal surface of head and nasal fossae of *Raia batis*, not common (P.W.B.-S.): common in 1932 on *Raia clavata*, Mewstone trawling grounds (W.H.L.-S.)

*See under Gaidropsarus, p. 392.

CRUSTACEA: COPEPODA

ELYTROPHORA BRACHYPTERA Gerstaecker [*T. and A. Scott*, 1913, I, p. 83]

From gills of a large *Thunnus thynnus*, 5 of each sex (P.W.B.-S.)

DINEMATURA PRODUCTA O. F. Müller [*T. and A. Scott*, 1913, I, p. 86 as *Dinemoura*]

On *Cetorhinus maximus*, 1949 (G.A.S.)

PANDARUS BICOLOR Leach [*T. and A. Scott*, 1913, I, p. 95]

Plymouth, 1889 (A.M.N.): a number taken from surface of *Scyliorhinus stellaris* (P.W.B.-S.): sides of *Squalus acanthias*, June 1933 (C.L.O. and W.H.L.-S.)

CECROPS LATREILLEI Leach [*T. and A. Scott*, 1913, I, p. 98]

Two specimens in gills of *Mola mola* (P.W.B.-s.): 3 males in gills of *M. mola*, July 1937 (C.L.O.)

ORTHAGORISCICOLA MURICATA (Krøyer) [*T. and A. Scott*, 1913, I, p. 100]

Surface of body of *Mola mola* (C.S.B.): 18.7.20 (H.G.C.): on caudal fin of *Mola mola*, off Batten, 12.7.20 (R.S.C.)

NOGAUS AMBIGUUS T. Scott, 1907 [*T. and A. Scott*, 1913, I, p. 78]

On *Squalus acanthias*, June 1933 (W.H.L.-S.)

Family **Dichelestiidae**

LERNANTHROPUS KRØYERI Van Beneden [*T. and A. Scott*, 1913, I, p. 110]

From gills of one *Morone labrax* in over a dozen examined (P.W.B.-S.)

HATSCHEKIA LABRACIS Van Beneden, 1870 [*T. and A. Scott*, 1913, I, p. 115]

Gills of *Labrus bergylta*, July 1933 (R.G.)

HATSCHEKIA MULLI (Van Beneden) [*T. and A. Scott*, 1913, I, p. 114]

Gills of *Mullus surmuletus*, a number of females (P.W.B.-S.)

HATSCHEKIA PYGMAEA T. Scott [*T. and A. Scott*, 1913, I, p. 119]

Gills of *Crenilabrus melops* 2.9.32, 20.4.34 (W.H.L.-S.)

HATSCHEKIA CORNIGERA T. Scott [*T. and A. Scott*, 1913, I, p. 118]

Gills of *Pagellus centrodontus*, Oct. 1947, several specimens of adult females (E.M.B.)

CONGERICOLA PALLIDA Van Beneden [*T. and A. Scott*, 1913, I, p. 124]

Gills of *Conger conger*, not common (P.W.B.-S.)

EUDACTYLINA ACUTA Van Beneden, 1853 [*T. and A. Scott*, 1913, I, p. 126]

Gills of *Squatina squatina* Eddystone, 27.8.32 (W.H.L.-S.)

Sub-Order LERNAEOIDA

Family **Lernaecidae**

LERNAEOCERA BRANCHIALIS (L.) [*T. and A. Scott*, 1913, I, p. 142, as *Lernaea*]

Gills of *Gadus callarias*, *G. aeglefinus*, *G. merlangus*, *Morone labrax* (P.W.B.-S.): gills of *G. merlangus*, buccal cavity of *Callionymus lyra* (H.L.-S.): gills of males of *Callionymus lyra*, 26.8.32 (W.H.L.-S.)

LERNAEOCERA LUSCI (Bassett-Smith) [*T. and A. Scott*, 1913, I, p. 144, as *Lernaea*]
Gills of *Gadus luscus*, very common (P.W.B.-S.)

PENICULUS FISTULA f. PAGELLI Delamare Deboutteville and Nunes, 1951, p. 453
Females on fins of *Pagellus centrodontus* and *P. erythrinus*, not common, normally without ovisacs (R.U.G.)

LERNAEENICUS SPRATTAE (Sowerby) [*T. and A. Scott*, 1913, I, p. 156]
Eye of *Clupea harengus* (P.W.B.-S.)

LERNAEENICUS ENCRASICOLA (Turton) [*T. and A. Scott*, 1913, I, p. 158]
Body of *Alosa alosa* (P.W.B.-S.)

HAEMOBAPHOIDES AMBIGUUS *T. Scott*, 1900 [*T. and A. Scott*, 1913, I, p. 148]
On *Callionymus maculatus*, Rame-Eddystone Agassiz trawl, May 1934 (W.H.L.-S.)

Family **Chondracanthidae**

ACANTHOCHONDRIA CORNUTA (O. F. Müller) [*T. and A. Scott*, 1913, I, p. 168]
Gills of *Lepidorhombus whiff-iajonis*, *P. platessa* and *P. flesus*, many (P.W.B.-S.)

ACANTHOCHONDRIA SOLEAE Krøyer [*T. and A. Scott*, 1913, I, p. 170]
Gill cavities of *Solea solea*, not common (P.W.B.-S.)

ACANTHOCHONDRIA DEPRESSA *T. Scott* [*T. and A. Scott*, 1913, I, p. 172]
Gills of *Platichthys flesus* (L.H.M.)

ACANTHOCHONDRIA CLAVATA Bassett-Smith [*T. and A. Scott*, 1913, I, p. 175]
Gills of *Microstomus kitt* (P.W.B.-S.)

ACANTHOCHONDRITES ANNULATES Olsson [*T. and A. Scott*, 1913, I, p. 169]
Female from cloacal aperture of a male *Galeorhinus galeus*, Plymouth trawler, 23.9.09 (E.R.S.)

CHONDRACANTHUS ZEI De la Roche [*T. and A. Scott*, 1913, I, p. 177]
In the anterior angle of the gill cavity of *Zeus faber*, very common (P.W.B.-S.)

CHONDRACANTHUS LOPHII Johnston [*T. and A. Scott*, 1913, I, p. 179]
Inside operculum and gills of *Lophius piscatorius*, nearly always present in well-grown fish (P.W.B.-S., W.H.L.-S., L.H.M.): females with egg sacs from gills of *Lophius piscatorius* from Plymouth trawlers, 23.9.09 (E.R.S.)

CHONDRACANTHUS MERLUCCII (Holten) [*T. and A. Scott*, 1913, I, p. 180]
Mouth of *Merluccius merluccius*, very common (P.W.B.-S.)

DISPHAEROCEPHALUS ORNATUS (*T. Scott*) [*T. and A. Scott*, 1913, I, p. 182, as *Chondracanthus*]
On *Callionymus lyra* (C.L.O.)

ORALIEN TRIGLAE (Blainville) [*Leigh-Sharpe and Oakley*, 1927, p. 460; *T. and A. Scott*, 1913, I, p. 184, as *Medesicaste asellinum*]
Gills of *Trigla gurnardus*, *T. cuculus* and *T. lucerna*, Plymouth (P.W.B.-S.)

CRUSTACEA: COPEPODA

LERNENTOMA ASELLINA (L.) [T. and A. Scott, 1913, I, p. 184, as Medesicaste]
Gills of *Trigla gurnardus*, Sept. 1932 (W.H.L.-S.)

Family Splanchnotrophidae

SPLANCHNOTROPHUS GRACILIS Hancock and Norman, 1863, p. 51
Parasite on *Acanthodoris pilosa*, 3 females and several males on one, several males on others, Rame-Eddystone Grounds, 12.7.06, otter-trawl (R.E.)

Family Lernaeopodidae

SALMINCOLA SALMONEA (L.) [T. and A. Scott, 1913, I, p. 199, as Lernaeopoda]
One female on gills of *Salmo salar* (P.W.B.-S.)

LERNAEPODA GALEI Krøyer [T. and A. Scott, 1913, I, p. 197]
Many from *Mustelus mustelus*, *Galeorhinus galeus* and *Squalus acanthias*, attached to soft skin behind pectoral and anal fins, and more particularly in the deep folds by the anal fins of the male, many specimens (P.W.B.-S.); cloaca and claspers of *Galeorhinus galeus* (W.H.L.-S.); female from cloacal aperture of *Galeorhinus galeus* male, female with large egg-sacs from skin beneath ventral fin of *Scyliorhinus stellaris* male, females from cloacal aperture of *Scyliorhinus canicula* male, Plymouth trawler, 24.9.09 (E.R.S.)

LERNAEPODA BIDISCALIS Kane [T. and A. Scott, 1913, I, p. 200]
Clasper of *Galeorhinus galeus*, Sept. 1933 (W.H.L.-S.)

LERNAEPODA GLOBOSA Leigh-Sharpe, 1918b, p. 29
Nasal fossae and outside spiracle of *Scyliorhinus canicula*, 1918 (W.H.L.-S.)

LERNAEPODA MUSTELICOLA Leigh-Sharpe, 1919, p. 256
Two female specimens, cloaca of *Mustelus mustelus* (W.H.L.-S.)

LERNAEPODA SCYLLICOLA Leigh-Sharpe, 1916, p. 262; 1918a, p. 18
Cloaca and claspers of *Scyliorhinus canicula*, especially males (W.H.L.-S.)

CHAROPINUS DUBIUS T. Scott [T. and A. Scott, 1913, I, p. 190]
Gills of *Raia maculata*, Eddystone, Sept. 1932, also *Raia batis* (W.H.L.-S.): 3 females from *Raia circularis*, 21.10.52 (L.A.H.)

CHAROPINUS DALMANNI (Retzius) [T. and A. Scott, 1913, I, p. 189]
Nostrils of *Raia batis*, Sept. 1932 (W.H.L.-S.)

CHAROPINUS RAMOSUS Krøyer [T. and A. Scott, 1913, I, p. 191]
Gills of *Raia clavata*, 18.5.29, 3.6.33, 30.8.33 (W.H.L.-S.)

CLAVELLA DEVASTATRIX Leigh-Sharpe, 1925, p. 197
Gills, pharynx and inside of operculum of *Gadus merlangus* (W.H.L.-S., L.H.M.)

CLAVELLA IADDA Leigh-Sharpe, 1925, p. 196
Skin, fins, tail, anus of *Gadus callarias* (W.H.L.-S.)

CLAVELLA DELICIOSA Leigh-Sharpe, 1933b, p. 117
Gills of *Merluccius merluccius* and *Gadus virens* (W.H.L.-S.)

CLAVELLA TYPICA Leigh-Sharpe, 1933*b*, p. 117
Gills of *Gadus luscus* (W.H.L.-S.)

CLAVELLA INVICTA Leigh-Sharpe, 1925, p. 197
Skin, fins, tail, anus of *Gadus pollachius* (L.H.M.)

CLAVELLA SCIATHERICA Leigh-Sharpe, 1925, p. 195
Buccal cavity, pharynx of *Gadus callarias* (W.H.L.-S.)

CLAVELLISA EMARGINATA (Krøyer) [*T. and A. Scott*, 1913, I, p. 218]
Gill rakers of *Alosa alosa* (P.W.B.-S.)

CLAVELLISA SCOMBRI (Kurz) [*T. and A. Scott*, 1913, I, p. 218; *Leigh-Sharpe*, 1925]
Gill arches of *Scomber scombrus* (L.H.M.)

CLAVELLOPSIS PARADOXA (Van Beneden) [*T. and A. Scott*, 1913, I, p. 222]
Gills of *Scomber scombrus* (P.W.B.-S.)

CLAVELLOPSIS (?) QUADRATA (Bassett-Smith) [*T. and A. Scott*, 1913, I, p. 223]
Gill rakers of *Callionymus lyra* (P.W.B.-S.)

BRACHIELLA BISPINOSA Nordmann [*T. and A. Scott*, 1913, I, p. 211]
Gill rakers of *Trigla gurnardus*, *T. cuculus* and *T. lyra* (P.W.B.-S.)

BRACHIELLA MERLUCCII Bassett-Smith (*T. and A. Scott*, 1913, I, p. 207)
Points of gill rakers of *Merluccius merluccius* (P.W.B.-S.): on *Gadus luscus*, 30.8.33 (W.H.L.-S.)

BRACHIELLA OBESA (Krøyer) [*Leigh-Sharpe*, 1928, p. 25]
Gill arches of *Trigla gurnardus* (L.H.M.): 5 females from tips of gill filaments of *Trigla cuculus*, 2 with a male each, Looe-Eddystone and outer Eddystone Grounds, 4.6.27 (W.H.L.-S.): also 1932 (W.H.L.-S.)

BRACHIELLA THYNNI Cuvier [*T. and A. Scott*, 1913, I, p. 204]
Behind pectoral fins of *Katsuwonus pelamis* (P.W.B.-S.)

BRACHIELLA TRIGLAE Claus [*T. and A. Scott*, 1913, I, p. 209]
Gills of *Trigla gurnardus*, *T. cuculus* and *T. lucerna* (P.W.B.-S.)

EPIBRACHIELLA IMPUDICA (Nordmann) [*T. and A. Scott*, 1913, I, p. 187, as Thysanote]
Inside of operculum of *Trigla gurnardus*, *T. cuculus* and *T. lucerna* (P.W.B.-S., as *Brachiella*, L.H.M.): on *T. lineata* (C.L.O.)

PARABRACHIELLA INSIDIOSA Heller [*T. and A. Scott*, 1913, I, p. 206]
Gill rays of *Merluccius merluccius* (P.W.B.-S.)

Sub-Order HERPYLLOBIOIDA

Family Herpyllobiidae

HEDYPHANELLA SUPERBA Leigh-Sharpe, 1926*b*, p. 271
On dorsal surface of *Gattyana cirrosa* (Pallas) (W.H.L.-S.)

CRUSTACEA: CIRRIPEDIA

SARSILENIUM CRASSIROSTRIS (M. Sars) [Leigh-Sharpe, 1926b, p. 272]
Dorsal surface of *Harmothoe impar*, immature females bearing males (W.H.L.-S.)

PHALUSIELLA PSALLIOTA Leigh-Sharpe, 1926b, p. 274
Dorsal surface of *Lagisca extenuata*, Plymouth (W.H.L.-S.)

PHALUSIELLA VERA Leigh-Sharpe, 1926b, p. 275
Dorsal surface of *Malimgrenia castanea*, Plymouth (W.H.L.-S.)

XENOCOELOMA ALLENI (Brumpt) [Brumpt, 1897, p. 1464, as Saccopsis]
Plymouth, on *Polycirrus caliendrum* (E.B.)

Family **Choniostomatidae**

HOMEOSCELIS MEDITERRANEA Hansen, 18-97, p. 96
In the branchial cavity of *Iphinoë trispinosa*, D-net, Cawsand Bay, 19.9.38 (C.L.O.)

SPHAERONELLA DISPAR Hansen, 1897, p. 156
Marsupium of *Eudorella truncatula*, eggs and larvae present, D-net, Cawsand Bay, 19.9.38 (C.L.O.)

ASPIDOECIA NORMANI Giard and Bonnier [Hansen, 1897, p. 187]
On *Erythropis elegans*, near Eddystone, 27.8.36; off Rame Head, 10.6.48 (O.S.T.)

Class **CIRRIPEDIA**Order **THORACICA**Family **Scalpellidae**

SCALPELLUM SCALPELLUM (L.) [Darwin, 1851, I, p. 222, as *S. vulgare*]
Common, attached to hydroids, Plymouth (A.M.N.): common on Halecium, Nemertesia, Aglaophenia, etc., 15-35 fm. (R.A.T., S.P.): Rame-Eddystone, about 25 fm., 30.3.21, trawled, nauplius still in egg, in mantle cavity; out of 5 specimens on a branch of *Nemertesia* 2 were very small and had no signs of eggs, of the other 3, 1 had eggs in oviduct, the other had eggs in mantle cavity (W.H.P.)

Family **Lepadidae**

LEPAS ANATIFERA (L.) [Darwin, 1851, I, p. 73]
On drift wood, Devon (G.M.): on floating wood and on ships' bottoms and floating cork (T.V.H.): occasionally on drift wood. etc. (R.A.T., S.P.): many on a drifting buoy, 4.1.30 (M.V.L.)

LEPAS ANSERIFERA (L.) [Darwin, 1851, I, p. 81]
Drifted wood, Plymouth (Cocks, *vide* A.M.N. and T.S.)

LEPAS FASCICULARIS Ellis and Solander [Darwin, 1851, p. 92]
Mouth of Yealm with *L. pectinata*, Sept. 1934 (O.D.H.): drifting timber, Wembury Bay, June 1937 (H.B.M.)
NEWQUAY. Fistral Bay, 30.9.45 (F.S.R. and D.P.W.)

LEPAS PECTINATA Spengler [*Darwin*, 1851, p. 85]

With *L. fascicularis*, mouth of Yealm, Sept. 1934 (O.D.H.)
NEWQUAY. Fistray Bay, 30.9.45 (F.S.R. and D.P.W.)

LEPAS HILLI Leach [*Darwin*, 1851, p. 77]

On Balistes, Hallsands, South Devon, 18.8.18, with *L. anatifera* and *Conchoderma virgatum* (E.F.): on floating dan-buoy with *L. anatifera* and *L. pectinata*, Plymouth, 2.11.35 (H.B.M.)

CONCHODERMA AURITUM (L.) [*Darwin*, 1851, i, p. 141]

On ships' bottoms stranded at Plymouth (T.V.H.): Plymouth, not native (A.M.N. and T.S.): from S.S. "War Viceroy", Millbay, 1919 (J.H.O., det. E.C.S.)

CONCHODERMA VIRGATUM (Spengler) [*Darwin*, 1851, I, p. 146]

On ship's bottom at Plymouth; not native (A.M.N. and T.S.): with *Lepas anatifera* and *L. hilli* on Balistes, Hallsands, South Devon, 18.8.28 (E.F.): from S.S. "War Viceroy", Millbay, 1919 (J.H.O. det. E.C.S.)

Family **Verrucidae**VERRUCA STROEMIA (O. F. Müller) [*Darwin*, 1854, II, p. 518]

Common on shells, stones, etc., L.W.-35 fm., Sound; Stoke Point Grounds; Rame-Eddystone Grounds; etc. (S.P.): also under stones at L.W. on most shores (A.J.So.): Mewstone Grounds (G.A.S.)

Family **Chthamalidae**CHTHAMALUS STELLATUS (Poli) [*Darwin*, 1854, II, p. 455]

Rocks between tide-marks, Sound, etc. (S.P.): Bull Point, Hamoaze, on shore, 19.7.28 (E.P.)
Breeding: Aug.-Sept. (W.G.): nauplii in mantle cavity, May-Oct.; main settlement, Aug.-Sept. (A.J.So.)

Family **Balanidae**BALANUS TINTINNABULUM (Linnaeus) [*Darwin*, 1854, II, p. 194]

Ships' bottoms at Plymouth; not native (A.M.N. and T.S.)

BALANUS SPONGICOLA Brown [*Darwin*, 1854, II, p. 225]

Off Plymouth on *Chlamys opercularis* (A.M.N.): Rame-Eddystone Grounds, attached to the upper valve of *C. opercularis*; etc. (S.P.): Mewstone Grounds, 1 specimen, Aug. 1932 (J.P.V.)

BALANUS AMPHITRITE Darwin, 1854, II, p. 240

On ships' bottoms, Plymouth (A.M.N. and T.S.): on piles near power station below Laira Bridge (D.J.C. and A.H.N.M.): on steps at Phoenix Wharf and Tinside, 1955 (A.J.So.)

BALANUS CRENATUS Bruguière [*Darwin*, 1854, II, p. 261]

Plymouth (A.M.N.): common in dredgings from Sound, etc., on stones and shells (S.P.): Eddystone Grounds (E.J.A.): River Tamar up to Cargreen landing; River Lynher up to shore by Ince Castle, June-Oct. 1928 (E.P.)
Breeding: spat beginning to settle Millbay Dock Gate, 23.4.36 (H.B.M.)

CRUSTACEA: CIRRIPEDIA

BALANUS PERFORATUS Bruguère [Darwin, 1854, II, p. 231]

Abundant on rocks between tide-marks; rocks under Laboratory; Millbay Dock, on piles; Drake's Island; etc. (S.P.)
Breeding: nauplii common in Sound, Sept.-Oct. (A.J.So.)

BALANUS BALANOIDES (L.) [Darwin, 1854, II, p. 267]

Rocks between tide-marks in Sound, etc. (S.P.): River Lynher up to shore by Ince Castle; River Tamar up to Cargreen landing, June-Oct. 1928 (E.P.): almost absent in 1951, specimens seen Rame Head, Breakwater, Tinside and Hen Point, more common at mouth of River Yealm, 1953-6 (A.J.So.)
Breeding: nauplii present in mantle cavity, Jan.-April; main settlement, March-April (A.J.So.)

BALANUS IMPROVISUS Darwin, 1854, II, p. 250

River Tamar, ½ m. above Halton Quay, L.W.; River Tiddy, St. German's Bridge, 14/22.9.28 (E.P.)

ACASTA SPONGITES Darwin, 1854, II, p. 308

Dredged from rough ground between Stoke Point and Revelstoke Point, in about 22 fm., 6.8.30, 5.9.30, coarse meshed dredge; always found completely embedded in the sponge *Spongelia fragilis* (G.A.S.): also at E.L.W.S.T. under overhangs, Wembury (A.J.So.)
Breeding: liberating nauplii, Stoke Point, E. of Mewstone, 19.8.32, trawl (J.P.V.)

PYRGOMA ANGLICUM Leach [Darwin, 1854, II, p. 360]

Not uncommon off coasts of Devon and Cornwall; attached to the calyx of Caryophyllia off Plymouth (A.M.N. and T.S.): common on *Caryophyllia smithi*, 15-35 fm. (R.A.T., S.P.)

ELMINIUS MODESTUS Darwin, 1854, II, p. 350

Occasional specimens in the Sound, on rocks and on *Mytilus edulis*, since 1947 (D.P.W.): Rum Bay, 2.4.49; plentiful on ruined jetty and on limestone rocks below Laboratory, May 1950 (G.M.S.): on a limpet shell from Rum Bay, 13.11.51 (D.J.C.): penetrates as far up River Tamar as *Balanus improvisus* (A.J.So.)
Breeding: probably all the year round, with maximum in summer and autumn (A.J.So.)
SALCOMBE. On derelict landing craft at Salstone, 23.9.49 (D.P.W.): many on rocks on shore, particularly at Tosnos Point, 1954 (D.A.H.)

Order ACROTHORACICA

Family **Alcippidae****ALCIPPE LAMPAS** Hancock [Darwin, 1854, II, p. 530]

Off Eddystone (C.S.B. *fide* Darwin, A.M.N. and T.S.): only in shells inhabited by large hermits (J.P.V.): frequent in Buccinum shells tenanted by Eupagurus, up to 15 in one shell, 1956 (G.M.S.)
Breeding: nauplii throughout July and August (J.P.V.)

CRUSTACEA: MALACOSTRACA

Order RHIZOCEPHALA.

Family Sacculinidae

SACCULINA CARCINI Thompson [*Van Beneden*, 1861, p. 154; *Krüger*, 1927, p. 6]

Common, parasitic on *Carcinus* (S.P.): Macropodia, Plymouth, 1903 (A.M.N., as *S. phalagni*): on *Carcinus* at mussel bed, off Neille Point, opposite Tavy; at Rat Island, 30.8.28, 3.10.28 (E.P.)

Breeding: May-Sept. (W.G.)

CHLOROGASTER SULCATUS (Lilljeborg) [*Boschma*, 1933, p. 479]

On *Anapagurus hyndmanni*, Plymouth, June 1950 (I.G. and J.P.H.)

GALATHEASCUS STRIATUS Boschma [*Boschma*, 1933, p. 475]

Looe-Eddystone Grounds, 11.6.13, 1 specimen on *Galathea strigosa* (H.Bo)

DREPANORCHIS NEGLECTA (Fraisie) [*Boschma*, 1933, p. 537]

Plymouth, 1903, 2 specimens on one of *Macropodia longirostris* (H.Bo)

LERNAEODISCUS GALATHEAE (Norman and Scott) [*Boschma*, 1933, p. 545]

Plymouth, 1889, 1 specimen on *Galathea intermedia*, Norman Collection (H.BO)

PELTOGASTER PAGURI Rathke [*Krüger*, 1927, pp. 6, 11]

On *Eupagurus bernhardus*, S.S.W. Penlee, 29.6.00; on *E. cuanensis*, Mewstone Ledge, 25.6.02 (R.A.T.)

PELTOGASTER SOCIALIS Müller [*G. Smith*, 1906, p. 109]

On *Anapagurus laevis*, Mewstone, bearing N.E. 3½ m., 25 fm., Agassiz trawl, 26.6.29, 4 specimens together on left side of abdomen, full of eggs (G.A.S.): six together on abdomen of *Anapagurus laevis* from trawling grounds outside Breakwater; five filled with nauplii ready to hatch, 11.4.50 (G.M.S.)

PELTOGASTER CURVATUS Kossmann [*Boschma*, 1933, p. 474]

On male *Eupagurus prideauxi*, June 1950 (I.G. and J.P.H.)

Class MALACOSTRACA

Sub-Class LEPTOSTRACA

NEBALIA BIPES (Fabricius) [*G. O. Sars*, 1896, p. 9]

Common under stones at low tide; Drake's Island; Mount Edgcombe; Rum Bay, etc. (R.A.T., S.P.): Asia Shoal, not uncommon (S.P.): Millbay Channel, occasionally; Whitsand Bay (A.J.S.): often abundant on the bait in lobster pots (E.J.A.): Rame Grounds and Eddystone shell-gravel (G.M.S.)

Breeding: April-July (W.G.): many carrying embryos from Rum Bay, 29.9.32 (A.J.S.)

Sub-Class STOMATOPODA

SQUILLA DESMARESTI Risso [*Bell*, 1853, p. 354]

Single specimen near New Ground Buoy, Dec. 1900 (R.A.T.): Eddystone

CRUSTACEA: MALACOSTRACA, CUMACEA

bearing S. $\frac{1}{2}$, $2\frac{1}{2}$ m., Agassiz trawl, 20.9.05, Capt. McKenzie (E.J.A.): Rame Head bearing N.E. by N.; Eddystone, S. $\frac{3}{4}$ W. about $3\frac{1}{2}$ m., otter trawl, 9.4.08; Rame-Eddystone, otter trawl, 1.4.09; Rame-Eddystone Grounds, long shrimp-trawl, 14.6. 10; 2 specimens, Rame-Eddystone Grounds; Eddystone S.W. by W. $2\frac{1}{2}$ m., otter trawl, shrimp-net over cod-end, caught in the shrimp-net, 17.2.14 (A.J.S.): 2 specimens, 4 m. S. of Mewstone, trawl, both alive and in excellent condition, not breeding, 17.3.27, 19.3.27 (C.M.Y.): one offshore, 11.10.33 (G.M.S.): one trawled outside Eddystone, 12.5.52; two trawled off Mewstone corner ground, after heavy gales, 1.12.54 (G.R.F.)

SALCOMBE. Under Marine Hotel, hand and spade, 3.4.08 (A.J.S.)

Breeding: larvae occasionally met with in tow-nettings (E.J.A.): *Erichthus* larvae, Rame E. by N. 4 m., Y.F.T., at least 100 specimens, 12.8.14 (E.F.): larvae fairly common in Y.F.T., spring and summer, inside and outside Sound (M.V.L.)

Sub-Class *PERACARIDA*

Order CUMACEA

Family **Bodotriidae**

BODOTRIA SCORPIOIDES (Montagu) [*Sars*, 1900, p. 12, as *Cuma edwardsi*; *Zimmer*, 1933, p. 80]

Off S. Devon, Feb. 1904 (A.M.N.): Plymouth, 1932 (F.S.R.): Wembury, W. Reef, 6.4.56 (G.M.S.)

SALCOMBE. Castle Rocks, 3, sieved from weeds, etc., 12.5.49 (G.M.S.)

BODOTRIA ARENOSA (Goodsir) [*Sars*, 1900, p. 10, as *Cuma scorpioides*; *Zimmer*, 1933, p. 80]

Off S. Devon (A.M.N.)

IPHINOË TRISPINOSA (Goodsir) [*Sars*, 1900, p. 14; *Zimmer*, 1933, p. 80]

Abundant, 1892 (W.G.): Whitsand Bay, May 1902 and 1903 (A.M.N.)

CUMOPSIS GOODSIRI (Van Beneden) [*Zimmer*, 1933, p. 80]

Whitsand Bay (A.M.N.)

VAUNTOMPSONIA CRISTATA Bate [*Zimmer*, 1933, p. 80]

Breakwater, night, tow-net with light, 4 males, July 1950 (J.P.H. det. I.G.)

Family **Leuconidae**

EUDORELLA TRUNCATULA Bate [*Sars*, 1900, p. 37; *Zimmer*, 1933, p. 85]

Type specimen from Plymouth Sound (C.S.B.): Plymouth, Cawsand Bay, 1889; April 1900; June 1903 (A.M.N.)

Family **Diastylidae**

DIASTYLIS RATHKEI (Krøyer) [*Sars*, 1900, p. 44; *Zimmer*, 1933, p. 92]

Plymouth, from trawler's refuse (C.S.B. *fide* A.M.N. and T.S.)

DIASTYLIS CORNUTA (Boeck) [*Sars*, 1900, p. 45; *Zimmer*, 1933, p. 96]

Outside Breakwater, small fish trawl, 15.6.08, male (W.DE m.)

DIASTYLIS LUCIFERA (Krøyer) [Sars, 1900, p. 49; Zimmer, 1933, p. 96]
Plymouth (A.M.N.)

DIASTYLIS RUGOSA G. O. Sars 1900, p. 48 [Zimmer, 1933, p. 94]
Female, 5 m. S.W. Breakwater, coarse tow-net, 30 fm. to S., 17.7.06 (G.E. B.)

DIASTYLIS LAEVIS Norman [Zimmer, 1933, p. 96; =*D. rostrata* Goodsir *non* Sars]
Sept. 1889; 2 m. N.E. of Eddystone, Sept. 1900 (A.M.N.): common on trawling grounds, taken in Y.F.T. (night hauls),
by bottom sampler, and in stomachs of young rays (G.M.S.)
SALCOMBE (A.M.N.)

DIASTYLIS BRADYI Norman, 1879, p. 59 [Walker, 1888, p. 178]
Cawsand Bay, April 1900; Whitsand Bay, May 1902 (A.M.N.)
SALCOMBE (A.M.N.)

Family **Pseudocumidae**

PSEUDOCUMA LONGICORNIS (Bate) [Zimmer, 1933, p. 88; Sars, 1900, p. 74 as *P. cercaria*]
The most common of the cumaceans of Devon and Cornwall; Cawsand Bay, April 1900; Whitsand Bay, May 1902, and
abundant in May 1903 (A.M.N.): very common in Cawsand Bay and Whitsand Bay (M.V.L.)

Family **Nannastacidae**

NANNASTACUS UNGUICULATUS Bate, 1859, p. 273
Whitsand Bay (A.M.N.): Breakwater, night, tow-net with light, July 1950, 3 males (J.P.H. det. I.G.)

CUMELLA PYGMAEA G. O. Sars, 1900, p. 81 [Zimmer, 1933 p. 85]
Plymouth, 1889 (A.M.N.): Whitsand Bay, 1903 (A.M.N.): Breakwater, night, tow-net with light. July 1950, 3 males
(J.P.H. det. I.G.)

Order TANAIDACEA

Family **Apseudidae**

APSEUDES TALPA (Montagu) *nec* Sars [Walker, 1897, p. 226, pl. 17, as *hibernicus*]
Plymouth (C.S.B., W.G.): not uncommon, between tide-marks, Rum Bay; Reny Rocks; Wembury Bay; Millbay
Channel (R.A.T.): common in rock crevices at Rum Bay and Wembury, 1934-5 (G.I.C.): Wembury Bay, March 1911
(K.H.B.): Wembury West Reef, April 1949 and March 1951, under stones; Asia Shoal dredgings, 23.3.53, 1.10.53
(G.M.S.)

SALCOMBE (G.M. and A.M.N.): not uncommon in dredgings between the town and Snape's Point (Allen and Todd,
1900, p. 203)

Breeding: ova hatching, Feb. (R.A.T.): carrying ova, Oct. (G.M.S.)

APSEUDES LATREILLEI (Milne Edwards) [Norman and Stebbing, 1886, p. 82]

Mouth of Yealm; Plymouth (A.M.N.): Drake's Island, common among mud at roots of corallines (W.G.): common
under stones and in rock crevices; Jennycliff Bay; Drake's Island (S.P.): common between tide

CRUSTACEA: MALACOSTRACA, TANAIDACEA

marks in muddy gravel, Rum Bay; dredged *Melampus*, White Patches, 1934-5 (G.I.C.): Wembury, Church Reef, in *Laminaria* (Colman, 1940): Wembury West Reef, 12.4.49, low water, under stones; Asia Shoal and Winter Shoal dredgings, 1952-3; Looe, amongst roots of *Zostera*, 12.5.52 (G.M.S.)

SALCOMBE (A.M.N.): Castle Rocks, 12.5.49, several; five from shelter of *Zostera* plant, 11.4.52 (G.M.S.)
Breeding: females carrying ripe ova in Aug. (S.P.)

Family **Tanaidae**

TANAIS CAVOLINI Milne Edwards [*Sars*, 1896, p. 12, pl. 5, as *T. tomentosus*]

Common in crevices of the limestone of Plymouth Breakwater (R.A.T.): piles of Trinity Pier (Millbay Docks) amongst *Balanus*, May-June 1921; about ten times as many from wooden piles as from concrete and iron piles (A.J.S.): common in galleries in sand bound together by *Rhodochorton* growing on rocks at Wembury, Mothecombe, etc.; common in mud on horizontal piles and in gribble burrows, West Wharf, Millbay (G.I.C., 1934-5): piles of Phoenix Wharf, singly from *Campanularia* tufts and *Limnoria* burrows; Plymouth Laboratory in growths and old *Limnoria* burrows on sides of "Drake's Island" tank, 1952-4 (G.M.S.): Wembury, Church Reef, in two *Ascophyllum* samples (Colman, 1940): Eddystone Rock, 31.8.54, coll. G.R.F. (G.M.S.)

SALCOMBE (T.R.R.S. *vide* Norman and Scott, 1906): in red weeds on rocks (G.I.C.)
Breeding: May-June (A.J.S.): May, July, Sept. (G.I.C.)

TANAIS CHEVREUXI Dollfus, 1898, p. 36

Looe, a number, 28.6.34; Wembury, 5.4.35: making burrows in the silt in crevices of shale from about mid-tide downwards—a habitat quite distinct from any occupied by the above (G.I.C.): Wembury, Church Reef, in rock crevices from M.H.W. to below mid-tide (Morton, 1954): Wembury, West Reef, many in galleries in rock crevices, *ca.* mid-tide level, 22.3.54; Portwrinkle, April and May 1951, etc., plentiful in shale crevices, sometimes under *Lichina*, about mid-tide level (G.M.S.)

LEPTOCHELIA SAVIGNYI (Krøyer) (*dubia* Krøyer) [*Dollfus*, 1898, pp. 40-3, fig. 5]

Plymouth Sound, 1903 (A.M.N.): Plymouth Sound (probably), *ca.* 50 specimens in Laboratory stock, the largest female of *savignyi* type and the largest male intermediate between *dubia* and *savignyi* (det. G.M.S.): dredged off Drake's Island (male of *savignyi* type, and two females of *dubia* type), 29.9.34; Yealm Mouth (G.I.C.): off *Maia squinado*, female, 11.6.51; Duke Rock dredgings, 19.3.52, 2.4.52; Wembury, Church Reef, adult male from weeds on rocks, 28.6.54, and others 26.1.55 (G.M.S.)

SALCOMBE. Western side of Estuary, from roots of *Zostera* plants, several (G.M.S.)

TANAISSUS LILLJEBORGI (Stebbing) [*Norman and Scott*, 1906, p. 34]

Jennycliff Bay, Whitsand Bay, dredged (A.M.N., and T.S.): Whitsand Bay,

CRUSTACEA: MALACOSTRACA, ISOPODA

dredged, females only, 1934-5 (G.I.C.): Duke Rock dredgings, 2.4.52 (G.M.S.)

PARATANAIS BATEI G. O. Sars, 1896, p. 16, pl. 7

Jennycliff Bay, and other parts of the Sound, 1903 (A.M.N.): Asia Shoal, emerged from dredged stones, females only, 19.3.20 (J.O.-C.): below Laboratory, from sponges; Millbay, West Wharf; females only, 1934-5 (G.I.C.): Wembury, Church Reef, in Laminaria holdfast, about 24 in 6 samples (Colman, 1940): Plymouth Sound, frequent in dredgings, 1952-4; Yealm Mouth and Slimers Rocks among epilithic growths below L.W., coll. G.R.F.; Eddystone Rock, Coll. G.R.F. (G.M.S.)

HETEROTANAIS ØRSTEDI Krøyer [Sars, 1896, p. 14, pl. 6]

Wembury, Church Reef, 8 specimens from Laminaria holdfasts (Colman, 1940): [Wembury, gully near Yealm Mouth, one, det. H. G. Jackson with specific name queried (Kitching *et al.*, 1934, p. 699)]. Prior to above records not known further west than the Exe Estuary (Crawford, 1937c)

LEPTOGNATHIA BREVIREMIS (Lilljeborg) [Sars, 1896, p. 28, pl. 13 (1)]

Plymouth, 1889 (A.M.N.)

TANAOPSIS LATICAUDATA G. O. Sars, 1896, p. 32, pl. 14 (1)

Plymouth Sound, 1903 (A.M.N.): 1 m. S. of L.3, 16.5.35; Cawsand Bay, 6.7.34 (G. 1. Crawford, 1936, p. 96, wrongly determined as *Leptognathia gracilioides* (Lilljeborg)-N.S.J., 5.3.51)

Order ISOPODA

Sub-Order FLABELLIFERA

Family Anthuridae

ANTHURA GRACILIS (Montagu) [Norman and Stebbing, 1886, p. 122; Sexton, 1914, p. 236]

Plymouth (A.M.N.): Duke Rock, a number, including a male, 1889 (A.M.N., Lab. Mus.): Plymouth Sound, single males, 19.6.92 and 16.9.92 (Garstang, 1892): occasionally in dredgings from Sound, e.g. Asia Shoal, Queen's Ground, Millbay Channel (R.A.T.): Channel, 21 m. S.W. of Eddystone, 42 fm., one (Crawshay, 1912): 6 m. W. of Eddystone, in Y.F.T. at night, 14.8.13, a male (Sexton, 1914): Millbay Channel, dredged on edge of the pit, 16.3.14, 23 specimens of various sizes (A.J.S.): Wembury, gully near Yealm Mouth, 5 in Laminaria (Kitching *et al.*, 1934): Wembury, Church Reef, 1 in a Laminaria holdfast (Colman, 1940): on *Maia squinado*, 11.6.5 1, 1 female and juvenile; Millbay Channel, 7.4.52, numerous including 2 males, and in other dredgings from Sound, 1952-3, once seen in old Pomatoceros tube; West Entrance to Sound, 6-7 fm., 10.5.54, 4.11.54, several, including one male; Yealm Mouth, in gully below L.W., 7.10.53, Coll. G.R.F. (G.M.S.)

SALCOMBE. One when dredging in the "Bag" (Allen and Todd, 1900, p. 203)

CRUSTACEA: MALACOSTRACA, ISOPODA

CYATHURA CARINATA (Krøyer) [*Norman and Stebbing*, 1886, p. 124]

A dominant species on the mud flats of the estuaries of Rivers Tamar, Lynher and Tavy, ranging from Saltash to Pentillie Quay and above Bere Ferrers; first recorded here by Percival as *Anthura gracilis* (and so entered in last edition of Fauna List); other localities, including Scunner Creek, by Crawford (1936, 1937c): population densities in Tamar estuary given by Spooner and Moore (1940): in stomach of *Pleuronectes platessa* (Hartley, 1940): Tamerton Creek; present in mud-banks in estuaries of Rivers Yealm, Erme and Avon (G.M.S.)

Family **Gnathidae**GNATHIA MAXILLARIS (Montagu) *nec* Sars [*Monod*, 1926, p. 521]

Polperro, a number (A.M.N. Coll., B.M., *teste* Monod, 1926): Looe, 23.9.22, 19 females, 1 male, 3 juveniles (T. J. Evans coll. Brit. Mus., *teste* Monod, 1926): common in dead barnacles, Drake's Island, 8.10.34 (G.I.C.): Wembury, Church Reef, in one *Laminaria* sample (Colman, 1940): this and next species more or less common in Plymouth Sound: in Laboratory stock bottle, 5 females and 46 praniza larvae found (G.M.S.): Plymouth Sound, dredge, 2 males, 5 females and 1 praniza larva (S.M.N. *teste* G.M.S.). Other records evidently apply both this and next species, Sars (1897) having introduced confusion by illustrating *oxyuraea* under this name (G.M.S.)

SALCOMBE. Very common in dredgings from the Harbour and two from the "Bag" (Allen and Todd, 1900) [which may include the next (G.M.S.)]

Breeding: records cover Jan.-May (G.M.S.)

GNATHIA OXYURAEA, (Lilljeborg) [*Sars*, 1897, p. 52, pl. 22 (1), as *G. maxillaris*; *Monod*, 1926, p. 538]

Praniza larvae on gills of Conger, 8.9.32, det. Monod (M.V.L. and W.H.L.-S.): among tubes of *Chaetopterus variopedatus*, about 10 m. S. of the Eddystone, 35 fm., 16.5.35 (G.I.C.): Plymouth, 49 males, 25 females, and 16 pranizas found in Laboratory stock bottle, thus adults appearing to be more numerous than *maxillaris*; on *Maia squinado*, 27.6.51, 1 male; Duke Rock dredging, 19.3.52, several; W. entrance to Sound, dredgings, 10.5.54 (G.M.S.): Wembury, 1951, 2 females (J.E.M., *teste* G.M.S.). See also above.

GNATHIA DENTATA G. O. Sars, 1897, p. 54, pl. 22 (2) [*Monod*, 1926, p. 516]

Wembury, Church Reef, in *Laminaria digitata* holdfasts at L.W., male, female and juvenile, 27.8.30 (J.S.C. and I.G.: see Colman, 1940)

GNATHIA VORAX (Lucas) [*Monod*, 1926, p. 480]

Duke Rock dredging, 19.3.52, several; in Plymouth Laboratory stock material, 1 male, 1 female, and 1 praniza larva mixed with the commoner species (G.M.S.)

PARAGNATHIA FORMICA (Hesse) [*Monod*, 1926, p. 308]

Tamar estuary, common above Saltash as far up as hard opposite Boheterick; Lynher estuary, common as far as junction of Lynher and Tidley, taken also commonly from stomachs of young herring; pranizas in Y.F.T. at various depths (E.P.): common in "salting cliff" at junction of Tidley and Lynher; River Tavy at Lopwell Ferry, under stones (G.I.C.):

River Tamar, in salting "cliff" on edge of Egypt salt-marsh, both sexes freely; River Avon, in salting "cliff", 1 m. below Aveton Gifford, common (G.M.S.)

Breeding: 17.8.28 (E.P.); 6.6.35 (G.I.C.); 14.5.46, 17.4.51 (G.M.S.)

Praniza Larvae and Hosts

In the S.W. praniza larvae (indet.) have also been recorded on *Cottus bubalis* (by Montagu, 1813: 15-16); on *Cottus scorpius* (by Parfitt, 1873: 251); on *Pleuronectes platessa* (A.W.T.); on Conger and Polyprion in the Aquarium tanks (G.R.F.); on *Labrus ossifagus* in Aquarium (D.P.W.)

Family Aegidae

AEGA BICARINATA Leach (? *rosacea* Risso) [Norman, 1904, p. 433; Holthuis, 1949, p. 166]

Plymouth harbour (C.S.B.): one, Outer Mewstone, 28 fm., otter trawl, Jan. 1928 (G.A.S., det. I.G. and W.M.T.): 1, Mewstone, 7 m. S.W. of, 29 fm., 5.9.28, otter trawl (G.A.S., det. W.M.T.): 1 in an Aquarium tank, Sept. 1949; another large male, dredged, attached to a Tealia on a Cyprina shell, 17.1.51; 2 adults, 1 attached to a *Squatina squatina*, trawled Looe-Eddystone, 6.10.52 (G.M.S.)

AEGA STRÖMI Lütken [Sars, 1897, p. 60, pl. 25 (2)]

Channel, 1 in Laboratory Museum (*teste* G.M.S.), (probably taken on the 1906 cruise ?). (N. B. Norman and Scott, 1906, suggest that Spence Bate's record of *bicarinata* from Plymouth was really this on grounds that the other species was not British: it can be seen there is no justification for this, G.M.S.)

ROCINELA DAMNONIENSIS Leach [Sars, 1897, p. 65, pl. 27]

Leach's type was from Plymouth Sound (*teste* C.S.B.): Polperro (C.S.B.): occasional specimens, 20-30 fm. (R.A.T., S.P.): a young female taken from a gurnard, July 1903, by D. J. Matthews (*teste* G.M.S.): at 5 positions 8-17 m. S.W. of Eddystone, 40-49 fm. (Crawshay, 1912): Revelstoke Point, 2 m. S.W. of, 5.12.29, dredged (G.A.S., det. W.M.T.): large female attached to a trawled fish, 28.3.51 (G.M.S.)

Breeding: March (G.M.S.)

ROCINELA DUMERILI (Lucas) [Norman, 1904, p. 436]

Near Eddystone, 1889 (A.M.N.): occasional specimens, 20-30 fm. (R.A.T., S.P.), e.g. 4-5 m. S.W. of Rame Head, 14.2.01, 5 m. S.E. of Eddystone, 22.4.03, also a female 20.9.00: large female, with eggs, Channel, 1906 (Crawshay *teste* G.M.S.): Mewstone Grounds, Jan. 1928, juvenile female (G.A.S. *teste* G.M.S.): Revelstoke Point, 2 m. S.W. of, 19 fm., 5.12.29, dredge (G.A.S., det. W.M.T.): Mewstone Grounds, 16.3.32, juvenile females (S.M.N. *teste* G.M.S.): juveniles in Y.F.T., 27.10.49 and 29.4.49; adult female trawled, 10.4.52; Looe-Eddystone, 28 fm., juvenile, 26.6.52; species probably more frequent than preceding but juvenile forms liable to misidentification (G.M.S.)

Breeding: April (G.M.S.)

CRUSTACEA: MALACOSTRACA, ISOPODA

Family **Anilocridae**

NEROCILA NEAPOLITANA Schiödte and Meinert, 1879, p. 41

One, 5 or 6 m. S. of Mewstone (A.M.N.)

ANILOCRA PHYSODES (L.) [*Schiödte and Meinert*, 1879, p. 131, pl. XVI]

Large male (33 mm.), attached to a Red Mullet, 7.2.51 (R. Tozer, det. G.M.S.): one, attached to an Aphrodite, 3.3.52 (G.M.S.). The first records for British Isles (excluding Channel Islands)

Family **Cirolanidae**

CIROLANA BOREALIS Lilljeborg [*Sars*, 1897, p. 70, pl. 29]

Drake's Island (A.O.W.): Plymouth Sound, Mallard Buoy, 25.10.34; Melampus Buoy, 4.12.34 (G.I.C.): Cawsand Bay, 13.4.50, N.A.H. with bottom sampler; Jennycliff Bay, 1 juvenile; E. of Drake's Island, 1 juvenile; New Grounds, female, 21.2.52, G.R.F. with dredge (G.M.S.)

Breeding: Feb. (G.M.S.)

CIROLANA CRANCHI Leach [*Hansen*, 1890, p. 341]

Plymouth, outside Breakwater, 6 fm. (C.S.B. fide A.M.N. and T.S.): Batten, tide pools (T.V.H.): over 100 specimens preserved in May 1928 (Laboratory stock, *teste* G.M.S.): Mewstone Ledge, 4, 25.3.35 (G.I.C.): Tinside, 24.3.52, 1 under stone; Stoke Point, 29.5.53, several from lobster-pots in which it is said to be a recognized pest, per G.R.F. (G.M.S.)

CONILERA CYLINDRACEA (Montagu) [*Hansen*, 1890, p. 358]

Plymouth (C.S.B., A.M.N.): West Entrance, Mewstone Ledge, Mewstone Grounds, Stoke Point Grounds, Rame-Eddystone Grounds (R.A.T., S.P.): about 400 (over 300 Iving) in a dead, but fresh specimen of *Scyliorhinus canicula*, Sept. 1899, feeding on the heart and liver having eaten through the wall of the stomach (R.A.T.): Drake's Island, shore, 2, 21.5.09 (A.J.S.): 1, 17 m. S.W. of Eddystone, 42 fm. (Crawshay, 1912). One of the characteristic species of the infauna of the Eddystone shell-gravel (Smith, 1932): Eddystone Grounds, in sandy gravel (Crawford, 1937b): regularly in shell-gravel collections from Eddystone and Mewstone Grounds, 1949-54; Stoke Point, 29.5.53, present in lobster-pots with *Cirolana cranchi*, per G.R.F. (G.M.S.)

EURYDICE PULCHRA Leach [*Sars*, 1897, p. 73, pl. 30 (2)]

Whitsand Bay, 1, 3.4.11 (K.H.B.): common intertidally in sand, 1934-5; Drake's Island; Mothecombe - often swimming freely as the tide rises (G.I.C.): Wembury Bay, in coarse sand, below the stream, L.W. Neaps, 3.11.47 (N.A.H.)

EURYDICE SPINIGERA Hansen, 1890, p. 367

Whitsand Bay, 1903 (A.M.N.): Whitsand Bay, on sand, 3-5 fm., 16.11.34, 19 specimens; Bigbury Bay, on sand, 4 fm., 22.1.35 (G.I.C.): Plymouth Sound, E. side, in a night collection by S.M.N. and G.R.F., 20.6.51, female with eggs; numerous at light, off Penlee Point and Mewstone (night hauls), by J.B.G.-B. in May 1956 (G.M.S.)

EURYDICE INERMIS Hansen, 1890, p. 366

Dredged near Eddystone, 1903 (A.M.N.): the types of the species were taken off the Lizard; and the species has been identified recently in plankton taken during western cruises (G.M.S.)

EURYDICE TRUNCATA (Norman, 1868, p. 421)

Off Prawle Point, 1904 (A.M.N.): Eddystone shell-gravel, 4.9.34 (G.I.C.)

Family **Limnoriidae**

LIMNORIA LIGNORUM (Rathke) [Sars, 1897, p. 76, pl. 31]

The Gribble has always been a pest in Plymouth dockyards and Sound, attacking all woods except teak (see Bate and Westwood, 1868, p. 353), but two species have been included under the one name. The true *lignorum* was figured by Bate and Westwood, and so at least this species was present in the middle of last century. It is also the species figured by Sars. In recent times at Plymouth it seems to be decidedly the less frequent of the two. The following samples have been confirmed: Plymouth Sound, oldest sample in Laboratory Museum; Aquarium tip-bucket (*ca.* 1930), mixed with *L. quadripunctata*; piles of the old Promenade Pier, under thick growth of *Mytilus*, only this species, 14.2.52; West Wharf, Millbay Docks, in old wood, together with the other species, 28.2.52 (G.M.S.)

LIMNORIA QUADRIPUNCTATA Holthuis, 1949, p. 167

In recent years at least, this appears to be the more abundant of the two *Limnoria* at Plymouth, the following samples having been determined: Drake's Island, 8.10.34 (G.I.C.) (as *lignorum*); over 50 all this; Aquarium tip-bucket older sample (*ca.* 1930), mixed with *lignorum*, sample *ca.* 1949 (R. Tozer), all this; Phoenix Wharf, in piles treated with creosote, this species only, plentiful, 8.2.52; Breakwater Raft, this species only, very plentiful, 23.2.52; Millbay Docks, West Wharf, mixed with *lignorum*, 28.2.52; Cattewater, in submerged fragment of tree root, numerous, 5.3.52; Jennycliff Bay, 21.3.52, in lump of wood with abundant *Chelura* population; inside Breakwater in wood piles of jetty and woodwork of raft, 18.3.52 (G.M.S.)

SALCOMBE. Sample of some 30 specimens, all this, 2.5.35, Coll. G.I.C. (G.M.S.)

Family **Sphaeromatidae**

SPHAEROMA SERRATUM (Fabricius) [Omer-Cooper and Rawson, 1934, p. 32]

Plymouth (C.S.B., A.M.N.): regularly on the shore intertidally under stones and in weeds and in shale crevices-Drake's Island, Rum Bay, Wembury Reefs, Whitsand Bay (R.A.T., S.P., G.I.C., G.M.S.): mainly between M.T.L. and L.W.N, normally not at L.W.S. or below; samples of several hundred collected by M. Hoestlandt from the shore at Mount Edgcumbe, Rum Bay, Wembury and Polperro, in Oct. 1953, contained the genetic colour forms *discretum*, *ornatum*, *albicum*, *lunulatum*, *rubrum*, and a single *signatum*; former estuarine records refer to the next (G.M.S.)

Breeding: known to be limited to early and mid summer, but no positive records for this area (G.M.S.)

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SPHAEROMA MONODI Bocquet, Hoestlandt and Lévi, 1954, p. 1864

A form occupying the seaward half of estuaries, formerly confused with the above (Percival, 1929; Spooner and Moore, 1940): intertidally West Muds, plentiful under empty Cardium shells, etc., and intertidally along the Tamar Estuary shore to Hole's Hole (E.P., G.M.S.): River Lynher to Wivelscombe Lake (E.P.), and not reaching Bere Ferrers in River Tavy (G.M.S.), in upper part of its range overlapping with the next species; River Erme Estuary, at Pamflete (G.M.S.)

SPHAEROMA RUGICAUDA Leach [*Omer-Cooper and Rawson, 1934, p. 34*]

Confined to brackish-water habitats where often abundant: Plymstock (A.M.N.): Tamar Estuary (where originally taken by Leach), from Weirquay area to well above Calstock, and Lynher River from beach 100 yd. above Antony Creek to Tideford Mill, under stones, in salting "cliffs" and in salting pools (E.P., G.I.C., G.M.S.): also in Tamerton Creek, and in estuaries of Rivers Tavy, Yealm, Erme and Avon in similar habitats (G.M.S.)

SPHAEROMA HOOKERI Leach [*Omer-Cooper and Rawson, 1934, p. 36*]

Chelson Meadow brackish ditches, Oct. 1913 (W.M.T.); regularly taken in abundance in this habitat whenever looked for (G.I.C., G.M.S.): common in sheltered brackish waters, frequenting less saline water than *S. rugicauda*, usually among weed: River Tavy at Lopwell Creek and Blaxton Creek, River Tamar, in creek above Crosspark Wood (G.I.C.): River Plym at very top end of estuary at Marsh Mills, in main channel (G.M.S.)

CYMODOCE TRUNCATA Leach [*Omer-Cooper and Rawson, 1934, p. 391*]

Drake's Island, females (A.O.W.): Cawsand Bay; Melampus; Batten (Laboratory Museum *teste* G.M.S.): E. of Drake's Island, 27 specimens, 20.8.34 and 29.9.34; New Grounds, 9.8.34, 1; Wembury, in shale crevices at L.W., 13 specimens, 5.4.35 (G.I.C.): Rum Bay, chiefly from tunnels of piddock borings at L.W., males dull coloured, some females grey with dark dots, 1 female with variegated pattern, 5.4.5 1; Wembury, West Reef, regularly taken, 1949-52, amongst weeds and under stones, some among *Corallina* variegated with bright orange-red; Asia Shoal, male, 7.3.52 (G.M.S.)

The form referable to *C. emarginata* (Leach) occurs with the above, but is believed not to be specifically distinct (see Norman and Scott, 1906, p. 44, pl. IV; *Omer-Cooper and Rawson, 1934, p. 38, 41*)

SALCOMBE. Near Marine Hotel, 31.7.00, female (*teste* G.M.S.): in Channel between Snape's Point and harbour mouth (Allen and Todd, 1900, p. 204): Castle Rocks, male, 12.5.49 (G.M.S.)

DYNAMENE BIDENTATA (Adams) [*Omer-Cooper and Rawson, 1934, p. 36*] (=NAESA)

Plymouth, Rum Bay (A.M.N.): common intertidally around the Sound; Jennycliff Bay, abundant in rock crevices; Mount Edgcumbe, under stones; Breakwater (S.P.): female referred to as *Dynamene rubra* (Mont.) in earlier records, including Rum Bay, Reny Rocks, and Hamoaze at Bull Point: Rum Bay, in rock crevices, March 1911 (K.H.B.): Wembury, River Yealm; Tinside; Drake's Island; Looe; and occasionally in shallow weedy dredgings

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as E. of Drake's Island, 1934-5 (G.I.C.): Wembury, Church Reef, plentiful in *Fucus serratus* and *Ascophyllum* with *Polysiphonia* also in *Fucus spiralis*, *F. vesiculosus* and *Gigartina stellata* (Colman, 1940): frequent at Rum Bay and Wembury, West Reef, 1949-54, and taken near mouth of Yealm and Tinside (G.M.S.)

SALCOMBE. Castle Rocks, 12.5.49, female and juvenile male (= *Dynamene montagui* Leach) (G.M.S.)

CAMPECOPEA HIRSUTA (Montagu) [*Omer-Cooper* and *Rawson*, 1934, p. 46]

Polperro (C.S.B.): Plymouth (A.M.N.): Drake's Island, Cawsand Bay, and below Laboratory, in empty barnacle shells, March 1911 ; seems to prefer the angles to the sides or tops of rocks; usually a male and female together in one barnacle, single male uncommon, single female more so (K.H.B.): Wembury, Church Reef, in abundance in the middle of the shore in growths of *Lichina pygmaea*, 250-300 per 10 g. of lichen, not present in other weeds (Colman, 1940): a strictly intertidal species, plentiful in barnacle shells and *Lichina* at Tinside, Wembury, and Portwrinkle, 1950-4 (G.M.S.)

Sub-Order VALVIFERA

Family Idoteidae

IDOTEA BALTICA (Pallas) [*Sars*, 1897, p. 80, pl. 32; *Naylor*, 1955, p. 491]

One of the three larger species which are general in shallow water amongst attached or loose weed, and at times occur in very large numbers. Queen's Ground, on *Nemertesia*; Cawsand Bay, on *Zostera*; Whitsand Bay (S.P.): Yealm Mouth, S. side, 17.3.15, all breeding, many (one large jar quite full) found and gathered by W.S. and A.J.S. from under large rocks amongst decaying drift wash, together with *Idotea emarginata* and *I. neglecta*; present S. bank, 17.3.16, but not in same spot as in 1915 although drift weed was still there (A.J.S.): Yealm Mouth, 2 fm., Sept. 1920, many (J.H.O. *teste* G.M.S.): Wembury, Church Reef; Whitsand Bay, 3-5 fm. - in weed, especially drifted, on shore and in shallow dredgings (G.I.C.): Drake's Island, numerous below L.W., 1938, 1939; Rum Bay, Sept. 1948, numerous on strip of matting lying on sand below L.W.; juveniles sparingly on buoys in Sound; Cawsand Bay, trawl; in Y.F.T. taken off the Eddystone on three occasions in Sept. 1949; Portwrinkle, plentiful in drift weed on sand at L.W., Oct. 1950, mainly juveniles, from which large adults were bred in the Laboratory; striking range of colour pattern shown (G.M.S.)

SALCOMBE. In most hauls of the cheese-cloth trawls (Allen and Todd, 1900, p. 204): Castle Rocks, at L.W. (G.M.S.)

Breeding: whole year (G.M.S.)

IDOTEA EMARGINATA (Fabricius) [*Sars*, 1897, p. 85, pl. 35 (2); *Naylor*, 1955, p. 492]

In similar situations as *I. baltica*, often occurring in company, attaining similar large size and showing similar range of colour pattern; also sometimes very abundant. Plymouth (A.M.N.): Jennycliff Bay, common (T.V.H., R.A.T.): Whitsand Bay (S.P.): Bovisand Bay, in sandy creek near rocks on E. side in pools uncovered at about half tide, so numerous as to make pools completely brown, several inches deep and above water level, all sizes including

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minute young, many buried by their heads with tails in the air, and under every stone, Oct. 1910 (H.J.B.W.): Yealm Mouth (not quite half a jar) with *L. baltica* and *L. neglecta* as above, 17.3.15, 17.3.16 (A.J.S.): Yealm Mouth, Sept. 1920, a few, with above (J.H.O. *teste* G.M.S.): Wembury, Church Reef; Whitsand Bay, 35 fm.-in weed, as for the above (G.I.C.): Drake's Island, freely 1938, 1939, with above; Eddystone, in Y.F.T., on two occasions in Sept. 1949; Portwrinkle shore, juveniles in drift weed on sand, Oct. 1950, from which a self-reproducing population reared in Laboratory for four years on a diet of *Fucus* (G.M.S.)

SALCOMBE. Mill Bay shore, one, 26.1.40 (G.M.S.)

Breeding: whole year (G.M.S.)

IDOTEA NEGLECTA G. O. Sars, 1897, p. 84, pl. 35 (1) [*Naylor*, 1955, p. 491]

Often in company with the two preceding in shallow water and sometimes in very large numbers. Plymouth, sometimes in the greatest profusion (A.M.N.): Drake's Island, abundant under stones at L.W.; occasionally Jennycliff Bay, Mount Edgecumbe, etc. (S.P.): Yealm Mouth (about 100) with *I. baltica* and *I. emarginata* as above, 17.3.15; Wembury Bay, west side, under stones and rocks, 1.4.15, many (A.J.S.): Drake's Island under stones; Wembury, Church Reef (G.I.C.): Drake's Island, in lower part of tidal zone, trawled, etc., 1938-9, the most numerous species; Wembury West Reef, freely in weed in L.W. region-the dominant species in this area; Eddystone, in Y.F.T., 2 juveniles, 24.5.49; Breakwater Raft, 1950; subject to wide range of colour pattern (G.M.S.)

Breeding: whole year (G.M.S.)

IDOTEA GRANULOSA Rathke [*Sars*, 1897, p. 82, pl. 34 (1); *Naylor*, 1955, p. 489]

Evidently overlooked in the past owing to its modest size (hence confused with juveniles of *L. baltica* and *neglecta*) and that it occurs chiefly, as it seems, above L.W. Neaps in certain weeds. Plymouth Sound: a few on Mallard Buoy and H4 Buoy (Milne, 1940, p. 71): Drake's Island, juveniles amongst *Corallina*, Feb. 1952; Barn Pool, a few on Buoy, 7.3.52 (G.M.S.): Wembury, in gully near Yealm Mouth (*Kitching et al.*, 1934): Wembury, Church Reef, by far the commonest *Idotea* amongst the larger algae (*Fucus*, *Ascophyllum*, *Gigartina*, *Chondrus*, etc.) from about H.W. Neaps to L.W., 1930, 1931, July 1937, 23.3.39 (J.S.C. and I.G., see also *Colman*, 1940): Wembury, West Reef, a few in *Corallina*, 28.3.52; Tinside, 24.3.52, one large ex. (G.M.S.)

IDOTEA CHELIPES (Pallas) (=VIRIDIS Slabber) [*Sars*, 1897, p. 83, as *Viridis*, pl. 34 (2), as *angusta*; *Naylor*, 1955, p. 489, as *viridis*]

In the seaward half of estuaries, but not on the open shore, apparently requiring some degree of shelter and reduction of salinity. Tamar estuary, especially common amongst the *Zostera* and *Ulva* in St. John's Lake (where recorded by E.P. as *baltica*); elsewhere more sparingly among fucoids, etc., to somewhat above Weirquay in Tamar, Wivelscombe Lake in the Lynher, and Maristow Ford in the Tavy (G.I.C., G.M.S.): Hamoaze, on buoys H1, H4, H7, and H11 (Milne, 1940): also present in the Plym and Avon estuaries (G.M.S.). (See also *Howes*, 1939)

SALCOMBE. In weeds of channel of Blank's Creek, 22.1.39 (G.M.S.)

IDOTEA PELAGICA Leach [*Sars*, 1897, p. 81, pl. 33; *Naylor*, 1955, p. 487]

Eddystone Lighthouse (C.S.B.): between Breakwater Light and Queen's Ground Buoy, female carrying embryos, Dec. (J.T.C.): on Panther and Mallard Buoys, 1937 (Milne, 1940): Duke Rock Buoy, 28.3.50, 2; Breakwater Raft, 23.2.52, a few, including adults of both sexes; Eddystone Rock, common on the exposed rocks of the southernmost reef, among algal tufts intertidally, Coll. G.R.F., 31.8.54 (G.M.S.)

Breeding: Feb., Aug. and Dec. recorded (G.M.S.)

IDOTEA METALLICA Bosc [*Collinge*, 1917, p. 746]

One in the Y.F.T., 7.11.49 (G.M.S.)

IDOTEA LINEARIS (Linnaeus) [*Bate and Westwood*, 1868, p. 388; *Naylor*, 1955, p. 490]

Bigbury Bay, dredged (C.S.B.): Plymouth (A.M.N.): Drake's Island, common among *Zostera*; Jennycliff Bay; Cawsand Bay; Whitsand Bay; Yealm Estuary (S.P.): Yealm Mouth, Sept. 1920, one (J.H.O. *teste* G.M.S.): Whitsand Bay, 3-5 fm., abundant, 16.11.34, females with ova (G.I.C.): Cawsand Bay, trawl, 11.4.50, two (G.M.S.)

ZENOBIANA PRISMATICA (Risso) [*Bate and Westwood*, 1868, p. 391, as *Idotea parallela*]

Cawsand Bay, inhabiting a *Zostera* stem (W.G.): Whitsand Bay, one, in case, 16.11.34; Drake's Island, one, in case, 1.10.34 (G.I.C.): Rum Bay, one in piece of hollow stick, 24.2.55; Wembury Church Reef, three juv. in old *Pomatoceros* tubes, 26.1.55 (G.M.S.)

SALCOMBE. Castle Rocks, L.W., 12.5.49, two (G.M.S.)

SYNISOMA LANCIFER (Leach) [*Bate and Westwood*, 1868, p. 396, as *Idotea appendiculata*; *Collinge*, 1917, p. 751]

Polperro (C.S.B.): Wembury Bay, shore, one, 2.4.12; Looe Island, shore, one, 29.3.14 (A.J.S. det. W.E.C.): Wembury Point, one, 2.4.19; Looe Island, one, 1.5.19 (A.J.S.): Wembury, gully near Yealm Mouth, male in *Laminaria*, female intertidally (*Kitching et al.*, 1934): Wembury, two under stone at L.W., 5.4.35 (G.I.C.): Wembury, West Reef, two (one feeding among red algae), 26.3.51; Church Reef, one at L.W.S., 26.1.55 (G.M.S.)

SYNISOMA ACUMINATUM (Leach) [*Bate and Westwood*, 1868, p. 394; *Dollfus*, 1894, p. 5]

Wembury West Reef, about 20 specimens washed from *Halidrys siliqua* in a large pool at about half-tide level, 5.4.35 (G.I.C.): one, 3 cm. long, trawled June 1952; Wembury West Reef, one, 13.4.53; three juveniles, 22.10.53; West Looe, at L.W., on *Cystoseira*, etc., male, 11.6.53; adults, 28.8.53, coll. P.G.C. (G.M.S.)

Breeding: April and Aug. recorded (G.M.S.)

Family **Arcturidae****ASTACILLA LONGICORNIS** (Sowerby) [*Sars*, 1897, p. 88, pl. 36]

Mouth of Yealm (A.M.N.): 8 m. S.W. of Eddystone, 1906, 40 fm., female juvenile (*Crawshay*, 1912): Rame-Eddystone, April 1909, female; no data,

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10 females, 1 juvenile male in Laboratory stock (*teste* G.M.S.): Rame-Eddystone, Agassiz, *ca.* 1948, female with young (N.A.H., photo D.P.W.) (*teste* G.M.S.): Eddystone Grounds, 23.2.53, male and female in Wickstead bottom plankton net; Cawsand Bay, one, 17.5.55; Station L4, adult female, 7.6.55; this larger species is usually met with singly; some past records apply to the following (G.M.S.)

SALCOMBE. On the *Zostera* at Ditch End and in dredgings from the Channel in Salcombe Harbour (Allen and Todd, 1900, p. 204) (this species, G.M.S.)

ASTACILLA INTERMEDIA (Goodsir) [Sars, 1897, p. 90, pl. 37 (2), as *affinis*]

Four miles W. of Eddystone, on spines of *Echinus esculentus*, 9.4.00, 4 females (breeding), 3 males, 1 juvenile (R.A.T., as *Arcturus longicornis*, Laboratory Museum, re-det. G.M.S.). Rame-Eddystone Grounds, from *Echinus esculentus*, a number, males, females, juveniles, 7.4.09 (Laboratory Museum, re-det. G.M.S.). Three other samples in Plymouth Laboratory stock indicating that at one time it occurred rather freely: no doubt it was this species and not young *longicornis* which Spence Bate took in the Channel, off Plymouth, attaching themselves to the spines of *Echinus* (Bate and Westwood, 1868, p. 369), and all records in previous fauna lists under *A. longicornis* against R.A.T. or S.P. belong here: it had not been noticed in recent years until two were observed in a collection from White Patch, 17.1.55 (G.M.S.)

ASTACILLA DESHAYESI (Lucas) [Stebbing, 1874*b*, p. 771, as *gracilis*; Norman and Scott, 1906, p. 47, pl. 5]

Inside Drake's Island, 1889 (A.M.N.): Rame-Eddystone Grounds, three young adults with a number of *A. intermedia*, 7.4.09, as above (*teste* G.M.S.): Millbay, 1 juvenile male; 3 other samples in Plymouth Laboratory stock (*teste* G.M.S.): Cawsand Bay, D-net, March 1911, 2 amongst *Zostera* and other bits of weed (K.H.B.): Asia Shoal dredgings, 1.10.53, one female (G.M.S.)

SALCOMBE (T.R.R.S.): 6 females breeding, Aug.-Sept. 1900 (Allen and Todd's specimens) (det. *Arcturella damnoniensis* by Allen on label, but not recorded, unless these were included in *A. longicornis*, see above-G.M.S.)

Breeding: Aug., Sept., Oct. (G.M.S.)

ARCTURELLA DAMNONIENSIS (Stebbing, 1874*a*, p. 291, pl. 15)

Plymouth (A.M.N.): Plymouth Sound, female clinging to weed or buoy, weed hand-picked by W.S., 6.2.11 (J.H.O.): in Laboratory stock were 6 males, 10 females, 1 juvenile, in bottle labelled *Astacilla longicornis* (*teste* G.M.S.): Wembury Bay, on rocks below L.W., several in four collections by G.R.F. from gullies near Yealm Mouth and from Slimers Rocks, Sept.-Oct. 1953 (G.M.S.)

Breeding: includes Sept. (G.M.S.)

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Sub-Order ASELOTOTA

Family **Janiridae****JANIRA MACULOSA** Leach [*Sars*, 1897, p. 99, pl. 40]

Common in Millbay Pit and between tide-marks at Mount Edgcumbe and Drake's Island; less common in dredgings from Queen's Ground and Asia Shoal and on Reny Rocks; occasional outside in 33 fm. (R.A.T.): Rum Bay, shore, 20.7.09; Rum Bay, shore, 21.1.09, a number, females carrying young but no eggs, 23.1.09 at L.W. mark (15' 6" tide), a number; 20.7.09, carrying eggs; Millbay Channel, dredged, 21.7.09; Promenade Pier, on *Halichondria panicea*, 12. 1. 10, about 100 very large (A.J.S.): Wembury, gully near Yealm Mouth, freely in Distomus-Halichondria association below L.W. (Kitching *et al*, 1934): Wembury, Church Reef, a few among Laminaria holdfasts (Colman, 1940): in weedy dredgings; New Grounds; 2-10 m. S. of Eddystone in 30-5 fm., 16.5.35 (G.I.C. 1934-5): Wembury West Reef, freely among weeds and under stones near L.W., 1949-5 1 ; Plymouth Sound, from Laminaria holdfasts, and in various dredgings (G.M.S.)

SALCOMBE. A few dredged in the Harbour Channel (Allen and Todd, 1900, p. 204): Castle Rocks, 12.5.49, several (G.M.S.)

Breeding: March-April (R.A.T.): Jan. (a few), July (A.J.S.): April-May (G.M.S.)

JAERA ALBIFRONS Leach (MARINA auctt. *nec* Linnaeus) [*Sars*, 1897, p. 104, pl. 43, as *marina*]

Plymouth, rocks under Hoe; Queen's Ground; Breakwater; not uncommon, between tide-marks (C.S.B.): Reny Rocks, common (R.A.T.): Hollow Rock Bay, common under stones at L.W. (S.P.): Breakwater, as "*J. nordmanni*", A. O. Walker, 3 specimens (Laboratory Museum, *teste* G.M.S.): Rum Bay, half tide to almost H.W., carrying young only, 21.1.09, but with eggs which were very green, 23.1.09 (A.J.S.): Hamoaze, very common at Bull Point, rare on shore above Ince Castle, 1928 (E.P.): on the shore present wherever there is a freshwater stream or drainage over the tidal zone, e.g. Wembury Point below ruined boathouse, where especially abundant under stones; in estuaries found intertidally under weeds and under stones for some distance up river, e.g. to N. Hooe in River Tamar, Wivelscombe Lake in River Lynher, at least to Bere Ferrers in River Tavy, to Marsh Mills in River Plym, to Aveton Gifford in the River Avon; recorded also from various parts of River Yealm and River Erme estuaries (G.M.S.)

SALCOMBE. Zostera bank of Ditch End, two (Allen and Todd, 1900, p. 204): channel of Blank's Creek, 22.1.39 (G.M.S.)

Breeding: whole year (G.M.S.)

Family **Munnidae****MUNNA MINUTA** Hansen (FABRICII *Sars nec* Krøyer; KRØYERI Bate and Westwood *nec* Goodsir) [*Sars*, 1899, p. 108, pl. 45 (2), as *fabricii*]

Millbay Channel, 1.3.00, 3 females and 2 others (R.A.T., as *M. krøyeri*, re-det. G.M.S.): Asia Shoal; Queen's Ground; River Yealm (R.A.T., as

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krøyeri, presumed this, G.M.S.): Asia Shoal, dredge, 6.8.12, about 2 dozen specimens (R.A.T., as *krøyeri*): Asia Shoal, Aug. 1922, several, mostly females with brood (A.J.S., as *krøyeri*, re-det. G.M.S.): Plymouth area, Feb. 1938 (S.M.N. det. G.M.S.): on Tubularia from G.W.R. Docks, Millbay, 19.11.34, 1 male (G.I.C., det. *fabricii* Sars provisionally - evidently correctly, G.M.S.): [Wembury, Church Reef, 5 specimens in Laminaria (Colman, 1940) - presumed this, but confirmation desired (G.M.S.)]: Duke Rock dredgings, 19.3.52, two; West Entrance to Sound, on red weeds, 10.5.54, a few, from two of which broods were reared in Laboratory; gullies near Yealm Mouth below L.W., on rocks with growths, Coll. G.R.F. Sept.-Oct. 1953, frequent in one sample (a rock covered with *Corynactis*), also from Slimers Rocks (G.M.S.)

Munna was recorded "abundant" by W.G. in 1892, and "not uncommon" by R.A.T. in 1904: it is by no means common at the present time: all examined Plymouth material belongs to one species, and, in view of the past confusion over specific characters, there are strong reasons for believing that the "*Munna limicola*" recorded by A.M.N. in 1889 and 1903 from near Duke Rock Buoy were not really distinct (G.M.S.)

Sub-Order ONISCOIDEA

Family **Ligiidae****LIGIA OCEANICA** (Linnaeus) [Sars, 1898, p. 156, pl. 70]

Common in rock crevices, etc., above H.W. mark in Sound (R.A.T., S.P.): abundant on quay walls in Cattewater (S.P.): Breakwater (A.O.W., S.P.): Drake's Island, in rock crevices, above H.W. mark (C.G.H.): regularly collected here for specimen supply (G.M.S.): Ince Castle, River Lynher, near, on rocky shore; Saltash Bridge, on left bank above, in wall, 1928 (E.P.): Weirquay, under stones at H.W.; Mount Edgcumbe shore, in cracks in bare rock above H.W.; generally along the rocky shore, seeking shelter in crevices, etc., sometimes aggregating in numbers, as observed at Erme Mouth (G.M.S.). (For habitat and biology, see Nicholls, 1931*a* and *b*)

Family **Trichoniscidae****TRICHONISCUS PUSILLUS** Brandt [Sars, 1898, p. 161, pl. 72]

Looe, abundantly among sticks by the side of the river (C.S.B.)

TRICHONISCUS ROSEUS (Koch) [Sars, 1898, p. 163, pl. 73]

Below the Laboratory in crevices in the limestone under debris, in the Xanthoria zone (G.M.S.)

Family **Oniscidae****PHILOSCIA MUSCORUM** (Scopoli) [Sars, 1898, p. 173, pl. 76]

A common coastal species, sometimes found in the supra-littoral under H.W. drift: at Wembury the var. *roseum* occurs with the typical form (G.M.S.)

PHILOSCIA COUCHI Kinahan [Bate and Westwood, 1868, p. 452]

Talland Cove, where first discovered by Kinahan, in company with

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P. muscorum and *Porcellio scaber*, under H.W. drift in slate rock (Bate and Westwood, 1868).
TORBAY. Meadfoot, and Paignton, near H.W. mark (Vaughan, 1920)

PORCELLIO SCABER Latreille [*Sars*, 1898, p. 176, pl. 57]

This ubiquitous land species may be found in company with *Ligia*, or under drift in the supra-littoral zone; it is especially numerous on the shore at Wembury (G.M.S.)

Family **Armadillidiidae**

ARMADILLIDIUM VULGARE (Latreille) [*Sars*, 1898, p. 189, pl. 82]

In rock crevices above H.W. with *Ligia oceanica*, Drake's Island, April (C.G.H.): a very common species on land, occasional under H.W. drift with *Porcellio* (G.M.S.)

Sub-Order EPICARIDEA

Family **Bopyridae**

PSEUDIONE CALLIANASSAE Kossmann [*Bonnier*, 1900, p. 293]

From *Callianassa subterranea*, outer Mewstone Grounds, 20 fm., 13.2.29 (G.A.S., det. W.M.T.): sole British record (Pike, 1953)

PSEUDIONE INSIGNIS Giard and Bonnier [*Bonnier*, 1900, p. 301, pl. 32]

From *Munida bamffica*, Mewstone Grounds, 28 fm., 11.12.28 (G.A.S., det. W.M.T.); Rame-Eddystone Grounds, May 1929 onwards, one (det. R.B.P.)

PSEUDIONE CREMULATA G. O. Sars, 1898, p. 207, pl. 86 (1)

From *Munida bamffica*, Rame-Eddystone Grounds, May 1929 onwards, five (det. R.B.P.)

PSEUDIONE PROXIMA Bonnier, 1900, p. 298 [*Sars*, 1898, p. 202, pl. 85 (2), as *P. hyndmanni*]

SALCOMBE. From *Eupagurus bernhardus* (in shell of *Helix aspersa*), female clasping male, L.W., 11.4.52 (G.M.S.). Southernmost limit of range.

PLEUROCRYPTA LONGIBRANCHIATA (Bate and Westwood) G. O. Sars, 1898, *nec* Pike, 1953 [*Sars*, 1898, p. 206, pl. 86 (2)]

This form proves amply distinct from any of the following species (female with long tuberculate pleopods, acute-cornered cephalon, and pink interiorly; male with broad head and annulated pleo-telson) and at present, 1953-5, seems the regular parasite of the intertidal *Galathea squamifera* population: females with attached males in branchial chamber of host on 16 occasions from shore sites including Rum Bay and Wembury West Reef: some at least of the records given by Pike (1953) for *G. squamifera* parasites from Wembury, etc., must surely be this (G.M.S.)

PLEUROCRYPTA GALATHEAE (Hesse) Bonnier, 1900, p. 310, pl. 13 [*Pike*, 1953, p. 220, in part]

The most frequent parasite of *Galathea* taken offshore, affecting more

CRUSTACEA: MALACOSTRACA, ISOPODA

than one species, but so far not proved from *G. squamifera*. Rame Mud Grounds, 4 females (2 with males) in branchial chambers of *Galathea nexa* (Lab. Mus. Coll., det. R.B.P.); infesting *G. dispersa* on 14 occasions from different trawling grounds, including Station L4, Mewstone Corner Grounds, Rame-Eddystone Grounds, and S.W. and S. of Eddystone; female with short tuberculate pleopods, obtuse-angled cephalon, and yellowish internally; male with somewhat longer head and smooth pleo-telson showing scarcely any signs of annulation - hence not identical with the parasite from *G. dispersa* figured by Bonnier and called *P. hendersoni* (G.M.S.)

PLEUROCRYPTA Sp. =LONGIBRANCHIATA Pike, 1953, *nec* Sars, 1898

Plymouth Sound, infesting a large pale *Galathea squamifera* dredged from Millbay Channel near Vanguard Buoy, 3.12.54, female of 11 mm. with attached male, agreeing well with Pike's description and figures of specimens taken by A.M. Norman at Starcross on *G. squamifera* (Brit. Mus. Coll.); until smaller specimens have been examined the possibility remains that these may simply be large examples of the preceding species (G.M.S.)

PLEUROCRYPTA MARGINATA G. O. Sars, 1898, p. 207, pl. 87 (1)

Wembury, 1945, in branchial chamber of *Galathea squamifera*, female with attached male (Pike, 1953)

PLEUROCRYPTA INTERMEDIA Giard and Bonnier [*Sars*, 1898, p. 208, as *microbranchiata*, pl. 87 (2); *Bonnier*, 1900, p. 313, pl. 14, 15]

Station L4, 29.12.54, a young female with attached male in branchial chamber of *Galathea intermedia* (G.M.S.)

PLEUROCRYPTA CLUTHAE T. Scott, 1902, p. 1, pl. 1, fig. 5.

In branchial chamber of *Pandalina brevirostris*: Mewstone Grounds, 26 fm., 28.9.28, fairly common (G.A.S.); Barn Pool, female with attached male, 20.3.52 (G.M.S.)

PLEUROCRYPTA sp. larva

Attached to a decapod larva, probably *Processa* (*teste* M.V.L.), at side of thorax, in tow-nets, 7.1.53 (G.M.S.)

IONE THORACICA (Montagu) [*Bonnier*, 1900, p. 238, pl. 1-3]

SALCOMBE. Described by Montagu (1808a, p. 103), who found it parasitic on *Callianassa subterranea* taken in the Kingsbridge Estuary: remains only British record apart from Channel Islands (see Pike, 1953)

GYGE BRANCHIALIS Cornalia and Panceri [*Bonnier*, 1900, p. 353, pl. 34]

SALCOMBE. In *Upogebia deltaura*, 23/24.3.22, 2 females with males (T.T.B., checked by R.B.P.): only British record apart from Channel Islands.

BOPYRUS FOUGEROUXI Giard and Bonnier (SQUILLARUM auctt. in part., ? Latr.) [*Sars*, 1898, p. 197, pl. 84 (1), as *squillarum*; *Bonnier*, 1900, p. 358, pl. 35-7]

Regularly on *Palaemon serratus* in various parts of Plymouth Sound, with fluctuating abundance, sometimes quite scarce (R.A.T., A.J.S., S.K., G.M.S.)

BOPYROIDES HIPPOLYTES (Krøyer) [*Sars*, 1898, p. 199, pl. 84 (2); *Bonnier*, 1900, p. 373]
Plymouth Sound, Barn Pool, on *Hippolyte varians*, 3.8.49 (S.M.N., det. I.G)

BOPYRINA GIARDI *Bonnier*, 1900, p. 364, pl. 39-40
In branchial chamber of *Hippolyte varians*: scarce at Plymouth; one by G.R.F. at Rum Bay, 3.8.54 (G.M.S.)

PHRYXUS (?) ABDOMINALIS (Krøyer) [*Sars*, 1898, p. 215, pl. 90]
Spirontocaris species infected, occasionally seen by G.R.F., most probably belong to this species (G.M.S.)

PHRYXUS PHILONIKA (Giard and *Bonnier*) [*Caroli*, 1930, p. 259, 262*]
Infesting *Processa canaliculata*: Mewstone Grounds, 25 fm., 3.5.29 (G.A.S., det. W.M.T.). Infested *Processa* occasionally seen (G.R.F.)

ATHELGES PAGURI (Rathke) [*Sars*, 1898, p. 210, pl. 88; *Nierstrass* and *Brender à Brandis*, 1926, p. 38, figs. 105-11]
Polperro, female (C. S. Bate coll.). Plymouth, female in left branchial chamber of *Eupagurus bernhardus*, 19.12.36 (Cattley, 1938). Plymouth Sound, inside Breakwater, 12.4.50, attached to abdomen of small ex. of *Eupagurus bernhardus* in a *Turritella* shell, female with ripe ova (G.M.S.)

Microniscus larval forms [*Sars*, 1898, pl. 92]
Common on various copepods in the plankton, all seasons (M.V.L.)

Family **Cryptoniscidae**

HEMIONISCUS BALANI (Spence Bate) [*Sars*, 1899, p. 236, pl. 98, as *Cryptotheir*; *Nierstrass* and *Brender à Brandis*, 1926, p. 12, figs. 2-8]
Regularly in *Balanus balanoides* on rocks below the Hoe, 1898 onwards (R.A.T., A.M.N., J.H.O., G.M.S.). In 1950 about 50 per cent. infection was found both in *B. balanoides*, and in the relatively newly arrived *Elminius modestus*: since 1950 *Balanus balanoides* has declined, but *Elminius* continues with heavy infection of *Hemioniscus*: *Chthamalus* is apparently always free from the parasite (G.M.S.): found in *Balanus balanoides* collected in St. John's Lake and Bull Point, Hamoaze, 8.9.28 (E.P.)

LIRIOPSIS PYGMAEA (Rathke) [*Sars*, 1899, p. 242, pl. 100]
Parasite on *Peltogaster paguri*; the latter being attached to the abdomen of young specimens of *Eupagurus cuanensis* dredged off Plymouth (A.M.N.)

Family **Entoniscidae**

PORTUNION MAENADIS Giard [*Nierstrass* and *Brender à Brandis*, 1926, p. 42]
On a male *Carcinus maenas* from Plymouth, only one out of 250 examined, mouth of Cattewater, 17.12.23 (M.G.L.P.)

*Permits identification: there is no description as such (G.M.S.).

PINNOTHERION VERMIFORME Giard and Bonnier [*Nierstrass and Brender à Brandis*, 1926, p. 44; Atkins, 1933*b*, pp. 319-63, pl. 1, 2]

NORTH CORNWALL. Camel Estuary, infecting *Pinnotheres pisum* (parasitic in *Mytilus*); the infection rate about 28 per cent., chiefly by male parasites; sex ratio 42 males to 1 female (Atkins, 1933*b*)

Order AMPHIPODA

NOTES

Reducing the numerous records to order has entailed some digesting and condensing especially for the better-known species. Generalized statements on abundance, habitats, etc., can sometimes be given, and for these G.M.S. is responsible. An attempt has always been made not to lose sight of the older records.

The initials 'G.I.C.' embrace both MS notes by Mr. G. I. Crawford and extracts from his four published papers (Crawford, 1936, 1937 *a, b, c*). Unless otherwise stated, Mr. Crawford's observations were made in 1934-5.

Breeding is found to be extended through the year, or through most of it, whenever sufficient information is available: no species in this list is known to have a restricted breeding season, as is found in some isopods, though some may have rest periods during late autumn or winter.

The coastal area considered is limited to that between Start Point and Polperro. Various records from other parts of Devon and Cornwall are given by Norman and Scott (1906), Crawford (1937*c*), and Holme (1950).

Further information on the habitats of species occurring in bottom deposits offshore may be found in Crawford (1937*b*) and Holme (1953), and of species inhabiting littoral algae in Colman (1940) and Wieser (1952).

Sub-Order GAMMARIDEA

Family Lysianassidae

ACIDOSTOMA OBESUM (Bate) [*Sars*, 1890, p. 38, pl. 14 (2); *Chevreux and Fage*, 1925, p. 32]

Plymouth (A.M.N.): Eddystone, N.A.H. Station B.5, 5.12.50 (G.M.S.)

SALCOMBE (T.R.R.S.)

PERRIERELLA AUDOUINIANA (Bate) [*Sars*, 1895, suppl., p. 678, pl. 2 (2); *Chevreux and Fage*, 1925, p. 34]

Plymouth Sound, frequent in dredgings (A.M.N., G.I.C., G.M.S.). On surface of *Maia squinado*, 1951 (G.M.S.)

NANNONYX GOËSI (Boeck) [*Sars*, 1891, p. 72, pl. 24 (3); *Chevreux and Fage*, 1925, p. 38]

Plymouth Sound, intertidally and in dredgings. frequent (1889, 1903, A.M.N.; 1934-5, G.I.C.). Off Rame Head, 25 fm. on *Maia squinado* (G.I.C.). Yealm Mouth, 8.10.53 (G.M.S.)

LYSIANASSA CERATINA (A. O. Walker) [*Chevreux and Fage*, 1925, p. 42]

Plymouth Sound, frequent in dredgings (A.M.N., E.F., K.H.B., G.I.C., G.M.S.): Wembury West Reef, frequent; Yealm Mouth and Slimers Rocks (G.M.S.): Mewstone Ledge (G.I.C.)

SALCOMBE (A.M.N.)

LYSIANASSA PLUMOSA Boeck [*Sars*, 1890, p. 42, as *L. costae*, pl. 16 (1); *Chevreux and Fage*, 1925, p. 43]

Plymouth Sound (C.S.B., T.V.H.): Eddystone Grounds. amongst *Chaetopterus* tubes, 6.7.51 (G.M.S.)

SALCOMBE (A.M.N.)

SOCARNOPSIS CRENULATA Chevreux [*Chevreux and Fage*, 1925, p. 49]

Station L4, amongst bottom fauna, 3.6.49; Eddystone Grounds, amongst *Chaetopterus* tubes, 17.7.51 (G.M.S.)

SOCARNES ERYTHROPHTHALMUS D. Robertson [*Chevreux and Fage*, 1925, p. 50]

Plymouth, 1903 (A.M.N.): Drake's Island, intertidally under stones (G.I.C.): Wembury W. Reef, one in pool with clean sand, 6.4.51 (G.M.S.): Eddystone, in coarse sand, one, 4.9.34 (G.I.C.)

HIPPOMEDON DENTICULATUS (Bate) [*Sars*, 1890, p. 56, pl. 20; *Chevreux and Fage*, 1925, p. 53]

Bigbury Bay and Whitsand Bay, on sandy bottom (E.F., (G.I.C.)). Eddystone, one on coarse sand (G.I.C.). Rame trawling grounds, females, 24.3.54 (G.M.S.)

SCOPELOCHEIRUS HOPEI (A. Costa) [*Sars*, 1890, p. 54, as *Callisoma krøyeri*, pl. 19 (2); *Chevreux and Fage*, 1925, p. 55]

Plymouth (A.M.N.): 6 m. S. of Mewstone, March 1911, several on the back and between the legs of *Maia squinado*, but chiefly in empty tests of *Echinocardium* (K.H.B.): Rame trawling grounds, several, 24.3.54 (G.M.S.)

ORCHOMENE HUMILIS (A. Costa) [*Sars*, 1890, p. 60, as *O. batei*, pl. 22; *Chevreux and Fage*, 1925, p. 59]

Plymouth (A.M.N.): Plymouth Sound (C.S.B., T.V.H., E.F.)
SALCOMBE. Castle Rocks, 12.5.49 (G.M.S.)

LEPIDEPECREUM LONGICORNE (Bate and Westwood) [*Sars*, 1891, p. 113, as *L. carinatum*, pl. 38 (2), 39 (1); *Chevreux and Fage*, 1925, p. 63]

Cawsand Bay, 17.10.34, female; 1.2.35, juvenile; 19.2.35. 2 females, attached to pieces of hydroid (G.I.C.)

TRYPHOSA SARSI (Bonnier) [*Sars*, 1891, p. 76, 1895, p. 684, as *T. nana*, pl. 27 (1)]

Plymouth Sound-Queen's Ground (T.V.H.), singly in Asia Shoal and Millbay Channel dredgings (G.M.S.): Yealm Mouth, 1889 (A.M.N.)
SALCOMBE. Castle Rocks, 2 females, 12.5.49 (G.M.S.)

TRYPHOSA HØRINGI Boeck [*Sars*, 1891, p. 77, pl. 27 (2)]

Yealm Mouth, 1889 (A.M.N.)

TMETONYX CICADA (Fab.) [*Sars*, 1891, p. 92, pl. 32 (2), as *Hoplonyx*; *Chevreux and Fage*, 1925, p. 69]

Plymouth Sound (C.S.B.). No recent records.

ORCHOMENELLA NANA (Krøyer) [*Sars*, 1891, p. 69, as *O. ciliata*, pl. 25 (2); *Chevreux and Fage*, 1925, p. 71]

Plymouth (A.M.N., T.V.H.): Plymouth Sound, Millbay, on a dredged decaying *Cancer pagurus*, 3.9.29 (S.M.N.); abundant on various dead crabs, Cawsand Bay, on fine sand with mud; under the Laboratory intertidally (G.I.C.): Whitsand Bay, by N.A.H. with bottom-sampler; Wembury W. Reef, 12.4.49; from surface of trawled *Maia squinado*, 11.6.51 (G.M.S.)

CRUSTACEA: MALACOSTRACA, AMPHIPODA

Family **Ampeliscidae**

AMPELISCA BREVICORNIS (A. Costa) [*Sars*, 1891, p. 169, as *A. laevigata*, pl. 59 (1); *Chevreux and Fage*, 1925, p. 77]

Frequent on the bottom, chiefly on fine muddy sand in shallow water. Plymouth Sound (C.S.B., G.I.C., G.M.S.): Cawsand Bay, regular, sometimes numerous (G.I.C., G.M.S.): Rame Grounds, and inside Eddystone, also from stomachs of *Gadus minutus* (G.M.S.): Bigbury Bay (G.I.C.)

SALCOMBE. Mill Bay, intertidally, in sand, lying in burrows lined with mucus (J.G.H., J.H.O.): Salstone (G.I.C.)

AMPELISCA sp. allied to *A. brevicornis*

In stomachs of *Gadus minutus*, 2 males and 1 juvenile, June 1948 (G.M.S.)

AMPELISCA SPINIPES Boeck [*Sars*, 1891, p. 173, pl. 60 (2); *Chevreux and Fage*, 1925, p. 81]

Generally distributed on the bottom outside the Sound, particularly on coarse sand and mixed grounds. Cawsand Bay, occasional (R.A.T.): Mewstone grounds (A.M.N., G.I.C.), on fine and medium gravel (R.A.T.), on sand and shell (E.F., G.A.S.): Eddystone Grounds, 8 m. S.W. (L.R.C.): in survey with bottom-sampler (N.A.H., G.M.S.): among Chaetopterus tubes (G.M.S.): in stomachs of very young rays which feed largely on this species and *A. tenuicornis* (G.A.S., G.M.S.): freely taken also by *Gadus minutus* (G.M.S.)

SALCOMBE (A.M.N.)

AMPELISCA DIADEMA (A. Costa) [*Sars*, 1891, p. 168, as *A. assimilis*, pl. 58 (2); *Chevreux and Fage*, 1925, p. 82]

Dredged frequently, chiefly on mixed grounds, but in smaller numbers than *A. tenuicornis* which occurs with it. Off Penlee Point and on Rame-Eddystone Grounds, 20-5 fm. (G.I.C.): inner Eddystone Grounds (N.A.H., bottom sampler); stomachs of *Gadus minutus* and young rays from trawling grounds (G.M.S.)

AMPELISCA TENUICORNIS Lilljeborg [*Sars*, 1891, p. 167, pl. 58 (1); *Chevreux and Fage*, 1925, p. 83]

Plymouth and off Mewstone (A.M.N.): Duke Buoy (A.O.W.). Commonly on the trawling grounds with preference for somewhat muddy bottom. Mewstone Grounds in fine silty sand (G.A.S.): Rame Mud, plentiful (G.I.C., G.M.S.): Eddystone grounds, fine sand (E.F.), various stations, especially B.5 on fine sand by N.A.H. with bottom-sampler (G.M.S.): Plymouth Sound, Melampus, Yealm Mouth, off Penlee, and on Rame-Eddystone Grounds (G.I.C.): a number in *Callionymus* and *Raia* stomachs, also taken by *Gadus minutus* (G.M.S.)

SALCOMBE (A.M.N.)

AMPELISCA TYPICA (Bate) [*Sars*, 1891, p. 165, pl. 57; *Chevreux and Fage*, 1925, p. 84]

Plymouth (A.M.N.): in Sound, Melampus Buoy; and on Rame-Eddystone Grounds - sparingly on mixed bottoms (G.I.C.): off Eddystone, shelly gravel (E.F.): in stomachs of young rays (G.M.S.)

SALCOMBE (A.M.N.)

Family **Argissidae**

ARGISSA STEBBINGI Bonnier [*Chevreux and Fage, 1925, p. 90*]

Cawsand Bay, 17.10.34, male and female with eggs; Plymouth Sound, middle, 29.11.34, 2 females with eggs; Melampus Buoy, 29.11.34, 4 males, 3 females, 1 juvenile (G.I.C., det. K. Stephensen)

Family **Haustoriidae**

BATHYPOREIA GUILLIAMSONIANA (Bate) [*Chevreux and Fage, 1925, p. 92; Watkin, 1938, p. 216*]

On clean sand in shallow water. Whitsand Bay (E.F., J.R.B., G.I.C.): Bigbury Bay (E.F., G.I.C.)

BATHYPOREIA PELAGICA (Bate), *nec* Sars, *nec* Chevreux and Fage [*Watkin, 1938, p. 219*]

Wembury Bay, common intertidally in coarse sand (N.A.H.)

BATHYPOREIA ELEGANS Watkin, 1938, p. 222 [*Sars, 1891, p. 129, pl. 44 (1), as B. pelagica; Chevreux and Fage, 1925, p. 93, as B. pelagica*]

At low-water springs and in shallow water, in fine sand. Plymouth (A.M.N.): Cawsand Bay, in fine muddy sand (G.I.C.): Erme Estuary, 26.11.47 (N.A.H.): Bigbury Bay, abundantly in fine sand (E.F., G.I.C.): Whitsand Bay (T.V.H., E.F., G.I.C., G.M.S.) (sample in B.M. coll.): Rame-Eddystone Grounds (E.F.). (Before Watkin's revision, recorded as *pelagica*)

SALCOMBE. On the bar (Allen and Todd, 1900)

BATHYPOREIA TENUIPES Meinert [*Watkin, 1938, p. 225*]

Cawsand Bay (G.I.C., as "*elegans*": *teste* E. E. Watkin): Start Bay (Norman coll., Brit. Mus., *teste* E. E. Watkin). Rather widely spread in shallow water and offshore-Plymouth Sound, E. side; Whitsand Bay; Bigbury Bay; Eddystone Grounds (G.m.s.)

BATHYPOREIA SARSI Watkin, 1938, p. 231 [*Sars, 1891, p. 131, pl. 44 (2), as B. robertsoni; Chevreux and Fage, 1925, p. 94, as B. robertsoni*]

Bigbury Bay, in bottom-sampler by N.A.H., 20.4.49 (G.M.S.)

HAUSTORIUS ARENARIUS (Slabber) [*Sars, 1891, p. 135, pl. 46; Chevreux and Fage, 1925, p. 95*]

Whitsand Bay (W.B., G.I.C.): Mothecombe, intertidally (G.I.C.). Not common.

SALCOMBE. Mill Bay, in loose sand, 17.3.49 (G.M.S.)

UROTHOË MARINA (Bate) [*Chevreux and Fage, 1925, p. 97*]

Plymouth (A.M.N.): Mewstone Grounds (G.A.S.): Erme Head (E.F.): Eddystone Grounds, in coarse sand and fine gravel (G.I.C.): many in the stomach of a young *Raia montagui*, 29.5.51, comprising bulk of meal, also others in a *R. clavata* (G.M.S.)

UROTHOË GRIMALDI Chevreux, var. POSEIDONIS Reibisch [*Chevreux and Fage, 1925, pp. 99, 100, as var. inermis*]

Whitsand Bay, in bottom-sampler by N.A.H., 6.5.49 (G.M.S.)

CRUSTACEA: MALACOSTRACA, AMPHIPODA

SALCOMBE. Mill Bay, in clean sand on Echinocardium ground, with tendency to lie up in burrows of *E. cordatum* and *Acrocnida brachiata* (G.I.C., G.M.S.)

UROTHOË BREVICORNIS Bate [*Chevreux and Fage*, 1925, p. 100]

Drake's Island, one in sand at extreme L.W., 7.3.35; Whitsand Bay, several dredged 3-5 fm., Nov. 1934 (G.I.C.)

SALCOMBE. The Bar, with D-net (Allen and Todd, Lab. Mus., *teste* G.I.C.)

UROTHOË ELEGANS Bate [*Sars*, 1891, p. 138, as *U. norvegica*, pl. 47; *Chevreux and Fage*, 1925, p. 101]

In finer and siltier sand than the other species in the area. Plymouth Sound (Melampus, White Patch), Cawsand Bay, Rame-Eddystone Grounds, Eddystone Grounds (G.I.C.): Plymouth Sound, males at light after dark, 20.6.51; in stomachs of *Gadus minutus* and *Raia clavata* from trawling grounds; in bottom-sampler near Eddystone (G.M.S.)

Family **Phoxocephalidae**

PHOXOCEPHALUS HOLBOELLI (Krøyer) [*Sars*, 1891, p. 144, pl. 49]

Plymouth Sound (C.S.B.), in 1889 (A.M.N.)

METAPHOXUS PECTINATUS (A. O. Walker) [*Chevreux and Fage*, 1925, p. 105]

Plymouth Sound (C.S.B.)

METAPHOXUS FULTONI (T. Scott) [*Chevreux and Fage*, 1925, p. 106]

Plymouth Sound, 1889 (A.M.N.): Rame-Eddystone, Eddystone and Bigbury Bay, 1934-5, in coarse sand and fine gravel (G.I.C.)

HARPINIA ANTENNARIA Meinert [*Sars*, 1891, p. 153, as *H. neglecta*, pl. 53 (1); *Chevreux and Fage*, 1925, p. 108]

Plymouth Sound (C.S.B., A.M.N., G.I.C.): Cawsand Bay very commonly, Yealm Mouth, Bigbury Bay (G.I.C.): Rame Mud; Rame-Eddystone (G.I.C., G.M.S.): Eddystone Grounds (G.M.S.). Mainly on muddy sand and mixed grounds. SALCOMBE (A.M.N.)

Family **Amphilochoidea**

AMPHILOCHUS NEAPOLITANUS Della Valle [*Chevreux and Fage*, 1925, p. 112]

SALCOMBE (A.M.N.): Castle Rocks, 12.5.49, 3 females (G.M.S.)

AMPHILOCHUS MANUDENS Bate [*Sars*, 1892, p. 217, pl. 74; *Chevreux and Fage*, 1925, p. 114]

Plymouth Sound, inside Drake's Island (A.M.N., A.O.W.); New Grounds, and in tow-nets (G.I.C.): inside Eddystone, in bottom-plankton net, 23.2.53 (G.M.S.): Eddystone Grounds, in debris from Chaetopterus tubes, 4.6.51 (G.M.S.)

AMPHILOCHUS SPENCE-BATEI (Stebbing) [*Chevreux and Fage*, 1925, p. 115]

Plymouth Sound: Melampus, 2, 29.11.34; Asia Shoal, 6, 29.11.34 (G.I.C.)

AMPHILOCHOIDES ODONTONYX (Boeck) [*Sars*, 1892, p. 222, as *A. pusillus*; 1895, p. 690, pl. 76 (1); *Chevreux and Fage*, 1925, p. 116]

Plymouth Sound, 8 fm., 1889 (A.M.N.): in tow-nets (G.I.C.)

GITANA SARSI Boeck [*Sars*, 1892, p. 228, pl. 78 (1); *Chevreux and Fage*, 1925, P. 118]

On a trawled *Maia squinado*, 27.6.5 1 ; Yealm Mouth, several on pieces of rock hand-collected below L.W. by G.R.F., 7.10.53 (G.M.S.)

PELTOCOXA MARIONI Catta [*Chevreux and Fage*, 1925, p. 119]

Yealm Mouth, one on piece of rock with *Distomus* hand-collected below L.W. by G.R.F., 7.10.53 (G.M.S.)

Family **Leucothoidae**

LEUCOTHOË SPINICARPA (Abildgaard) [*Sars*, 1892, p. 283, pl. 100, 101 (1); *Chevreux and Fage*, 1925, p. 122]

Plymouth, regularly recorded from Sound and shallow water; frequently in cavities of sponges (*Desmacidon*, *Ficulina*) or of ascidians (*Ascidia mentula*, *Ascidiella*, *Phallusia*), also in laminarian roots; less frequent offshore, but taken by L.R.C. at five stations S. of Eddystone in 40-5 fm. (Lab. Mus. Coll.) (G.M.S.)

SALCOMBE (A.M.N.; Allen and Todd, 1900): Tosnos Point, occupying cavities in *Halichondria*, 5.10.56 (G.M.S.)

LEUCOTHOË sp. nov. (allied to *L. richiardi* Lessona)

Eddystone Grounds, amongst coiled *Chaetopterus* tubes, first reported by G.I.C., who took it in 1935, and subsequently (1951-3) found regularly but sparingly in this site by G.M.S. Also occurred in stomachs of *Gadus minutus* in 1948, and in N.A.H.'s bottom samples in 1950 (G.M.S.)

LEUCOTHOË INCISA D. Robertson [*Chevreux and Fage*, 1925, p. 123]

Wembury, Church Reef, in *Laminaria* holdfast at low water, 3.4.31 (J.S.C.): Eddystone, 30.3.33, 1 in stramin-net by F.S.R. (G.I.C.): 25.3.54, 1 female among *Chaetopterus* tubes (G.M.S.)

LEUCOTHOË LILLJEBORGI Boeck [*Sars*, 1892, p. 284, pl. 101 (2); *Chevreux and Fage*, 1925, p. 124]

Rame Mud, 20-5 fm., 13 ex., 14.8.34 (G.I.C.); 4 ex., 12.7.39, by M.M. (G.M.S.): Whitsand Bay, by N.A.H., Station 11, one (G.M.S.): mid-Channel, S. of Eddystone, 43 fm., one, det. "young *spinicarpa*" by L.R.C. (Lab. Mus. Coll.) (*teste* G.M.S.)

Family **Metopidae**

METOPA sp.

Yealm Mouth, and Slimers Rocks, 3 ex. from pieces of rock hand-collected below L.W. by G.R.F., 7 and 9.10.53 (G.M.S.)

Family **Stenothoidae**

STENOTHOË MONOCULOIDES (Montagu) [*Sars*, 1892, p. 240, pl. 82 (1); *Chevreux and Fage*, 1925, p. 133]

Plymouth (C.S.B., A.M.N.): Plymouth Sound, very common, on shore at

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L.W. amongst weeds (G.I.C., G.M.S.): Cawsand Bay (G.I.C.): Wembury West Reef, frequent amongst weeds; Yealm Mouth, Wembury Bay, and Eddystone Rock, on rocks hand-collected by G.R.F. below L.W.; on surface of trawled *Maia squinado*, 12.6.51 (G.M.S.)

SALCOMBE (G.M.): Castle Rocks amongst weeds (G.M.S.): Salstone (G.I.C.)

STENOTHOË sp. nov. allied to *monocoloides*

Plymouth Sound, rather numerous in 1949, 1950, etc., amongst hydroids collected from Millbay and rafts near the Breakwater (G.M.S.)

STENOTHOË SPINIMANA Chevreux [*Chevreux and Fage*, 1925, p. 134]

Eddystone Rocks, southern reef, several among tufts of *Corallina* and other weeds, Coll. G.R.F., 31.8.54 (G.M.S.)

STENOTHOË MARINA (Bate) [*Sars*, 1892, p. 236, pl. 80; *Chevreux and Fage*, 1925, p. 136]

Plymouth (A.M.N.): Duke Buoy (A.O.W.): Asia Shoal dredgings occasionally (G.M.S.): Mewstone Ledge (G.I.C.): trawl refuse from near Eddystone (C.S.B.); Rame-Eddystone (G.I.C.): from surface of a trawled *Maia squinado*, and in bottom-plankton net (G.M.S.)

SALCOMBE. Mill Bay, intertidally (G.I.C.)

STENOTHOË VALIDA Dana [*Chevreux and Fage*, 1925, p. 137]

Plymouth Sound, regularly amongst growths of *Tubularia* since first noticed in 1949. It has also been observed in Brixham harbour (G.M.S.)

STENOTHOË SETOSA Norman, 1900, p. 39

Plymouth, Aug. 1889, type specimen (A.M.N.)

PARAMETOPA KERVILLEI Chevreux [*Chevreux and Fage*, 1925, p. 139]

Cawsand Bay, 1 female with eggs, D-net, 7.10.34 (G.I.C.): Plymouth Sound, in weeds on raft, 1 female, 22.3.50; Slimers Rocks, Wembury Bay, 13 ex. on piece of rock hand-collected by G.R.F.. 9.10.53 (G.M.S.)

Family **Cressidae**

CRESSA DUBIA (Bate) [*Sars*, 1892, p. 278, pl. 98 (2), 99 (1); *Chevreux and Fage*, 1925, p. 141]

Amongst trawl refuse from near Eddystone, type specimen (C.S.B.): from surface of *Maia squinado*, 11.6.51, two; 12.6.51, one (G.M.S.)

Family **Phliantidae**

PEREIONOTUS TESTUDO (Montagu) [*Chevreux and Fage*, 1925, p. 142]

Wembury, West Reef, several found in sievings from weeds, 12.4.49, and on five subsequent occasions, including sievings of *Corallina*, etc., from mid-tide rock-pools; animals survive well in dishes, browsing on weeds (G.M.S.)

SALCOMBE. In 1889 and 1903 (A.M.N.)

Family **Colomastigidae**

COLOMASTIX PUSILLA Grube [*Chevreux and Fage*, 1925, p. 144]

Plymouth (A.M.N.): Plymouth Sound; common in sponges; dredged in various places, and taken intertidally below the Laboratory, females with ova, Aug.-Oct., the male seldom seen (G.I.C., G.M.S.)

Family **Acanthonozomatidae**

PANOPLIOEA MINUTA (G. O. Sars) [*Sars*, 1893, p. 379, as *Iphimedia*, pl. 133 (1); *Chevreux and Fage*, 1925, p. 148]

Plymouth (A.M.N.): Plymouth Sound, in dredgings (T.V.H., R.A.T., G.I.C., G.M.S.): Yealm River (R.A.T.): Cawsand Bay (G.I.C.): Slimers Rocks (G.M.S.): in stomachs of *Gadus minutus*; and from Chaetopterus tubes debris (G.M.S.)

PANOPLIOEA EBLANAE (Bate) [*Chevreux and Fage*, 1925, p. 149]

In tow-nets, one, 1.2.35 (G.I.C.): Rame Grounds, female from side of trawl, 8.4.49 (G.M.S.)

IPHIMEDIA OBESA Rathke [*Sars*, 1893, p. 377, pl. 132; *Chevreux and Fage*, 1925, p. 150]

Plymouth Sound, dredged N.W. side of Drake's Island (C.S.B.): near Drake's Island (G.I.C.): Plymouth Harbour (T.V.H.): trawling grounds, from stomachs of *Gadus minutus* and in bottom plankton net (G.M.S.): S.W. of Eddystone in 40 fm., one (L.R.C.)

SALCOMBE (T.R.R.S.)

Family **Liljeborgiidae**

LILJEBORG BREVICORNIS (Bruzelius) [*Sars*, 1894, p. 530, as *L. pallida*, pl. 187; *Chevreux and Fage*, 1925, p. 155]

Plymouth Sound, E. of Drake's Island, described as *pallida* (C.S.B.): intertidally on Drake's Island (G.I.C.): Mewstone Ledge; one in Eddystone shell gravel (G.I.C.)

Family **Oedicerotidae**

PERIOCULODES LONGIMANUS (Bate and Westwood) [*Sars*, 1892, p. 313, pl. 110 (2), 111 (1) ; *Chevreux and Fage*, 1925, p. 162]

Plymouth (A.M.N.): Plymouth Sound, occasional; Cawsand Bay, plentifully in fine muddy sand; Bigbury Bay; Rame Mud (G.I.C.): 3¼ m. due S. of Breakwater, 25 fm., 22.8.28 (G.A.S.): in stomachs of young *Raia clavata*, 1951 (G.M.S.)
SALCOMBE. Mill Bay, intertidally (G.I.C.)

PONTOCRATES NORVEGICUS Boeck [*Sars*, 1895, p. 693, suppl. pl. 6 (2), 7 (1); *Chevreux and Fage*, 1925, p. 164]

Wembury and Mothecombe, intertidally; Bigbury Bay, in fine sand (G.I.C.): Whitsand Bay (A.M.N.): Mewstone shell gravel, 6.4.50 (G.M.S.)

PONTOCRATES ARENARIUS (Bate) [*Chevreux and Fage*, 1925, p. 166]

Plymouth Sound (E.F., G.M.S.): Whitsand Bay, in 1889 and 1903 (A.M.N.):

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dredged in fine sand at three stations, 1934 (G.I.C.): Wembury, intertidally (G.I.C.): Eddystone Grounds. in fine shelly sand (E.F.): in stomachs of young *Raia clavata*; and amongst Chaetopterus tubes (G.M.S.). This and previous characteristic of clean sand.

PONTOCRATES ALTAMARINUS (Bate and Westwood) [*Sars*, 1895, p. 695, pl. 7 (2); *Stebbing*, 1906. p. 240]
SALCOMBE. At the Bar (R.A.T.) (Allen and Todd, 1900)

SYNCHELIDIUM HAPLOCHELES (Grube) [*Sars*, 1892, p. 318, as *S. brevicarpum*, pl. 112 (1); *Chevreaux* and *Fage*, 1925, p. 168]
Plymouth (A.M.N.): Plymouth Sound, at New Grounds and Asia Shoal (G.I.C.): Cawsand Bay, one, 31.3.11 (K.H.B.); several in 1934, from fine sand with mud (G.I.C.)

MONOCULODES CARINATUS (Bate) [*Sars*, 1892, p. 295, pl. 105; *Chevreaux* and *Fage*, 1925, p. 169]
Plymouth Sound, near Duke Rock, 1889 (A.M.N.); New Grounds (G.I.C.): Erme Head, shelly gravel (E.F.): Cawsand Bay, fine muddy sand; and Rame-Eddystone, mixed grounds, singly (G.I.C.): singly in stomachs of *Gadus minutus* and young *Raia clavata* (G.M.S.)

MONOCULODES sp., allied to *tesselatus* Schneider
One in stomach of *Gadus minutus*, July 1948 (G.M.S.)

WESTWOODILLA CAECULA Bate [*Sars*, 1892, p. 327, pl. 115; *Chevreaux* and *Fage*, 1925, p. 173]
Eddystone Grounds, among trawl refuse (C.S.B.); dredged in 1903 (A.M.N.): off Penlee Point; Rame Mud; Rame-Eddystone Grounds, sparingly (G.I.C.): frequent in stomachs of young rays; also taken in bottom plankton net (G.M.S.)

Family Calliopiidae

APHERUSA BISPINOSA (Bate) [*Sars*, 1893, p. 439, pl. 155 (1); *Chevreaux* and *Fage*, 1925, p. 177]
A common shallow-water species, regularly recorded, from Looe to Salcombe. It may be sieved from weeds at L.W., and occurred in young fish trawls taken after dark (G.M.S.)
SALCOMBE. Castle Rocks, in weeds, abundant (G.M.S.); Mill Bay (G.I.C.)

APHERUSA OVALIPES Norman and Scott [*Chevreaux* and *Fage*, 1925, p. 178]
Plymouth, not uncommon (A.M.N.): common in weedy dredgings - Plymouth Sound; Cawsand Bay, on fine muddy sand, numerous (G.I.C.): Yealm Estuary, one sieved from weeds, 1951; numerous in stomachs of *Gadus minutus* from trawling grounds, 1948; many on carapaces of *Maia squinado*, 1951 (G.M.S.): in the plankton, common at least in 1925 (F.S.R.): Eddystone Grounds; sometimes in tow-nets (G.I.C.)

APHERUSA CLEVEI G. O. Sars [*Chevreaux* and *Fage*, 1925, p. 179]
A common planktonic species, March-Nov. at least. It is taken in the Y.F.T., and has been noted at Station E.1 (G.M.S., G.I.C.)

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APHERUSA CIRRUS (Bate) [*Sars*, 1893, p. 441, as *A. borealis*, pl. 155 (2); *Chevreaux and Fage*, 1925, p. 179]

In weeds, especially Halidrys, on rocky ground along the shore, mainly intertidal. Plymouth (A.M.N.): Drake's Island (G.I.C.): Wembury reefs (K.H.B., G.I.C., G.M.S.): Portwrinkle reef (G.M.S.): W. Looe reef (G.I.C., G.M.S.)
SALCOMBE (A.M.N.): Castle Rocks (G.M.S.): Mill Bay (G.I.C.)

APHERUSA HENNEGUYI *Chevreaux and Fage*, 1925, p. 180

On trawling grounds, 20-30 fm., this appears to have become a widespread species, having been noticed first in 1948. Many occurred in stomachs of *Gadus minutus* caught in 1948; and several were taken in the bottom-plankton net, near Eddystone in 1953. It has also been dredged on the bottom at L4, occurred in Y.F.T. from the same station, and been found amongst the fauna lodging between Chaetopterus tubes. (G.M.S.)

APHERUSA JURINEI (Milne Edwards) [*Sars*, 1893, p. 445, pl. 157 (1); *Chevreaux and Fage*, 1925, p. 182]

Very common (females) amongst weeds intertidally and in shallow water near the shore. Plymouth (A.M.N.): Plymouth Sound, below Laboratory (K.H.B., G.I.C.): Drake's Island (G.M.S.): Wembury (K.H.B., G.I.C., G.M.S.): Breakwater; Yealm Mouth (G.I.C.): River Tamar Estuary, in weeds on shore as far as Ernesettle Flat; River Plym, as far as Point Quay, Laira Estuary; River Yealm Estuary at Misery Point; Avon Estuary opposite Bantham; Yealm Mouth and Slimers Rocks, on pieces of rock hand-collected by G.R.F.; Portwrinkle (G.M.S.). (Offshore records require confirmation)
SALCOMBE. Mill Bay (G.I.C., G.M.S.): Salstone; Castle Rocks (G.M.S.)

CALLIOPIUS CRENLATUS *Chevreaux and Fage*, 1925, p. 183

Portwrinkle, several sieved from weeds on sand near L.W., 3.5.50 (G.M.S.)
SALCOMBE. One female washed from *Cystoseira* just below E.L.W.S., 6.3.35 (G.I.C.)

CALLIOPIUS RATHKEI (Zaddach) [*Sars*, 1893, p. 447, pl. 157 (2)]

SALCOMBE. Castle Rocks, 12.5.49, one sieved from weeds at L.W. (G.M.S.)

Family **Pleustidae**

STENOPLEUSTES Sp. (? nec MALMGRENI (Boeck) *Sars*)

A few examples in tow-nets, metre-net, and ring-trawl, 1934, 1935, probably brought up from bottom by rough weather (G.I.C.): several in Wickstead's bottom-plankton net on trawling grounds, 1953 (G.M.S.). This form has a long reniform eye and a distinct colour pattern.

Family **Paramphithoidae**

EPIMERIA CORNIGERA (Fabricius) [*Sars*, 1893, p. 364, pl. 128; *Chevreaux and Fage*, 1925, p. 191]

Mid-Channel, S.W. of Eddystone, 43-7 fm., 5 ex. in 3 stations (L.R.C.)

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Family **Atylidae**

NOTOTROPIS SWAMMERDAMI (Milne Edwards) [*Sars*, 1893, p. 463, as *Paratylus*, pl. 163; *Chevreux* and *Fage*, 1925, p. 195]
Common amongst weeds on sandy ground in shallow water (various)

NOTOTROPIS VEDLOMENSIS (Bate and Westwood) [*Sars*, 1893, p. 466, as *Paratylus*, pl. 164 (2)]

Plymouth Sound (E.F., G.I.C.): Cawsand Bay, fine sand with mud (G.I.C.): Whitsand Bay, shelly gravel (E.F.), and in sand (G.M.S.): Mewstone Grounds, 1929 (G.A.S.): Rame-Eddystone Grounds (E.F., G.A.S., G.I.C.): off Eddystone (E.F.): In young-fish trawl at L4; in stomach of young *Raia clavata*, 1951; and in stomachs of *Gadus minutus*, 1948 (G.M.S.): amongst the bottom fauna on trawling grounds, several (Hunt, 1925)

NOTOTROPIS FALCATUS (Metzger) [*Sars*, 1893, p. 465, 1895, p. 697, as *Paratylus*, pl. 164 (1); *Chevreux* and *Fage*, 1925, p. 196]

Whitsand Bay (A.M.N.): Cawsand Bay, at two stations, fine sand with mud (G.I.C.): Mewstone and Rame-Eddystone Grounds, silty sand and shell (G.A.S.): in stomach of *Gadus minutus*, June 1948, female with eggs (G.M.S.)

Family **Melphidippidae**

MELPHIDIPPELLA MACRA (Norman) [*Sars*, 1894, p. 488, pl. 171; *Chevreux* and *Fage*, 1925, p. 198]

Rame-Eddystone Grounds, silty sand with shell fragments (E.F.): in metre-net 6 m. S. of Rame Head, July (G.I.C.): Station L4, one in Y.F.T., 27.4.49; in stomach of *Gadus minutus*, 3.6.49; in stomachs of young *Raia clavata* and *montagui*, 1951 (G.M.S.)

Family **Eusiridae**

EUSIRUS LONGIPES Boeck [*Sars*, 1893, p. 420, pl. 148 (1); *Chevreux* and *Fage*, 1925, p. 201]

Trawling grounds, 2 ex. (Hunt, 1925): Rame mud, one; Rame Turretella ground, two, one with eggs, 14.8.34 (G.I.C.)

Family **Gammaridae**

GAMMARELLUS ANGULOSUS (Rathke) [*Sars*, 1894, p. 492, as *Amathilla*, pl. 173 (2); *Chevreux* and *Fage*, 1925, p. 204]

Yealm Mouth, amongst the fauna collected in a rocky gully, by Kitching, Macan and Gilson (1934, p. 699) (*teste* G.A.S.): again found here on piece of rock hand-collect by G.R.F., one, 7. 10. 53. (G.M.S.): recorded by Norman and Scott (1906) from several Devon and Cornwall localities, including Polperro.

GAMMARELLUS HOMARI (Fabricius) [*Sars*, 1894, p. 490, as *Amathilla*, pl. 172, 173 (1); *Chevreux* and *Fage*, 1925, p. 205]

Plymouth Sound, on a raft near the Breakwater, 4.5.50 (G.M.S.)

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SALCOMBE. Washed from *Cystoseira* just below E.L.W.S., 4 juveniles, 6.3.35 (G.I.C.)

CHEIROCRATUS SUNDEVALLI (Rathke) [*Sars*, 1894, p. 524, pl. 184 and 185 (1); *Chevreux and Fage*, 1925, p. 223]

Plymouth (A.M.N.): Plymouth Sound, Melampus Buoy, 15 ex., 4.12.34 (G.I.C.): Mewstone Grounds, in very fine silty sand (G.A.S.): Rame-Eddystone and Eddystone Grounds, singly, and in tow-net off Rame Head (G.I.C.)
SALCOMBE (A.M.N.)

CHEIROCRATUS INTERMEDIUS G. O. Sars, 1894, p. 527, pl. 186 (1) [*Chevreux and Fage*, 1925, p. 224]

Plymouth, single male in 1889 (A.M.N.): Eddystone Grounds, N.A.H. Station B.5, 3 ex. 1952; among *Chaetopterus* tubes, male, 4.6.51; in stomachs of *Raia clavata*, 25 ex., and of *R. montagui*, 1 ex., 1951 (G.M.S.)

CHEIROCRATUS ASSIMILIS Liljeborg [*Sars*, 1894, p. 528, pl. 186 (2); *Chevreux and Fage*, 1925, p. 225]

In stomach of *Gadus minutus*, July 1948, 1 male (G.M.S.)

MEGALUROPUS AGILIS Hoeck [*Chevreux and Fage*, 1925, p. 226]

Plymouth (A.M.N.): Plymouth Sound, White Patch (G.I.C.): Cawsand Bay, 2 females, 31.3.11 (K.H.B.); regularly in 1934-5 (G.I.C.): Bigbury Bay (G.I.C.): Whitsand Bay (A.M.N.). Common in fine sand in shallow dredgings.

MELITA PELLUCIDA G. O. Sars, 1894, p. 511, pl. 180 (2) [*Chevreux and Fage*, 1925, p. 228]

In the upper parts of estuaries in low salinities, in the region inhabited by *G. z. zaddachi* and *G. chevreuxi*, favouring sheltered situations. River Tamar, abundant in a stream at Haye, 2 m. below Calstock (G.I.C.), and freely in a neighbouring reed bed (G.M.S.): River Tavy, common in a stream at Lopwell, a few also in the channel at Lopwell Ferry and in Blaxton Creek (G.I.C.); also in Gnatham Creek (G.M.S.): River Plym, above Marsh Mills Bridge; River Erme, common in brackish ditch opposite Holbeton; River Aune, in channel at Aveton Gifford, and just below it (G.M.S.)

MELITA PALMATA (Montagu) [*Sars*, 1894, p. 508, pl. 179; *Chevreux and Fage*, 1925, p. 230]

Plymouth (A.M.N.): between tide-marks in the Sound (R.A.T.). Intertidally on shore of Plymouth Sound, Wembury, Yealm Mouth, Revelstoke, Portwrinkle, Looe, etc., under stones, sometimes abundant, partial to ground with freshwater seepage; often failing towards L.W. where it tends to be replaced by *M. hergensis*. Some offshore records require confirmation, but it was found by Mr. C. Edwards on the Rame Mud in 1953. A plentiful species on the shore in the seaward end of estuaries, especially on stony ground: River Tamar, freely up to Weirquay, or to Pentillie in dry periods; River Lynher, to Wivelscombe Lake at least; River Plym, to upper end of Laira estuary, and in Chelson Meadow ditches; River Yealm, to middle of

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Cofflete Creek and above Steer Point; River Erme, to Efford House; River Aune, to ½ m. below Aveton Gifford (G.M.S.)
SALCOMBE (A.M.N., G.M.S.). Kingsbridge Estuary, in Blanks Lake (G.M.S.)

MELITA HERGENSIS Reid, 1939, p. 278

A common species along the shore in the lower part of the tidal zone, under stones, etc., at once distinguished by its colour (slate-blue, with white bands on limbs); not yet recognized offshore, and does not penetrate any distance into estuaries. Plymouth Sound, Wembury, Yealm Mouth, Portwrinkle (D.M.R., G.M.S.)

SALCOMBE. In Norman Coll., Brit. Mus. (D.M.R.): Castle Rocks and Mill Bay shores (G.M.S.)

MELITA OBTUSATA (Montagu) [*Sars*, 1894, p. 510, pl. 180 (1); *Chevreux* and *Fage*, 1925, p. 232]

Plymouth (C.S.B., A.M.N.). Plymouth Sound, not uncommon in Millbay Channel and Pit, Queen's Ground, Cawsand Bay (R.A.T.); Duke Rock (T.V.H.); Melampus Buoy (G.I.C.); Yealm Mouth (G.I.C.): among Chaetopterus tubes from the trawling grounds (G.M.S.)

SALCOMBE (OM., A.M.N.)

MELITA GLADIOSA Bate [*Chevreux* and *Fage*, 1925, p. 233]

Plymouth (C.S.B., A.M.N.): Plymouth Sound, in various dredgings, but not numerous (R.A.T., G.I.C., G.M.S.); Yealm Mouth (A.M.N.): Wembury West Reef, amongst weed; Slimers Rocks (G.W.S.)

SALCOMBE (A.M.N.). Channel of the Harbour (R.A.T.): Castle Rocks (G.M.S.)

CERADOCUS SEMISERRATUS (Bate) [*Chevreux* and *Fage*, 1925, p. 236]

Plymouth Sound, near Mallard Buoy (C.S.B.); Yealm Mouth (A.M.N.): Whitsand Bay (E.F.): Eddystone Grounds, 30 fm. (A.O.W.): in coarse sand and medium gravel, 17 ex. at a station of latter type (G.I.C.): Rame-Eddystone, mixed grounds (G.I.C.)

SALCOMBE (A.M.N.)

MEARA OTHONIS (Milne Edwards) [*Sars*, 1894, p. 518, pl. 182 (1); *Chevreux* and *Fage*, 1925, p. 237]

Generally common on various grounds offshore, excepting fine sand (various), eaten by *Gadus minutus* and young rays (G.M.S.): also below L.W. in Plymouth Sound and Yealm Mouth (A.M.N., R.A.T., T.V.H., G.I.C.)

SALCOMBE (T.R.R.S.)

MAERA GROSSIMANA (Montagu) [*Chevreux* and *Fage*, 1925, p. 239]

Common on the shore intertidally under stones and in weeds: Plymouth Sound, Wembury, Yealm Mouth, Portwrinkle, etc., to the exclusion of previous species. It has a characteristic pink colour. Normally not taken offshore, but it occurred in samples taken by J. H. Wickstead in his bottom-plankton net, off Eddystone, in 28 fm., 23.2.53. (G.M.S.)

SALCOMBE. Salstone (G.I.C.)

ELASMOPUS RAPAX A. Costa [*Sars*, 1894, p. 521, pl. 183; *Chevreux and Fage*, 1925, p. 244]

Off Plymouth (C.S.B.): Jennycliff Bay (G.I.C.): Portwrinkle, shore, 3.5.50 (G.M.S.): Yealm Mouth and Slimers Rocks, several on pieces of rock hand collected by G.R.F., Oct. 1953; on surfaces of living *Maia squinado*, several, 1951 (G.M.S.)

PHERUSA FUCICOLA Leach [*Chevreux and Fage*, 1925, p. 247]

Plymouth (A.O.W.): Yealm Mouth (A.M.N.): common along the shore intertidally, under stones, etc., usually where weed is plentiful, at Plymouth Sound, Wembury, Yealm Mouth, Looe, etc.; also dredged in shallow water (G.I.C., G.M.S.)

SALCOMBE. Castle Rocks, Mill Bay, and Salstone (G.M.S.)

GAMMARUS LOCUSTA (L.) [*Chevreux and Fage*, 1925, p. 257; *Sexton*, 1942, .pl. 3]

The species, in its restricted sense, is plentiful in shallow water along the coast and intertidally near L.W. among weeds, penetrating all estuaries to a certain degree. On clean sand, as in Whitsand Bay, it tends to be replaced by a closely related species hitherto confused with it. In brackish water it is progressively displaced by *Gammarus zaddachi*, of which sub-sp. *salinus* regularly overlaps it. In River Tamar it ranges up to Weirquay in summer and Thorn Point in winter; River Tavy to Bere Ferrers; River Plym to near upper end of Laira flats; River Yealm to above Steer Point; River Erme near mouth only; River Allege to just above Bantham. (G.M.S.)

SALCOMBE. Plentiful in the Estuary, a flourishing population occurring amongst weeds at L.W.S. at the Salstone; it reaches Blanks Lake (G.M.S.)

GAMMARUS sp. allied to *locusta*

This is the dominant species in the Mediterranean, and ranges northwards to the coasts of England and Belgium (where first recognized by the late Prof. Pirlot). In England it seems to be prevalent on sandy ground and has been found in numbers in Whitsand Bay, where first collected in shallow water, by G.I.C. (Spooner, 1947, p. 15, under *locusta*), and more recently at Portwrinkle amongst algal detritus at L.W. (G.M.S.)

GAMMARUS ZADDACHI Sexton [*Sexton*, 1942, pp. 593-602, pls. 1, 2; Spooner, 1947, pp. 18-45]

A brackish-water species that flourishes in estuaries. Two forms are recognized in the area, which probably merit the status of distinct species. *G. z. zaddachi* Spooner occurs at the heads of estuaries and its branches in low salinities, extending up to the limits of tidal influence. It occurs in the main channel of the River Tamar and all other rivers in the area, as well as in some small streams flowing on to the shore at the point where the stream is covered with salt water at H.W. *G. z. salinus* Spooner has an interesting mid-estuarine range, overlapping *G. locusta* at the seaward end of its range and *G. z. zaddachi* at the river end (but no inter-breeding occurs): it has been recognized in the main channels of the Rivers Lynher, Tamar, Tavy, Plym, Yealm, Erme and Aune and in side branches of the Kingsbridge Estuary: in the Aune the salinity conditions permit its range to extend for

CRUSTACEA: MALACOSTRACA, ISOPODA

10 females, 1 juvenile male in Laboratory stock (*teste* G.M.S.): Rame-Eddystone, Agassiz, *ca.* 1948, female with young (N.A.H., photo D.P.W.) (*teste* G.M.S.): Eddystone Grounds, 23.2.53, male and female in Wickstead bottom plankton net; Cawsand Bay, one, 17.5.55; Station L4, adult female, 7.6.55; this larger species is usually met with singly; some past records apply to the following (G.M.S.)

SALCOMBE. On the *Zostera* at Ditch End and in dredgings from the Channel in Salcombe Harbour (Allen and Todd, 1900, p. 204) (this species, G.M.S.)

ASTACILLA INTERMEDIA (Goodsir) [Sars, 1897, p. 90, pl. 37 (2), as *affinis*]

Four miles W. of Eddystone, on spines of *Echinus esculentus*, 9.4.00, 4 females (breeding), 3 males, 1 juvenile (R.A.T., as *Arcturus longicornis*, Laboratory Museum, re-det. G.M.S.). Rame-Eddystone Grounds, from *Echinus esculentus*, a number, males, females, juveniles, 7.4.09 (Laboratory Museum, re-det. G.M.S.). Three other samples in Plymouth Laboratory stock indicating that at one time it occurred rather freely: no doubt it was this species and not young *longicornis* which Spence Bate took in the Channel, off Plymouth, attaching themselves to the spines of *Echinus* (Bate and Westwood, 1868, p. 369), and all records in previous fauna lists under *A. longicornis* against R.A.T. or S.P. belong here: it had not been noticed in recent years until two were observed in a collection from White Patch, 17.1.55 (G.M.S.)

ASTACILLA DESHAYESI (Lucas) [Stebbing, 1874*b*, p. 771, as *gracilis*; Norman and Scott, 1906, p. 47, pl. 5]

Inside Drake's Island, 1889 (A.M.N.): Rame-Eddystone Grounds, three young adults with a number of *A. intermedia*, 7.4.09, as above (*teste* G.M.S.): Millbay, 1 juvenile male; 3 other samples in Plymouth Laboratory stock (*teste* G.M.S.): Cawsand Bay, D-net, March 1911, 2 amongst *Zostera* and other bits of weed (K.H.B.): Asia Shoal dredgings, 1.10.53, one female (G.M.S.)

SALCOMBE (T.R.R.S.): 6 females breeding, Aug.-Sept. 1900 (Allen and Todd's specimens) (det. *Arcturella damnoniensis* by Allen on label, but not recorded, unless these were included in *A. longicornis*, see above-G.M.S.)

Breeding: Aug., Sept., Oct. (G.M.S.)

ARCTURELLA DAMNONIENSIS (Stebbing, 1874*a*, p. 291, pl. 15)

Plymouth (A.M.N.): Plymouth Sound, female clinging to weed or buoy, weed hand-picked by W.S., 6.2.11 (J.H.O.): in Laboratory stock were 6 males, 10 females, 1 juvenile, in bottle labelled *Astacilla longicornis* (*teste* G.M.S.): Wembury Bay, on rocks below L.W., several in four collections by G.R.F. from gullies near Yealm Mouth and from Slimers Rocks, Sept.-Oct. 1953 (G.M.S.)

Breeding: includes Sept. (G.M.S.)

CRUSTACEA: MALACOSTRACA, AMPHIPODA

ditches in the S.W. corner of Chelson Meadows. Estuaries of Rivers Yealm and Erme. Aune Estuary, plentiful under weeds and stones to half a mile. below Aveton Gifford. (G.M.S.)

SALCOMBE. Plentiful in Kingsbridge Estuary, ranging into Blanks Lake (G.M.S.)

MARINOGAMMARUS OBTUSATUS (Dahl) [*Sexton and Spooner*, 1940, pp. 650-6]

Intertidally, between mid-tide and mean low water, especially under stones on fine gravel amongst rocks. It is a dominant gammarid on reefs, such as at Rum Bay and, particularly, at Wembury. It does not penetrate any distance into estuaries. Plymouth Sound, numerous in various collections, including Breakwater. Wembury, on Church Reef and West Reef, very plentiful. Yealm Mouth, on shore between Noss Mayo Creek and Misery Point. (G.M.S.)

SALCOMBE. Castle Rocks, a number under stones above M.L.W. (G.M.S.)

MARINOGAMMARUS FINMARCHICUS (Dahl) [*Sexton and Spooner*, 1940, pp. 656-61]

Intertidally, in region of L.W., under stones and coarse gravel, especially where there is deficiency of silt and water is held up. Plymouth Hoe, below the Laboratory, since Aug. 1938 (when first distinguished), taken regularly under stones, both at L.W.S., and somewhat higher up shore, in some places under stones lying on concrete. Revelstoke Beach, under pebbles, 4.5.40. (G.M.S.)

MARINOGAMMARUS STOERENSIS (Reid) [*Sexton and Spooner*, 1940, pp. 662-7]

Intertidally, under stones, strictly confined to places where freshwater streams, or permanent seepage, crosses the shore. Plymouth Sound - stream over rocks between Cawsand and Penlee; Bovisand Bay, in freshwater seepage with *Procerodes ulvae*; Crownhill Bay, Bovisand, in similar site, with *M. pirloti*; Drake's Island, intertidally. River Tamar Estuary, at Wear Point, stream over shore. Wembury, regularly under stones in stream at Church Beach. Yealm Mouth, regularly in stream flowing over shore in Passage Wood. Revelstoke Beach, very numerous in stream. River Erme Estuary, near Mouth. River Aune Estuary, near Mouth, where first discovered in 1932. Thurlestone, plentifully at outflow of freshwater drain over reef of rocks. (G.M.S.)

MARINOGAMMARUS PIRLOTI Sexton and Spooner, 1940, pp. 667-73, pl. 4

Intertidally among pebbles and under stones, restricted to sites where there is some kind of freshwater flow over the shore. Range somewhat wider than *M. stoerensis*. Plymouth Sound: shore of Drake's Island, Cawsand Bay (where first discovered in 1913), Bovisand Bay, Crownhill Bay. Wembury, abundant at the Point, where freshwater drains on to West Reef, also at times plentiful on Church Beach and in gully at head of Church Reef. Revelstoke Beach. Not in estuaries. (G.M.S.)

CRUSTACEA: MALACOSTRACA, AMPHIPODA

Family **Dexaminidae**

DEXAMINE SPINOSA (Montagu) [*Sars*, 1894, p. 475, pl. 166 (2), 167; *Chevreux and Fage*, 1925, p. 264]

Plymouth, inside Drake's Island (A.M.N., A.O.W.): Plymouth Sound, on shore near L.W., and plentiful in shallow weedy dredgings (T.V.H., G.I.C., G.M.S.); many swam to light after dark, 20.6.51: Wembury reefs, common amongst *Corallina* and other weeds in pools and gullies (G.M.S.): Cawsand Bay (T.V.H.), many on fine sand with mud (G.I.C.): Yealm Mouth (R.A.T., G.I.C.): Whitsand Bay (T.V.H.): Portwrinkle, at L.W. (G.M.S.): Looe, intertidally (G.I.C.)

SALCOMBE (A.M.N.): trawled on *Zostera* off Ditch End, and taken on *Zostera* under Marine Hotel, also dredged (Allen and Todd, 1900): Mill Bay (G.I.C.): Castle Rocks, and Salstone, sieved from weeds (G.M.S.)

DEXAMINE THEA Boeck [*Sars*, 1894, p. 477, pl. 168 (1); *Chevreux and Fage*, 1925, p. 265]

Plymouth Sound, common amongst weeds and roots of *Laminaria* near L.W. on rocks below the Laboratory (G.I.C.): Wembury reefs (G.I.C., G.M.S.): off Penlee Pt., 8.5.56, several at light, by J.B.G.-B.; Portwrinkle (G.M.S.): Looe (G.I.C.)

SALCOMBE. Castle Rocks, amongst weeds at L.W. (G.M.S.): Salstone, amongst weeds (G.I.C., G.M.S.)

TRITAETA GIBBOSA (Bate) [*Sars*, 1894, p. 479, pl. 168 (2); 1895, p. 698, suppl. pl. 8 (1); *Chevreux and Fage*, 1925, p. 266]

Plymouth, Barn Pool, 1889 (A.M.N.): Plymouth Sound in dredgings, amongst *Laminaria* roots, hydroids and sponges - e.g. common in *Ficulina*, Asia Shoal, March 1911 (K.H.B.); in *Ficulina*, Queen's Grounds (G.I.C.); in roots of *Laminaria ochroleuca*, 2.5.50, among hydroids in Millbay pit etc., (G.M.S.): Yealm Mouth, on pieces of rock, with *Corynactis*, etc., hand collected by G.R.F., Oct. 1953; Slimers Rocks, ditto (G.M.S.)

GUERNIA COALITA (Norman) [*Chevreux and Fage*, 1925, p. 267]

Plymouth, 1889 (A.M.N.): Cawsand Bay, fine sand, one; Eddystone, gravel, in 3 samples, 1934-5 (G.I.C.)

Family **Talitridae**

TALITRUS SALTATOR (Montagu) [*Sars*, 1890, p. 23, pl. 9; *Chevreux and Fage*, 1925, p. 271]

Abundant on all sandy shores, in the sand in H.W. region and under H.W. drift: e.g. Rum Bay, Wembury, Mothecombe, Wonwell Beach, Bantham, Whitsands, Portwrinkle, etc. (S.P., G.I.C., G.M.S.)

SALCOMBE. In clean sand along Mill Bay shore (G.M.S.)

ORCHESTIA MEDITERRANEA A. Costa [*Chevreux and Fage*, 1925, p. 273; *Williamson*, 1951]

On the shore under H.W. drift on stones and gravel, locally abundant, usually mixed with *O. gammarella*. Plymouth Sound - Drake's Island (T.V.H.),

CRUSTACEA: MALACOSTRACA, AMPHIPODA

G.I.C.); Rum Bay (G.I.C.): River Tamar Estuary-Millbrook Lake, shore below South Down brickworks, abundant, 21.6.27 (E.P.); Rat Island (G.I.C.); Neal Point, 12.2.40 (28 males to 15 of *O. gammarella*); Weirquay, 4.2.40 (G.M.S.)

ORCHESTIA GAMMARELLA (Pallas) [*Sars*, 1890, p. 24, as *O. litorea*, pl. 10; *Chevreux and Fage*, 1925, p. 274]

Abundant nearly everywhere in H.W. zone under weed and stones, and in rock crevices, especially on stony and gravelly ground (S.P., G.M.S.), also in salt marshes (G.I.C., G.M.S.): Plymouth Sound, all shores, found to range to 12 ft. above H.W. (by G.I.C.): Wembury; Yealm Mouth (various): River Tamar Estuary, up to N. Hooe (E.P., G.I.C., G.M.S.); River Lynher to Ince Castle (E.P.), in Scunner Creek and Wivelscombe Lake (G.I.C.)

TALORCHESTIA DESHAYESEI (Audouin) [*Chevreux and Fage*, 1925, p. 278]

Mount Batten, Plymouth (C.S.B.): Mewstone Corner Grounds, trawled, 1 juvenile with juvenile *Orchestia* and other victims of severe gale, 1.12.54 (G.M.S.)

HYALE NILSSONI (Rathke) [*Sars*, 1890, p. 26, pl. 11 (1); *Chevreux and Fage*, 1925, p. 282]

Intertidally, amongst algae and in rock crevices, common, ranging M.H.W. to L.W.S. Plymouth Sound shore at Rum Bay, Drake's Island, Breakwater, etc. Wembury reefs J.S.C., G.M.S.): Mewstone (A.M.N.): Yealm Mouth (G.M.S.): Whitsand Bay, amongst *Enteromorpha* in rock pools (K.H.B.): Looe; Mothecombe (G.I.C.): River Tamar Estuary, common among weeds in upper part of tidal zone as far as Weirquay (G.M.S.); On Neal Point buoys and in Wivelscombe Salt Marsh (G. (G.I.C.))

SALCOMBE. Castle Rocks, among weeds at L.W. (G.M.S.)

HYALE PONTICA Rathke [*Sars*, 1890, p. 27, pl. 11 (2), as *H. lubbockiana*; *Chevreux and Fage*, 1925, p. 283]

Plymouth Breakwater (C.S.B.); intertidally near L.W. (G.I.C.): Eddystone Rock, southern reef, intertidally among tufts of algae, 31.8.54, Coll. G.R.F. (G.M.S.)

HYALE PERIERI (Lucas) [*Chevreux and Fage*, 1925, p. 284]

Plymouth Breakwater, freely amongst *Porphyra* and *Enteromorpha* on seaweed slope at M.T. level, the young sheltering under the shells of living *Patella*, 18.6.54 (G.M.S.): Gara Point, among *Nucella lapillus* on an exposed headland, 12.4.35 (also in similar situations in Cornwall) (G.I.C.): Eddystone Rock, southern reef, a few intertidally among tufts of algae, 31.8.54, Coll. G.R.F. (G.M.S.)

Family **Aoridae**

AORA TYPICA Krøyer [*Sars*, 1894, p. 545, as *A. gracilis*, pl. 193; *Chevreux and Fage*, 1925, p. 293]

Plymouth Sound (A.M.N., R.A.T.): intertidally under the Laboratory and at St. John's Lake, and common in weedy dredgings (G.I.C.): Cawsand Bay (E.W.S.), in weedy dredgings on fine sand (G.I.C.): Yealm Mouth (A.M.N.,

CRUSTACEA: MALACOSTRACA, AMPHIPODA

G.I.C.); on pieces of rock with *Distomus*, *Corynactis*, etc., hand-collected by G.R.F. below L.W. (G.M.S.): Wembury, W. Reef (G.M.S.)

SALCOMBE. Salstone, plentiful among weeds at L.W.S. (G.M.S.)

MICRODEUTOPUS CHELIFER (Bate) [*Chevreux and Fage*, 1925, p. 295]

Wembury, W. Reef, both sexes, 12.4.49, 4.4.50, sieved from weeds; Wembury, Church Reef, male, 26.1.55; Portwrinkle, male, 3.5.50; in Laboratory "Drake's Island" tank, Jan. 1956 (G.M.S.)

SALCOMBE (W.W. *vide* C.S.B.): Castle Rocks, 12.5.49 (G.M.S.)

MICRODEUTOPUS DAMNONIENSIS (Bate) [*Sars*, 1894, p. 542, pl. 192 (1), as *propinquus*; *Chevreux and Fage*, 1925, p. 297]

Common among sponges and corallines intertidally, especially in pools - Plymouth Sound on shore of Drake's Island, and on Breakwater (G.I.C.). Wembury (G.I.C.): Yealm Mouth and Slimers Rocks below L.W. (G.M.S.)

SALCOMBE. Salstone, freely amongst weeds at L.W.S. (G.M.S.)

MICRODEUTOPUS ANOMALUS (Rathke) [*Sars*, 1894, p. 540, pl. 191; *Chevreux and Fage*, p. 298]

Yealm Mouth (A.M.N.)

SALCOMBE. Salstone, intertidally (G.I.C.)

MICRODEUTOPUS GRYLLOTALPA A. Costa [*Sars*, 1894, p. 543, pl. 192 (2); *Chevreux and Fage*, 1925, p. 299]

In sheltered shallow water. River Tamar Estuary - Rat Island, at junction of Lynher, intertidally, one male (G.M.S.): Wiveliscombe Salt Marsh (Lynher), both sexes in salting pools (G.I.C., G.M.S.). [Plymouth, on *Maia squinado*, 1889 (A.M.N.)]

COREMAPUS VERSICULATUS Norman [*Chevreux and Fage*, 1925, p. 301]

Plymouth (C.S.B., (A.M.N.): Plymouth Sound, common in shallow weedy dredgings - nr. Drake's Island, Asia Shoal, Winter Shoal, New Grounds, Melampus (G.I.C.): Yealm Mouth; Rame Mud, 25 fm., one on *Maia squinado* (G.I.C.)

SALCOMBE (T.R.R.S., A.M.N.)

LEMBOS WEBSTERI Bate [*Sars*, 1894, p. 547, as *Autonoë* pl. 194; *Chevreux and Fage*, 1925, p. 303]

Plymouth (A.M.N.): Cattewater, female in weed (G.M.S.): Drake's Island, under stones (G.I.C.): Yealm Mouth, freely on pieces of rock with *Distomus*, *Corynactis*, etc., hand-collected by G.R.F., Oct. 1953 (G.M.S.): Portwrinkle (G.M.S.)

SALCOMBE (T.R.R.S.)

Family **Photidae****MICROPROTOPUS MACULATUS** Norman [*Sars*, 1894, p. 567, pl. 201; *Chevreux and Fage*, 1925, p. 308]

Plymouth (A.M.N.): Plymouth Sound, in dredgings nr. Drake's Island, Melampus and White Patch; Cawsand Bay, dredged in fine sand with mud; Yealm Mouth (G.I.C.): S. of Eddystone, in 35 fm. (G.I.C.)

SALCOMBE. Salstone, intertidally (G.I.C.), at L.W.S. among weeds (G.M.S.)

PHOTIS LONGICAUDATA (Bate and Westwood) [Sars, 1894, p. 571, pl. 203 (1); Chevreux and Fage, 1925, p. 310]

Plymouth (A.M.N.): Plymouth Sound, in dredgings from Asia Shoal and Melampus (G.I.C.): Rame-Eddystone Grounds, Looe-Eddystone Grounds, on mixed bottom (G.I.C., G.M.S.): from surface of *Maia squinado*, frequent 1951 (G.M.S.): Eddystone Grounds, 28 fm., 1953 (G.M.S.); 35 fm., 1934 (G.I.C.). Among Chaetopterus tubes on trawling grounds (G.M.S.)

SALCOMBE. Salstone, intertidally (G.I.C.)

EURYSTHEUS MACULATUS (Johnston) [Sars, 1894, p. 558, as *Gammaropsis erythrothalma*, pl. 198; Chevreux and Fage, 1925, p. 314]

Plymouth, very common (A.M.N., A.O.W.): Plymouth Sound, below L.W., generally abundant in weed, occasional intertidally (G.I.C.): Looe, at L.W.; Cawsand Bay, dredged (G.I.C.): Wembury W. Reef, and Portwrinkle, sparingly in weeds at L.W.; Yealm Mouth, below L.W., on pieces of rock hand-collected by G.R.F., 1953 (G.M.S.). Regularly, and often in some number, on surface of living *Maia squinado*, trawled S. of Mewstone and Rame-Eddystone Grounds, 1911 (K.H.B.); from Rame Mud, 1934 (G.I.C.); and from various grounds in 1951 (G.M.S.): Downderry-Looe, on muddy shingle (E.F.): S. of Eddystone, in 35 fm. (G.I.C.): S.W. of Eddystone, in 47 fm. (L.R.C.): among Chaetopterus tubes from trawling grounds, common; in stomachs of *Gadus minutus*; once in Y.F.T. at Station L.5 (G.M.S.): occasional in tow-nets (G.I.C.)

SALCOMBE. Castle Rocks, in weed at L.W.S. (G.M.S.)

GAMMAROPSIS NANA G. O. Sars, 1894, p. 561, pl. 199 (2)

Plymouth Sound, 29.11.34, Asia Shoal and Melampus, total of 1 male and 7 females; in tow-nets, 18.2.35, 1 male and 3 females; in ring-trawl, 19.2.35, 1 female [?=*Eurystheus palmatus* (Stebbing and Robertson) (Chevreux and Fage, 1925, p. 313), but K. Stephensen believes it may possibly be distinct] (G.I.C.)

PODOCEROPSIS SOPHIAE Boeck [Sars, 1894, p. 574, pl. 204; Chevreux and Fage, 1925, p. 316]

On mixed grounds with much silt: off Breakwater, 23 fm.; near L3; Rame-Eddystone, 27 fm. (G.I.C.): among bottom fauna of LA, and in stomachs of *Gadus minutus* (G.M.S.): occasional on *Maia squinado* (G.I.C., G.M.S.): sometimes taken in tow-nets (G.I.C.)

MEGAMPHOPUS CORNUTUS Norman [Sars, 1894, p. 564, pl. 200; Chevreux and Fage, 1925, p. 319]

In stomachs of young rays, 29.5.51: *Raia clavata* (4 ex.), *R. montagui* (6 ex.) (G.M.S.). [Presumably this is the species recorded by Crawford (1936, p. 645) as "Megamphopus sp.", sparingly from Melampus Ground, Cawsand Bay, and Eddystone gravel]

LEPTOCHEIRUS HIRSUTIMANUS (Bate) [Sars, 1894, p. 555, as *L. pilosus*, pl. 197; Chevreux and Fage, 1925, p. 321]

Plymouth Sound, in coarse shelly gravel (E.F.): Eddystone, gravel, 30 fm., 4.9.34 (G.I.C.)

CRUSTACEA: MALACOSTRACA, AMPHIPODA

LEPTOCHEIRUS PILOSUS Zaddach [*Chevreux and Fage, 1925, p. 322*]

In brackish water of moderately low salinity. River Tamar - Neal Point, one, 29.1.35; Whitsam, several among *Cordylophora lacustris*, 1935; Ashburton Turn and Calstock Bridge, abundant amongst *Cordylophora*, 1935 (G.I.C.); Cotehele Ferry, amongst *Cordylophora*, 1948 (G.M.S.). River Plym - Chelson Meadow in ditches near sluice, building nests on *Ruppia maritima*, 1935 (G.I.C.). River Tavy - Gnatham Creek and above Lopwell Ford, 1938 (G.M.S.)

LEPTOCHEIRUS PECTINATUS (Norman) [*Chevreux and Fage, 1925, p. 324*]

Plymouth Sound - New Grounds, 1 female, 29.11.34 (G.I.C.); Winter Shoal, 1 female, 22.6.53 (G.M.S.); Rame-Eddystone, 25 fm., 2 females, 2.10.34 (G.I.C.)

Family **Isaeidae**ISAEA MONTAGUI Milne Edwards [*Chevreux and Fage, 1925, p. 329*]

On *Maia squinado*, Plymouth (A.M.N.): S. of Mewstone, Rame-Eddystone, 2-3 ex. on each *Maia*, 1911 (K.H.B.): frequent on carapace and mouth-parts of *Maia squinado* trawled on Rame Mud, etc., 1934-5 (G.I.C.): freely among the mouth-parts of *Maia squinado*, 1951, etc., present in all freshly caught adults examined and in most of the smaller specimens, up to about 20 on 1 *Maia* (23.5.51, 74 all sizes from 12 *Maia*) (G.M.S.)

ISAEA ELMHIRSTI Patience [*Chevreux and Fage, 1925, p. 330*]

Bigbury Bay to Looe-Eddystone Grounds, 1955-6, living on the surface of *Homarus vulgaris*, at the bases of 3rd maxillipede and other thoracic limbs; scarce, usually not more than one on each host, but as many as five have been taken; adult males, hitherto undescribed, have occurred, but are less frequent than females (G.M.S.)

Family **Amphithoidae**AMPHITHOË VAILLANTI Lucas [*Chevreux and Fage, 1925, p. 333*]

In shallow water among weeds. Plymouth Sound (G.I.C., G.M.S.): Cawsand Bay (G.I.C.): Yealm Mouth (G.I.C., G.M.S.): Rame Mud, 3 on a *Maia squinado*, 2.11.34 (G.I.C.): Rame-Eddystone, one, 2.4.51 (G.M.S.)

AMPHITHOË RUBRICATA (Montagu) [*Sars, 1894, p. 579, pl. 206; Chevreux and Fage, 1925, p. 334*]

Plymouth, common intertidally (A.M.N.): not uncommon in dredgings from Sound (R.A.T.) in which it is more frequent than *A. vaillanti* (G.I.C.). Plymouth Sound, intertidally at Rum Bay, Drake's Island, Breakwater, Mount Edgumbe, making sinuous tubes under stones on coarse sand (G.I.C., G.M.S.): River Yealm, dredged (T.V.H.): Yealm Mouth, dredged; Mothecombe and Looe intertidally (G.I.C.): Wembury W. Reef and Church Reef, common near L.W. under stones (G.I.C., G.M.S.): River Tamar Estuary at Saltash, L.W. (G.M.S.)

SALCOMBE. Dredged commonly (Allen and Todd, 1900): Mill Bay (G.I.C.): Castle Rocks, at L.W. (G.M.S.)

PLEONEXES GAMMAROIDES Bate [Sars, 1894, p. 582, pl. 207; Chevreux and Fage, 1925, p. 335]

Plymouth Sound, chiefly but not exclusively where not exposed by tide Drake's Island, common on mooring-buoy off slips, 8.3.11 (K.H.B.), intertidally, 1934-5 (G.I.C.); several on raft amongst surface growths, 1950 (G.M.S.); in weed in dredgings from Queen's Grounds (G.I.C.): Cawsand Bay, dredged (G.I.C.): Wembury reefs, intertidally (G.I.C.), amongst Corallina from pools (G.M.S.): Mewstone, intertidally (A.M.N.): Yealm Mouth, dredged (G.I.C.), generally distributed on rock faces below L.W. amongst growths-rock fragments hand-collected by G.R.F., Oct. 1953-inclusive of Slimers Rocks (G.M.S.): Looe Reef, intertidally (G.I.C., G.M.S.)

SALCOMBE (T.R.R.S.): Mill Bay (G.I.C.): Castle Rocks, amongst weeds at L.W.S. (G.M.S.)

SUNAMPHITHOË PELAGICA (Milne Edwards) [Sars, 1894, p. 585, as *S. conformata*, pl. 208; Chevreux and Fage, 1925, p. 340]

Plymouth (A.M.N.): Wembury Church Reef, at L.W., 14.3.53; Yealm Mouth, among weeds at L.W., 31.7.38 (G.M.S.): Looe, intertidally (G.I.C.)

SALCOMBE (A.M.N., T.R.R.S.): Mill Bay, at L.W. (G.I.C.): Salstone, at L.W.S. (G.M.S.)

BIANCOLINA CUNICULUS (Stebbing) [Chevreux and Fage, 1925, p. 342]

Wembury, Church Reef, one in a *Laminaria digitata* holdfast at L.W., 2.6.30 (J.S.C.); another near L.W.S., 15.3.57 (G.M.S.)

Family **Jassidae**

JASSA FALCATA (Montagu) *sens. str.* [Sars, 1894, p. 594, as *Podocerus*, pl. 212; Sexton and Reid, 1951, as *J. falcata* "narrow-form" from Europe, pl. 4, 5-9, etc.]

Plymouth Sound: robust specimens and flourishing populations on rafts, buoys, and mooring chains, more especially amongst growths of *Tubularia* (amongst which pure populations of this species can be obtained); smaller sized adults among occasional dredgings. Yealm Mouth: pure population of small-sized individuals amongst growths on rocks below L.W., rather plentiful, rocks hand-collected by G.R.F., Oct. 1953; these also occasional above L.W. on Wembury Reefs. Former published records do not distinguish this and the next, with which it occurs in company among mixed growths. A regular variant of the male has been named *J. dentex* and wrongly assigned specific rank. (G.M.S.)

JASSA MARMORATA Holmes [Chevreux and Fage, 1925, p. 344, as *J. falcata*; Sexton and Reid, 1951, as *J. falcata* "broad-form" from Europe and N. America, pl. 5 (figs. 2-4), 10 (figs. 4, 6), 12 (fig. 5), 13, 14, etc.]

Plymouth Sound: plentiful on rafts, buoys, etc., showing robust growth, especially amongst ascidians and weeds, often forming mixed populations with the above but not inter-breeding with it; pure populations of this frequent on buoys; pure populations also in natural habitats at and below L. W., e.g. among sponges in cave below Laboratory and other growths on rocks, but these individuals are small-sized. (G.M.S.)

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JASSA VALIDA (Dana) [*Stebbing*, 1888, p. 1135, pl. 138B]

In Brixham Harbour, accompanying *J. marmorata*, but not so far found at Plymouth. Presumably introduced from southern hemisphere. (G.M.S.)

JASSA PUSILLA (G. O. Sars) [*Sars*, 1894, p. 596, as *Podocerus*, pl. 213 (1); *Chevreux* and *Fage*, p. 346]

Trawling grounds, 25-35 fm., regularly on the carapace and legs of *Inachus* and *Macropodia* spp. amongst epizoic growths of sponges, first recorded in 1911, by K.H.B., and latterly (1951-4) observed in this situation, as well as freely on the exterior of *Maia squinado*, and among coils of *Chaetopterus* tubes (G.M.S.): S.W. of Eddystone, 40-42 fm., at two stations, at one on a sponge containing an *Inachus dorsettensis* (L.R.C.)

PARAJASSA PELAGICA (Leach) [*Sars*, 1894, p. 599, as *Janassa capillata*, pl. 214; *Chevreux* and *Fage*, 1925, p. 349]

On rock surfaces amongst tufted algae and other growths in shallow water, not common. Hamoaze, No. 15 Buoy, 19.7.28 (E.P., as *Corophium odontonyx*): Yealm Mouth, on rock with *Corynactis*, hand-collected by G.R.F., 7.10.53 (G.M.S.): from trawlers off Plymouth (C.S.B.): Eddystone Rock, southern reef, intertidally and below L.W., abundant, the most numerous crustacean, 31.8.54, Coll. G.R.F. (G.M.S.)

MICROJASSA CUMBRENSIS (Stebbing and Robertson) [*Chevreux* and *Fage*, 1925, p. 350]

Plymouth, abundant (A.M.N.): Plymouth Sound, dredged in abundance on Melampus Ground, 1934 (G.I.C.); a few dredged Western Entrance, 1954 (G.M.S.)

ISCHYROCERUS ANGUIPES Krøyer [*Sars*, 1894, pp. 588-90, as *I. anguipes* + *I. minutus*, pl. 209, 210 (1); *Stebbing*, 1906, p. 658]

Plymouth Sound, at Duke Rock, in 5 fm. (T.V.H.): Wembury Bay, gully off Yealm Mouth and Slimers Rocks, on rocks amongst epilithic growths below L.W., Oct. 1953; specimens of small size (G.M.S.)

Family **Podoceridae****PODOCERUS VARIEGATUS** Leach [*Chevreux* and *Fage*, p. 374]

Cawsand Bay, 6.5.07 (E.W.S.): Wembury reefs, at L.W.S., by P.G.C., sparingly amongst *Cystoseira*, on which they browse, 27.8.53; Looe, in similar habitat, 28.8.53; Yealm Mouth, on rocks below L.W. among epilithic growths, rather freely, especially on a rock with *Corynactis*, hand collected by G.R.F., Oct. 1953; Slimers Rocks, below L.W., by G.R.F., numerous (G.M.S.)

SALCOMBE. Castle Rocks, several sieved from weeds at L.W.S., 12.5.49 (G.M.S.)

Family **Corophiidae****ERICHTHONIUS BRASILIENSIS** (Dana) [*Sars*, 1894, p. 602, as *E. abditus*, pl. 215; *Chevreux* and *Fage*, 1925, p. 353]

Plymouth, abundant (A.M.N.): Plymouth Sound, regularly recorded in dredgings (R.A.T., S.P., G.I.C., G.M.S.): Cawsand Bay (G.I.C.): Yealm Mouth

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(R.A.T., G.I.C.); plentiful on rocks amongst surface growths below L.W., hand-collected by G.R.F. (G.M.S.): Looe, at L.W.S. (G.I.C., G.M.S.): Eddystone Grounds (E.J.A., G.I.C., G.M.S.): in stomachs of *Gadus minutus*, on exterior of *Maia squinado*, and amongst Chaetopterus tubes (G.M.S.): S.W. of Eddystone in 47 fm. (L.R.C.)
SALCOMBE (A.M.N.)

ERICHTHONIUS DIFFORMIS Milne Edwards [*Sars*, 1894, p. 604, pl. 216 (1); *Chevreux and Fage*, 1925, p. 354]
Plymouth (A.M.N.): Looe, on the reef at L.W.S., among *Cystoseira*, by P.G.C., 28.8.53, both sexes (G.M.S.)

UNCIOLA CRENATIPALMA (Bate) [*Chevreux and Fage*, 1925, p. 358]
Plymouth Sound, in dredgings on Asia Shoal, 1949, 1950 (G.M.S.): Off Plymouth, among shells and stones on a muddy bottom, 20 fm., plentiful (W.G., A.M.N.): 1 male in metre net (G.I.C.)

SIPHONOCETES COLLETTI Boeck [*Sars*, 1894, p. 610, pl. 218 (1); *Chevreux and Fage*, 1925, p. 359]
Cawsand Bay, one (G.I.C.): Whitsand Bay (A.M.N., G.M.S.): Eddystone Grounds, in muddy shingle (E.F.): S. of Eddystone, 3 ex. (G.I.C.)
SALCOMBE (A.M.N.)

SIPHONOCETES DELLAVALLEI Stebbing [*Chevreux and Fage*, 1925, p. 361]
Rather common in fine sand in shallow water. Drake's Island; Yealm Mouth (G.I.C.): Whitsand Bay, clean sand (E.F.): Bigbury Bay (E.F.), in four stations (G.I.C.)

COROPHIUM VOLUTATOR (Pallas) [*Sars*, 1894, p. 614, as *C. grossipes*, pl. 219]
Burrows in mud and muddy sand in sheltered waters of estuaries and salt-marshes, sometimes in abundance, but evidently averse to disturbances of ground by currents. River Tamar Estuary, plentiful in one area on West Muds, then very patchy up to N. Hooe, beyond which rather freely, burrowing in the mud flats, to Calstock; numerous in shallow muddy pools on Egypt saltings and Clifton Marsh, also in Haye Creek. River Lynher Estuary, up to Tideford, in the mud of River Tiddy; River Tavy Estuary to Lopwell; River Plym Estuary, to Marsh Mills road bridge (and in brackish ditches of Chelson Meadows). River Yealm Estuary, very sparse near mouth but in great abundance on the mud flats between Steer Point and Puslinch, also at head of Cofflete Creek. River Erme Estuary, opposite Holbeton, abundant in brackish ditch behind sea-wall. River Aune below Aveton Gifford, very scarce. (G.M.S.)

COROPHIUM sp. nov.

In brackish water of rather low salinity, making tubes in cavities and crevices rather than in the open mud. River Tamar Estuary, in creeks at Cross Park Wood, Whitsam, and Haye (in addition to *C. volutator*), amongst G.I.C.'S specimens; in reed bed south of Cotehele, 1949; at Cotehele Quay and on Calstock Railway Bridge, numerous amongst *Cordylophora lacustris*, 1948-50 (as originally recorded by G.I.C. under *volutator*); W. of Calstock, 27.6.50, old wharves, a number nesting in rotting wooden

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pile lying on mud, while *C. volutator* occupied burrows in mud-flat alongside. River Plym, in one sample at limit of tidal influence above Marsh Mills road bridge, July 1938, when first recognized. (G.M.S.)

COROPHIUM CRASSICORNE Bruzelius [Sars, 1894, p. 615, pl. 220; Crawford, 1937a, p. 607, fig. 4]

Burrows in muddy sand in shallow water, especially ground with growths of *Zostera marina*. Plymouth Sound, dredged in small numbers from near Melampus Buoy and White Patch; Cawsand Bay; Yealm Mouth, dredged sparingly. (Most of records in the 1931 list must refer to other species.) (G.I.C.)

COROPHIUM BONELLI G. O. Sars, 1894, p. 616, pl. 221 (1) [Crawford, 1937a, p. 608, fig. 2, H-O]

Builds tubes of mud on hydroids in shallow water. Plymouth Sound, formerly abundant in dredgings, as proved by collections from Millbay Channel, Asia Shoal, West Channel, and W. of Drake's Island, between 1889 and 1911, but in 1934 only total of 5 specimens (of which 4 from New Grounds) obtained, evidently displaced by *C. sextoni* (G.I.C.): still scarce 1949-54; Asia Shoal, 2.6.49, 5 females (G.M.S.)

COROPHIUM INSIDIOSUM Crawford, 1937a, p. 615, fig. 2, A-G

Builds tubes on weeds, chiefly in water of lowered salinity. Plymouth Sound-Millbay, W. Wharf, female and male types, 8.5.35, etc.; Pontoon; Tinside, intertidally (G.I.C.): River Tamar Estuary, on Bull Point, and Neal Point buoys, 1934-5 (G.I.C.): River Plym, in Chelson Meadow ditches near the sluice, building tubes on *Ruppia maritima*, 1934 (G.I.C.); here on *Ulva*, 1937 and 1945; in Laira river channel, 1938 (G.M.S.)

COROPHIUM ACHERUSICUM A. Costa [Chevreux and Fage, 1925, p. 368; Crawford, 1937a, p. 617, fig. 2 P]

Builds tubes amongst weeds and hydroids in shallow water, especially on floating objects such as buoys and rafts. Plymouth Sound, raft at Tinside, 1934 (G.I.C.); raft near Breakwater, 1950 (G.M.S.); Millbay Pontoon (G.I.C.): River Tamar Estuary, on buoys at Barn Pool, Trevol, Saltash, and Neal Point, at latter thousands obtained in one jar of weed, also on Neal Point mussel bed, 1934-5 (G.I.C.); Weare Point, 1938 (G.M.S.): has occurred also on drift wood, with *Chelura* (G.M.S.)

COROPHIUM SEXTONI Crawford, 1937a, p. 620, fig. 3, A-H, 4, G-H

Builds tubes on stones, weeds, and other objects in shallow water. Plymouth Sound-missing from the rich collections of *Corophium* made 1895-1911, but in 1934-5 was the commonest species of *Corophium* in shallow dredgings (G.I.C.); in abundance far outnumbering all other species together, 1949-54 (G.M.S.): River Tamar Estuary, dredged near Rat Island, at junction of River Lynher, 1938, but not farther up either river: trawling grounds, on carapaces of *Maia squinado*, where first noticed in 1934 (G.I.C.); generally plentiful in this habitat, 1950-1 (G.M.S.): Yealm Mouth, the most abundant amphipod amongst surface growths on rocks below L.W. (G.R.F. coll) Oct 1953, though only 4 specimens were recorded here in 1931 by Kitching *et al.* (1934, as *C. bonelli*) (G.M.S.). Strongly suspected of being a

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recent introduction to S. England. Types from Winter Shoal, 18.10.34 (G.I.C.)
SALCOMBE. Castle Rocks and Salstone, at L.W.S., among weeds (G.M.S.)

COROPHIUM ACUTUM Chevreux [*Chevreux and Fage*, 1925, p. 366; *Crawford*, 1937a, p. 624]

Builds tubes among surface growths intertidally or in shallow water. Plymouth Sound, shore near low-water mark, the commonest species of Corophium in 1934-5, among sponges, corallines, and roots of Laminaria (but far less common than *C. sextoni* in shallow dredgings); Millbay Docks, May 1935, abundant on pontoon and wharves (G.I.C.): apparently much less frequent, 1949 onwards, and perhaps suffering from competition of *C. sextoni* (G.M.S.)

Family **Cheluridae**CHELURA TEREBRANS Philippi [*Sars*, 1894, p. 627, pl. 225; *Chevreux and Fage*, 1925, p. 371]

Generally plentiful in woodwork exposed to the sea, both fixed and drifting, intertidally near L.W. and in shallow water; settles in the wood after preliminary work on it by Limmoria (G.M.S.): Plymouth Sound (A.M.N., etc.): River Yealm (G.M.S.): Looe (G.I.C.)
SALCOMBE (A.M.N., G.M.S.)

Sub-Order HYPERIIDEA

Family **Hyperiididae**HYPERIA GALBA (Montagu) [*Sars*, 1890, p. 7, pl. 2, 3 (1); *Chevreux and Fage*, 1925, p. 401]

Plymouth: abundant (C.S.B.), in 1889 (A.M.N.), occasionally on Rhizostoma, Chrysaora, etc. (R.A.T.): River Tamar, 1 m. below Pentillie Quay, 1 ex., 29.6.28 (Aurelia also taken) (E.P.): in Y.F.T., 1949; in cavities of Scyphomedusae, 1952, 1953 (G.M.S.)

HYPERIA MEDUSARUM (Müller) [*Sars*, 1890, p. 7, pl. 3 (2)]

Plymouth: females singly in tow-nets, 29.1.35, 20.3.35; male in ring-trawl, 4.4.35. This is on extreme S.W. limit of the range of the species. (G.I.C.)

THEMISTO GRACILIPES (Norman) [*Stephenson*, 1924, p. 97] *

Eddystone Grounds (G.C.B.): West Channel, 18.10.06, 2 ex. (W.B.): common in plankton, July 1924, and throughout 1930; occurs in association with *Sagitta elegans* (F.S.R.)

Sub-Order CAPRELLIDEA

Family **Caprellidae**PHTHISICA MARINA Slabber [*Sars*, 1895, p. 646, pl. 223; *Chevreux and Fage*, 1925, p. 434, both as Phtisica]

Plymouth (A.M.N.): Plymouth Sound (E.J.A., T.V.H.), the commonest

*Formerly sometimes recorded as *Parathemisto oblivia* the name used in 2nd ed. of this work; but *gracilipes* is not the species figured by Sars under *oblivia*.

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caprellid in dredgings of hydroids, Cattewater, Drake's Island, Asia Shoal, Melampus, etc. (G.I.C.): Cawsand Bay; Yealm Mouth (G.I.C.): Slimers Rocks, below L.W., by G.R.F. (G.M.S.): Whitsand Bay, single ex. (J.T.C.): Eddystone Grounds (E.J.A.), in stomach of *Blennius ocellaris* (G.I.C.), in bottom-plankton net (G.M.S.): S.W. of Eddystone, 40 fm. (L.R.C.): in stomachs of *Gadus minutus*, frequent; of *Callionymus*; and of young *Raia* (G.M.S.): on surface of *Maia squinado* (G.I.C., G.M.S.): among *Chaetopterus* tubes (G.M.S.): occasional in tow-nets (G.I.C.)

SALCOMBE. *Zostera* bank off Ditch End; in cheese-cloth trawl on *Zostera* bank between Snape's Point and Salcombe Town (Allen and Todd, 1900): Castle Rocks; Salstone, several among weeds, etc. (G.M.S.)

PSEUDOPROTELLA PHASMA (Montagu) [*Sars*, 1895, p. 649, as *Protella*, pl. 234; *Chevreux* and *Fage*, 1925, p. 437]

Plymouth (A.M.N.): Plymouth Sound, commonly in dredgings containing hydroids (R.A.T., G.I.C., R.J.H., G.M.S.): River Tamar Estuary, one in main stream 100 yd. above Antony Creek, 27.9.28 (E.P.): Eddystone Rock, among weeds and hydroids attached to *Laminaria* stalk (G.M.S.): occasional from trawling grounds (R.A.T., G.I.C., G.M.S.): S.W. of Eddystone, several in 3 stations 40-49 fm. (L.R.C.): in stomachs of *Gadus minutus*, and among *Chaetopterus* tubes (G.M.S.)

SALCOMBE. Common in dredge (Allen and Todd, 1900)

Breeding: spring and summer months (Harrison, 1940)

PARIAMBUS TYPICUS (Krøyer) [*Sars*, 1895, p. 655, pl. 235; *Chevreux* and *Fage*, 1925, p. 441]

Plymouth (A.M.N.): Plymouth Sound, Jennycliff Bay (T.V.H.), White Patch (G.I.C.): River Tamar Estuary, female dredged above Antony Passage with above (E.P.) Cawsand Bay (G.I.C.): common in ambulacra of *Asterias rubens* (G.I.C.), this commensal association being characteristic of the species.

CAPRELLA ACANTHIFERA Leach [*Sars*, 1895, p. 666, pl. 239 (3); *Chevreux* and *Fage*, 1925, p. 446]

Plymouth (C.S.B., A.M.N.): Plymouth Sound, Millbay Channel (T.V.H.): Yealm Mouth (A.M.N.): a few on rocks among surface growths below L.W., Coll. G.R.F., on Slimers Rocks ditto (G.M.S.): Wembury, intertidally (G.I.C.): Eddystone, on a sponge (T.V.H.): Eddystone Rock, 9 fm., on *Heterosiphonia*; off surface of *Maia squinado* (G.M.S.)

CAPRELLA ACUTIFRONS Latreille [*Chevreux* and *Fage*, 1925, p. 450]

Plymouth Sound (Mr. Boswarva, per A.M.N.): Eddystone Rock, 14.9.56, abundant on red weeds on *Laminaria* stalk, of bright red colour (coll. G.R.F., det. G.M.S.)

CAPRELLA AEQUILIBRA Say [*Sars*, 1895, p. 663, pl. 238; *Chevreux* and *Fage*, 1925, p. 455]

Plymouth (A.M.N.): Plymouth Sound-common on buoys and hulks (R.A.T.), in scrapings from Millbay pontoon (G.I.C.), Duke Rock Buoy, amongst *Ciona*, etc. (G.M.S.)

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CAPRELLA LINEARIS (L.) [Sars, 1895, p. 657, pl. 236; *Chevreux and Fage*, 1925, p. 456]

Plymouth (A.M.N.): Plymouth Sound - Drake's Island, L.W. (J.T.C.); Millbay Channel; Queen's Grounds (T.V.H.); Yealm River (T.V.H.)

CAPRELLA FRETENSIS Stebbing [*Chevreux and Fage*, 1925, p. 457]

Wembury Bay, Slimers Rocks below L.W., on hand-collected rock by G.R.F., one ex., 9.10.53; Eddystone Rock, 9 fm., abundant on *Heterosiphonia*, Coll. G.R.F. (G.M.S.)
SALCOMBE (A.M.N.)

CAPRELLA ERETHIZON Mayer [*Chevreux and Fage*, 1925, p. 459]

Wembury Bay, Slimers Rocks, below L.W., on hand-collected rock by G.R.F., 4 ex., 9.10.53 (G.M.S.)

CAPRELLA TUBERCULATA Bate and Westwood [*Chevreux and Fage*, 1925, p. 460]

Plymouth (A.M.N.): occasional in Sound (R.A.T.): Yealm Mouth gully and Slimers Rocks, below L.W., a few on hand-collected rocks among surface growths, by G.R.F. (G.M.S.)

Order SCHIZOPODA (=MYSIDACEA)

Family Mysidae

SIRIELLA ARMATA (Milne Edwards) [*Tattersall and Tattersall*, 1951, p. 145]

Plymouth Sound, 1888 (W.H.): Plymouth, chiefly in Whitsand Bay, 1889, 1903 (A.M.N.): Drake's Island, June 1893 (W.G.): Cawsand Bay, few specimens, April, May, June, Sept., 1899; April 1900; Jennycliff Bay, few specimens, Sept. and Oct. 1899; Whitsand Bay, abundant Aug. 1898 and Oct. 1899; Bovisand Bay, Oct. 1899; Yealm Estuary, Oct. 1899 and April 1900 (W.I.B.): a few, Cawsand Bay, 20.3.06 (L.R.C.): Cawsand Bay, 7 specimens, 12.8.27; one, 2 m. E. of Eddystone, 1938 (W.M.T.)

Breeding: June (W.G.): April, Oct. (W.I.B., R.A.T.): March (L.R.C.): Aug. (W.M.T.)

SIRIELLA CLAUSI G. O. Sars [*Tattersall and Tattersall*, 1951, p. 1481]

Near Drake's Island; Whitsand Bay, Plymouth, 1899 and 1903 (A.M.N.): Cawsand Bay, few specimens, April, June, Sept.; Jennycliff Bay, few specimens, June, Oct.; Yealm Estuary, several specimens, among decaying *Zostera*, Oct.; 2½ m. S. of the Breakwater Fort, single specimen at surface, Feb. 1899 (W.I.B.): 1 specimen outside Breakwater, Oct. 1916 (M.V.L.): 2 m. off Eddystone, 3.1.25 (W.M.T.): between Breakwater and Eddystone; off Rame Head, few juveniles, 17.1.28 (W.M.T.)

SIRIELLA JALTENSIS Czerniavsky [*Tattersall and Tattersall*, 1951, p. 152]

Plymouth, 1889, 1903 (A.M.N.): at the surface 1 m. S. of the Breakwater Fort, Sept. 1892; Drake's Island, abundant among weeds, June 1893 (W.G.): Rum Bay, single specimen, Feb. 1901 (R.A.T.): Jennycliff Bay (F.W.G., W.I.B.): off Rame Head, Dec.-Jan. 1927-8, all immature; 2 m. E. of Eddystone, Jan. 1928, several juveniles; between the Breakwater and Eddystone, Dec.-Jan. 1927-8, all bottom tow-nets (W.M.T.): 2 m. E. of Eddystone 1 specimen, 2 m. S.W. of Eddystone, 1 juvenile, Aug. 1938; between Break

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water and Eddystone one on 30.12.54 and three on 19.3.55 in oblique hauls at night (O.S.T.)
Breeding: June (W.G., R.A.T.)

SIRIELLA NORVEGICA G. O. Sars [*Tattersall and Tattersall*, 1951, p. 157]

2 m. E. of Eddystone; 2 m. S.E. of Eddystone; 2 m. S.W. of Eddystone, all oblique hauls at night, 6 specimens in all, only 1 adult, Aug. 1938; 4 m. S.S.W. of Eddystone several 6/7.10.54 in oblique hauls at night (O.S.T.)
Breeding: Oct and March (O.S.T.)

GASTROSACCUS SANCTUS (Van Beneden) [*Tattersall and Tattersall*, 1951, p. 162]

Whitsand Bay, Aug. 1892 (W.G.): July 1898 (E.W.L.H.): Oct. 1899, abundant (W.I.B.): Cawsand Bay, immature specimen in April; Yealm Estuary, single specimen among decaying *Zostera*, Oct. 1899 (W.I.B.): abundant Whitsand Bay, Aug. 1903 (A.M.N.): May 1903, abundant (S.P.)
Breeding: July (E.W.L.H.): Aug. (W.G.): Oct. (W.I.B., R.A.T.): hatching out, May (R.A.T.)

GASTROSACCUS NORMANI G. O. Sars [*Tattersall and Tattersall*, 1951, p. 168]*

At the surface about 1 m. S. of the Breakwater Fort, Sept. 1892 (W.G.): Plymouth 1894 (W.G.): Mewstone Amphioxus Ground, Oct. 1899 (W.I.B.): many juveniles in bottom plankton, Dec. and Jan. 1927-8 (W.M.T.): night oblique hauls Eddystone region, abundant, 27/28.8.36 and June 1948; abundant in oblique night hauls, Eddystone region, Oct.-Dec. 1954 and between Breakwater and Eddystone, March 1955 (O.S.T.)
Breeding: Sept. (W.G.): Oct. (W.I.B.): March, June, Aug. and Oct. (O.S.T.)

GASTROSACCUS SPINIFER (Goës) [*Tattersall and Tattersall*, 1951, p. 174]

2 m. E. of Eddystone, June 1927, 2 juveniles; Dec.-Jan., many juveniles; April 1928, 1 juvenile; between Breakwater and Eddystone, Dec.-Jan. 1927-8, many juveniles, 2 adults; off Rame Head, 5 juveniles, Jan. 1928 (W.M.T.)

ANCHIALINA AGILIS (G. O. Sars) [*Tattersall and Tattersall*, 1951, p. 180]

Near Eddystone, 1889-90; Whitsand Bay, 1903 (A.M.N.): 3 m. S. of Rame Head, Aug. 1898 (E.W.L.H. and W.I.B.): Cawsand Bay, few, Feb.; Mewstone Amphioxus Ground, several in Oct.; W. of Hand Deeps, 33 fm., sand, abundant in June; about 4 m. S. of Breakwater, abundant, March, etc., 1899 (W.I.B.): Whitsand Bay, one, May 1903 (S.P.): between Rame Head and Dodman Point, 1914 (H.S., G.E.B.): few adults all through year: large numbers of young Dec.-Jan. 1927-8 (W.M.T.): in oblique night hauls in Eddystone region very numerous Oct. 1954 and many Nov., Dec. 1954 and March 1955 (O.S.T.)
Breeding: June (W.I.B., R.A.T.): Oct. and Dec.-March (W.M.T.): Aug. and June (O.S.T.)

ERYTHROPS ELEGANS G. O. Sars [*Tattersall and Tattersall*, 1951, p. 198]

3 m. S.W. of Rame Head, Aug. 1898 (E.W.L.H. and W.I.B.): Rame-Eddystone Grounds; Mewstone Amphioxus Ground, etc.; several specimens, March, June, Oct., Nov. 1899 (W.I.B.): near Eddystone, 1908 (A.M.N.): off Rame Head, June, July, Oct., Dec. 1927; 2 m. E. of Eddystone,

*See Addenda, p. 410.

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June 1927-April 1928; between Breakwater and Eddystone, Aug., Dec. 1927, few in bottom tow-nets (W.M.T.): several in oblique night hauls, Eddystone region, Aug. 1936; several off Rame Head, tow-net on dredge, June 1948; in oblique night hauls between Breakwater and Eddystone, one in Dec. 1954, seven in March and two in Dec. 1955 (O.S.T.)

Breeding: June, Oct. (W.B.): Oct., late embryos only (W.G.): June and Aug. (O.S.T.)

LEPTOMYSIS GRACILIS (G. O. Sars) [*Tattersall and Tattersall*, 1951, p. 287]

Plymouth 1893 (W.G.): Aug. 1896, 3 m. W. by S. of Eddystone (W.I.B.): Aug. 1898, 3 m. S.W. of Rame Head (E.W.L.H. and W.I.B.): June 1899, fairly abundant W. of Hand Deepes (W.I.B.): plankton at night, abundant, July 1924 (F.S.R.): off Rame Head; 2 m. E. of Eddystone; between Breakwater and Eddystone, bottom tow-nets, abundant during summer, 1927 (W.M.T.): in oblique night hauls in Eddystone region, very abundant Aug. 1936 and 1949, many in Oct. 1954, fewer in Nov. and Dec. 1954; many in night hauls between Breakwater and Eddystone, Oct. 1955 (O.S.T.)

LEPTOMYSIS MEDITERRANEA G. O. Sars [*Tattersall and Tattersall*, 1951, p. 292]

Plymouth (A.M.N.): Cawsand Bay, common June 1893 (W.G.): Aug. 1898 (E.W.L.H. and W.I.B.): several specimens, Feb., April, May, June, Sept., Oct. 1899 (W.I.B.): Jennycliff Bay, single specimen, Oct. and Dec. 1899 (W.I.B.): single specimen, April 1902 (R.A.T.): Bovisand Bay; Whitsand Bay; Yealm Estuary, among decaying *Zostera*; Oct. 1899 (W.I.B.): not common outside Breakwater, Nov.-Jan. 1916-17 (M.V.L.)

Breeding: April (W.I.B., R.A.T.): June (W.G.): Oct., Dec. (W.I.B., R.A.T.)

LEPTOMYSIS LINGVURA (G. O. Sars) [*Tattersall and Tattersall*, 1951, p. 295]

Whitsand and Bovisand Bays, 1889 and 1903 (A.M.N.): Cawsand Bay, Rame Head, on the shore among *Fucus*; Whitsand Bay; 4 m. S.S.W. of Rame Head; W. of Hand Deepes, on sand; Yealm Estuary, among decaying *Zostera*; several specimens, Feb-Oct. 1899 (W.I.B.): Plymouth, winter months, all juveniles, 1928 (W.M.T.): Looe, among weed on shore, very low tide, 1920 (W.M.T.)

MYSIDOPSIS ANGUSTA G. O. Sars [*Tattersall and Tattersall*, 1951, p. 325]

Occasionally in 15-33 fm. (R.A.T.): W. of Hand Deepes, June; 4 m. S.S.W. of Rame Head; Mewstone Amphioxus Ground, Oct.; 1 m. W. of Stoke Point, Nov. 1899 (W.I.B.): 2 m. E. of Eddystone; off Rame Head; between Breakwater and Eddystone, in small numbers throughout year, 1938 (W.M.T.): Eddystone region, Aug. 1936; off Rame Head, June 1948; one between Breakwater and Eddystone, 2.12.1955 (O.S.T.)

Breeding: June-Oct. (W.I.B., R.A.T.): more or less continuous, June-Feb. (W.M.T.): June, Aug. and Dec. (O.S.T.)

MYSIDOPSIS GIBBOSA G. O. Sars [*Tattersall and Tattersall*, 1951, p. 321]

Cawsand Bay, several occasions, 1893-4 (W.G.): Aug. 1898, few specimens 3 m. S.W. of Rame Head (E.W.L.H. and W.I.B.): 1899, single specimen, Cawsand Bay in April, 3 specimens W. of Hand Deepes in June (W.I.B.): Jennycliff Bay April 1902, (F.W.G.): 3 specimens June, 1 specimen Nov., 2 m. E. of Eddystone; 2 juveniles Dec. off Rame Head; few specimens between

CRUSTACEA: MALACOSTRACA, SCHIZOPODA

Breakwater and Eddystone, Dec.-Feb. 1927-8 (W.M.T.): few specimens, Eddystone district, in oblique hauls at night, Aug. 1936; a few in oblique night hauls between Breakwater and Eddystone, Dec. 1954, March, Oct. and Nov. 1955 (O.S.T.)

Breeding: June-Oct. (W.I.B., R.A.T.): continuous breeding April-Nov. (W.M.T.): March (O.S.T.)

HEMIMYSIS LAMORNAE (Couch) [*Tattersall and Tattersall*, 1951, p. 331]

Plymouth (A.M.N.): Cawsand Bay, July 1893 (W.G.): Drake's Island, 1 specimen (R.A.T.): tank on N. side of Laboratory, 16.10.08; adults numerous in early Sept.; many adults with young adults, Oct. 16th (A.J.S., A.J.M.-J.): Eledone tank, 14.3.09, a great number making quite a cloud in corner of tank, females with eggs (E.W.N.): Eledone tank in aquarium, 5.4.09, over 100, carrying eggs; conger tank, 29.3.18, since the autumn they were swarming in the tank, now much scarcer; same tank, 25.8.20, all sizes; very plentiful, Dec., Jan. 1920; still very plentiful, 2.2.21 (A.J.S.): Asia Shoal, 3.11.24; dredge, immature female (N.J.B.): in June 1929 it has almost disappeared from the tanks (A.J.S.): June 1948, plentiful and actively breeding in the aquarium (O.S.T.): in the aquarium numbers vary greatly from time to time and tank to tank - depending to some extent on whether there are animals present which eat them or not (D.P.W.)

Breeding: freely all the year round in the tanks.

PARAMYSIS ARENOSA (G. O. Sars) [*Tattersall and Tattersall*, 1951, p.- 352]

Whitsand Bay (A.M.N.): Cawsand Bay, 1893 (W.G.): Feb. 1899, 4 specimens; April 1900, single specimen (W.I.B.): Whitsand Bay, 1892-3 (W.G.): 1896 (T.V.H.): Oct. 1899 (W.I.B.): May 1903, several specimens (S.P.): Bovisand Bay; Yealm Estuary, on sand with decaying *Zostera*, Oct. 1899 (W.I.B.)

SALCOMBE. (W.I.B.): one in cheese-cloth trawl on the bar outside Harbour (Allen and Todd, 1900, p. 202, as *Schistomysis*)

Breeding: June (W.G.): Oct. (W.I.B., R.A.T.)

PARAMYSIS HELLERI (G. O. Sars) [*Tattersall and Tattersall*, 1951, p. 356]

Plymouth, 1892 (A.M.N.)

SALCOMBE. (W.I.B.): not uncommon in pools on mud flats north of the Rectory, on east side of Southpool Lake (Allen and Todd. 1900, p. 202, as *Schistomysis*)

EXMOUTH. More or less common, inside the estuary (Allen and Todd, 1902, p. 324, as *Schistomysis*)

SCHISTOMYSIS SPIRITUS (G. O. Sars) [*Tattersall and Tattersall*, 1951, p. 361]

Whitsand Bay, abundant, July 1892 (W.G.): 1897 (E.W.L.H.): Aug. 1898, abundant (E.W.L.H. and W.I.B.): May 1903 (S.P.): Sound and Whitsand Bay, 1903 (A.M.N.): Cawsand Bay, single specimen in Feb. and in April 1899 (W.I.B.): 3 m. S.W. of Rame Head, Aug. 1898 (E.W.L.H. and W.I.B.): one, between Breakwater and Eddystone, Dec. 1955 (O.S.T.)

Breeding: April (W.I.B., R.A.T.): June, July, Aug., late stages Only (W.G.): large individuals almost disappeared by Aug.. Young numerous (W.G.)

SCHISTOMYSIS ORNATA (G. O. Sars) [*Tattersall and Tattersall*, 1951, p. 369]

River Tamar, Saltash, March; Dec. 1899 (W.I.B.): Feb. 1901 (W.I.B., R.A.T.): 3 m. S.W. of Rame Head, few specimens, Aug., etc., several specimens, March-Nov. 1899 (W.I.B.): River Lynher as far as Erth Hill, 20.7.28, females with eggs (E.P.): 1923 (W.M.T.): large numbers of females in bottom levels of plankton during winter, 1927-8 (W.M.T.): in oblique night hauls Eddystone region, many in Aug. 1936; breeding females off Rame Head, June 1948; generally numerous in night hauls in the Eddystone region, Oct.-Dec. 1954, March, Oct. and Dec. 1955 (O.S.T.)

Breeding: Feb., April, Oct. (W.I.B., R.A.T.): practically all the year round, especially Dec. and Jan. (W.M.T.): June, Aug. and Oct. (O.S.T.)

SCHISTOMYSIS PARKERI Norman [*Tattersall and Tattersall*, 1951, p. 367]

Whitsand Bay, 1896 (T.V.H.): Tregantle, 1897 (E.W.L.H.): Whitsand Bay, 1897 (W.M.T. Coll.)

EXMOUTH. One between Pole and Monster sands (Allen and Todd, 1902, p. 324)

Breeding: Dec. 1897 (collected by W.I.B., in W.M.T. Coll.)

PRAUNUS FLEXUOSUS (Müller) [*Tattersall and Tattersall*, 1951, p. 378]

Essentially an estuarine form, swarming about shores of the Tamar at Saltash (especially in summer); in small numbers in Sound; River Yealm (W.I.B.): River Tamar up to ¼m. above Calstock; River Lynher up to ½ m. above St. German's Bridge, Y.F.T., June-Oct. 1928, very abundant (E.P.): Saltash (Hartley, 1940)

SALCOMBE. Very common on *Zostera* bank south of Pilworthy Point, common on *Zostera* off Ditch End, a few only from *Zostera* bank between Snape's Point and Salcombe, and two from *Zostera* on eastern side of Salcombe Harbour, between Ferry House and Mill Bay (Allen and Todd, 1900, p. 202, as *Macromysis*)

Breeding: July (W.M.T. Coll.): April-July (W.G.)

PRAUNUS NEGLECTUS (G. O. Sars) [*Tattersall and Tattersall*, 1951, p. 385]

Predominant form in Sound, occurring in the shallows, especially Cawsand Bay, River Yealm; Whitsand Bay, once (W.I.B.): Drake's Island; Cawsand Bay, several, female with young embryos, 20.3.06 (L.R.C.)

SALCOMBE. South of Pilworth Point, off Ditch End and under Marine Hotel (Allen and Todd, 1900, p. 202, as *Macromysis*)

Breeding: March (L.R.C.): June (W.G.)

PRAUNUS INERMIS (Rathke) [*Tattersall and Tattersall*, 1951, p. 388]

Plymouth, 1889 (A.M.N.): Sept. 1892 and 1894 (W.G.): 1898, Cawsand Bay, Bigbury Bay in July (W.I.B.): 1899, Cawsand Bay, Jennycliff Bay, Bovisand Bay, Whitsand Bay, Yealm Estuary, among decaying *Zostera*, few specimens, Feb.-Oct.; 1900, April (W.I.B.)

SALCOMBE. 1892 (A.M.N.): a few in cheese-cloth trawl on *Zostera* bank off Ditch End and under the Marine Hotel (Allen and Todd, 1900, p. 202, as *Macromysis*)

Breeding: April, Oct. (W.I.B.): June (W.G.)

CRUSTACEA: MALACOSTRACA, SCHIZOPODA

MESOPODOPSIS SLABBERI (Van Beneden) [*Tattersall and Tattersall*, 1951, p. 393]

Saltash, very abundant March and Dec. 1899; Cawsand Bay, single specimen, April 1900 (W.I.B.): Tregantle, single specimen, Dec. 1897 (E.W.L.H.): Whitsand Bay, several specimens, May 1903 (S.P.): Whitsand Bay, 1903 (S.P.): Whitsand Bay, 1903 (A.M.N.): rare, outside Breakwater, Dec. 1916 (M.V.L.): River Tamar, up to ¼ m. or thereabouts above Calstock; River Lynher up to Penimble region; very abundant in the rivers apart from the Hamoaze (E.P.): about 60 specimens, N. of Drake's Island, 6.12.29 (A.J.S.): Saltash (Hartley, 1940, as *Macropsis*)

Breeding: June-Oct. (E.P.): 29.3.99 (W.M.T.)

NEOMYSIS INTEGER (Leach) [*Tattersall and Tattersall*, 1951, p. 399]

Plymstock (A.M.N.): Laira, 1897 (E.W.L.H.): River Lynher, tidal pool opposite Saltash, summer, 1898 (E.W.L.H. and W.I.B.): River Tamar, just above Saltash Bridge, few specimens, March and Dec. 1899: Jennycliff Bay, single young specimen, Sept. 1899 (W.I.B.): Saltash, Feb. 1901 (R.A.T.): very abundant up to Morwell Rocks on River Tamar and to Penimble on River Tiddy, 1929 (E.P.): brackish water near Plymouth, 1934 (Needham, 1937, p. 560, as *N. vulgaris*)

SALCOMBE. Kingsbridge Estuary (A.M.N.)

Breeding: Feb. (R.A.T.): throughout summer up to Nov. (E.P.): Summer (Needham, 1937, as *N. vulgaris*)

ACANTHOMYSIS LONGICORNIS (Milne Edwards) [*Tattersall and Tattersall*, 1951, p. 410]

W. of Hand Deeps, June 1899; 4 m. S.S.W. of Rame Head, Oct. 1899; several specimens (W.I.B.): River Tamar, common up to upper end of Morwell Rocks; River Lynher, common up to opposite Markwell L.W., at H.W. possibly passing by towards Tideford; June-Nov. 1928, enormously common (E.P.): 2 m. E. of Eddystone; off Rame Head; between the Breakwater and Eddystone; in bottom tow-nets captured fairly regularly through year with largest number in Jan. 1927-8, 1938 (W.M.T.): between Breakwater and Eddystone, several in March 1954, fairly numerous Oct. and Dec. 1955 (O.S.T.)

Breeding: Start Bay, 1894 (E.W.L.H. and W.I.B.): June, Oct. (W.I.B.): June-Nov. (E.P.): May, June and Aug. (W.M.T.): Oct, Dec. (O.S.T.)

HETEROMYSIS FORMOSA S. I. Smith [*Tattersall and Tattersall*, 1951, p. 416]

Plymouth, rare, 1889 and 1903 (A.M.N.): Millbay Channel, New Grounds, Cawsand Bay, the Yealm, off Stoke Point, a few at a time (W.G.): Jan. 1899, Millbay Channel, Feb. 1900, Asia Shoal (W.I.B.): Asia Shoal, 26.10.24 (N.J.B.)

Breeding: Oct.-Nov. (W.G.): Oct. (N.J.B.)

HETEROMYSIS MICROPS (G. O. Sars) [*Tattersall and Tattersall*, 1951, p. 423]

One adult male in bottom tow-net, 23.3.28, midway between Breakwater and Eddystone (W.M.T.). This is the only male to have been seen of the species (O.S.T.)

CRUSTACEA: MALACOSTRACA, EUPHAUSIACEA

Sub-Class *EUCARIDA*

Order EUPHAUSIACEA

Family **Euphausiidae****MEGANYCTIPHANES NORVEGICA** (M. Sars) [Zimmer, 1909, p. 8; Einarsson, 1945, p. 21]

Adults only occasionally outside Sound, probably coming from further out to breed near the coast; 1930, adults numerous once in Feb., from outside Eddystone.

Breeding: eggs, nauplii and early larvae, Feb.-March, not seen every year: nauplius and metanauplius in winter, 4.2.30, many in Y.F.T. from 2 m. E. of Eddystone, near bottom: Furcilia and Cyrtopia stages occasionally in spring and summer, 1924-6, unusually numerous in spring, 1930 (M.V.L.)

NYCTIPHANES COUCHI (Bell) [Zimmer, 1909, p. 10; Einarsson, 1945, p. 42]

Probably the only resident euphausian in the district; adults usually near the bottom in daylight and come up to the surface at night; outside the Breakwater and all round, extending all over area, autumn winter and spring less in summer (M.V.L.)

Breeding: young (Calytopis to Cyrtopia), Feb. onwards; females with eggs or nauplii throughout the year, chiefly spring (M.V.L.)

THYSANOËSSA INERMIS (Krøyer) [including the form *neglecta*] [Zimmer, 1909, p. 11, as Rhoda; Einarsson, 1945, p. 46]

Both forms found together occasionally outside Breakwater, probably coming inshore from the outer waters to breed like *Meganycitiphanes norvegica*; adults in winter and spring, larvae spring and summer. Both males and females abundant of the *inermis* form, males of the *neglecta* form very rare; April 1924, 2 adult specimens of *inermis* form, 1 of *neglecta*, Y.F.T., daytime, Station L4; on a night trip in same month many adult specimens of both forms were collected by O.D.H.; both forms shed eggs in glass jars the following day in the Laboratory; a large quantity of adults in Y.F.T., with *Meganycitiphanes* and *Nyctiphanes*, from near bottom, 2 m. E. of Eddystone, 4.2.30 (M.V.L.)

Order DECAPODA

Sub-Order NATANTIA

Tribe *Caridea*Family **Pandalidae****PANDALUS MONTAGUI** Leach [Kemp, 1910, p. 86]

Occasionally abundant during short periods, at other times apparently quite absent (S.P.): Nov. 1887, large numbers in Batten Bay (W.H.): Feb. 1896, single specimen, Cawsand Bay (T.V.H.): Aug. 1897; Sept. 1898 (E.W.L.H.): July-Aug. 1902; Aug. 1903 (S.P.): one near Melampus Buoy, Nov. 1949; several near N.W. Drake's Island Buoy, summer 1952 (G.R.F.)

Breeding: Jan. (W.G., M.V.L.): Feb. (W.G., T.V.H., R.A.T.): March, April,

CRUSTACEA: MALACOSTRACA, DECAPODA

outside Sound (M.V.L.): Nov.. (W.G., R.A.T.): Dec. (W.G., M.V.L.): larvae with those of *Pandalina*, very common in plankton, both inside and outside Sound, spring and especially summer, a few in autumn (M.V.L.)

PANDALINA BREVIROSTRIS (Rathke) [Kemp, 1910, p. 97]

Eddystone (A.M.N. and T.S.): common in Sound, especially on clean, coarse gravel and clinker grounds, 5-10 fm.; common on Cellaria Grounds, 15-20 fm. (R.A.T.): at four positions 8-31 m. S.W. of Eddystone, 3 young, 40-47 fm. (Crawshay, 1912, p. 352): eastern Mewstone Grounds (G.A.S.)

SALCOMBE (A.M.N.)

Breeding: females in berry, March (R.A.T., S.P.): April (W.G., R.A.T.): May-July (R.A.T.): thousands in berry, spring and early summer, eastern Mewstone Grounds (G.A.S.): larvae in plankton, March-June (R.G.): all through the spring and summer (M.V.L.): young hatched from eggs (R.G., M.V.L.)

Family **Hippolytidae**

HIPPOLYTE VARIANS Leach [Kemp, 1910, p. 100]

Common among weeds everywhere (A.M.N. and T.S.): more or less common everywhere among weed, L.W.-5 fm.; occasionally taken outside in 15-30 fm. (R.A.T.): 4 specimens 30 m. S.W. of Eddystone, 47 fm. (Crawshay, 1912, p. 352). *Hippolyte fascigera* Gosse, common in Cawsand Bay, is regarded by Kemp as synonymous with *H. varians*. It is easily distinguished by its tufts of hairs, but the young hatched from the egg are identical with those of *H. varians* (M.V.L.)

SALCOMBE. Generally taken with cheese-cloth trawl on *Zostera* banks, especially opposite Marine Hotel; in rock pools between Sandhill Point and South Sands Bay (Allen and Todd, 1900, p. 202)

Breeding: Feb. (R.A.T.): March (R.A.T., S.P.): April (R.A.T.): May-July (W.G., R.A.T.): Aug., Nov. (R.A.T.): larvae in plankton almost throughout the year, chiefly near coast; hatched from egg (M.V.L.)

HIPPOLYTE PRIDEAUXIANA Leach [Kemp, 1910, p. 101]

Bantham (type locality): Plymouth (A.M.N. and T.S.): Yealm Estuary, not uncommon (R.A.T.)

Breeding: July (R.A.T.): July-Aug., hatched from egg (M.V.L.)

SPIRONTOCARIS CRANCHI (Leach) [Lebour, 1936b, p. 90; Holthuis, 1947, p. 14 as *Thoralus cranchii*]

Common round the Plymouth coast in shallow water, usually swimming amongst weeds (M.V.L.)

SALCOMBE. Salstone (type locality): one between Snape's Point and mouth of Harbour (Allen and Todd, 1900, p. 202, as Hippolyte)

Breeding: larvae hatched in Laboratory in April, May and June; record of moults undergone by post-larvae throughout Oct.-April. (Lebour, 1936b, p.95)

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SPIRONTOCARIS OCCULTA Lebour, 1936*b*, p. 96 [*Holthuis*, 1947, p. 11, as *Eualus occultus*]

Present with the above species in shallow water, amongst weeds, but much rarer (M.V.L.)

Breeding: larvae common in the plankton through the summer, often with those of *cranchii*; record of moults undergone by post-larva from Oct.-April (Lebour, 1936*b*, p. 97)

CARIDION STEVENI Lebour, 1930*a*, p. 185

Rum Bay, 2.3.00 (R.A.T.): Drake's Island, 11.3.02 (R.A.T.): Cawsand Bay (shore), 18/19.12.08; 16.1.07 at Farmer's Cellars, Cawsand Bay, several, 1 female in berry; Wembury Bay West, shore, 10.5.11, about 15 specimens, many more seen, including about 10 under one stone; Wembury Bay, shore, 29.5.11, female carrying eggs; Wembury Bay West, in big rock pool, 23.3.13, 2 females with eggs, under stones; Wembury Bay West shore, 2/3.4.12 (J.H.O.): 1 female, Wembury, August 1929 (M.V.L.): apparently absent 1949-52 (G.R.F.)

TORBAY. 2 in berry under boulder near Elbury Cove, 27.2.52 (G.R.F.)

Breeding: Rum Bay, Feb. 1929, 2 females in berry; larvae (=Sars' *Pandalus bonnierii* larva) in plankton from early spring to middle of Aug., inside and outside Sound; hatched from egg, March; post-larvae and young reared from larvae in plankton (M.V.L.)

CARIDION GORDONI (Bate) [*Kemp*, 1910, p. 109]

Adult not yet found in this area; post-larva from Mewstone Grounds, bottom, June (G.A.S.): larvae (=Sars's *Pandalus borealis* larva) in plankton with that of *C. steveni*, chiefly outside Sound, spring and summer until middle of Sept.; post-larvae and young reared from larvae in plankton (Lebour, 1930*a*, p. 185)

Family **Alpheidae**ALPHEUS GLABER (OLIVI) [*Kemp*, 1910, p. 120, as *A. ruber*; *Holthuis*, 1950, p. 35]

Not uncommon in 30 fm. (C.S.B., fide A.M.N. and T.S.): 2 females, 1 in berry, off Stoke Point, ca. 1½ m. N. ½ E., 18.6.08 (W.DE M.): 1 very fine specimen, about 2½ in. long from rostrum to telson, Sound, 16.4.09; 1 specimen, 11 m. off Rame, bearing N., 30.4.09, in berry; Rame Head, bearing N.E. 2-21 m., 3.5.10; 2 specimens, inner trawling grounds, 25/ 26.2.14 (A.J.S.): Rame Mud (E.F.): several recorded from 11 m. off Rame, 1919 (recorder not specified): 1 specimen 3 m. S. of Breakwater Light, Mewstone, 10° 3½ m., 11.12.28 (G.A.S.)

Breeding: females in berry, June, July, Aug.; hatched from egg, Aug.; larvae of *Alpheus*, probably a mixture of this species and *A. macrocheles*, very frequent in plankton in summer and early autumn, especially common in late summer (M.V.L.)

ALPHEUS MACROCHELES (Hailstone) [*Kemp*, 1910, p. 120; *Norman and Scott*, 1906, p. 16]

Off Plymouth, not uncommon (C.S.B. fide A.M.N. and T.S.): 1 specimen Church Reef, Wembury Bay, under a stone, recorded as *A. ruber* (R.A.T.):

CRUSTACEA: MALACOSTRACA, DECAPODA

1 specimen at each of four positions 39-49 m. S.W. of Eddystone, 21-40 mm., the largest a female in berry, 40-50 fm. (Crawshay, 1912, p. 352): 2 specimens, Eddystone bearing S.W. 3 m., trawl, 5.3.13; Wembury Bay West, shore collecting (A.J.S.): 20.4.13 (J.H.O.): 2 specimens, Rame-Eddystone Grounds, one in a Chaetopterus tube, 3.3.14 (A.J.S.): Eddystone bearing S.W. 4 m., 3.3.14 (J.H.O. and E.F.)

Breeding: 1 female in berry, 15.6.28, locality not specified; 1 female in berry, 1.8.28, locality not specified; 1 female in berry, 20.11.28, locality not specified; larvae in plankton in summer and autumn, especially common in summer; hatched from egg, Nov. (M.V.L.)

ATHANAS NITESCENS (Montagu) [*Kemp*, 1910, p. 122]

Sound (Bell, 1853): not uncommon in rock pools and among corallines, Fucus, etc. (S.P.): generally gregarious, 3-4 specimens under one stone (R.A.T.): Rum Bay; Mount Edgcumbe; Wembury Bay (R.A.T., S.P.): Tinside (R.G., R.A.T.): Cawsand Bay, occasionally between tide-marks; occasional specimens, on the outside grounds, 15-30 fm. (R.A.T.)

SALCOMBE. Between tide-marks (A.M.N. and T.S.): 1 specimen between Salstone and Snape's Point (Allen and Todd, 1900, p. 202): Castle Rocks, low tide, 12.4.29 (G.M.S.)

Breeding: Wembury Bay West, on shore, 25.8.11, 1 female carrying eggs (J.H.O.): 1 female in berry from below Laboratory, July 1929; larvae in plankton in summer and autumn, especially common in summer; hatched from egg, July (M.V.L.)

Family **Processidae**PROCESSA CANALICULATA Leach [*Kemp*, 1910, p. 123 in part; *Lebour*, 1936c, p. 612]

Frequent in the outer grounds-Eddystone Trawling Grounds and Rame Mud: larvae of this and the next species occur together at Plankton Stations, L.3, L4 and L.5, sometimes in the Sound, and farther out as far as near Ushant (M.V.L.). The type was from Torcross.

Breeding: females in berry from Feb.-Sept.; larvae from March-Nov. (M.V.L.)

PROCESSA EDULIS (Risso) [*Lebour*, 1936c, p. 611]

This is the usual inshore species. Cawsand Bay, Jennycliff Bay and Wembury: larvae occur with those of above species at Plankton Stations L.3, L4 and L.5, sometimes in the Sound and farther out as far as near Ushant (M.V.L.)

Breeding: females in berry from Feb.-Sept.; larvae from March-Nov.; eggs green (M.V.L.)

Family **Palaemonidae**PALAEMON SERRATUS (Pennant) [*Kemp*, 1910, p. 130, as Leander; *Holthuis*, 1950, p. 57]

More or less common everywhere among weed (R.A.T., S.P.): many from Sound, 9.3.23, and just previously, but of over 60 examined, only 7 were females (A.J.S.): River Tamar, common, taken as far as Pentillie Quay;

CRUSTACEA: MALACOSTRACA, DECAPODA

River Lynher, common, taken as far as confluence of Tiddy and Lynher, June-Oct. 1928 (E.P.)

SALCOMBE. Present on all the *Zostera*, mud and sand-banks, when covered with water (Allen and Todd, 1900, p. 202)

Breeding: Jan.-Feb. (W.G., R.A.T., M.V.L.): March-April (W.G., R.A.T., S.P.): May (W.G., R.A.T.): June (W.G.): Nov. (W.G., R.A.T.): Dec. (W.G.): larvae in plankton most of the year, hatched from egg, April (M.V.L.)

PALAEMON ELEGANS Rathke [*Kemp*, 1910, p. 132, as *Leander equities*; *Holthuis*, 1950, p. 55]

Plymouth (A.M.N. and T.S.): the Sound, not uncommon between tidemarks (R.A.T.): River Lynher, as far as shore above Ince Castle; River Tamar, as far as Neille Point, 1/17.8.28 (E.P.)

SALCOMBE (A.M.N.)

Breeding: May (R.A.T.): July, and earlier (W.G.): hatched out in Aug. (R.A.T.)

PALAEMON LONGIROSTRIS Milne Edwards [*de Man*, 1915, p. 149, as *Leander*; *Holthuis*, 1950, p. 59]

Four specimens, 1 young male, 3 females (2 young, 1 large full-grown without eggs), Lynher Estuary, 27.8.27 (O.D.H.): River Tamar, up to ¼ m above Calstock Bridge; River Lynher, up to ¼ m. above St. German's Bridge, June-Oct. 1928; young adults in St. John's Lake, 16.9.28; commonest in upper part of estuaries (E.P.)

R. Gurney had found larvae in the Sound (July 1922), before the adults were discovered (M.V.L.)

PALAEMONETES VARIANS (Leach) [*Kemp*, 1910, p. 123]

In brackish water, Chelson Meadow (A.M.N.): Saltram, Laira, etc. (R.A.T.): Erth, River Lynher, common in pools on a salt marsh (W.I.B.): tributaries of River Plym, very common (W.F.R.W.): 1930, very common in Chelson Meadow (M.V.L.)

Breeding: April (R.A.T.): May-June (W.G., R.A.T.): July, Aug., late stages only (W.G.): April-Aug. (M.V.L.)

TYPTON SPONGICOLA da Costa [*Heller*, 1863, p. 254]

Rare in sponges, 4 fm., Plymouth (C.S.B. *vide* A.M.N. and T.S.): off Mewstone in *Desmacidon fruticosum*, 1889 (A.M.N.): 2 specimens in *Desmacidon*, dredged 23 m. W. of Eddystone, 10.4.11 (J.H.O.): 2 specimens from *Desmacidon fruticosum*, 31.7.13, 1 with larvae nearly hatching; 1 specimen in *Desmacidon fruticosum*, Mewstone Ledge, with larvae nearly hatching, 17.7.14; 6 specimens (4 females, 2 males) in *Desmacidon*, Mewstone Ledge, with larvae nearly ready to hatch, 17.7.24; 7 specimens (4 females in berry and 3 small males), Mewstone Ledge, 22.7.24; 4 specimens, all females, Revelstoke Point bearing N.N.E., Mewstone bearing N.N.W., in two small pieces of *Desmacidon fruticosum*, dredge, 27.10.25, 3 specimens, all females, Mewstone Ledge, Stoke Point, 1 with eggs but no sign of development, 1 with eggs ready to extrude, 1 with clear gonad, not developed, 12.5.27 (A.J.S.): Looe-Eddystone Grounds, 2 tiny specimens in *Desmacidon* J.H.O.)

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Breeding: 1 with eggs nearly ready to hatch, June 1924, eggs hatched in plunger jar (M.V.L.): 2 miles N.E. of Eddystone, 21.8.46, a last larva which changed to post-larva in the Laboratory (M.V.L.)

Family **Crangonidae****CRANGON VULGARIS** Fabricius [*Kemp*, 1910, p. 137]

More or less abundant everywhere on sand, L.W.-10 fm. (R.A.T., S.P.): common up to ¼ m. above Calstock Bridge; and up to 1 m. above St. German's Bridge, June-Oct. 1928 (E.P.)

SALCOMBE. On all mud-flats in Kingsbridge Estuary and in the upper parts of Salcombe Harbour, many young (June-Sept.) (Allen and Todd, 1900, p. 201)

Breeding: Jan.-Aug. (W.G., R.A.T.): Nov. (R.A.T.): Dec. (W.G.): a few in berry practically all the year round, most abundant spring and summer; larvae in plankton most of the year, especially spring, scarce in autumn; larvae hatched from eggs, April, May (M.V.L.)

CRANGON ALLMANI Kinahan [*Kemp*, 1910, p. 138]

Plymouth, 1892 (W.G.): very rare 15-30 fm. (R.A.T.): 3 m. S.S.W. of Rame Head, common Aug. 1898 (W.I.B.): 1 specimen 40 m. S.W. of Eddystone Grounds (G.A.S., M.V.L.)

Breeding: in berry, Feb., April, hatch out March. Larvae common in outside plankton March, April (M.V.L.)

PHILOCHERAS TRISPINOSUS (Hailstone) [*Kemp*, 1910, p. 146]

Whitsand Bay (A.M.N.): Sound, occasionally; Whitsand Bay, common; Yealm Estuary, occasionally (R.A.T.): Cawsand Bay (W.I.B.)

SALCOMBE. Eight specimens on clean sand of the bar, with cheese-cloth trawl (Allen and Todd, 1900, p. 202, as Crangon)

Breeding: females in berry: April (T.V.H.): May-June (R.A.T.): July (W.G.): Aug. (J.T.C.): hatching, May (R.A.T.): early larval stages, April May, Sept. (R.G.): larvae hatched from eggs, July (M.V.L.)

PHILOCHERAS SCULPTUS (Bell) [*Kemp*, 1910, p. 148]

Plymouth, 20 fm. (C.S.B. and W.G.): occasionally, 15-30 fm. (R.A.T.): fairly common Mewstone Grounds, 1928-9 (G.A.S.)

Breeding: June (W.G., M.V.L.): Aug. (R.A.T.): larvae hatched from eggs, Aug. (M.V.L.): female in berry, Nov. 1949 (G.R.F.)

PHILOCHERAS FASCIATUS (Risso) [*Kemp*, 1910, p. 151]

Plymouth, 20 fm. (C.S.B.): Rum Bay; Jennycliff Bay; Cawsand Bay; sand patch N. of Drake's Island; not uncommon, L.W.- 5 fm. (R.A.T.): W. entrance (J.T.C.)

SALCOMBE. (J. Alder *vide* A.M.N.)

Breeding: March-April (R.A.T.): May (W.G.): hatching out, April (R.A.T.): early larvae, May, July-Sept. (R.G.): March-Aug., larvae in plankton (M.V.L.)

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PHILOCHERAS BISPINOSUS (Hailstone and Westwood) [*Kemp*, 1910, p. 152]

At the surface in Sound, Feb. 1887 (W.H.)

Breeding: females in berry, June-July (R.A.T., M.V.L.): early larvae, June, Aug.-Sept. (R.G., M.V.L.): larvae hatched from egg, July (M.V.L.)

PONTOPHILUS SPINOSUS (Leach) [*Kemp*, 1910, p. 160]

Plymouth, frequent in 6-15 fm. (C.S.B. *vide* A.M.N. and T.S.): Mewstone Grounds; 1 m. W. of Stoke Point; not uncommon on coarse sand and medium gravel (R.A.T.): Rame-Eddystone Grounds (E.W.L.H.)

Breeding: females in berry, Jan., March-April (R.A.T.): Oct. (M.V.L.): Dec. (E.W.L.H.): hatching out, April (R.A.T.): early larvae, April-May (R.A.T., R.G.): larvae in plankton, Feb.-Sept. (M.V.L.): rare after June, 1925-6 (F.S.R.)

Sub-Order REPTANTIA

Tribe *Palinura*Family **Palinuridae**PALINURUS VULGARIS Latreille [*Selbie*, 1914, p. 42; *Holthuis*, 1950, p. 91, as *P. elephas* (Fabr.)]

Common among rocks, the Sound, Eddystone Grounds, Mewstone Grounds, etc. (R.A.T., E.J.A.): young 3 in. long from rostrum to tip of tail, Mewstone Ledge, 17.7.14 (A.J.S.)

SALCOMBE. According to Salcombe fishermen sometimes taken in tuck-netting, and occasionally found in holes at the edge of the *Zostera* bank (Allen and Todd, 1900, p. 201)

Breeding: females in berry, April-May (R.A.T.): Nov. (M.V.L.): Dec. (W.H.): hatching, July (J.T.C.): Phyllosoma stage, March (R.G.): phyllosoma and puerulus stages, near Eddystone, from surface to a certain distance from bottom, June-Sept. 1913 (E.L.B.): larva in plankton, Feb.-Aug., sometimes very abundant (M.V.L.): late stages, July-Aug. (F.S.R.)

Family **Scyllaridae**SCYLLARUS ARCTUS (L.) [*Bouvier*, 1940, p. 89]

Millbay Dock, single specimen, April 1892 (R.A.T.): off the Breakwater Light, single specimen in a crab pot, Aug. 1897 (J.T.C.): 5 m. S. of Eddystone, single specimen, Jan. 1900 (R.A.T.)

Breeding: March (S.P.): Phyllosoma stage, near Eddystone, from surface to a certain distance from bottom, July, Aug. 1913 (E.L.B.)

Tribe *Astacura*Family **Nephropsidae**HOMARUS VULGARIS Milne Edwards [*Selbie*, 1914, p. 53; *Holthuis*, 1950, p. 99, as *H. gammarus* (L.)]

Common among rocks, occasionally between tide-marks; Rum Bay; Wembury Bay, etc. (R.A.T.): occasionally on sand; Eddystone Grounds (E.J.A.)

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SALCOMBE. Occasionally taken in push-nets and when tuck-netting (Allen and Todd, 1900, p. 201)

Breeding: females in berry: May-June (R.A.T.): July (W.G., R.A.T.): Aug. (W.G.): Sept.-Dec. (R.A.T.): berried lobster, Wembury Bay (Church Reefs), 2.4.23 (J.H.O.): larvae newly hatched and first moult, very abundant at surface, July 1897 (W.I.B.): larvae at surface, Aug. 1897 (E.W.L.H.): larvae in plankton, Jan., April-Oct., Dec., only few specimens at one time (M.V.L.)

Tribe *Anomura*Family **Galatheidae****GALATHEA INTERMEDIA** Liljeborg [*Selbie*, 1914, p. 66]

Plymouth, frequent in 10-45 fm. (C.S.B. *vide* A.M.N. and T.S.): Plymouth, Eddystone (A.M.N.): Asia Shoal; Millbay Channel; 3 m. S.S.W. Breakwater Light; 5 m. S.W. Penlee; 1 m. S.W. Yealm Head (W.I.B.): Queen's Ground; Mewstone Ground; Rame-Eddystone Grounds (R.A.T. and W.I.B.): 1 specimen 8 m. and 1 at 28 m. S.W. of Eddystone, 40-45 fm. (Crawshay, 1912, p. 354)

SALCOMBE (A.M.N.): very common in dredge between Salstone and Snape's Point; also, but not commonly between Snape's Point and mouth of Harbour (Allen and Todd, 1900, p. 201)

Breeding: March (W.G., R.A.T.): larvae in plankton in spring, hatched from egg, Aug. (M.V.L.)

GALATHEA DISPERSA Bate [*Bonnier*, 1888, p. 154; *Bull*, 1937, p. 46, pl. 1-6]

Plymouth (C.S.B., A.M.N.): abundant everywhere, 10-30 fm. (S.P.): Queen's Ground, common; Duke Rock, common; Cawsand Bay, occasionally (R.A.T.): Millbay Pit (W.I.B., R.A.T.): Rame-Eddystone Grounds; Mewstone Grounds, etc. (W.I.B., R.A.T.): Eddystone Grounds, on all grounds and in almost every haul (E.J.A.): 1 to 3 specimens from 13 positions, 846 m. S.W. of Eddystone (Crawshay, 1912, p. 352): the commonest Galathea in the outside grounds (M.V.L.)

SALCOMBE (C.S.B., A.M.N.)

Breeding: March (W.G., R.A.T.): May (S.P.): females in berry through spring and summer: larvae in plankton chiefly from outside from early spring to late autumn, sometimes in winter: eggs hatched out in April (M.V.L.)

GALATHEA NEXA Embleton [*Bonnier*, 1888, p. 149; *Bull*, 1937, p. 42, pl. 1-6] as distinct from *dispersa* (see Lebour, 1930b, p. 175)

Six specimens from one, and one from a second position, 39 m. S.W. of Eddystone, 49 fm. (Crawshay, 1912, p. 353) Selbie (1914, p. 70) regards this species and *G. dispersa* as one.

GALATHEA SQUAMIFERA Leach [*Selbie*, 1914, p. 69; *Bull*, 1937, pl. 3, 4]

Abundant under stones on all rocky shores, L.W.- 3 fm. (S.P.): Millbay Channel, Queen's Ground, Yealm River, occasionally (R.A.T.): 1 specimen 16 m. and 1 17 m. S.W. of Eddystone, 42-43 fm. (Crawshay, 1912, p. 354)

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SALCOMBE. A few in dredge between Salstone and Snape's Point; 1 in a prawn-pot, 4-5 fm. off Ditch End (Allen and Todd, 1900, p. 201)

Breeding: Jan.-May (R.A.T.): Feb., April; larvae in plankton in spring (M.V.L.)

GALATHEA STRIGOSA (L.) [*Selbie*, 1914, p. 72; *Bull*, 1937, pl. 3]

Breakwater, occasionally; Mount Edgumbe (R.A.T., S.P.): Drake's Island (T.V.H.): off Batten Breakwater, 1 specimen; off Yealm Head, 18 fm., 1 specimen (J.T.C.): Eddystone bearing W. by N., ca. 6 m. (E.F.): shore, 23.2.17 (A.J.S.)

Breeding: Breakwater, female carrying eggs, 20.2.09; Rum bay, 6 specimens, all carrying eggs in various stages of development, some nearly ready to hatch (E.F.): female in berry, eggs half-way to hatching, Millbay Pit, 2.1.30, dredge hatched April (M.V.L.): larvae in both inside and outside plankton in spring (M.V.L.)

MUNIDA BAMFFICA (Pennant) [*Selbie*, 1914, p. 73]

Rame-Eddystone Grounds, Eddystone bearing N. by E. 3 m., otter-trawl, 28.6.09; inner trawling grounds, Plymouth trawler, 24.7.13, 7.8.13, 13.8.13; inside Eddystone, Plymouth trawler, night 7/8.7.13; Eddystone bearing N.E., Plymouth trawler, 8.11.13; 4 specimens, outer trawling grounds, Eddystone bearing E.N.E. Plymouth trawler, 14.8.13; Yealm Point, bearing N.E. by N. 2 m., 22.4.14 (A.J.S.): common throughout the 1930's, but since 1946 only 2 specimens have been taken, 3.6.48 and 10.8.51 on Looe-Eddystone Grounds (D.P.W.)

Breeding: females in berry, Jan.-April (M.V.L.): larvae in plankton Jan.-June. Larvae hatched from egg, March (M.V.L.)

Family **Porcellanidae**

PORCELLANA PLATYCHELES (Pennant) [*Selbie*, 1914, p. 87]

Under stones on all rocky shores, L.W-3 fm. (S.P.)

SALCOMBE. Recorded only from under rocks, etc., between Sandhill Point and South Sands Bay (Allen and Todd, 1900, p. 201)

Breeding: females in berry: March (R.A.T.): April (W.G., R.A.T.): May (W.G.): June-July (W.G., S.P.): Aug. (R.A.T.): early larval stage, Aug. (R.G.): Porcellana larvae, species not identified, in plankton spring, summer and autumn (M.V.L.)

PORCELLANA LONGICORNIS (L.) [*Selbie*, 1914, p. 87]

More or less abundant on all grounds, L.W-30 fm. (S.P.): from 12 positions 8-30 m. S.W. of Eddystone, 40-50 fm. (Crawshay, 1912): Jennycliff Bay; near Mallard Buoy; off Eddystone (E.F.): mussel bed off Neille Point opposite Tavy, common; larvae in plankton up to beach 100 yd. above Antony Creek, 3.10.28 (E.P.)

SALCOMBE. Recorded only from dredgings between Snape's Point and the Salstone, probably taken elsewhere (Allen and Todd, 1900, p. 201)

Breeding: females in berry: March, April (W.G., R.A.T., S.P.): May (W.G., S.P.): June (W.G., R.A.T.): July (W.G., R.A.T., S.P.): Aug. (R.A.T.): early larval stage, March (R.G.)

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Tribe *Thalassinidea*Family **Axiidae****AXIUS STIRHYNCHUS** Leach [*Selbie*, 1914, p. 89]

Plymouth (G.M. *fide* A.M.N.): male from under stone off Penlee Point, 1.4.08 (W.DE M.): Wembury shore under stone, Laminaria zone, Church Reefs, 2.4.23, female in berry (G.B.): 1 female apparently lately spawned, shore collecting, Wembury, 15.8.28 (M.V.L.): 3 (1 female, 2 males) dredged, Rame Mud, 28.3.39 (E.J.F.): Rum Bay, under stones in mud, 19.2.46; 1 female in berry, River Yealm, dug out of mud, south shore, April 1946 (D.P.W.)

SALCOMBE. Two females in berry, 17.3.49, one of them below the Marine Hotel (G.M.S.)

Breeding: larvae in plankton, summer, early autumn (M.V.L.)

Family **Laomediidae****JAXEA NOCTURNA** (Chiereghin) Nardo [*Selbie*, 1914, p. 96; *Rawlinson*, 1938, p. 79]

Rame Mud, 24 fm., Rame Head, bearing N. 2m., 26.3.36 (G.A.S.): Off Rame Head, mud, 3.9.37, one; 28.9.37, one; 6.10.37, three (R.R.): stomach of *Gadus merlangus*, Start Bay, 31.10.40 (N.G.S.)

Breeding: larvae from Salcombe (R.G.): larvae in plankton, Looe-Eddystone Grounds, Aug. 1913 (E.L.B.): larvae not uncommon occasionally outside the Breakwater, summer (M.V.L.)

Family **Callianassidae****CALLIANASSA (CHERAMUS) SUBTERRANEA** (Montagu, 1808a, p. 88, as *Cancer astacus subterraneus*)

4 fm. off Plymouth (C.S.B.): Rame-Eddystone Grounds, 3-4 m. S. of Rame Head, 4.4.11 (J.H.O.): Rame mud (E.F.): common in certain localized patches of fine muddy sand, Mewstone Grounds, 1928-9 (G.A.S.)

SALCOMBE. Montagu's type was from Kingsbridge Estuary. Mill Bay, in muddy sand on *Zostera* bed, 26.3.29 (J.H.O.): 1 specimen, Mill Bay, April 1946 (D.P.W.): below the Marine Hotel, 17.3.49; Salstone, 26.3.52; Ox Point at L.W. in muddy sand, 1.6.54, 5.10.56 (G.M.S.)

Breeding: larvae very common in plankton in summer and early autumn (M.V.L.)

UPOGEBIA (GEBIOPSIS) DELTAURA (Leach) [*Selbie*, 1914, p. 103]

186 specimens 2½ m. S. of Revelstoke Point, 5.1.33, after very heavy S.W. gale (G.A.S.): several specimens, inside Lepton, southern shore of River Yealm, April 1946 (D.P.W.): River Yealm, S. shore, regularly taken 1949-56, always this species (G.M.S.): occasionally dredged from mud or muddy sand, inside the Sound and on the trawling grounds outside (G.R.F.)

SALCOMBE. Found with *Upogebia stellata*, a day's hunting may produce a dozen specimens (W.DE M., 1910, p. 476): not uncommon at E.L.W.S.T., both sides of harbour (D.P.W.)

Breeding: spring and summer; berried female eggs about half developed, April 1930 (M.V.L.)

UPOGEBIA STELLATA (Montagu) [Selbie, 1914, p. 104]

Young specimens dredged near mouth of Yealm and from fish stomachs at Plymouth (A.M.N., including both *U. stellata* and *U. deltaura*): occasional specimens between tide-marks in the Yealm and under Mount Edgumbe, also in dredgings from Queen's Grounds, and a single specimen 5 m. W. S. of Rame Head (R.A.T.): one dredged in fine sand 4 m. E. of Eddystone, 2.5.52 (G.R.F.)

SALCOMBE (G.M. and A.M.N.): below Marine Hotel on *Zostera* bank (Allen and Todd, 1900, p. 201): Estuary mud-flat, 30.3.07, 3 specimens in berry, larvae visible April 7th (W.DE M.) m.): *Zostera* bed, W. side 200 yd. S. of Marine Hotel, 24.2.21, male and female in berry (R.W.): with early eggs, April 1930 (M.V.L.): occasional below the Marine Hotel, female with eggs 4.4.27, and again 14.4.53 (G.M.S.)

Breeding: Aug. (R.A.T.): Yealm sand bank, female in berry, dug out, 30.3.07, larvae hatched 16.5.07 (W.DE M.): mouth of River Yealm, N. side in *Zostera* bed, 6.3.16, female carrying eggs; S. side, opposite houseboats (*Zostera* bed), 7.3.16, female in berry; from lobster-pot, Plymouth Sound, female in berry, 27.11.30 (A.J.S.): larvae of *Upogebia* (species not determined) very common in plankton in spring and summer; also post-larvae in late summer (M.V.L.)

Tribe *Paguridea*Family **Paguridae****UDIOGENES PUGILATOR** (Roux) [Selbie, 1921, p. 4]

Mouth of Yealm (A.M.N.): Whitsand Bay (T.V.H.)

SALCOMBE. One specimen only in the cheese-cloth trawl, on the bar, outside Salcombe Harbour (Todd in Allen and Todd, 1900, p. 201)

Breeding: July (W.G.)

EUPAGURUS BERNHARDUS (L.) [Selbie, 1921, p. 15]

Generally distributed on sand, gravel and stones, 3-30 fm. (R.A.T., S.P.): the shell inhabited by this species usually affords lodgment for one or more specimens of *Calliactis parasitica* or else it is invested with a colony of *Hydractinia echinata*; also its apical whorls are occupied by the polychaete *Nereis fucata* (R.A.T., S.P.): single or few specimens at 16 positions 8-40 m. S.W. of Eddystone 40-49 fm. in Buccinum shells and in the sponge *Ficulina ficus*; no occurrence of the associated anemone *Calliactis parasitica* (Crawshay, 1912, p. 354): St. John's Lake and Bull Point, 1928 (E.P.): small specimens very common in Littorina, trochid, etc., shells in pools intertidally; many of this size are berried; the orange and white colouring of large off-shore specimens is masked in small intertidal specimens by dark green colouring; off-shore small specimens have same colouring as large and are much scarcer than intertidally, fifth commonest, 3 or 4 in fifteen minute tow of Agassiz trawl; Agassiz trawl catches in shallower water in Bigbury Bay appear to show that with increasing size some of the intertidal population move off-shore and lose the dark colouration (P.G.C.)

SALCOMBE. Young very common on the Salstone and opposite Marine Hotel, running about between tide-marks; present in all the dredgings

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(excepting in the "Bag") in varying numbers; a few large specimens were taken inhabiting Buccinum shells to which were attached *Calliactis parasitica* (Allen and Todd, 1900, p. 200)

EUPAGURUS SCULPTIMANUS (Lucas) [*Selbie*, 1921, p. 191]

Near Eddystone, 1889, 1903 (A.M.N.): Rame-Eddystone Grounds, in *Ficulina* (R.A.T.): from 1-3 specimens at 11 positions, 17-48 m. S.W. of Eddystone, 42-51 fm. (Crawshay, 1912, p. 355): uncommon; 6-8 specimens in Agassiz hauls, 1955-6, Looe-Eddystone grounds; sometimes in shells covered with *Suberites domuncula*. (P.G.C.)

EUPAGURUS CUANENSIS (Thompson) [*Selbie*, 1921, p. 26]

Plymouth (A.M.N.): Mewstone Grounds, not uncommon, generally with *Ficulina ficus*; Rame-Eddystone Grounds, occasionally (R.A.T.): Eddystone Grounds, never in large numbers, and confined to the gravel grounds in the neighbourhood of the Eddystone (E.J.A.): Yealm River, occasionally (R.A.T.): 1 or 2 specimens only at each of 9 positions S.W. of Eddystone, 42-49 fm. (Crawshay, 1912, p. 354): fourth commonest species on off-shore trawling grounds, 4-6 specimens in fifteen-minute tow of Agassiz trawl (P.G.C.)

SALCOMBE (A.M.N.): taken most commonly between Snape's Point and the Salstone; a few W. of the Salstone and between Snape's Point and the mouth, all in the dredge (Allen and Todd, 1900, p. 200)

Breeding: females in berry: March-April (R.A.T.)

EUPAGURUS PRIDEAUXI (Leach) [*Selbie*, 1921, p. 34]

Moderately common, 15-30 fm. (R.A.T.): Eddystone Grounds, absent on the fine sand of the "inner" and "outer" trawling grounds (E.J.A.): almost always associated with *Adamsia palliata* (R.A.T., S.P.): a specimen trawled 2 m. S.W. of Penlee had a *Calliactis parasitica* upon its shell as well as the normal *A. palliata* (E.W.L.H.): occasionally the shell is invested with a colony of *Hydractinia echinata* in place of the *Adamsia palliata*, and very rarely both are present upon the same shell (S.P.): single or few specimens at 18 positions, 8-40 m. S.W. of Eddystone, 40-49 fm. (Crawshay, 1912, p. 354): *Nereis fucata* occasionally present in shell, Mewstone Grounds, 1928-9 (G.A.S.): small specimens in Turritella, etc., shells are about as numerous as *A. hyndmanni*, up to 100 in fifteen-minute tow of Agassiz trawl (P.G.C.)

SALCOMBE. Several specimens in dredgings taken between Salstone and the mouth of the Harbour, sometimes with *Adamsia palliata* (Allen and Todd, 1900, p. 200)

Breeding: females in berry: Jan. (R.A.T.): March-July (W.G., R.A.T.): Sept. (S.P.): hatching out, March-April (R.A.T.): June (S.P.): July-Aug. (R.A.T.): early larval stages, March-April (R.G.)

ANAPAGURUS LAEVIS (Thompson) [*Selbie*, 1921, p. 44]

Plymouth (A.M.N.): common on the Mewstone Grounds with *Epizoanthus incrustatus*; the Sound, occasionally; moderately common on other grounds, 15-30 fm. (R.A.T.): Eddystone Grounds (E.J.A.): single or few specimens at 5 positions, 20-40 m. S.W. of Eddystone, 42-49 fm.; a single

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specimen recorded with the commensal polychaete *Nereis fucata* (Crawshay, 1912, p. 355): commonest species on off-shore trawling grounds, up to 200 in fifteen-minute tow of Agassiz trawl; very occasional intertidally at L.W.; sometimes in shells covered with *Suberites domuncula* (P.G.C.)

SALCOMBE (A.M.N.): taken frequently in the dredge in all parts of the Channel between the mouth of the Harbour and the Salstone, generally inhabiting *Turritella* shells (Allen and Todd, 1900, p. 200)

Breeding: Feb. (R.A.T.): April (W.G., R.A.T., M.V.L.): May (W.G.): July (R.A.T.): Aug. (S.P.)

ANAPAGURUS HYNDMANNI (Thompson) [Selbie, 1921, p. 49]

Plymouth (A.M.N.): 2 specimens apparently belonging to this species from 39 m. S.W. of Eddystone, 49 fm. (Crawshay, 1912, p. 355): about as numerous as small *E. prideauxi* on off-shore trawling grounds, sometimes abundant (up to 200 in fifteen-minute tow of Agassiz trawl) especially along southern edge of Rame Mud; occasionally intertidally at low water; sometimes in shells covered with *Suberites domuncula* (P.G.C.)

SALCOMBE (A.M.N.)

Larvae of Hermit Crabs, species not identified, abundant in both inside and outside plankton in spring and summer (M.V.L.)

Tribe *Brachyura*Family **Dromiidae**DROMIA VULGARIS Milne Edwards [Bell, 1853, p. 369; Bouvier, 1940, p. 189; Monod, 1956, p. 59, as *D. caputmortuum*]

Duke Rock, female in *Ficulina ficus*, dredge, 26.10.06 (L.R.C.): Mewstone Ledge, female, close to the Slimers, 7.7.09, dredge, in berry (A.J.S.): female from Bigbury Bay, 20.9.19 (A.J.S.): one carrying *Diazona violacea* taken in crawfish-net outside Sound, 21.3.34 (D.P.W.): 8.11.49, 1 male, 1 female in Brit. Mus. Coll.

NEWQUAY. Single specimens sent to Plymouth, 16.8.38, 27.9.47 and 15.8.52 (S.M.N.)

Family **Leucosiidae**EBALIA TUBEROSA (Pennant) [Bell, 1853, p. 141, as *E. pennanti*; Bouvier, 1940, p. 211]

Plymouth (A.M.N.): Millbay Channel (T.V.H.): not uncommon 20-30 fm.; Mewstone Grounds, Rame-Eddystone Grounds; etc. (R.A.T.): Eddystone Grounds, together with *E. tumefacta* (E.J.A.): from 20 positions 1-46 m. S.W. of Eddystone, 40-50 fm. (Crawshay, 1912, p. 356): Rame Mud (E.F.): the commonest *Ebalia* in the district, occurring in sand, both inside and outside Sound (M.V.L.)

SALCOMBE (A.M.N.): in all hauls of the dredge between Snape's Point and the Salstone; a few only between Snape's Point and the mouth of the Harbour (Allen and Todd, 1900, p. 200)

Breeding: females in berry, May-June (R.A.T.): from Jan. to late summer or autumn; larvae in plankton almost throughout the year, chiefly in spring and summer, generally near the bottom (M.V.L.)

CRUSTACEA: MALACOSTRACA, DECAPODA

EBALIA CRANCHI Leach [*Bell*, 1853, p. 148; *Bouvier*, 1940, p. 209]

Plymouth (type locality) (A.M.N.): Cawsand Bay, 1 specimen; Whitsand Bay, 1 specimen (T.V.H.): Eddystone Grounds, on sandy gravel, E. of Hand Deeps (E.J.A.): from 2 positions 15-23 m. S.W. of Eddystone, 40-45 fm. (Crawshay, 1912, p. 355)

Breeding: females in berry in spring and summer, larvae in plankton summer and autumn (M.V.L.)

EBALIA TUMEFACATA (Montagu) [*Bell*, 1853, p. 145, as *E. bryeri*; *Bouvier*, 1940, p. 209]

Off Plymouth (A.M.N.): Duke Rock, single specimen (T.V.H.): Eddystone Grounds, abundant on coarse sandy gravel W. of Eddystone, constantly present but less abundant on clean shell-gravel grounds (E.J.A.): 1 specimen each at 2 positions, 23-46 m. S.W. of Eddystone, 45-50 fm. (Crawshay, 1912, p. 355); Queen's Grounds, female, 24.3.06 (L.R.C.)

SALCOMBE. Below Marine Hotel, one, 7.4.51 (G.M.S.)

Family **Corystidae**

CORYSTES CASSIVELAUNUS (Pennant) [*Bell*, 1853, p. 159; *Bouvier*, 1940, p. 218]

Plymouth (A.M.N.): generally distributed on clean, fine sand, 15-30 fm.; Cawsand Bay, not uncommon (R.A.T., S.P.): 29 specimens, all males, 10.7.19 (J.H.O.): clean sand, Whitsand Bay, Bigbury Bay, West Channel (E.F.)

Breeding: females in berry: May-July; Nov. (R.A.T.): zoea stage, Feb.-May (R.G.): megalopa stage, April (R.G.): swarms in May 1925 (F.S.R.): berried females, April, July; larvae in plankton, March-June, rarely later; 6 berried females Cawsand Bay, Aug. 1926, 72 berried females outside Sound the day after (M.V.L.)

Family **Atelecyclidae**

ATELECYCLUS SEPTEMDENTATUS (Montagu) [*Bell*, 1853, p. 153; *Bouvier*, 1940, p. 219]

Plymouth (A.M.N.): moderately common 15-30 fm. (R.A.T.): local, but common where it occurs, generally on muddy gravel (S.P.): Rame-Eddystone and Mewstone Grounds (R.A.T., S.P.): Eddystone Grounds, abundant on muddy gravel about 1 m. E. of Eddystone, on gravelly sand about 3 m. W. of Eddystone, and occasionally at other stations (E.J.A.): at 15 positions 7-30 m. S.W. of Eddystone, 40-47 fm. (Crawshay, 1912, p. 360)

Breeding: April-July (R.A.T.): berried females Feb.-April; rarely in summer and autumn; larvae in plankton March-June (M.V.L.)

Family **Pirimelidae**

PIRIMELA DENTICULATA (Montagu) [*Bouvier*, 1940, p. 225; *Monod*, 1956, p. 157, as *Perimela*]

Plymouth 4-30 fm. (C.S.B.): Drake's Island, not uncommon on clean coarse shelly gravel (W.G., S.P.): Rum Bay (R.A.T.): Yealm River (T.V.H.): Stoke Point Grounds (S.P.): Drake's Island, between tide-marks, under a

stone, 22.10.06 (L.R.C.): Bovisand Beach between tide-marks, 18.8.10 (J.H.O.)
Breeding: Feb., April (R.A.T.)

Family Thiidae

THIA POLITA Leach [*Bell*, 1853, p. 365; *Bouvier*, 1940, p. 222; *Monod*, 1956, p. 153, as *T. residua*]

One female dredged Revelstoke Point N.N.E. 2 m., 1926; 1 male dredged Eddystone Grounds, 29.3.27 (M.V.L.): 1 female, not in berry, from shell gravel 1 m. N. of Eddystone 10.9.51 (B.M.G.)
Breeding: larvae in plankton in late summer, fairly common (M.V.L.)

Family Cancridae

CANCER PAGURUS L. [*Bell*, 1853, p. 59; *Bouvier*, 1940, p. 224]

Small specimens common among stones between tide-marks on all rocky shores; large specimens seldom seen above low-water mark (S.P.): common in the trawl in Sound and outside (M.V.L.)

Breeding: Jan. (R.A.T.): Feb., onwards (W.G.): March-July; Dec, (R.A.T.): a female in berry from Plymouth Sound in crab-pot, 27.2.25, measured under 13 cm. across carapace (A.J.S.): 1 large specimen with eggs, 23 cm., and 2 specimens 46 m. S.W. of Eddystone, 46-50 fm. (Crawshay, 1912, p. 358): berried females in spring; larvae in plankton, April-Aug. (M.V.L.)

Family Portunidae

PORTUNUS CORRUGATUS (Pennant) [*Palmer*, 1927, p. 881]

Queen's Grounds; Millbay Channel; not uncommon (R.A.T.): Drake's Island, between tide-marks, 1 specimen (T.V.H.): Cawsand Bay (E.W.L.H.): Bovisand Bay (J.T.C.): New Grounds, 7.12.06, dredge (L.R.C.): much less common than it was many years ago, occurs on usual dredging and trawling grounds, both inside and outside the Sound (M.V.L.): two or three a year from rough ground, Mewstone Ledge and Looe-Eddystone Grounds, (P.G.C.)

SALCOMBE. (A.M.N.): once only, in dredge between Snape's Point and the Salstone (Allen and Todd, 1900, p. 200)

Breeding: June, Aug. (R.A.T.): berried females, April, May, June; larvae hatching out June; no larvae seen in plankton (M.V.L.)

PORTUNUS PUBER (L.) [*Palmer*, 1927, p. 882]

Common among stones on all rocky shores, between tide-marks -5 fm. (S.P.): sometimes trawled beyond Breakwater (M.V.L.)

Breeding: females in berry: Feb.-May; July (R.A.T.): zoeae hatching out, March-May (R.A.T.): berried females chiefly in spring, rarely through summer and as late as Nov.; larvae in plankton April-Aug., rarely in autumn; chiefly April-June; young hatched, May-July (M.V.L.)

PORTUNUS ARCUATUS Leach [*Palmer*, 1927, p. 884]

Plymouth, mouth of Yealm (A.M.N.): Queen's Ground (R.A.T.): Cawsand

CRUSTACEA: MALACOSTRACA, DECAPODA

Bay (T.V.H., E.W.L.H.): Yealm River, not uncommon (R.A.T., T.V.H.): Laira (T.V.H.): Jennycliff Bay, 22.7.09, in berry; Asia Shoal, 9.2.11, in berry (A.J.S.)

SALCOMBE (A.M.N.)

Breeding: Feb. (A.J.S.): March (W.G.): April-May (W.G., R.A.T.): July (A.J.S.): April-Sept. (M.V.L.): larvae in plankton, spring and summer (M.V.L.)

PORTUNUS PUSILLUS Leach [*Palmer*, 1927, p. 885]

Plymouth (A.M.N.): not uncommon in dredgings from Sound and outside grounds 15-30 fm.; Queen's Grounds, occasionally; Drake's Island, occasionally between tide-marks; Yealm River, not uncommon (R.A.T.): Eddystone Grounds, on gravel, and occasionally on sand grounds adjoining the gravel (E.J.A.): at 8 positions 8-40 fm. S.W. of Eddystone, 40-52 fm., 2 in berry (Crawshay, 1912, p. 359): off Eddystone (E.F.): common inside and outside Sound on sandy bottoms (M.V.L.)

SALCOMBE (A.M.N.): commonest in dredge material from between Snape's Point and the Salstone, a few between Snape's Point and the mouth of the Harbour (Allen and Todd, 1900, p. 200)

Breeding: females in berry Feb.-May (R.A.T.): April-July; larvae in plankton spring and summer (M.V.L.)

PORTUNUS MARMOREUS Leach [*Palmer*, 1927, p. 888]

Plymouth occasionally (C.S.B.): Whitsand Bay, 20-30 specimens, 18 and 19.9.06; 6 males, Cawsand Bay, 30.3.09 (A.J.S.): 1 specimen, 29 m. S.W. of Eddystone, 46 fm. (Crawshay, 1912, p. 359): 1 specimen S. of Mewstone Buoy (L.R.C.): mud, Rum Bay (E.F.): fairly common both inside and outside the Sound on sandy bottom (M.V.L.)

Breeding: May (W.G.): May-July; larvae in plankton spring and summer (M.V.L.)

PORTUNUS HOLSATUS Fabricius [*Palmer*, 1927, p. 889]

Plymouth (C.S.B.): Queen's Ground; Cawsand Bay; Whitsand Bay (E.W.L.H.): occurs more frequently than *P. marmoreus* but in the same situations both inside and outside the Sound (M.V.L.)

Breeding: March (W.G.): April-Aug.; larvae in plankton spring and summer (M.V.L.)

PORTUNUS DEPURATOR (L.) [*Palmer*, 1927, p. 893]

Near Eddystone (A.M.N.): Plymouth, occasionally, 3-45 fm. (C.S.B.): generally distributed, 3-30 fm., sometimes in large numbers (R.A.T., S.P.): 1 specimen, 17 m. S.W. of Eddystone, 43 fm. (Crawshay, 1912, p. 359): the commonest of all the Portunus species in the district, occurring abundantly both outside and inside the Sound (M.V.L.)

SALCOMBE (A.M.N.): one only recorded from dredgings between Snape's Point and mouth of Harbour (Allen and Todd, 1900, p. 200)

Breeding: Jan.-Feb. (R.A.T.): March-April (W.G., R.A.T., S.P.): May-July (W.G., R.A.T.): Aug. (W.G.): Sept., Nov. (R.A.T.): March-Oct., larvae in plankton chiefly in spring and summer (M.V.L.)

PORTUNUS TUBERCULATUS Roux [*Palmer*, 1927, p. 894]

A single specimen at each of three positions, 18-39 m. S.W. of Eddystone, 43-49 fm. (Crawshay, 1912, p. 359)

BATHYNECTES LONGIPES (Risso) [*Bell*, 1853, p. 361, as *Portunus*; *Bouvier*, 1940, p. 246]

Near Eddystone, on fine sand (W.G.): Mewstone Ledge, 9.6.08, carrying eggs which hatched 18.6.08; 1 specimen, Yealm Point N. by E. 1½ m., 10.5.09; 2 females in berry, Millbay Channel; 1 male and 2 females (1 in berry), Stoke Point-Mewstone, 30.6.09; 1 female in berry, Mewstone Ledge, 7.7.09; 3 males, 3 females (1 in berry), Mewstone Ledge, Stoke Point Grounds, 19.7.09; 3 specimens, Mewstone Ledge, 15.3.10; several specimens, 1 female with *Sacculina*, Mewstone Ledge, 8.6.10 (A.J.S.): Millbay Pit, 29.8.05 (L.R.G.): 1 specimen at each of 2 positions 28-49 m. S.W. of Eddystone, 47-51 fm. (Crawshay, 1912, p. 359).

Breeding: one female in berry, July 1926, young hatched (M.V.L.): 24.4.29, female in berry, young hatched, 27.5.29 (M.V.L.)

POLYBIUS HENSLOWI Leach [*Bell*, 1853, p. 116; *Bouvier*, 1940, p. 243]

The male is not uncommon at times on the shrimp-trawling grounds, particularly in Cawsand Bay, also swimming near the surface at the deeper water stations, but the female has only twice been recorded at the Laboratory (S.P.): a dozen males Whitsand Bay, 10.8.10 (A.J.S.): 2 females, 10 males Whitsand Bay, 2½-4 fm., 7.7.11 (F.J.Br.): 1 female, Rame Mud, July 1927 (M.V.L.): Mewstone trawling grounds near Stoke Point, 1 female in berry, 14.5.32 (W.H.L.-S.): Mewstone, 1 female, 18.9.33 (S.M.N.): Rame Mud, 1 female, 18.8.33 (S.M.N.)

Breeding: females in berry; Sept. (R.A.T., W.I.B.): hatched: Sept. (R.A.T.): Dec., zoeae hatched out (M.V.L.)

CARCINUS MAENAS (L.) [*Bell*, 1853, p. 76; *Bouvier*, 1940, p. 234]

Common everywhere, tide-marks, 3 fm. (R.A.T., S.P.): Millbay Channel, occasionally (R.A.T.): common in Tamar, taken up to ¾ m. above Calstock; common in Lynher, taken up to within 1 m. of Tideford, near Tredinnick, June-Oct. 1928 (E.P.)

SALCOMBE. Moderately common on the sand, mud and *Zostera* banks in Salcombe Harbour; abundant in some localities, Ditch End *Zostera* bank especially (Allen and Todd, 1900, p. 200)

Breeding: females in berry, Jan.-April (W.G., R.A.T.): May-Aug. (W.G.): Nov. (R.A.T.): Dec. (W.G., R.A.T.): Zoea stage, Feb.-April (R.G.): July (R.A.T.): berried females from Dec.-Nov., chiefly Feb.-March; larvae in plankton throughout the year, chiefly spring (M.V.L.)

PORTUMNUS BIGUTTATUS (Risso) [*Bouvier*, 1940, p. 232; *Monod*, 1956, p. 168, as *Xaiva*]

Drake's Island, occasional specimens, burrowing in fine gravel (W.G., R.A.T.): 2 specimens, male and female, sand patch, N.E. corner of Drake's Island, 21.3.05; Cawsand Bay, 3.10.06 (L.R.C.). Not seen since 1906 (M.V.L.)

Breeding: females in berry, Aug. (R.A.T.): megalopa, Aug. 1902 (R.G.)

CRUSTACEA: MALACOSTRACA, DECAPODA

PORTUMNUS LATIPES (Pennant) [*Bouvier*, 1940, p. 231; *Bell*, 1853, p. 85, as *P. variegatus*]

Whitsand Bay, shore, 18 and 19.9.06, about 30 specimens, various sizes (A.J.S.): abundant at low-water mark and below, burrowing in sand, Whitsand Bay, but they probably swim about just above the sand at high tide when they are caught in shrimping nets (M.V.L.)

Breeding: larvae in plankton in summer and autumn; berried female, in June, from which zoeae were obtained; breeding season probably extends from spring to autumn (M.V.L.)

Family Xanthidae

XANTHO INCISUS Leach [*Bouvier*, 1940, p. 265, as *X. floridus*; *Drach* and *Forest*, 1953, p. 11, as *X. floridus*]

Plymouth (A.M.N.): common between tide-marks on all rocky shores (S.P.)

Breeding: April (R.A.T.): May (W.G.): June (W.G., R.A.T.): berried females spring and early summer; zoeae occasionally in plankton; reared from egg to crab, June-Aug. 1927 (M.V.L.)

XANTHO PILIPES Milne Edwards [*Bell*, 1853, p. 54, as *X. rivulosa*; *Drach* and *Forest*, 1953, p. 16]

Plymouth (A.M.N.): between tide-marks on all rocky shores not uncommon under stones, etc. (S.P.): much rarer than *X. incisus*, occurring in the same localities, but much farther down so that it can only be collected at extremely low tides (M.V.L.). This has recently been shown to be very distinct from the true *X. rivulosus* Risso, a Mediterranean species; the name *hydrophilus* has often been applied, wrongly, to either indiscriminately (G.M.S.)

SALCOMBE. Ox Point, female with peculiar reticulate pattern, 5.10.56 (G.M.S.)

Breeding: March (R.A.T.): May (W.G., S.P.): June (W.G.): berried crabs in spring; eggs hatched June 1927 (M.V.L.)

MEDAEUS COUCHI *(Bell in Couch) [*Bell*, 1853, p. 359, as *Xantho tuberculata*; *Bouvier*, 1940, p. 267, as *Xantho*]

One specimen at 9 positions, and 2 at 1 position 21-48 m. S.W. of Eddystone, 44-50 fm. or over, 3 ovigerous females (Crawshay, 1912, p. 358): said by Bate to be frequent at Plymouth from 4-45 fm. (A.M.N. and T.S.)

PILUMNUS HIRTELLUS (L.) [*Bell*, 1853, p. 68; *Bouvier*, 1940, p. 255]

Not uncommon on all rocky shores under stones and in crevices, L.W - 5 fm. (S.P.): common in *Lepralia foliacea*; Mewstone Ledge, etc. (R.A.T., S.P.): Mewstone Ledge, 21.7.20, female in berry (R.W.)

SALCOMBE. One only taken in dredgings from between Snape's Point and the Salstone (Allen and Todd, 1900, p. 199)

Breeding: March (S.P.): April (W.G., R.A.T.): May-June (W.G.): July (S.P.): berried crabs in spring and summer, chiefly spring; larvae abundant

* Bell, 1853, forgot that he had named the species *couchi* in 1851.

in plankton throughout the summer; reared from egg to megalopa, Aug.-Sept. 1926 (M.V.L.)

PILUMNOIDES PERLATUS (Poëppig) [*Rathbun*, 1930, p. 535]

From hull of S. Vessel "Micfield", G.W. Docks, Plymouth (B.M. coll. 1913. 10.29. 110; introduced from South America)

Family **Goneplacidae**

GONEPLAX ANGULATA (Pennant) [*Bell*, 1953, p. 130, as *Gonoplax*; *Bouvier*, 1940, p. 278] (in 1931 Fauna List as *Gonoplax rhomboides*)

Plymouth (A.M.N.): Cawsand Bay, rare; Jennycliff Bay, 1 specimen (S.P.): occasionally in 15-30 fm.; Rame-Eddystone Grounds; Mewstone Grounds (R.A.T., S.P.): Eddystone Grounds (E.J.A., S.P.): Looe-Eddystone Grounds, 30.4.14, with larvae nearly hatching (J.H.O.): Rame Head bearing N.E., 2-2½ m.; N.E. by N. 2 m., very small specimens (A.J.S.): Rame Mud (E.F.)

SALCOMBE (G.M. *fide* A.M.N. and T.S.): E. side above ferry, on side of *Zostera* bank exposed low water, 13 ft. tide, in burrows of soft mud (N.J.B.): burrows in mud south of Ox Point, the crabs extracted by hand, 1.6.54, 5.10.56 (G.M.S.)

Breeding: hatched out in June (R.A.T., M.V.L.): berried females, April, July, 1928; 20.3.29, Rame Mud (J.H.O., M.V.L.): larvae in plankton in late summer and early autumn; hatched out Sept. 1928 (M.V.L.)

Family **Pinnotheridae**

PINNOTHERES Pisum (Pennant) [*Bell*, 1853, p. 121 ; *Bouvier*, 1940, p. 301]

In Saltash mussels (G.S.B.): Mewstone Amphioxus Ground, in the mantle cavity of *Laevicardium crassum* and of *Glycymeris* (W.G., R.A.T.): common in mussels, *Mytilus edulis* above Steer Point; Saltash district (J.H.O., A.J.S.): 1 in *Mytilus* from Plymouth Pier, 9.12.27 (D.A.); 1 in *Ascidia mentula*, Mewstone Grounds, March 1910 (G.H.G.): under Laira Bridge in *Mytilus*, 22.2.13 (J.H.O.)

SALCOMBE. One specimen from *Modiolus*, 6.9.28 (D.A.)

Breeding: July-Aug. (R.A.T.): berried females in late spring and early summer, rarely in autumn; zoeae occasionally in the plankton (M.V.L.): females in berry, River Yealm, 14.8.27, 21.7.28, 3.8.28; Promenade Pier, 11.9.28 (D.A.)

PINNOTHERES PINNOTHERES (L.) [*Bouvier*, 1940, p. 302; *Bell*, 1853, p. 126, as *P. veterum*]

Occasionally found in ascidians, July 1925; 1 in *Ascidia mentula*, Plymouth district (M.V.L.): probably this species from *Mytilus edulis*, from near junction of Tamar and Tavy, 20.10.27; from *Ascidia mentula*, Mewstone region, male, 1.8.28, 13.9.28; female, solitary male, solitary, 14.9.28; 2 adult females separately, 18.10.28; female and male, female in berry, 11.7.25 (D.A.): male, 18.8.27; young female, April 1927; 1 in branchial chamber of *Ascidiella aspersa*, Rame-Eddystone Ground, 27.6.29 (D.A.)

SALCOMBE. In *Pinna* (G.M. *fide* A.M.N. and T.S.)

Breeding: zoeae in plankton in late summer and early autumn (M.V.L.):

CRUSTACEA: MALACOSTRACA, DECAPODA

a female from branchial cavity of *Ascidia mentula* from Revelstoke Point spawned in Laboratory, 18.5.29 (D.A.)

Family **Maiidae****MAIA SQUINADO** (Herbst) [*Bell*, 1853, p. 39; *Bouvier*, 1940, p. 321]

Moderately common in Sound, among rocks and on sand with *Zostera*, etc., 5 fm. (R.A.T.): common amongst the rocks outside Sound (E.J.A.): Cawsand Bay, not uncommon (R.A.T., S.P.): Mewstone Echinoderm Ground; Rame-Eddystone Grounds; occasionally (R.A.T.): Eddystone Grounds (E.J.A.): Yealm River, moderately common (R.A.T.): 7 specimens, Cawsand Bay, 28.4.09; 2 Asia Shoal, 22.4.09; 8, Rame-Eddystone, 30.4.09 (A.J.S.): very common on the trawling grounds, both inside and outside Sound (M.V.L.)

SALCOMBE. One only was taken in the dredge between Snape's Point and the mouth of the Harbour; it is however very commonly taken when working the tuck-net on the *Zostera* banks and mud-flats (Allen and Todd, 1900, P. 199)

Breeding: March-April (R.A.T.): May (S.P.): June (R.A.T.): females in berry spring and summer, chiefly summer; larvae in plankton abundant in late summer (M.V.L.)

EURYNOME ASPERA (Pennant) [*Bell*, 1853, p. 46; *Bouvier*, 1940, p. 340]

Fairly common 10-30 fm., on gravel and sand (S.P.): Millbay Channel and Pit, not uncommon; Asia Shoal; Queen's Ground (R.A.T., S.P.): Duke Rock; the Breakwater, between tide-marks, 1 specimen; Yealm River, occasionally in dredging (R.A.T.): Rame-Eddystone Grounds; Mewstone Amphioxus Ground (R.A.T., S.P.): Eddystone Grounds (E.J.A., S.P.): Stoke Point Grounds (S.P.): common in crevices of stones and polyzoa in the Sound and outside (M.V.L.): from 19 positions 8-39 m. S.W. of Eddystone, 40-49 fm. (Crawshay, 1912, p. 357): Asia Shoal, 3.2.20, female in berry (J.H.O.)

SALCOMBE. Common in dredgings between Snape's Point and the Salstone (Allen and Todd, 1900, p. 199)

Breeding: Jan.-Feb. (W.G., R.A.T.): March-April (W.G., R.A.T., S.P.): May-June (S.P.): July (R.A.T., S.P.): Sept. (S.P.): females in berry, spring and summer; larvae in plankton spring and summer, more rarely in autumn (M.V.L.)

PISA GIBBSI Leach [*Bell*, 1853, p. 27; *Bouvier*, 1940, p. 331]

Mewstone Ledge, single specimen; Yealm River, single specimen (R.A.T.): 1 with *Sacculina* 20 m. S.W. of Eddystone and 1 female in berry, 39 m. S.W. of Eddystone, 42-49 fm. or over (Crawshay, 1912, p. 357)

Breeding: May (R.A.T.): female in berry, July 1926; female in berry 21 m. S. of Mewstone trawl, 5.8.30; eggs hatched, 17.8.30; reared to second zoeae (M.V.L.)

PISA TETRAODON (Pennant) [*Bouvier*, 1940, p. 328]

Plymouth, not common, 10-20 fm. (C.S.B. *teste* A.M.N.)

HYAS COARCTATUS Leach [*Bell*, 1853, p. 35; *Bouvier*, 1940, p. 335]

Off Plymouth (A.M.N.): occasionally in 15-30 fm.; Rame-Eddystone Grounds, etc. (R.A.T.): Eddystone Grounds, occasionally on the fine sand grounds (E.J.A.): Cawsand Bay, fairly common (A.J.S.): 1 specimen at each of 5 positions 7-40 m. S.W. of Eddystone, 40-52 fm. (one in berry) (Crawshay, 1912, p. 357): fairly common both inside and outside Sound, on the trawling and dredging grounds (M.V.L.)

Breeding: March-April; July (R.A.T.): Aug. (W.G.): Dec. (R.A.T.): larvae in plankton chiefly in early spring (M.V.L.)

HYAS ARANEUS (L.) [*Bell*, 1853, p. 31; *Bouvier*, 1940, p. 334]

Yealm River (E.J.A., E.W.L.H., R.A.T., T.V.H.): the Mewstone (T.V.H.): apparently not seen in the last 20 years (M.V.L. in 1931 list): apparently no recent records (D.P.W.)

INACHUS DORSETTENSIS (Pennant) [*Bell*, 1853, p. 13; *Bouvier*, 1940, p. 353]

Queen's Ground, occasionally; common in 15-30 fm. outside Sound; Mewstone Grounds; Rame-Eddystone Grounds, etc. (R.A.T.): Eddystone Grounds (E.J.A.): Yealm River, not uncommon (R.A.T.): from one to several specimens at 24 stations, 7-38 m. S.W. of Eddystone, 40-49 fm. (Crawshay, 1912, p. 357): the commonest of all the Inachinae; very common in the district both inside and outside Sound, chiefly outside (M.V.L.)

SALCOMBE. In all hauls of the dredge, excepting those of the "Bag" (Allen and Todd, 1900, p. 199)

Breeding: females in berry, Jan.-April (R.A.T.): June-Aug. (R.A.T., S.P.): Sept. (S.P.): zoea stage, March, July (R.G.): females in berry throughout the year. larvae in plankton in any month, perhaps specially abundant in autumn; reared from egg to crab, June-July (M.V.L.)

INACHUS DORYNCHUS Leach [*Bell*, 1853, p. 16; *Bouvier*, 1940, p. 355; *Monod*, 1956, p. 531, as *I. phalangium*]

Much rarer than the last, Plymouth (A.M.N.): Millbay Channel, occasionally; Duke Rock; Yealm River, not uncommon (R.A.T.): often in this district confused with *I. leptochirus*; inhabiting inshore waters, common (M.V.L.)

SALCOMBE (type locality). (A.M.N.): only found on the west and south-east shores of the Salstone, between tide-marks (Allen and Todd, 1900, P. 199)

Breeding: female in berry, March (R.A.T.): throughout the year, larvae in plankton with other Inachus species; reared from egg to megalopa (M.V.L.)

INACHUS LEPTOCHIRUS Leach [*Bell*, 1853, p. 18; *Bouvier*, 1940, p. 356]

Two specimens at 2 positions and one at 3 positions, 30-40 m. S.W. of Eddystone, 47-49 fm. (Crawshay, 1912, p. 357): common in the deeper water outside Sound; apparently has been much confused with *I. dorynchus*, but usually inhabits deeper water (M.V.L.)

Breeding: females in berry throughout the year; larvae in plankton with other Inachus species (M.V.L.)

CRUSTACEA: MALACOSTRACA, DECAPODA

MACROPODIA LONGIROSTRIS (Fabricius) [*Bell*, 1853, p. 6, as *Stenorynchus tenuirostris*; *Bouvier*, 1940, p. 365]

Queen's Ground, not uncommon; Cawsand Bay, occasionally; moderately common outside Sound, 15-30 fm.; Mewstone Grounds; Rame-Eddystone Grounds, etc. (R.A.T.): Eddystone Grounds, especially abundant where the prevailing hydroid is *Sertularella gayi* (E.J.A.): Yealm River, occasionally (R.A.T.): at 15 positions 7-38 m. S.W. of Eddystone, 40-53 fm., one with *Sacculina* (Crawshay, 1912, p. 356): the commonest *Macropodia* species; occurs inside and outside Sound on the usual trawling grounds (M.V.L.)

SALCOMBE. A few were dredged between Snape's Point and the mouth of the Harbour (Allen and Todd, 1900, p. 199, as *Stenorynchus*)

Breeding: Feb.-April (R.A.T.): May (W.G.): July-Aug. (R.A.T.): females in berry and larvae in plankton throughout the year; reared from egg to megalopa (M.V.L.)

MACROPODIA ROSTRATA (L.) [*Bell*, 1853, p. 2, as *Stenorynchus phalangium*; *Bouvier*, 1940, p. 362]

Occasionally in dredgings from Sound; Cawsand Bay, moderately common; Yealm River, not uncommon (R.A.T.): from 1 to 5 specimens at 8 positions, 7-31 m. S.W. of Eddystone, 40-47 fm., 1 female in berry (Crawshay, 1912, p. 357): common in the shallower waters of the Sound, often covered with red or green weed (M.V.L.)

SALCOMBE. Present in most hauls of the dredge between Salstone and the mouth of the Harbour, excepting those taken in the "Bag" (Allen and Todd, 1900, p. 199)

Breeding: May (W.G.): Aug. (R.A.T.): females in berry and larvae in plankton throughout the year, especially spring and summer; larvae reared from egg to megalopa (M.V.L.)

MACROPODIA EGYPTIA (Milne Edwards, 1834, I, p. 280, as *Stenorynchus egyptius*) [*Bouvier*, 1940, p. 364]

Not uncommon on weedy ground (W.G.): very rare, 15-30 fm. (R.A.T.): a single specimen at 2 positions 28-31 m. S.W. of Eddystone, 43-45 fm. (Crawshay, 1912, p. 356): not so common as the other two species; in shallow water in Sound, in same localities as *M. rostratus*, usually also dressed in red or green weed (M.V.L.)

Breeding: females in berry seem to occur at any time of year, and larvae in plankton; larva reared from egg to second (last) zoea (M.V.L.)

ACHAEUS CRANCHI Leach [*Bell*, 1853, p. 10; *Bouvier*, 1940, p. 360]

Plymouth (A.M.N.): Queen's Ground; Duke Rock (T.V.H.): Yealm River (R.A.T.)

SALCOMBE (A.M.N.)

Breeding: Aug. (R.A.T.): Sept. (S.P.): March (O.D.H.)

ARACHNIDA: ACARINA

Sub-Phylum ARACHNIDA

Class ACARINA

Order METASTIGMATA

Family **Gamasidae**

CYRTHYDROLAELAPS HIRTUS Berlese, 1904, p. 20

Wembury, Church Reef, occasional in rock-crevices in upper part of tidal zone (det. T. E. Hughes) (Morton, 1954)

HYDROGAMASUS SALINUS (Laboulbène) [Halbert, 1920, p. 120, as *littoralis*]

Wembury, Church Reef, on Ascophyllum (Colman, 1940, as *littoralis*), in rock-crevices in high-water zone (Morton, 1954)

Order PROSTIGMATA

Family **Bdellidae**

BDELLA INTERRUPTA Evans, 1952, p. 668

Wembury, Church Reef, in rock-crevices, sometimes abundant (det. T. E. Hughes) (Morton, 1954)

Family **Halacaridae**

RHOMBOGNATHUS (S.S.) NOTOPS (Gosse) [André, 1946, p. 37]

Plymouth Laboratory tank; Drake's Island (Fountain, 1949)

RHOMBOGNATHUS (S.S.) MAGNIROSTRIS Trouessart [André, 1946, p. 39]

Drake's Island (Fountain, 1949)

RHOMBOGNATHUS (RHOMBOGNATHIDES) PASCENS (Lohmann) [André, 1946, p. 46]

Common on various seaweeds, Wembury (Colman, 1940): Wembury; Portwrinkle; Seaton (Fountain, 1949)

RHOMBOGNATHUS (RHOMBOGNATHIDES) TRIONYX Trouessart [Anon, 1946, p. 48]

One specimen; Looe Harbour at low-water level (Fountain, 1949)

RHOMBOGNATHUS (RHOMBOGNATHOPSIS) SEAHAMI (Hodge) [André, 1946, p. 50]

Abundant on various seaweeds, Wembury (Colman, 1940): Plymouth Laboratory tank; Portwrinkle; Seaton Beach (Fountain, 1949)

HALACARUS (S.S.) CTENOPUS Gosse [André, 1946, p. 58]

Duke Rock, Plymouth (Fountain, 1949)

HALACARUS (HALACARELLUS) BASTERI (Johnston) [André, 1946, p. 67]

On *Fucus serratus* and Ascophyllum, Wembury (Colman, 1940): Portwrinkle (Fountain, 1949)

COPIDOGNATHUS (S.S.) GLYPTODERMA Trouessart [André, 1946, p. 77]

Plymouth Laboratory tank (Fountain, 1949)

COPIDOGNATHUS (S.S.) FABRICIUSI (Lohmann) [André, 1946, p. 84]

Portwrinkle (Fountain, 1949)

ARACHNIDA: PSEUDOSCORPIONIDEA -PYCNOGONIDA

COPIDOGNATHUS (S.S.) LORICIFER M. André, 1946, p. 88
Plymouth Laboratory tank (Fountain, 1949)

COPIDOGNATHUS (S.S.) RHODOSTIGMA Gosse [André, 1946, p. 89]
Duke Rock, Plymouth (Fountain, 1949)

COPIDOGNATHUS (S.S.) LAMELLOSUS Lohmann [André, 1946, p. 91]
Duke Rock, Plymouth (Fountain, 1949)

COPIDOGNATHUS (COPIDOGNATHOPSIS) OCULATUS (Hodge) [André, 1946, p. 95]
Seaton Beach (Fountain, 1949)

LOHMANNELLA FALCATA Hodge [André, 1946, p. 125]
Duke Rock, Plymouth (Fountain, 1949)

Class **PSEUDOSCORPIONIDEA**

Order NEOBISIINEA

Family **Neobisiidae**

NEOBISIUM MARITIMUM (Leach) [Pickard-Cambridge, 1892, p. 215, pl. B, fig. 8; Kew, 1911, p. 55, pl. 6, fig. 18 - both as Obisium]

Wembury, Church Reef, sparsely between the lamina of shale rock, chiefly mid-tide to H.W. zone, first by J.H.K. on 3.6.16, and subsequently to present time (G.M.S.); see Barnes (1925) and Morton (1954). Portwrinkle, in rock-crevices, mid-tide and above, a few in March 1951 and April 1955, and several on 22.5.54; Plymouth, Tinside, one juvenile in rock-crevice near L.W.N., 2.7.54 (G.M.S.)

Class **PYCNOGONIDA**Family **Nymphonidae**

NYMPHON GRACILE Leach [Hoek, 1881, p. 498 and p. 501, as *N. gallicum*]

Common between tide-marks and dredged in the Sound. The commonest shore pycnogon (M.V.L.): occasionally between tide-marks in Sound and in 2.5 fm.; in Cawsand Bay (R.A.T.): Duke Rock, rare; Yealm River (T.V.H.): Cattewater, Aug. 1915, low spring tide under stones; Winter Shoal, 11.11.15 (M.V.L.)

SALCOMBE. Two dredged in the Harbour (Allen and Todd, 1900, p. 204)

Breeding: Feb.-June, probably throughout spring and summer (M.V.L.): males carrying ova in Feb; a male carrying ova in May (R.A.T.)

NYMPHON RUBRUM Hodge [Sars, 1891a, p. 58]

Common between tide-marks, Wembury and Kingsand; on Millbay Pontoon; also dredged in Sound (M.V.L.): Asia Shoal, 1 specimen (A.M.N.)

Breeding: in spring (including March) and summer (M.V.L.)

NYMPHON BREVIROSTRE Hodge, 1863, p. 282

Recorded by Norman (1908) and Hodgson (1910) from Plymouth Sound, Yealm River and Starcross. Not found in recent years.

ARACHNIDA: PYCNOGONIDA

Family **Pallenidae****PALLENE BREVIROSTRIS** Johnston [*Hoek*, 1881, p. 511]

Not uncommon between tide-marks and dredged in the Sound. In plankton from the Laira and between tide-marks among corallines, Wembury; Cattewater, Aug. 1915; tow-netting, Knap Buoy, Oct. 1915; Winter Shoal, 11.11.15 (M.V.L.): Asia Shoal (S.P.): 1 specimen, 46 m. S.W. of Eddystone, 49 fm. (Crawshay, 1912, p. 360)

Breeding: Asia Shoal, 10.6.13, 1 male carrying eggs, young larvae just hatching (W.O.R.K.): Winter Shoal, 11.11.15, 1 male carrying eggs (M.V.L.)

PALLENE SPECTRUM Dohrn, 1881, p. 197

Norman (1908) records this species from Plymouth. No data are available.

Family **Phoxichilidiidae****PHOXICHILIDIUM FEMORATUM** (Rathke) [*Sars*, 1891a, p. 21 ; *Lebour*, 1945, p. 146]

This species has been recorded from Starcross, Devon, and a specimen labelled "Plymouth" is in the collections of Dundee University. For details of its distribution, see Lebour (1945, p. 146) and also notes on the larvae.

SALCOMBE. Woodville Rocks, one of each sex, 18.3.57 (G.M.S.)

PHOXICHILIDIUM TUBULARIAE Lebour, 1945, p. 147

This species occurs at Plymouth in numbers among *Tubularia larynx*, especially where it grew on an experimental raft moored near the Breakwater and also on the Millbay pontoon (M.V.L.)

Breeding: larvae in the gastral cavity of *Tubularia larynx*, young emerging and found among the Tubularia, spring to autumn or any time when the Tubularia is grown up (M.V.L.)

PHOXICHILIDIUM VIRESCENS Hodge [*Lebour*, 1945, p. 150]

Occurs abundantly on Ascophyllum, Wembury, Church Reef, and among corallines in rock pools, Kingsand; in both places usually with *Anoplodactylus angulatus* (M.V.L.). A specimen from Plymouth and two from Starcross are in the Norman collection in the British Museum.

Breeding: males bearing eggs occurred from Sept.-Jan. and larvae hatched out; probably breeding takes place in spring and summer also (M.V.L.)

ANAPLODACTYLUS ANGULATUS (Dohrn) [*Lebour*, 1945, p. 155]

Occurs commonly with *Phoxichilidium virescens* on Ascophyllum from Wembury, and among corallines at Kingsand; also in Laira dredgings; specially common with *P. virescens* among short Dynamena on the Ascophyllum (M.V.L.)

Breeding: males carrying eggs in summer and autumn and larvae hatched Out (M.V.L.)

ANAPLODACTYLUS PETIOLATUS (Krøyer) [*Lebour*, 1945, p. 157]

Fairly common at Plymouth but never found in numbers, but the larva is abundant in late spring and summer in the manubrium of Obelia and

ARACHNIDA: PYCNOGONIDA

related forms in the plankton (M.V.L.): Asia Shoal (A.M.N., S.P.): Winter Shoal, Aug. 1915; in tangles of *Bowerbankia* and hydroids dredged from the Laira estuary (M.V.L.)

Breeding: males with eggs in Aug. and Sept. 1944, without eggs, Oct. 1944; larvae in *Obelia medusae manubrium* frequent; older stages in *Obelia medusae*; also in and on *Amphinema dinema*, *Phialidium hemisphaericum* and *Cosmetira pilosella* (M.V.L.)

ANAPLODACTYLUS PYGMAEUS (Hodge) [Lebour, 1945, p. 159]

This species was first discovered by Spence Bate at Plymouth; he notices it in the British Association Report, Hull, 1853, and remarks on the larvae, but neither describes nor figures it. Occurs abundantly at Plymouth, in tufts of *Bowerbankia* and hydroids from Phoenix Wharf, in tufts of the same dredged from the Laira, on the Church Reef at Wembury between tidemarks among corallines and hydroids, and in rock pools at Kingsand. One of the commonest shallow water forms (M.V.L.)

Breeding: males carrying eggs from spring to autumn; larvae hatched and reared in *Obelia* hydroids until they emerged in the last larval stage; the larvae were in the gastral cavity of *Obelia* (M.V.L.)

Family Phoxichilidae

ENDEIS SPINOSA (Montagu) [Hoek, 1881, p. 518, as Phoxichilus]

Fairly common round Plymouth. Occasionally between tide-marks on the Church Reef, Wembury, on the Millbay Pontoon and in Laira dredgings (M.V.L.): Queen's Ground, occasionally (R.A.T.): Millbay Pit, several specimens; Yealm River (T.V.H.): 1 specimen 39 m. S.W. of Eddystone, 49 fm. (Crawshay, 1912, p. 360): Rum Bay, 29.11.15; in tow-nettings outside Breakwater, July 1915; Winter Shoal, 11.11.15; Cattewater, Aug. 1915; young on *Obelia* hydroids, Batten Beach, Aug. 1915; young with chelae on fourth pair of legs not wholly developed, on medusae, in tow-nettings outside Breakwater (M.V.L.)

Breeding: one male with eggs in July 1941 and one in Jan. 1945; larvae in *Obelia* hydroids, 1917 (M.V.L.)

Family Ammotheidae

AMMOTHEA ECHINATA (Hodge) [Hoek, 1881, p. 508]

A very common species; in *Bowerbankia* from Phoenix Wharf, Wembury, Kingsand, dredged in Sound (M.V.L.): not uncommon, Millbay Channel and Pit; Asia Shoal, Queen's Ground, Yealm River, Rum Bay, Duke Rock, etc. (R.A.T.)

SALCOMBE. Not uncommon in dredgings from the Harbour (Allen and Todd, 1900, p. 204)

Breeding: spring and summer (M.V.L.): Aug. (W.G.): Duke Rock, 14.9.11, dredge, many specimens carrying eggs (J.H.O.): 1 to 3 specimens at 5 positions 30-46 m. S.W. of Eddystone, 47-50 fm. (Crawshay, 1912, p. 360): Winter Shoal, abundant, 11.11.15 (M.V.L.)

AMMOTHEA LONGIPES (Hodge, 1864, p. 113, as *A. hispida*)

Norman (1908) records this species from Starcross, Devon, but no early records from Plymouth can be found. It is fairly common with *A. echinata* between tide-marks both at Wembury and Kingsand; also at Phoenix Wharf in Bowerbankia; nearly as plentiful as *A. echinata* (M.V.L.)

AMMOTHEA LAEVIS (Hodge, 1864, p. 114)

This species is recorded by Hodgson (1910) from the Eddystone Grounds. Not seen further at Plymouth.

Family **Pycnogonidae****PYCNOGONUM LITTORALE** (Ström) [*Sars, 189 la, p. 7*]

Usually found below low-water mark. A dead specimen high up on the Church Reef, Wembury, among *Ascophyllum* (M.V.L.): Yealm River; Breakwater (T.V.H.): Breakwater, young specimen parasitic on young anemone, 23.10.07 (C.L.W.): 7 specimens, mainly on *Alcyonium digitatum*, Bolt Tail bearing N.E., 7-8 m., otter trawl, 29.6.14 (A.J.S.)

Sub-Phylum MYRIAPODA.

Class **CHILOPODA**Family **Geophilidae****SCOLIOPLANES MARITIMUS** (Leach) [*Schubart, 1929, pp. 5, 10*]

Plymouth, under stones on shore, by J. J. Reading (Parfitt, 1866): Wembury, Church Reef, regularly in rock-crevices in upper half of tidal zone, 1952-3 (Morton, 1954)

Sub-Phylum INSECTA

Class **APTERYGOTA**

Order THYSANURA

Family **Machilidae****PETROBIUS BREVISTYLIS** Carpenter [*Womersley, 1930, p. 390*]

Plymouth, rocks below Laboratory above H.W., evidently numerous; over 95 per cent. of the (male) specimens in the stock bottles-collected here, *teste* R. Tozer - belong to this species; Wembury, on rocks below Church, above H.W., 24.6.54 (G.M.S.). Not hitherto distinguished from the next, and past records under "*maritimus*" may include or even refer wholly to this species, e.g. in previous edition, records for rocky shores of Plymouth Sound, Drake's Island, Bovisand, and Tamar Estuary, as well as references to *Petrobius* at Church Reef, Wembury, by Colman (1940) and Morton (1954) (G.M.S.)

PETROBIUS MARITIMUS (Leach) [*Carpenter, 1913, p. 2; Womersley, 1930, p. 393*]

Plymouth, below Citadel, among rocks above H.W., both sexes, 7.10.54; a few males also among stock-bottle specimens collected below the Laboratory are this, but are greatly outnumbered by *P. brevistylis*; no doubt common, but previous records do not distinguish between the two species (G.M.S.)

INSECTA: PTERYGOTA

TRIGONIOPHTHALMUS BRITANNICUS (Womersley, 1930, p. 279, as Machilis)

Described from a single specimen taken at Berry Head, Brixham, May 1929, in moss on stones (Womersley, 1930)

DILTA LITTORALIS (Womersley, 1930, p. 221, as Praemachilis)

Paignton, at Roundham Head, male in May 1929 (Womersley, 1930)

Order COLLEMBOLA

Family **Neanuridae**

ANURIDA MARITIMA Laboulbène [*Lubbock*, 1873, p. 193; *Imms*, 1906 (=LIPURA)]

Rock-pools below Laboratory, July-Aug., very plentiful, floating on surface (J.H.O.); Breakwater (G.M.S.): Wembury, Church Reef, occasional in weed samples, above M.T.L. (J.S.C.); abundant in rock-crevices in upper part of tidal zone (J.E.M.)

Class **PTERYGOTA**

Order HEMIPTERA

Family **Saldidae**

AËPOPHILUS BONNAIREI Signoret [*Saunders*, 1892, p. 145]

Wembury, Church Reef, March 1930 (J.S.C.): regular in crevices about M.T.L. shaded by damp thallose algae (Morton, 1954): Wembury Point and Portwrinkle, in crevices of shale rock, and on south face of Breakwater (G.M.S.)

Order TRICHOPTERA

Family **Leptoceridae**

LEPTOCERUS ANNULICORNIS Stephens [*Rousseau*, 1921, p. 613]

River Tamar, in moss on top of tidal region, 11.7.28 (E.P.)

Order DIPTERA*

Family **Tipulidae**

LIMONIA (GERANOMYIA) UNICOLOR (Haliday) [*Coe et al.*, 1950, p. 30; for larva see *Saunders*, 1930, p. 185]

Adults, distributed along shore, especially at damp spots in cliff face just above H.W., and frequent in May and June, e.g. Bovisand, 5.5.93, Whitsand Bay, 5.10.94 (J.W.Y.); Wembury, 20.5.54; Bantham, freely, 29.5.54; Looe, 3.6.54; Plymouth Breakwater, female freshly emerged on seaward slope, 18.6.54 (G.M.S.). Larvae recognized as rather frequent, sometimes numerous, in Jan.-April and in Sept., among growths of *Pygmaea pumila* (= *Lichina pygmaea*) in upper tidal zone, as at Wembury Church Reef (J.S.C., det. F.W.E. as probably this species; Morton, 1954): also occasionally in shale crevices, as at Wembury (J.E.M.); and in tufts of *Catenella repens*, as at Jennycliff Bay (G.M.S.)

SALCOMBE. 23.5.93 (J.W.Y.)

* Records under J.W.Y. are abstracted from Yerbury, 1919a, 1919b and 1920.

LIMONIA (DICRANOMYIA) GORITIENSIS (Mik) [Coe et al., 1950, p. 25]

Adults are confined to the coast and occur with the above at damp spots, in cliffs, as at Bantham, 29.5.54; previously recorded by J.W.Y. from Yealm Mouth, April 1893, and Whitsand Bay, 24.5.93; larval habits unknown, but may partly resemble *L. unicolor* (G.M.S.)

Family **Culicidae****AËDES DETRITUS** Haliday [Coe et al., 1950, p. 107, figs. 172f, 174b, 175f]

Pupae and full-grown larvae numerous in salting pools towards high-tide mark, Bere Ferrers and Weirquay, 4.5.35 (G.I.C., teste J. F. Marshall)

Family **Chironomidae****PRODIAMESA OLIVACEA** (Meigen) [Coe et al., 1950, p. 137]

Tamerton Lake, 2 bred from sample of mud, April 1949 (R.E.H.)

METRIOCNEMUS PICIPES (Meigen) [Coe et al., 1950, p. 141]

Tamerton Lake, one, April 1949 (R.E.H.)

METRIOCNEMUS (PARAPHAENOCLADIUS) IMPENSUS (Walker) [Coe et al., 1950, p. 142]

Tamerton Lake, pair *in coitu*, April 1949 (R.E.H.)

CRICOTOPUS VITRIPENNIS (Meigen) [Coe et al., 1950, p. 148]

Plymouth Sound - Drake's Island, larvae in *Chondrus crispus*, adults reared, 28.7.37, F. W. Edwards det. (R.R.M.J.); Tinside rocks, adults on wing, 17.6.54, 16.7.54 (G.M.S.): Wembury, Church Reef, larvae forming loose tubes amongst weeds on rock ledges and in rock pools, about middle of shore, adults reared, July 1954; Portwrinkle, a few females on wing over reef, 22.5.54; Looe, one female on reef, 10.7.54 (G.M.S.)

CRICOTOPUS FUCICOLA (Edwards, 1926, p. 782, fig. 1, as *Trichocladus*) [Coe et al., 1950, p. 148]

Plymouth Sound-Drake's Island, larvae in *Corallina* washings, adults reared, 1937, F.W. Edwards det. (R.R.M.J.); Plymouth, rocky shore pools, both intertidal and above H.W. level, emergence from former observed, April 1949 (R.E.H.): Jennycliff Bay, male and female on wing over rocks, 19.7.54 (G.M.S.): Wembury, Church Reef, adults rather sparingly in H.W. region, reared from larvae in high-level rock pool, June and July 1954; Looe, W. reef, adults abundant 10.7.54, females in small swarms over weed and pools at H.W. level, some females flying with them (G.M.S.)

CRICOTOPUS OBNIXUS (Walker) [Coe et al., 1950, p. 147, fig. 186h]

Tamerton Lake, April 1949 (R.E.H.)

HYDROBAENUS (SMITTIA) THALASSOPHILUS (Goetghebuer) [Coe et al., 1950, p. 165]

Plymouth, rocky shore pools, intertidal and above H.W. level, April 1949 (R.E.H., as *Spaniotoma*); small tidal pools among rocks near bathing place, M.T. level and below, May and June 1954, several males (G.M.S.): Wembury Church Reef, males on surface of rock pools, 20.5.54, males with

INSECTA: PTERYGOTA DIPTERA

a few females on wing collecting around certain high rocks at high tide, 28.6.54; over rocks and rock pools between Church and Point, 24.6.54; Portwrinkle, 22.5.54, 2 males on reef, M.T. level (G.M.S.)

CLUNIO MARINUS Haliday [*Chevrel*, 1894; *Coe et al.*, 1950, p. 171-2, fig. 192g]

Plymouth, rocks by bathing pool, June and July 1954, adults, pupae and larvae amongst *Laurencia* tufts on rocks, M.T. level to L.W. neaps, larvae more numerous here than in other habitats investigated in district (G.M.S.). Between Penlee Point and Rame Head, salt-water rock pools (J.W.Y.). Wembury, Church Reef, larvae including this species regularly on *Ascophyllum* (J.S.C. det. G.M.S.): Wembury, Church Reef, larvae in different weeds on rocks intertidally, 1954 (G.M.S.)

THALASSOMYIA FRAUENFELDI Schiner [*Chevrel*, 1903, pp. 1-29, pl. 1, as *Scopelodromus isemerinus*; *Coe et al.*, 1950, p. 172, fig. 192f]

Plymouth, larvae in *Enteromorpha* on bathing raft off Tinside, 2 female adults reared, 17.10.38, F. W. Edwards det. (R.R.M.J.); shore below Laboratory, male on damp seaweed about M.T. level, April 1949 (R.E.H.): Tinside, adults freely in May, 1954, males and females between H.W. neaps and M.T. level, especially over patches of *Enteromorpha* in which they breed; Wembury, Church Reef* adults singly near *Enteromorpha* patches, June and July 1954; Plymouth Breakwater, on outer face in upper tidal zone, several males, 12.4.54, numerous at *Enteromorpha* patches on concrete blocks, April 1956; Eddystone Rock, larvae in *Enteromorpha*, Sept. 1956 (G.M.S.)

Breeding: larvae in *Enteromorpha*, sometimes freely; adults emerge throughout the year, even during the stormiest and coldest periods of winter (G.M.S.)

TANYTARSUS (MICROSPECTRA) BRUNNIPES (Zett.) [*Coe et al.*, 1950, p. 197]

Tamerton Lake, adults taken in flight, and several bred from larvae living in the mud at the head of the creek (R.E.H.)

Family **Empididae**

COLOBONEURA HIRTA (Walker) [*Wingate*, 1906, p. 124, as *Chersodromia*; *Lundbeck*, 1910, p. 277, as *Chersodromia*]

Cawsand Bay, under bare seaweed, and running about on the wet sand, common (J.W.Y.): Wembury, 24.6.54, a few under decaying seaweed; Erme Mouth, 7.6.54, and Bantham, 29.5.54, numerous under dry seaweed drift lying on fine sand, also running over rocks at H.W. in front of the rising tide; Whitsands, freely under H.W. drift on sand (G.M.S.)

SALCOMBE. South Sands, under driftweed on sand (G.M.S.)

CHERSODROMIA ARENARIA (Haliday) [*Wingate*, 1906, p. 124; *Lundbeck*, 1910, p. 281]

Wembury, 24.6.54, and Looe, 3.6.54, freely under dry seaweed litter on coarse sand (G.M.S.)

*Colman's larvae from *Ascophyllum*, etc. (1940, pp. 177,181), do not include this species, the suspected examples being large orthocladine larvae, and hence *Cricotopus*. In Colman's preserved samples of larvae, *Clunio marinus* is the most numerous species (G.M.S.)

CHERSODROMIA DIFFICILIS Lundbeck, 1910, p. 280 (CURS TANS Brit. auctt. *nec* Zett.) [Wingate, 1906, p. 124; Collin, 1926, p. 149]

Cawsand Bay, common under seaweed on wet sand (J.W.Y.): Erme Mouth numerous under H.W. drift weed on fine sand, 7.6.54, and present also at Bantham, 29.5.54; Looe, numerous under drift weed on coarse sand, 3.6.54 (G.M.S.)

CHERSODROMIA INCANA Walker [Wingate, 1906, p. 124; Lundbeck, 1910, p. 282]

Erme Mouth, 7.6.54, and Bantham, 29.5.54, rather numerous under dried H.W. drift weed on fine sand; easily overlooked owing to its small size and quick movements (G.M.S.)

CHERSODROMIA SPECULIFERA Walker [Wingate, 1906, p. 124]

Erme Mouth, 7.6.54, one taken in company with *C. incana* (G.M.S.)

Family **Dolichopodidae**

APHROSYLUS CELTIBER Haliday [Parent, 1938, p. 335, figs. 508-12]

Common throughout the district on rocky shores, particularly on barnacle-covered rocks, over which the adults run with jerky movements, and less frequent where (as at Looe) there is much fucoid weed covering the rocks; adults disperse over the tidal zone as the tide ebbs and move back with the advance of the tide, and they will spread over damp sand as well as rocks; Yerbury did not distinguish this species from the next, and his records may be taken as applying mainly to this; larvae have been recognized amongst the fauna of *Pygmaea pumila*, tufted algae, and barnacle shells (G.M.S.)

SALCOMBE. On rocks at South Sands, 1.6.54 (G.M.S.)

APHROSYLUS RAPTOR Walker [Parent, 1938, p. 340, figs. 507, 519-22]

General, but less frequent than *A. celtiber*. Plymouth, sides of Tinside bathing pool, 17.6.54; Wembury, Church Reef, mainly in H.W. region, on 28.6.54, 6 examples in a sample containing 79 of *A. celtiber*; Looe, sparingly, 3.6 and 10.7.54 (G.M.S.)

APHROSYLUS FEROX Walker [Parent, 1938, p. 337, figs. 513-16]

Mount Batten, Rum Bay, common on small rocks (J.W.Y.): Whitsand Bay (Verrall): Plymouth, on rocks near bathing-place, common in June; Wembury, towards the Point, common on rocks from H.W. to M.T., at Church Reef, numerous at period of H.W. running on rocks and making short flights; Looe, 10.7.54, common; larvae, probably of this, from tufted weeds on rocks at Picklecombe (G.M.S.)

APHROSYLUS MITIS Verrall [Parent, 1938, p. 339, figs. 517-18]

Wembury, on rocks between Church and Point, male and female, 24.6.54; Looe, 10.7.54, one male; much less frequent than *A. ferox* with which it occurs (G.M.S.)

HYDROPHORUS PRAECOX (Lehmann) [Parent, 1938, p. 286, figs. 417, 418]

Portwrinkle, 22.5.54, over rock pool at H.W. level (G.M.S.)

CHERSODROMIA DIFFICILIS Lundbeck, 1910, p. 280 (CURS TANS Brit. auctt. *nec* Zett.) [Wingate, 1906, p. 124; Collin, 1926, p. 149]

Cawsand Bay, common under seaweed on wet sand (J.W.Y.): Erme Mouth numerous under H.W. drift weed on fine sand, 7.6.54, and present also at Bantham, 29.5.54; Looe, numerous under drift weed on coarse sand, 3.6.54 (G.M.S.)

CHERSODROMIA INCANA Walker [Wingate, 1906, p. 124; Lundbeck, 1910, p. 282]

Erme Mouth, 7.6.54, and Bantham, 29.5.54, rather numerous under dried H.W. drift weed on fine sand; easily overlooked owing to its small size and quick movements (G.M.S.)

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HYDROPHORUS PRAECOX (Lehmann) [*Parent*, 1938, p. 286, figs. 417, 418]

Portwrinkle, 22.5.54, over rock pool at H.W. level (G.M.S.)

INSECTA: PTERYGOTA, DIPTERA

Family **Syrphidae**

ERISTALIS SEPULCHRALIS (Linnaeus) [Coe, 1953, p. 69]

In spring with *E. aeneus*, but wanders much farther inland (J.W.Y.)

ERISTALIS AENEUS (Scopoli) [Coe, 1953, p. 70]

Fairly common on thrift blossom in the spring, on the rocks between Bovisand and Wembury, probably breeding in the rock pools and fissures in the rocks (J.W.Y.)

Family **Coelopidae**

OEDOPAREA BUCCATA (Fallén) [Séguy, 1934, p. 309]

Torcross, April 1909; seems to be uncommon on the Devonshire coast (J.W.Y.)

ORYGMA LUCTUOSUM Meigen [Karl, 1930, p. 66; Séguy, 1934, p. 310]

Common everywhere on the shore, but appears to prefer the dry seaweed and other marine rejectamenta lying along the H.W. mark of muddy creeks, such as Millbrook and St. John's Creek (J.W.Y.): generally distributed in H.W. drift weed, but never very numerous - Wembury, Bantham, Portwrinkle, Looe (G.M.S.)

SALCOMBE. 7.7.89 (J.W.Y.)

MALACOMYIA SCIOMYZINA (Haliday) [Séguy, 1934, p. 311, as Phycodroma]

A few under seaweed in the little Picklecombe Bay, never common (J.W.Y.)

COELOPA PILIPES Haliday [Karl, 1930, p. 66; Séguy, 1934, p. 313]

Wembury, in great numbers in company with *C. frigida* in Nov. 1953; generally numerous in weed litter, in which it breeds, at Whitsands, Portwrinkle and Looe (G.M.S.)

COELOPA FRIGIDA (Fabricius) [Elwes, 1915, as Fucomyia; Karl, 1930, p. 66; Séguy, 1934, pp. 312-13, as *C. frigida* and *C. eximia*]

Common all round the coast under dead seaweed; in great numbers in Picklecombe Bay (J.W.Y.): common generally in deposits of weed at H.W. levels, or in rock gullies, sometimes in abundance, as at Wembury in Nov. 1953, the larvae absorbing the decaying weed until its products are exhausted; adults normally remaining over the weed or in its cover, but when plentiful will move along the shore and settle under cover of shingle, etc., or even make long migrations away from normal habitat, e.g. reported in city of Plymouth in Nov. 1953; size variable, the largest = *C. eximia* Stenh. and the smallest = *C. parvula* Hal. (G.M.S.)

Family **Ephydriidae**

HECAMEDE ALBICANS (Meigen) [Wingate, 1906, p. 347; Séguy, 1934, p. 408]

Below the Whitsand Bay Hotel, on small pebbles in the bed of the stream running across the beach (J.W.Y.)

SCATELLA STAGNALIS (Fallén) [*Collin*, 1930, P. 134; *Séguy*, 1934, p. 436]

Breeding in seawater tanks in the main Laboratory, 1929 (Sen, 1931), 1954-6 (G.M.S.)

Family **Sphaeroceridae**

COLLINELLULA LIMOSA (Fallén) [*Wingate*, 1906, pp. 378, 381, as *Limosina*; *Séguy*, 1934, p. 467, as *Leptocera*]

A few under seaweed in the little Picklecombe Bay (J.W.Y.)

THORACOCOAETA ZOSTERAE (Haliday) [*Wingate*, 1906, p. 382; *Karl*, 1930, p. 68, both as *Limosina*; *Séguy*, 1934, p. 471, as *Leptocera*]

Generally common, usually plentiful, in H.W. drift, breeding in decaying seaweed; a swarm of adults observed moving westward along the shore past Wembury Point, Nov. 1953 (G.M.S.)

SALCOMBE. Plentiful in deposited weed on shore near Ox Point (G.M.S.)

Family **Chloropidae**

CALAMONCOSIS TOMENTOSA (Macquart) [*Wingate*, 1906, p. 361, as *Lipara rufitarsis*; *Séguy*, 1934, p. 489, as *Lipara*]

Wembury Bay, forming galls in reeds growing in damp spots on the edge of the shore, regularly 1930-54; also in similar habitats on shore of Cawsand Bay, at Revelstoke, and at Looe; adults emerge in early June (G.M.S.)

Family **Cordiluridae**

SCOPEUMA VILLIPES (Zetterstedt) [*Wingate*, 1906, p. 307, as *Scatophaga*]

On one occasion in fair numbers under seaweed in the little bay near the Picklecombe Lodge at Mount Edgcumbe Park, under dead seaweed on both rocky and sandy ground (J.W.Y.)

SCATOMYZA LITOREA Fallén [*Wingate*, 1906, p. 307, as *Scatophaga*; *Séguy*, 1934, p. 693, as *Scatophaga*]

Common under dead seaweed both on rocky and sandy shores; Bere Ferrers, 11.4.03 (J.W.Y.): Tavy Estuary at Maristow, on saltings (G.M.S.)

CERATINOSTOMA OSTIORUM (Haliday) [*Wingate*, 1906, p. 306, as *Scatophaga oceana* Mcq.; *Séguy*, 1934, p. 692]

Common on marine rejectamenta; Bovisand, 3.7.96; Stonehouse, in front of the Marine Villa, under dead seaweed, Aug. 1918 (J.W.Y.); Plymouth, shore below Laboratory, occasional; Erme Mouth and Bantham, not scarce; Portwrinkle, males and females freely, 22.5.54, flying over and settling on rocks of reef; Looe, sparingly, 3.6.54: adults predatory on other shore Diptera (G.M.S.)

Family **Muscidae**

HELINA PROTUBERANS (Zetterstedt) [*Wingate*, 1906, p. 255, as *Spilogaster*; *Karl*, 1930, p. 76]

Bantham, on the sands between the plants of marram grass, rare (J.W.Y.):

INSECTA: PTERYGOTA, COLEOPTERA

FUCELLIA MARITIMA (Haliday) [*Wingate*, 1906, p. 289; *Karl*, 1930, p. 80]

Common everywhere, perhaps with a preference for wet rocks and sandy shores; Stonehouse, in front of Winter Villa, more or less dry rocks (J.W.Y.). Very numerous and generally spread on the shore, at least where there is cast-up weed; adults disperse over rocks and sand when the tide falls - Wembury, freely, 20.5, and through 6.54; Bantham, abundant, 29.5.54; Erme Mouth, abundant, 7.6.54; Portwrinkle, abundant, 22.5.54; Looe, over H.W. drift and on the reef, 3.6.54, 10.7.54. Yerbury's Devon records of *F. fucorum* must apply to dark-legged individuals of this, as that other species has a northern distribution and is absent from the English Channel coasts (G.M.S.)

SALCOMBE. South Sands, plentiful, 1.6.54 (G.M.S.)

Order HYMENOPTERA

Family **Ichneumonidae**

PHYGADEUON Sp.

Drake's Island, two emerged from parasitized chironomid larva, collected June 1937 (J. F. Perkins det.) (R.R.M.J.)

Order COLEOPTERA*

Sub-Order ADEPHAGA

Family **Carabidae**

BROSCUS CEPHALOTES (Linnaeus) [*Fowler*, 1887, I, p. 27, fig. Pl. 5]

Coastal; Whitsand Bay (J.H.K.): very common here, dozens seen coming out of their holes at dusk, 2.9.46 (J.T.)

BEMBIDION PALLIDIPENNE (Illiger) [*Fowler*, 1887, I, p. 117, fig. Pl. 18, as *Bembidium*]

Thurlestone (N.J.)

BEMBIDION VARIUM (Olivier) [*Fowler*, 1887, I, p. 120, fig. Pl. 18, as *Bembidium*]

Sub-maritime; Donderry, Aug. 1900; Lipson Marsh, May 1910 (J.H.K.)

BEMBIDION MARITIMUM Stephens [*Fowler*, 1887, I, p. 115, fig. Pl. 18, as *Bembidium concinnum*]

Coastal; estuary of the Yealm, Aug. 1900; several examples on the shore, Newton Ferrers, June 1916; in great abundance in the bed of the river near the mouth of the Tavy, 1917 (J.H.K.)

BEMBIDION NIGROPICEUM (Marsham) [*Fowler*, 1887, I, p. 99, fig. Pl. 16, as *Limnaeum*]

Sub-maritime; rare, Batten, Dec. 1888, one; Aug. 1889, one; Aug. 1890, one; Sept. 1890, two, deep in the shingle; Rame Head, April 1902, three (J.H.K.)

BEMBIDION LATERALE (Samouelle) [*Fowler*, 1887, I, p. 99, fig. Pl. 16, as *Cillenus*]

Maritime; Millbrook Creek and mouth of Yealm, in numbers; Wivelscombe Creek and Bere Ferrers (J.H.K.)

* Mainly from Keys, 1918.

BEMBIDION NORMANUUM Dejean [*Fowler*, 1887, I, p. 108]

Lynher Estuary, at Wivelscombe Creek, June 1915, 6 examples (J.H.K.)

BEMBIDION HARPALOIDES Serville (*rufescens* Guérin-Meneville) [*Fowler*, 1887, I, p. 103, fig. Pl. 16]

Chelson Meadow, May 1924; common in many places along the S. coast of Devon and Cornwall (G.C.C.)

TACHYS PARVULUS (Dejean) [*Fowler*, 1887, I, p. 98]

Sub-maritime; 4 specimens in shingle just below H.W., about half a mile beyond Bovisand, June 1905 (J.H.K.)

PERILEPTUS AREOLATUS Creutz [*Fowler*, 1887, I, p. 124, fig. Pl. 19]

Coastal; 2 specimens, Stoke Bay, 10.6.17, in shingle by a rill of fresh water; July 15th, scarce at the rill but in numbers nearer sea where shingle ended and rocks began (J.H.K.)

AËPOPSIS ROBINII (Laboulbène) [*Fowler*, 1887, I, p. 125, fig. Pl. 19, as Aëpus]

Maritime; all along the coast and may be taken with *A. marinus*; not found in estuaries; in 1889 and 1890 more common than *marinus*; natural habitat of *robinii* seems to be much nearer the laminarian zone than that of *marinus* (J.H.K.): Rum Bay, in crevices of rocks with *Dynamene* (= *Naesa*) *bidentata*, March 1911 (K.H.B. identified by E.O.W., Brit. Mus.); Wembury, Church Reef, in rock crevices from M.H.W.N. to below M.T. level (J.E.M., G.M.S.): Portwrinkle, frequent in crevices in shale rock, also larva, about M.T. level, 27.3.51, 22.5.54 (G.M.S.)

AËPUS MARINUS (Ström) [*Fowler*, 1887, I, p. 124, fig. Pl. 19]

Maritime; generally distributed all along coast from the Yealm to Cremyll; also found in the estuaries at Wivelscombe, Bere Ferrers, etc.; some seasons abundant; at Batten, Oct. 1909, quite 200 under one boulder, 70 were captured; once only in numbers in the roll of rejected seaweed at H.W. mark at Millbrook Creek, their usual habitat being under stones embedded an inch or two in clayey shores. Occur practically all the year round and their larvae may often be taken with them; in 1888 at Tinside and in coves between the rocks under the Citadel (J.H.K.)

TRECHUS FULVUS Dejean (LAPIDOSUS Daws) [*Fowler*, 1887, I, p. 127, fig. Pl. 19]

Sub-maritime; 3 specimens on beach at Rame Head, April 1902; one, Bovisand, July 1905 (J.H.K.)

POGONUS CHALCEUS (Marsham) [*Fowler*, 1887, I, p. 131, fig. Pl. 20]

Sub-maritime; mouth of Erme, Sept. 1906; Wivelscombe Creek, June 1915; Budshead Creek, Tamerton, June 1916 (J.H.K.)

PANAGAEUS BIPUSTULATUS (Fabricius) [*Fowler*, 1887, I, p. 28, fig. Pl. 5]

Coastal; Whitsand Bay, May 1890, one under stone on the slopes; Tregantle, March 1905, one (J.H.K.); Penlee Point, May 1902, one running on the pathway (E. E. Lowe, per J.H.K.); Bovisand, at roots of grass, March 1920, one (J.H.K.)

INSECTA: PTERYGOTA, COLEOPTERA

CHLAENIUS VESTITUS (Paykull) [*Fowler*, 1887, I, p. 33, fig. Pl. 6]

Coastal; Wembury Beach, June 1898, several by the rivulet; Lipson Marsh, April 1900; Compton fields, 1901 (J.H.K.)

HARPALUS TENEBROSUS Dejean [*Fowler*, 1887, I, p. 50, fig. Pl. 8]

Coastal; rare, first discovered at Whitsand Bay by J. J. Walker in 1875; may still be obtained there in spring and autumn; Batten, 1 male, April 1904 (J.J.W., J.H.K.)

HARPALUS ATTENUATUS Stephens [*Fowler*, 1887, I, p. 49, fig. Pl. 8]

Coastal; 1 specimen, Whitsands, June 1902; abundant following Aug.; 1 only, Millbrook Creek, July 1902 (J.H.K.)

HARPALUS TARDUS (Panzer) [*Fowler*, 1887, I, p. 49, fig. Pl. 8]

Mothecombe, 3 females, Sept. 1905 (J.H.K.)

DICHEIROTRICHUS GUSTAVII Crotch (PUBESCENS Paykull) [*Fowler*, 1887, I, p. 55, fig. Pl. 9]

Sub-maritime; near mouth of Erme, Sept. 1906, in abundance; Cargreen, Oct. 1912, 1 only; Wivelscombe Creek, June 1915, several (J.H.K.)

DICHEIROTRICHUS OBSOLETUS (Dejean) [*Fowler*, 1887, I, p. 55]

Tamar Estuary, near Cargreen, 3 in rejeamenta on the shore, Oct. 1912 (J.H.K.)

AMARA OVATA (Fabricius) [*Fowler*, 1887, I, p. 15, fig. Pl. 12]

Coastal; Whitsand Bay, not rare; Donderry (J.H.K.)

var. ADAMANTINA Kolenati [*Ganglbauer*, 1892-5, Vol. I, p. 316]

Tregantle, 1 specimen, Aug. 1902; apparently the only British record (J.H.K.)

AMARA LUCIDA (Duftschmid) [*Fowler*, 1887, I, p. 77]

Coastal; Whitsand Bay, frequent (J.H.K.)

AGONUM RUFICORNE (Goeze) [*Fowler*, 1887, I, p. 88, fig. Pl. 14, as *Anchomenus albipes*]

Often in numbers, in wet places around the coast and inland; Batten, April 1904 (G.C.C.)

MICROLESTES MAURUS (Sturm) [*Fowler*, 1887, I, p. 144, fig. Pl. 221 (=BLECHRUS)]

Coastal; Bovisand, Wembury, Whitsands (J.H.K.)

LIONYCHUS QUADRILLUM (Duftschmid) [*Fowler*, 1887, I, p. 146, fig. Pl. 22]

Sub-maritime; Donderry, May 1915, darting about amongst the shingle at the foot of the sloping slaty rocks at H.T. mark; under lamellae of slate rock below H.T. mark, Aug. 1916 (J.H.K.)

var. BIPUNCTATUS (Heer) [*Ganglbauer*, 1892-5, Vol. I, p. 401]

Donderry (J.H.K.)

Family **Dytiscidae**

HYGROTUS (COELAMBUS) INAEQUALIS (Fabricius) [*Fowler*, 1887, I, p. 168, fig. Pl. 24]

Coastal; common, Lipson Marsh, Chelson Meadows, Donderry (J.H.K.)

AGABUS CONSPERSUS (Marsham) [Fowler, 1887, I, p. 194, fig. Pl. 28]

Coastal; plentiful in a pool by the mouth of the River Seaton, near Downderry (J.H.K.)

Sub-Order POLYPHAGA

Family **Hydrophilidae**

OCHTHEBIUS DILATATUS Stephens [Fowler, 1887, I, p. 246, fig. Pl. 35, as *impressicollis*]

Coastal; Lipson Marsh, May 1899, one only; May 1910 in swarms; Chelson Meadow, Aug. 1907; Cawsand to Rame, May 1908; Stoke Bay, July 1917 (J.H.K.)

OCHTHEBIUS METALLESCENS Rosenhauer subsp. POWERI Rye [Fowler, 1887, I, p. 246]

Coastal; one specimen in freshwater trickle on face of rocks on shore at Bovisand, July 1921 (J.H.K.)

OCHTHEBIUS MARINUS (Paykull) [Fowler, 1887, I p. 245, fig. Pl. 35]

Sub-maritime; in numbers in salt marsh, Insworke Barton, nr. Millbrook, June 1909; Chelson Meadow, May 1921 (J.H.K.)

OCHTHEBIUS VIRIDIS Peyron [Fowler, (1887-91) 1913, VI, p. 35]

Coastal; Downderry, in swarms, edges of muddy pool, Aug. 1900; again Aug. 1916 (J.H.K.)

OCHTHEBIUS LEJOLISI Mulsant et Rey [Fowler, (1887-91) 1913, VI, p. 35]

Sub-maritime; in brackish pools on the rocks between Penlee Point and Rame Head, 55 specimens, Sept. 1901; May 1925, shore near Picklecombe, 45 examples (J.H.K.)

CERCYON LITORALIS (Gyllenhal) [Fowler, 1887, I, p. 255, fig. Pl. 36]

Sub-maritime; generally abundant in the district in the line of rejected seaweed, at H.T. mark on the shore; var. *binotatum* Stephens [1839, p. 93] frequent with the type form (J.H.K.)

CERCYON DEPRESSUS Stephens [Fowler, 1887, I, p. 255]

Sub-maritime; found with the above, and not uncommon, at Batten and other places in the Plymouth district (J.H.K.)

ENOCHRUS BICOLOR (Fabricius) (MARITIMUS Thomson) [Fowler, 1887, I, p. 224, fig. Pl. 32, as *Philydrus*]

Chelson Meadow, May 1924, 3 specimens; Sept. 1924 in numbers (J.H.K.)

Family **Silphidae**

ABLATTARIA LAEVIGATA (Fabricius) [Fowler, 1887-91, III, p. 52, fig. Pl. 74]

Coastal; Bovisand; Tregantle, at roots; in single specimens only (J.H.K.)

Family **Orthoperidae**

CORYLOPHUS SUBLAEVIPENNIS du Val [Fowler, 1887-91, III, p. 145, fig. Pl. 80]

Coastal; 1 specimen at roots in sand, Downderry, Aug. 1905 (J.H.K.)

INSECTA: PTERYGOTA, COLEOPTERA

Family **Ptiliidae**

PTENIDIUM PUNCTATUM (Gyllenhal) [Fowler, 1887-91, III, p. 137, fig. Pl. 80]

Sub-maritime; generally distributed from Bigbury Bay to Downderry, in great profusion at times under large stones on or close to decaying seaweed, at Batten in particular (J.H.K.)

Family **Staphylinidae**

OMALIUM LAEVIUSCULUM Gyllenhal [Fowler, 1887-91, II, p. 413, as Homalium]

Sub-maritime; seaweed, common (J.H.K.)

OMALIUM RIPARIUM Thomson [Fowler, 1887-91, II, p. 413, as Homalium]

Sub-maritime; with the above, common (J.H.K.)

MICRALYMMA MARINUM (Stroem) (**BREVIPENNE** Gyllenhal) [Fowler, 1887-91, II, p. 407, fig. Pl. 68]

Maritime; Yealm, Batten, Millbrook Creek, Wivelscombe; July 1897, at Batten, crawling among barnacles; June 1900, at Millbrook Creek, 20 specimens, with *Anurida maritima*, between slates used in an old landing stage; again at Batten, Oct. 1907, with larvae and numbers of *Anurida* by scraping little patches of lichen off the rocks (J.H.K.): Wembury, Church Reef, occasional in rock crevices in upper part of tidal zone (J.E.M.): Tinside, on rock with *Enteromorpha*, 3.12.54; Breakwater, from weed on south face, 5.4.55 (G.M.S.)

OLOPHRUM PICEUM (Gyllenhal) [Fowler, 1887-91, II, p. 404]

Bere Ferrers, estuarine drift refuse (J.T.)

ACTOCHARIS MARINA Fauvel (**READINGII** Sharp) [Fowler, (1887-91) 1913, VI, p. 163. fig. Pl. 50]

Maritime; originally found at Plymouth by J. J. Reading; rediscovered at Millbrook Creek by M. Cameron, Oct. 1900, several specimens under seaweed; later with J.H.K. in same place found 40 specimens; July 1901, 23 specimens, July 1902, 9 specimens, gregarious (J.H.K.)

TROGOPHLOEUS HALOPHILUS Kiesenwetter [Fowler, 1887-91, II, p. 289]

Maritime; Millbrook Creek, two only, May 1900; June, on the S. Down side, in numbers (J.H.K.)

TROGOPHLOEUS UNICOLOR Sharp (**ANGLICANUS** Sharp) [Fowler, (1887-91), 1913, VI, p. 78]

Sub-maritime; one under a stone at about half tide near Palmer's Point, Millbrook Creek; another on opposite bank of creek, near S. Down in a similar situation; two in July in the roll of seaweed at H.T., in the first locality; Aug. 17 specimens; in July 1905, swarming (J.H.K.)

OXYTELUS PERRISI Fauvel (**MARITIMUS** Thomson) [Fowler, 1887-91, II, p. 381]

Sub-maritime; Tregantle, spring and autumn; in May 1902, the var. with testaceous elytra occurred in some numbers (J.J.W., J.H.K.)

OXYTELUS COMPLANATUS Erichson [Fowler, 1887-91, II, p. 381]

Coastal; Batten, Millbrook, etc. (J.H.K.)

INSECTA: PTERYGOTA, COLEOPTERA

Family **Ptiliidae**

PTENIDIUM PUNCTATUM (Gyllenhal) [Fowler, 1887-91, III, p. 137, fig. Pl. 80]

Sub-maritime; generally distributed from Bigbury Bay to Downderry, in great profusion at times under large stones on or close to decaying seaweed, at Batten in particular (J.H.K.)

Family **Staphylinidae**

OMALIUM LAEVIUSCULUM Gyllenhal [Fowler, 1887-91, II, p. 413, as Homalium]

Sub-maritime; seaweed, common (J.H.K.)

OMALIUM RIPARIUM Thomson [Fowler, 1887-91, II, p. 413, as Homalium]

Sub-maritime; with the above, common (J.H.K.)

MICRALYMMMA MARINUM (Stroem) (BREVIPENNE Gyllenhal) [*Fowler*, 1887-91, II, p. 407, fig. Pl. 68]

Maritime; Yealm, Batten, Millbrook Creek, Wivelscombe; July 1897, at Batten, crawling among barnacles; June 1900, at Millbrook Creek, 20 specimens, with *Anurida maritima*, between slates used in an old landing stage; again at Batten, Oct. 1907, with larvae and numbers of *Anurida* by scraping little patches of lichen off the rocks (J.H.K.): Wembury, Church Reef, occasional in rock crevices in upper part of tidal zone (J.E.M.): Tinside, on rock with *Enteromorpha*, 3.12.54; Breakwater, from weed on south face, 5.4.55 (G.M.S.)

OLOPHRUM PICEUM (Gyllenhal) [*Fowler*, 1887-91, II, p. 404]

Bere Ferrers, estuarine drift refuse (J.T.)

ACTOCHARIS MARINA Fauvel (READINGII Sharp) [*Fowler*, (1887-91) 1913, VI, p. 163. fig. Pl. 50]

Maritime; originally found at Plymouth by J. J. Reading; rediscovered at Millbrook Creek by M. Cameron, Oct. 1900, several specimens under seaweed; later with J.H.K. in same place found 40 specimens; July 1901, 23 specimens, July 1902, 9 specimens, gregarious (J.H.K.)

TROGOPHLOEUS HALOPHILUS Kiesenwetter [*Fowler*, 1887-91, II, p. 289]

Maritime; Millbrook Creek, two only, May 1900; June, on the S. Down side, in numbers (J.H.K.)

TROGOPHLOEUS UNICOLOR Sharp (ANGLICANUS Sharp) [*Fowler*, (1887-91), 1913, VI, p. 78]

Sub-maritime; one under a stone at about half tide near Palmer's Point, Millbrook Creek; another on opposite bank of creek, near S. Down in a similar situation; two in July in the roll of seaweed at H.T., in the first locality; Aug. 17 specimens; in July 1905, swarming (J.H.K.)

OXYTELUS PERRISI Fauvel (MARITIMUS Thomson) [*Fowler*, 1887-91, II, p. 381]

Sub-maritime; Tregantle, spring and autumn; in May 1902, the var. with testaceous elytra occurred in some numbers (J.J.W., J.H.K.)

OXYTELUS COMPLANATUS Erichson [*Fowler*, 1887-91, II, p. 381]

Coastal; Batten, Millbrook, etc. (J.H.K.)

BLEDIUS SPECTABILIS Kraatz [*Fowler*, 1887-91, II, p. 365, fig. Pl. 66]
Thurlestone (N.J.)

STENUS ATRATULUS Erichson [*Fowler*, 1887-91, II, p. 339]
Coastal; Donderry, Aug. 1905 (J.H.K.)

STENUS NANUS Stephens [*Fowler*, 1887-91, II, p. 342]
Wembury Beach, Aug. 1946 (J.T.)

ASTENUS FILIFORMIS (Latreille) [*Fowler*, 1887-91, II, p. 320]
Coastal; Whitsand Bay, single specimens occasionally; Tregantle; Donderry, Aug. 1900, 6 examples, and at various times since; Bigbury Bay, 2 specimens, May 1911 (J.H.K.)

MEDON POCOFERUS Peyron [*Fowler*, 1887-91, II, p. 314, fig. Pl. 63]
Sub-maritime; Batten, 2 specimens (J.H.K.)

MEDON RIPICOLA (Kraatz) [*Fowler*, 1887-91, II, p. 310]
Sub-maritime; Batten, July 1890, 2 in Feb. 1897; the following May, a quantity in rotting seaweed at Jennycliff; Aug. 1902, 1 only on beach beyond Bovisand (J.H.K.)

LATHROBIUM ANGUSTATUM Boiduval and Lacordaire [*Fowler*, 1887-91, II p. 300, fig. Pl. 62]
One specimen, July 1917, Stoke Bay (J.H.K.)

XANTHOLINA LONGIVENTRIS Heer [*Fowler*, 1887-91, II, p. 291]
Bere Ferrers, estuarine drift refuse (J.T.)

PHILONTHUS CRUENTATUS Gmelin [*Fowler*, 1887-91, II, P. 272, fig. Pl. 59]
Coastal; Batten and probably all along the coast (J.H.K.)

CAFIUS XANTHOLOMA (Gravenhorst) [*Fowler*, 1887-91, II, p. 282, fig. Pl. 60]
Sub-maritime; all along the coast, very common (J.H.K.): Drake's Island, March 1911, in sand with *Orchestia littorea* (K.H.B., identified by E.O.W., Brit. Mus.): Wembury Beach, 1946, very common (J.T.)
Var. **VARIOLOSUS** Sharp, not uncommon with the type form in the Plymouth district (J.H.K.): Wembury Beach, very common (J.T.)
Var. **VARIEGATUS** Erichson, Batten, Jennycliff, etc., not uncommon (J.H.K.): Wembury Beach, very common. (J.T.)
NOTE.-The Cafii may be found almost throughout the year and larvae with them (J.H.K.)

CAFIUS FUCICOLA (Curtis) [*Fowler*, 1887-91, II, p. 282, fig. Pl. 60]
Sub-maritime; in decaying seaweed; as a rule, local and rare; abundant at Batten and Jennycliff, Millbrook Creek, Tregantle (J.H.K.): Drake's island, March 1911, in sand with *Orchestia littorea* (K.H.B., identified by E.O.W., Brit. Mus.): Wembury Beach, very common in 1946 (LT.)

REMUS SERICEUS Holme [*Fowler*, 1887-91, II, p. 283]
Generally distributed with *Cafius xantholoma*, but. much less abundant (J.H.K.): Wembury Beach, 1946 (J.T.)

INSECTA: PTERYGOTA, COLEOPTERA

- STAPHYLINUS ATER** Gravenhorst [*Fowler*, 1887-91, II, p. 257, fig. Pl. 58, as *Ocypus*]
Coastal; Bovisand; Batten; Millbrook Creek, in some numbers; Tregantle (J.H.K.)
- HETEROTHOPS BINOTATUS** (Gravenhorst) [*Fowler*, 1887-91, II, p. 234, fig. Pl. 55]
Sub-maritime; Jennycliff, Batten, Downderry (J.H.K.): Wembury Beach (J.T.)
- QUEDIUS TRISTIS** (Gravenhorst) [*Fowler*, 1887-91, II, p. 237]
Bere Ferrers, estuarine drift refuse (J.T.)
- QUEDIUS UMBRINUS** Erichson [*Fowler*, 1887-91, II, p. 240]
Coastal; uncommon; once in considerable numbers, Millbrook Creek in the little salt marsh beyond Palmer's Point, Aug. 1900 (J.H.K.)
- QUEDIUS SEMIAENEUS** Stephens [*Fowler*, 1887-91, II, p. 244]
Coastal; Tregantle; single specimens frequently, Millbrook Creek; by the Yealm (J.H.K.)
- TACHYPORUS CHRYSOMELINUS** (Linnaeus) [*Fowler*, 1887-91, II, p. 195]
Bere Ferrers, estuarine drift refuse (J.T.)
- DIGLOTTA MERSA** (Haliday) [*Fowler*, 1887-91, II, p. 171, fig. Pl. 50]
Maritime; Batten, once only, 1 specimen, April 1982; under stones much below H.W., Millbrook Creek, very sparingly, May 1900, 1907, 1909 (J.H.K.)
- PHYTOSUS SPINIFER** Curtis [*Fowler*, 1887-91, II, p. 169, fig. Pl. 50]
Sub-maritime; Tregantle, April, May, Aug., occasionally in considerable numbers; Bovisand, one only, July 1912; one only, May 1913; Stoke Bay, June 1916, one only; Bantham, July 1922, 19 specimens (J.H.K.)
- PHYTOSUS BALTICUS** Kraatz [*Fowler*, 1887-91, II, p. 170, fig. Pl. 50]
Sub-maritime; under seaweed and in the sand below it with *P. spinifer*, often in numbers, at Tregantle; Bantham, July 1922, several (J.H.K.)
- PHYTOSUS NIGRIVENTRIS** Chevrolat [*Fowler*, 1887-91, IV, p. 50]
Sub-maritime; with the above at Tregantle, not so abundant; Bantham, July 1922, 3 examples (J.H.K.)
- HETEROTA PLUMBEA** (Waterhouse) [*Fowler*, 1887-91, II, p. 64, fig. Pl. 42]
Sub-maritime; under seaweed, Wembury to Tregantle, not common (J.H.K.)
- MYRMECOPORA BREVIPES** Butler [*Fowler*, (1887-91) 1913, VI, p. 51]
In seaweed and shingle, generally distributed around the coast of Devon and Cornwall, and also in estuaries, often in quantity: replaced by *M. uvida* (Erichson) on rest of S. coast (J.H.K.): Wembury Beach, 1946 (J.T.)
- MYRMECOPORA SULCATA** (Kiesenwetter) [*Fowler*, 1887-91, II, p. 146]
Of similar habit to *M. brevipes*, but occurs in greater numbers (J.H.K.): Whitsand Bay, 1946 (J.T.)

- ATHETA (HYDROSMECTA) THINOBIOIDES (Kraatz) (LONGULA Heer) [*Fowler*, 1887-91, II, p. 72, fig. Pl. 43]
Coastal; Wembury Beach, several specimens, June and July 1916; Donderry; Stoke Bay, June 1917; Mount Edgumbe shore (J.H.K.)
- ATHETA (ALOCONOTA) SULCIFRONS (Stephens) [*Fowler*, 1887-91, II, p. 69]
Bere Ferrers, estuarine drift refuse (J.T.)
- ATHETA (PSEUDOPASILIA) TABIDA (Kiesenwetter) [*Fowler*, 1887-91, II, p. 166, fig. Pl. 50, as *Sipalia testacea*]
Sub-maritime; Batten Beach under stones below H.T. ; Millbrook Creek, in the shingle at roots of rushes at H.T. mark, rare, March-Sept. (J.H.K.)
- ATHETA (HALOBRECTA) FLAVIPES Thomson (HALOBRECTHA Sharp) [*Fowler*, 1887-91, II, p. 83, fig. Pl. 44]
Sub-maritime; common under seaweed and in shingle (J.H.K.)
- ATHETA (HALOBRECTA) PUNCTICEPS Thomson (ALGAE Hardy) [*Fowler*, 1887-91, II, p. 84]
Coastal; 1 specimen, Donderry, Oct. 1900 (J.H.K.)
- ATHETA (MICRODOTA) INDUBIA (Sharp) [*Fowler*, 1887-91, II, p. 12]
Coastal; Millbrook Creek, several, May 1906 (J.H.K.)
- ATHETA TRIANGULUM (Kraatz) [*Fowler*, 1887-91, II, p. 108]
Coastal; Cremyll, in seaweed (J.H.K.)
- ATHETA (THINOBAENA) VESTITA (Gravenhorst) [*Fowler*, 1887-91, II, p. 79, fig. Pl. 42]
Sub-maritime; very common under seaweed on the coast, and often in the estuaries, in small numbers (J.H.K.): Wembury Beach, very common (J.T.)
- ATHETA (ACROTONA) FUNGI (Gravenhorst) var. ORBATA Erichson [*Fowler*, 1887-91, II, p. 139]
Coastal; Burgh Island, May 1911 (J.H.K.)
- OCALEA RIVULARIS Miller [*Fowler*, 1887-91, II, p. 44]
Bere Ferrers, estuarine drift refuse (J.T.)
- OXYPODA EXOLETA Erichson [*Fowler*, 1887-91, II, p. 29, fig. Pl. 38]
Coastal; Donderry, Oct. 1900, 1 specimen (J.H.K.)
- ALEOCHARA GRISEA Kraatz [*Fowler*, 1887-91, II, p. 21]
Sub-maritime; Batten; Jennycliff; Bigbury Bay; Tregantle, never in numbers (J.H.K.)
- ALEOCHARA ALGARUM Fauvel [*Fowler*, 1887-91, II, p. 22, fig. Pl. 37]
Sub-maritime; common in decaying seaweed all round the coast (J.H.K.): Wembury; Whitsand Bay (J.T.)
- ALEOCHARA OBSCURELLA Gravenhorst [*Fowler*, 1887-91, II, p. 22, fig. Pl. 37]
Sub-maritime; with the above, but not so common (J.H.K.): Wembury Beach (J.T.)

INSECTA: PTERYGOTA, COLEOPTERA

Family **Pselaphidae**

BRACHYGLUTA SIMPLEX (Waterhouse) [*Fowler*, 1887-91, III, p. 94, as *waterhousei*]

Sub-maritime; in rejectamenta on the shore near Cargreen, Oct. 1912; on the shore, Hooe Lake, near Radford (J.H.K.)

Family **Histeridae**

ACRITUS PUNCTUM (Aubé) [*Fowler*, 1887-91, III, p. 215, fig. Pl. 86]

Sub-maritime; Tregantle, May 1902, in some numbers; of late years only single specimens; Bantham, July 1922, 1 example (J.J.W., J.H.K.)

PACHYLOPUS MARITIMUS (Stephens) [*Fowler*, 1887-91, III, p. 212, fig. Pl. 86]

Sub-maritime; Tregantle, under seaweed and in sand, sometimes in numbers (J.H.K.)

Family **Nitidulidae**

MELIGETHES EXILIS Sturm [*Fowler*, 1887-91, III, p. 257, fig. Pl. 90]

Coastal; Tregantle, on *Armeria*, etc. (J.H.K.)

Family **Lathridiidae**

CORTICARIA CRENULATA (Gyllenhal) [*Fowler*, 1887-91, III, p. 289]

Coastal; Batten, at roots on the beach, once only (J.H.K.)

CORTICARIA IMPRESSA (Olivier) (**DENTICULATA** Gyllenhal) [*Fowler*, 1887-91, III, p. 289]

Coastal; Penlee Point, on gorse attacked by the dodder, May and June 1910; Whitsand Bay (J.H.K.)

Family **Coccinellidae**

SUBCOCCINELLA 24-PUNCTATA (Linnaeus) [*Fowler*, 1887-91, III, p. 156, fig. Pl. 81]

Coastal; frequently met with on the coast; in Aug. 1916, in numbers, both pupae and mature insects, at the roots of *Silene* on the shore at H.T. mark at Downderry (J.H.K.)

MICRASPIS 16-PUNCTATA (Linnaeus) [*Fowler*, 1887-91, III, p. 168, fig. Pl. 82]

Coastal; Wivelscombe Creek, June 1915 (J.H.K.)

Family **Oedemeridae**

NACERDES MELANURA (Linnaeus) [*Fowler*, 1887-91, V, p. 61, fig. Pl. 148, as *Anoncodes*]

Coastal; Cattedown, 1 specimen, caught in the road; 3 specimens bred from old timber from a cellar at Stonehouse (J.H.K.)

Family **Anthicidae**

ANTHICUS ANGUSTATUS Curtis [*Fowler*, 1887-91, V, p. 87, fig. Pl. 150]

Sub-maritime; Bigbury Bay, 1.4.07, abundant under seaweed at H.W. mark, under stones and in sand, 96 specimens obtained (J.H.K.)

Family **Mordellidae**

MORDELLISTENA PARVULA (Gyllenhal) var. INAEQUALIS Mulsant [*Fowler*, 1887-91, V, p. 73]
Coastal; Tregantle, July 1900, 3 specimens (J.H.K.)

Family **Tenebrionidae**

PHYLAN GIBBUS (Fabricius) [*Fowler*, 1887-91, V, p. 8, fig. Pl. 143]
Coastal; Whitsand Bay, frequent (J.H.K.): Wembury Beach, 12.9.46, one (J.T.)

MELANIMON TIBIALIS (Fabricius) [*Fowler*, 1887-91, V, p. 9, fig. Pl. 143, as *Microzoum*]
Looe (Vict. Hist. Cornwall, *teste* J.H.K.)

OPATRUM SABULOSUM (Linnaeus) [*Fowler*, 1887-91, V, p. 9, fig. Pl. 143]
Coastal; Whitsands; Downderry (J.H.K.)

PHALERIA CADAVERINA (Fabricius) [*Fowler*, 1887-91, V, p. II, fig. Pl. 143, as *Hopatrum*]
Sub-maritime; Tregantle, often abundant; Downderry; Bantham, July 1922, abundant (J.H.K.): Wembury Beach, 12.9.46, one (J.T.)

Family **Scarabaeidae**

APHODIUS NITIDULUS (Fabricius) [*Fowler*, 1887-91, IV, p. 32]
Coastal; Whitsands, near Rame, in numbers, July 1890; very abundant, July 1899 (J.H.K.)

PSAMMOBIUS PORCICOLLIS (Illiger) [*Fowler*, 1887-91, IV, p. 38]
Coastal; Tregantle, apparently the only British locality; March, Aug., Sept., in various years (J.J.W., J.H.K.)

AEGIALIA ARENARIA (Fabricius) [*Fowler*, 1887-91, IV, p. 39, fig. Pl. 102]
Sub-maritime; Whitsands, not common; Bantham, July 1922, several specimens (J.H.K.): Whitsand Bay, 2.9.46, one (J.T.)

Family **Chrysomelidae**

CHRYSOLINA HAEMOPTERA (Linnaeus) [*Fowler*, 1887-91, IV, p. 305, fig. Pl. 130, as *Chrysomela*]
Coastal; Whitsand Bay (J.H.K.)

CHRYSOLINA BANKSI (Fabricius) [*Fowler*, 1887-91, IV, p. 304, fig. Pl. 130, as *Chrysomela*]
Coastal; generally distributed throughout the Plymouth district (J.H.K.)

PSYLLIODES MARCIDA (Illiger) [*Fowler*, 1887-91, IV, p. 392, fig. Pl. 141]
Coastal: Bovisand; Tregantle, on *Cakile maritima* (J.J.W., J.H.K.)

CASSIDA NOBILIS Linnaeus [*Fowler*, 1887-91, IV, p. 400, fig. Pl. 142]
Coastal; on the underside of a pebble amongst low plants on Wembury Beach, just at H.T. mark, but well within range of a, stormy sea, about

INSECTA: PTERYGOTA, COLEOPTERA

two dozen specimens as well as the fully fed larvae and pupae, taken 21.7.17 (J.H.K.)

CASSIDA VITTATA de Villers [*Fowler*, 1887-91, IV, p. 399, fig. Pl. 142]
Coastal; Millbrook Creek, one only, May 1900 (J.H.K.)

Family **Curculionidae**

APION ATOMARIUM Kirby [*Fowler*, 1887-91, V, p. 156]
Coastal; Whitsand Bay, at roots of thyme, sometimes in quantity (J.J.W., J.H.K.)

APION CONFLUENS Kirby [*Fowler*, 1887-91, V, p. 150]
Coastal; Tregantle, on *Matricaria*, on the slopes above H.W. mark, occasionally in numbers (J.H.K.)

APION HOOKERI Kirby [*Fowler*, 1887-91, V, p. 152, fig. Pl. 154]
Coastal; on the coast only, on *Matricaria* (J.H.K.)

APION SCHÖNHERRI Boheman [*Fowler*, 1887-91, V, p. 147]
Coastal; 1 specimen, Bovisand, July 1902 (J.H.K.)

APION LAEVICOLLE Kirby [*Fowler*, 1887-91, V, p. 147, fig. Pl. 155]
Coastal; Whitsands, April 1900 (J.H.K.)

APION ONONICOLA Bach (BOHEMANNI Thomson) [*Fowler*, 1887-91, V, p. 148]
Coastal; on *Ononis*, Tregantle, Aug. 1902, several (J.H.K.)

OTIORRHYNCHUS RUGIFRONS (Gyllenhal) [*Fowler*, 1887-91, V, p. 179, fig. Pl. 157]
Coastal; Batten, single specimens, July 1890, June 1895; Tregantle, often in numbers (J.H.K.)

OTIORRHYNCHUS ATROAPTERUS (Degeer) [*Fowler*, 1887-91, V, p. 176, fig. Pl. 157]
Coastal; Bigbury Bay, May 1911 (J.H.K.)

CATHORMIOCERUS ATTAPHILUS Brisout [*Keys*, 1921, p. 100, Pl. 1]
Coastal; same locality and conditions as following; 1924, Oct. 1, one specimen; 1925, Sept. 14, three; Oct. 2, seven; Oct. 14, three. Only taken elsewhere in Britain at the Lizard; originally discovered in 1880 at the Belle-Ile-en-Mer (J.H.K.)

CATHORMIOCERUS MYRMECOPHILUS (Seidlitz) [*Fowler*, 1887-91, V, p. 183, fig. Pl. 158, as *Trachyphloeus*]
Coastal; at roots of low plants on the slopes, mouth of River Yealm, Oct. 1924, 3 specimens (J.H.K.)

POLYDRUSUS CHRYSOMELA (Olivier) [*Fowler*, 1887-91, V, p. 202, fig. Pl. 160]
Sub-maritime; Wivelscombe Creek, 10.6.15, by sweeping the banks just above H.W. mark; the specimens were rather abraded (J.H.K.)

PHILOPEDON PLAGIATUS (Schaller) (GEMINATUS Fabricius) [*Fowler*, 1887-91, V, p. 208, fig. Pl. 161, as *Cneorrhinus*]
Coastal; Burgh Island, May 1911, in abundance, not on mainland; Tregantle, common (J.H.K.)

SITONA WATERHOUSEI Walton [*Fowler*, 1887-91, V, p. 220, fig. Pl. 162, as *Sitones*]

Coastal; Batten, at roots of low plants, Sept. 1897; near Yealmpton, May 1911; Whitsand Bay, frequently, spring and autumn (J.J.W., J.H.K.)

PHLOEOPHAGA SPADIX (Herbst) [*Fowler*, 1887-91, V, p. 396, fig. Pl. 177, as *Codiosoma*]

Sub-maritime; Batten, in an old wooden pile on the shore, May 1892; South Down, in old piles stuck into the mud flats, larvae and perfect insects in numbers, May 1909 (J.H.K.)

SMICRONYX JUNGERMANNIAE (Reich) [*Fowler*, 1887-91, V, p. 283]

Coastal; abundant in some years on the dodder of the gorse at Penlee Point, May and June; also at Tregantle (J.H.K.)

TYCHIUS SCHNEIDERI (Herbst) [*Fowler*, 1887-91, V, p. 229, fig. Pl. 168]

Coastal; recorded in *Fowler* as occurring at Whitsand Bay.

LIMNOBARIS T-ALBUM (Linnaeus) [*Fowler*, 1887-91, V, p. 379, fig. Pl. 175]

Sub-maritime; in some numbers at Wivelscombe Creek, June 1915, shore at Bere Ferrers, June 1916, by sweeping sedges; both places covered with salt water for a brief period at spring tides (J.H.K.)

CEUTHORHYNCHIDIUS DAWSONI Brisout [*Fowler*, 1887-91, V, p. 366, fig. Pl. 174 as *Ceuthorrhynchus*]

Coastal; Bovisand, Batten, Whitsands; often in abundance on *Plantago* (J.H.K.)

CEUTHORHYNCHUS TERMINATUS (Herbst) [*Fowler*, 1887-91, V, p. 363, fig. Pl. 174]

Coastal; Bovisand, Aug. 1902, 1 specimen at roots on the shore; 1 specimen., Tregantle, June 1905 (J.H.K.)

MECINUS CIRCULATUS (Marsham) [*Fowler*, 1887-91, V, p. 313]

Coastal; Tregantle. at roots of low plants in April and May in various years (J.J.W., J.H.K.)