

XII.—*A Synopsis of the British Edriophthalmous Crustacea.*

By C. SPENCE BATE, F.L.S. &c.—Part I. AMPHIPODA*.

CLASS CRUSTACEA.

Legion II. EDRIOPHTHALMA.

Order I. AMPHIPODA.

Group A. NORMALIA.

Division I. GAMMARINA.

Subdivision I. VAGANTIA.

Do not construct abodes to dwell in.

Tribe I. *Saltatoria*.

Mode of progression out of the water is by leaps.

Family I. *Orchestidæ*.

The upper antenna shorter than the lower. The coxæ well developed; the posterior pleopoda short and robust, the last being single.

Genus 1. ORCHESTIA †.

Upper antenna rudimentary; the lower with the basal joints absorbed within the facial wall of the cephalic segment. Olfactory spine absent. The second pair of feet subcheliform.

Subgenus 1. *Talitrus*, Latr., Bosc, Leach.

First pair of feet simple in both sexes.

1. *T. Locusta*, Latr. Second pair of feet feeble, terminating in a subcheliform hand, and folded beneath the body; the dactylos small, and articulating remote from the apex of the propodos. The last pair of the posterior pleopoda rudimentary. The telson obsolete.

Sandy shores all round Europe, at high-water mark.

Subgenus 2. *Talorchestia*, Dana.

First pair of feet simple in female only.

[Of this subgenus there is no British species known.]

* The classification adopted in this Synopsis is the result of the united labours of Mr. Westwood and the author; it is based on the structure and the habits of the animals as far as known. The characters given are only those which more immediately strike the observer. Many of the terms employed are new; they are explained at the end of this paper.

† The classification adopted in this genus is that given by Dana, and the result of his discovery of the intermediate form of *Talorchestia*.

Subgenus 3. *Orchestia*, Leach.

First pair of feet simple in neither sex.

1. *O. littorea*. The first pair of hands minute, subcheliform in both sexes; second pair large and powerful in the male, feeble and similar to those of *Talitrus* in the female.

Rocky shores all round Europe, including the Crimea, at high-water mark.

2. *O. Deshayesii*. Hand of the second pair of feet having the posterior portion of the palm armed with a strong tooth.

Plymouth, *Dr. E. Moore*.

3. *O. levis*, mihi. Second hand in male long and triangular, and without a thumb or tooth on the palm.

Swansea, *C. S. B.*

Genus 2. *ALLORCHESTES*, Dana.

Upper antenna about half the length of the under. The basal joints of lower antenna not completely fused into the facial wall of the head. Olfactory spine rudimentary. The first two pairs of feet subcheliform. Mandible non-palpigerous.

1. *A. Danai*, mihi. Upper antenna reaching to the termination of the peduncle of the inferior; the lower one-third the length of the animal. The first pair of feet considerably smaller than the second; the posterior edge of the palm of the latter terminating in an obtuse point.

Moray Frith, *Rev. G. Gordon*. Penzance, *G. Barlee, Esq.*, *W. Webster, Esq.* Falmouth, *W. Webster, Esq.*

2. *A. imbricatus*, mihi. Upper antenna longer than the peduncle of the lower. The central edge of the dorsal surface keel-shaped, each of the segments being surmounted by a small tubercle.

Penzance, *G. Barlee, Esq.*

Genus 3. *GALANTHIS* (mihi).

Lower antenna scarcely longer than the upper. Mandible non-palpigerous. Posterior pleopoda Orchestiform. Telson divided.

1. *G. Lubbockiana* (mihi). Antennæ subequal. Hands of both pairs of gnathopoda subcheliform and subequal.

Falmouth, *W. Webster, Esq.* Penzance, — *Harris, Esq.*, *G. Barlee, Esq.*

Tribe II. *Natatoria*.

Mode of progression is by swimming. Cannot leap or walk when out of the water.

Family II. *Gammaridæ*.

Body compressed. Legs long and slender. Posterior pleopoda well developed, the last being generally the longest.

Subfamily I. **STEGOCEPHALIDES**.

Antennæ subequal. Coxæ of the four anterior legs immensely developed.

Genus 1. *MONTAGUA* (mihi).

Upper antenna without secondary appendage. Mandibles non-palpigerous. Hands of both gnathopoda subcheliform. Posterior pleopoda single-branched. Telson entire.

1. *M. monoculoides* (Montagu). Second joint of the peduncle of the upper antenna shorter than the first. Palm oblique, occupying only half the length of the hand.

S. Coast of Devon, *Montagu* (*Linn. Trans.* vol. xi.). Plymouth, *Howard Stewart, Esq., C. S. B.*

2. *M. marina* (mihi). Palm nearly the whole length of the inferior side of the hand.

Macduff, *Mr. Gregor*. Banff, *Mr. Edwards*. Plymouth, from trawlers, *C. S. B.*

3. *M. Alderii* (mihi). Hand square, furnished with a small thumb; palm denticulated.

Coast of Northumberland, *J. Alder, Esq.*

4. *M. pollexiana* (mihi). Hand of second gnathopod furnished with a large thumb, which is formed by a deep cleft in the palm.

St. Ives, *G. Barlee, Esq.*

Genus 2. *DANAIA* (mihi).

First pair of gnathopoda simple; last pair of pleopoda with a single stylet.

1. *D. dubia* (mihi). Coxæ of the second, third and fourth pairs of legs denticulated at the margin.

Subfamily II. **LYSIANASSIDES**.

Upper antenna short, pyriform. Second gnathopod long, feeble, and obsoletely subcheliform.

Genus 3. *LYSIANASSA* (Edwards).

Upper antenna furnished with a secondary appendage. First gnathopod simple. Telson simple.

1. *L. Costæ* (Edwards). Inferior antenna scarcely longer than the superior.

Plymouth, *C. S. B.*

2. *L. Audouiniana* (mihi). Inferior antenna much shorter than the superior. Filamentary appendage to the superior rudimentary.

Plymouth, *C. S. B.*

3. *L. Chausica*, Edwards (?). Lower antenna longer than the upper, and longer than the entire animal.

Plymouth, *C. S. B.*

4. *L. marina* (mihi). Lower antenna longer than the upper, but not half so long as the entire animal.

Plymouth Sound, *C. S. B.* Banff, *Mr. Edwards*.

Genus 4. *SCOPELOCHEIRUS* (mihi).

Upper antenna furnished with a secondary appendage. First pair of gnathopoda terminating in a brush; second, cheliform. Telson double.

1. *S. crenatus*. Head furnished with a small rostrum. Upper antenna very large at the base. Secondary filament consisting of but one articulation. A deep notch in the second segment of the anterior pleon.

Banff, *Mr. Edwards*. Plymouth, *C. S. B.*

Genus 5. *ANONYX* (Kröyer).

First gnathopod subcheliform. Telson squamiform, with a central division.

1. *A. Edwardsii* (Kröyer). Lower antenna scarcely longer than the upper.

Moray Frith, *Rev. G. Gordon*. Plymouth Sound, *C. S. B.* Falmouth, *W. Webster, Esq.* Banff, *Mr. Edwards*.

2. *A. minutus* (Kröyer). Lower antenna nearly three times as long as the upper. The squamiform coxæ of the two posterior legs produced so as to cover the two next succeeding articulations.

Plymouth Sound, *C. S. B.*

3. *A. Holbolli* (Kröyer). The squamiform development of the posterior legs *not* produced so as to cover the two next succeeding articulations.

Moray Frith, *Rev. G. Gordon*. Plymouth Sound, *C. S. B.*

4. *A. Ampulla* (Kröyer). Lower antenna five times as long as upper.

Moray Frith, *Rev. G. Gordon*. Banff, *Mr. Edwards*.

5. *A. denticulatus*. Posterior and inferior extremity of the second and third segments of the anterior pleon produced into a tooth-like process.

Moray Frith, *Rev. G. Gordon*. Banff, *Mr. Edwards*.

Subfamily III. **TETROMATIDES**.

Eyes four: not compound. Upper antenna in advance of the lower.

Genus 6. **TETROMATUS*** (mihi).

Head projecting forwards as a snout. Upper antenna proceeding from the extremity; lower situated far posteriorly. Mandible palpigerous. Gnathopoda but imperfectly prehensile.

1. *T. typicus*. Head and anterior segments much compressed. Upper antenna half as long as the lower, the lower as long as the animal. Posterior margin of the last segment of the anterior pleon *not ornate*.

Moray Frith, *Rev. G. Gordon*. Plymouth, *F. P. Smyth, Esq., C. S. B.*

2. *T. Bellianus*. Upper antenna not so long as the peduncle of the lower. Posterior edge of the last segment of the anterior pleon ornate.

Moray Frith, *Rev. G. Gordon*. Plymouth Sound, *C. S. B.*

Subfamily IV. **PONTOPOREIDES**.

The shell of the head developed anteriorly beyond the head so as to look like a hood. Upper antenna situated in advance of the lower.

Genus 7. **WESTWOODIA** (mihi).

Shell of the head produced to a point. Upper antenna not appendiculated. Telson entire.

1. *W. cæcula* (mihi). Eyes converging into a single organ, situated above and in advance of the superior antenna. Head not produced into a rostrum. First gnathopod sub-prehensile; second gnathopod simple, fringed on the anterior margin of the *propodos* with a brush of hair.

Moray Frith, *Rev. G. Gordon*. Plymouth, from trawlers, *C. S. B.*

* It is not improbable that it will be necessary to yield this genus to that of *Pseudophthalmus* of Stimpson (*Nat. Hist. of Grand Manan*, which work the author has only seen since this paper has been in type); the only doubt resting on the form of the third and fourth pairs of legs. In the American genus they are "elongated, tapering, with the second joint very small, the third expanded to a hand." In *Tetromatus* they are slight and tapering, with the terminal joint exceedingly long and styliform.

Genus 8. KRÖYERA (mihi).

Westwoodia (mihi), Brit. Assoc. Rep.

Head like *Westwoodia*. Hands of gnathopoda well developed, and formed by the *carpus* being produced so as to meet the apex of the *dactylos*.

1. *K. carinata*. The last two segments of the pereion and those of the anterior pleon strongly carinated.

Banff, *Mr. Edwards*.

Genus 9. PHOXUS (Kröyer).

Cephalic segment produced into a rostrum. Upper antenna with two terminal filaments. Mandible palpigerous. Gnathopoda subcheliform. Last pair of legs very small.

1. *P. Kröyerii* (mihi). Upper antenna reaching scarcely beyond the extremity of the rostrum; lower antenna much longer.

Plymouth, *C. S. B.*

2. *P. Holbolli* (mihi). The peduncle of the upper antenna reaching quite to the extremity of the rostrum; the lower scarcely longer than the upper.

Plymouth, *C. S. B.*

3. *P. plumosus* (Holboll). Upper antenna reaching beyond the lower. The penultimate segment of the peduncle of the lower produced inferiorly into a scale-like process. Hair upon the animal plumose.

Plymouth, *C. S. B.*

Genus 10. SULCATOR (mihi), Ann. Nat. Hist. 1852.

Bellia (mihi), Ann. Nat. Hist. 1851; Dana.

Upper antenna with two filaments. Gnathopoda scarcely prehensile. Telson double.

1. *S. arenarius* (mihi). Anterior coxæ largely developed. Upper antenna not longer than the lower. Basis of three posterior pereopoda developed in the form of scales. Dactylos of the same obsolete.

Falmouth, *Dr. Leach, MS. (Brit. Mus. Coll.)*. Glamorganshire, *C. S. B.* Moray Frith, *Rev. G. Gordon*.

2. *S. marinus* (mihi). Basis of three posterior pereopoda not developed in the form of scales.

Banff, *Mr. Edwards*. Macduff, *Mr. Gregor*.

Subfamily V. GAMMARIDES.

The upper antenna not in advance of the lower, and never

rudimentary. Gnathopoda generally prehensile. Last pair of posterior pleopoda terminating in two stylets which are more or less fringed with cilia.

Genus 11. DARWINIA (mihi).

Pereion inflated. Upper antenna without secondary appendage. All the feet terminating in simple hooks, not subcheliform.

1. *D. compressa* (mihi). Head produced into a rostrum. Posterior pleon slender and weak, lying compressed beneath the body of the animal. Upper antenna stouter and longer than inferior. Telson single, lanceolate.

Banff, *Mr. Edwards*. Macduff, *Mr. Gregor*.

Genus 12. IPHIMEDIA (Rathke).

Not compressed. Upper antenna without secondary appendage. Telson simple. First gnathopod simple; second subcheliform.

1. *I. obesa* (Rathke). Head produced into a rostrum. Upper antenna as long as the lower. The last segment of the pereion and all the segments of the anterior pleon armed on the dorsal ridge with two parallel spines.

Tenby, *W. Webster, Esq.* Macduff, *Mr. Gregor*. Plymouth, *C. S. B.*

Genus 13. ACANTHONOTUS (Owen).

First gnathopod subcheliform. Telson divided. Mandible palpigerous.

1. *A. Owenii* (mihi). Head armed with a rostrum. Four anterior segments of the pleon produced on the dorsal surface posteriorly into a strong spine, the posterior margins also denticulated laterally. Anterior coxæ produced each to a point, the fifth directed posteriorly.

Banff, *Mr. Edwards*. Macduff, *Mr. Gregor*.

Genus 14. DEXAMINE (Leach).

Upper antenna with the third articulation of the peduncle reduced in length to that of the filament. Mandible non-palpigerous. Telson divided.

1. *D. spinosa* (Montagu). Head with a short rostrum. Upper antenna with the second articulation longer than the first. Four anterior rings of pleon produced dorsally into a spine posteriorly.

S. Devon (*Montagu, Brit. Mus. Coll.*), *Linn. Trans.* vol. xi. Plymouth, *C. S. B.* Penzance, — *Harris, Esq., W. Webster, Esq.* Macduff, *Mr. Gregor*.

2. *D. bispinosa*. Second segment of upper antenna not so long as the first. Two anterior segments only of pleon produced into a spine.

Plymouth, *C. S. B.* Penzance, — *Harris, Esq.* Moray, *Rev. G. Gordon*. Falmouth, *W. Webster, Esq.* Macduff, *Mr. Gregor*.

3. *D. Gordoniana*. First segment of posterior pleon furnished with a spine.

Moray, *Rev. G. Gordon*.

4. *D. fucicola* (Edwards).

Amphitoë fucicola (Edwards). *Pherusa fucicola* (Leach).

With no dorsal spine.

Falmouth, *W. Webster, Esq.* Youghal, Ireland, *R. Ball, Esq.* (*Ann. Nat. Hist.* Oct. 1847).

Genus 15. CALLIOPE (MS. Leach).

Upper antenna without secondary appendage. All the feet with strong semi-prehensile claws. Telson single. Mandible palpi-gerous.

1. *C. Leachii* (mihi). Antennæ subequal. First and second gnathopoda subcheliform, subequal.

Moray, *Rev. G. Gordon*. Devonshire?, *Dr. Leach* (*Brit. Mus. Coll.*).

Genus 16. ISÆA (Edwards).

Upper antenna with secondary appendage. All the feet prehensile. Telson reduced.

1. *I. Montagui* (Edwards). Upper antenna rather longer than lower. First gnathopod smaller than second.

Plymouth, *C. S. B.*

Genus 17. LEMBOS (mihi).

Upper antenna with secondary appendage small. First gnathopod larger than the second. First of the posterior pereopoda very short, the last very long. Telson rudimentary.

1. *L. Cambriensis* (mihi). First hand without a thumb.

Glamorganshire, *C. S. B.*

2. *L. versiculatus* (mihi). First hand without a thumb. Second scarcely prehensile, the carpus and meros furnished with a strong brush.

Plymouth, *C. S. B.*

3. *L. Websterii* (mihi). First hand with a thumb on propodos. Falmouth, *W. Webster, Esq.*

4. *L. Damnoniensis* (mihi). First hand with a thumb on carpus.

Genus 18. LONCHOMERUS (mihi).

Like *Lembos*. Meros of first gnathopod produced into a long spine.

1. *L. gracilis*. Spine of meros of first gnathopod as long as the carpus; carpus longer than propodos. Dactylos ornate.

Polperro, *Mr. Loughrin*. Glamorgan; Plymouth, *C. S. B.*

Genus 19. EURYSTHEUS (mihi).

First gnathopod smaller than the second. Upper antenna with secondary appendage. Telson cylindrical.

1. *E. tridentatus* (mihi). Palm of second gnathopod convex, furnished with three obtuse teeth.

Plymouth, *C. S. B.* Macduff, *Mr. Gregor*.

Genus 20. GAMMARELLA (mihi).

Antennæ like *Gammarus*, and upper with secondary appendage. Last pair of pleopoda with a single branch. Telson single.

1. *G. orchestiformis*. Upper antenna longer than the lower. Hand of first gnathopod small; hand of second very large and oval. Caudal appendages short.

Polperro, *Mr. Loughrin*.

Genus 21. AMATHIA (Rathke).

Upper antenna with secondary appendage. The telson entire. The animal Gammariform.

1. *A. carinata* (Rathke). Head with a small rostrum. Centre of the dorsal surface surmounted by a distinct carina commencing at the head and terminating with the caudal segments.

Banff, *Mr. Edwards*. Crimea, *Rathke*.

Genus 22. GAMMARUS (Fabr.).

Body compressed. Antennæ long and slender, with a secondary appendage to the upper. Posterior pleopoda two, branched. Telson double.

1. *G. Sabinii* (Leach).

G. Moggridgii (mihi) (Ann. Nat. Hist. 1851).

Head with a short rostrum. Dorsal surface marked with a carina commencing about the fourth segment and terminating at the caudal appendages.

Arctic Regions, — *Sabine*. Banff, *Mr. Edwards*. Menai Straits, *J. Alder, Esq.* Glamorgan, *C. S. B.*

2. *G. carinatus* ? Johnston.

Berwickshire coast, *Dr. Geo. Johnston (White's Catalogue of the British Crustacea)*.

3. *G. Locusta* (Fabr.). Upper antenna not much longer than lower. Stylets of the last of the posterior pleopoda subequal. All round Europe.

4. *G. fluviatilis* (Edwards). Scarcely differs from *G. Locusta*. Freshwater streams. Wales; Devon, *C. S. B. Duddingston near Edinburgh, Dr. Leach (White's Cat. Brit. Crust.)*.

5. *G. Pulex* (Fabr.). Resembles *G. fluviatilis*. Spines upon the posterior portion of the abdomen*. Freshwater streams. Ireland (Loch Neagh), *W. Thompson, Esq. (White's Catalogue of the British Crustacea)*.

6. *G. gracilis*. Upper antenna much longer than the lower. Last pair of the posterior pleopoda with the stylets unequal. Plymouth, *C. S. B. Crimea, Rathke*. Probably all round Europe.

7. *G. campylops* (Leach). Eye in form of the letter S. Isle of Arran (near Loch Ranza), *Dr. Leach's Coll. (White's Cat. Brit. Crust.)*. Belfast, *Thompson (Ann. Nat. Hist. 1847)*.

8. *G. marinus* (Leach). Antennæ short and robust. Hands of the gnathopoda truncated in appearance. The stylets of the last of the posterior pleopoda subequal. Starcross, *C. S. B. Strangford Lough, Mr. Hyndman (Ann. Nat. Hist. Oct. 1847)*. Sligo, *Mrs. Hancock (Ann. Nat. Hist. Oct. 1847)*. Devonshire, *Dr. Leach (Linn. Trans. vol. xi.)*.

9. *G. palmatus* (Montagu).

Melita palmata (Leach).

First gnathopod with a very small hand; second with hand very large and square. Dactylos scimitar-shaped. Devon, *Montagu*. Plymouth, *C. S. B.*

10. *G. Othonis* (Edwards). Hands subequal, long, and narrow towards the extremity. The last of the pleopoda with stylets equal. Plymouth, *C. S. B.*

* This description is taken from M. Milne-Edwards's *Histoire des Crustacés*.

11. *G. longimanus* (Leach). Second hand much larger than the first, very long, and not narrowing towards the extremity. Last caudal stylets equal.

(Leach, *Brit. Mus. Coll.*) Belfast, Thompson (*Ann. Nat. Hist.* Oct. 1847). Plymouth, C. S. B.

12. *G. brevicaudatus* (Edwards). Lower antenna not reaching to the extremity of the peduncle of the upper. Last pair of caudal stylets extremely short.

Plymouth, C. S. B.

13. *G. grossimanus* (Montagu).

Mæra grossimana (Leach).

Coxæ not largely developed. Hand of second gnathopod very large.

Plymouth, C. S. B. Devonshire, Montagu.

14. *G. inæquimanus* (mihi). The second pair of gnathopoda has the left hand four times as large as the right. A dorsal spine on the first segment of the posterior pleon, and two smaller placed laterally on the next.

Polperro, Mr. Loughrin.

15. *G.?* *pallidus* (mihi). Upper antenna shorter than the lower. Hands large, with dactylos well developed, and fringed internally with teeth.

Plymouth, C. S. B.

16. *G. maculatus?* (Johnston).

17. *G.?* *subterraneus* (Leach).

Well in London.

Genus 23. УРОТНОË (Dana).

Upper antenna scarcely longer than the peduncle of the lower. Coxæ moderately developed. Gnathopoda prehensile. The dactylos of the other feet styliform. Telson double.

1. *U. elegans** (mihi).

Gammarus elegans (mihi), Brit. Assoc. Report.

Hands of gnathopoda very small. Upper antenna shorter than the lower. Last pair of pleopoda with the stylets feathery and subequal.

Plymouth, C. S. B.

* This species scarcely differs from *U. irrostratus* of Dana, which however, having been taken in the Sooloo Sea, can scarcely be supposed to belong to the same species as the British form.

Genus 24. NIPHARGUS (Schiodte).

1. *N. Stygius* (Westwood).

Deep well in Central England.

Genus 25. THERSITES (mihi).

Upper antenna with second joint of peduncle produced from the inferior side of the first. Second gnathopod terminating in a brush. Telson double.

1. *T. Guilliansoniana*. Inferior antenna as long again as the superior.

Weymouth, *Prof. Williamson*.

2. *T. pelagica*. With the inferior antenna six times as long as the superior.

Moray Frith, *Rev. G. Gordon*.

Subfamily VI. LEUCOTHOIDES.

Carpus on both pairs of gnathopoda developed into a thumb to the hand.

Genus 26. LEUCOTHOË (Leach).

The process of the carpus on the first gnathopod as long as the propodos. The hands of the second oval and larger than those of the first. Telson single.

1. *L. articulosa* (Mont.). Head furnished with a short down-curved rostrum. Lower antenna shorter than the upper. Telson long and lanceolate.

Plymouth, *C. S. B.* Moray Frith, *Rev. G. Gordon*.

2. *L. procera* (mihi). Hand of the first gnathopod short, of the second long, and narrower than in *L. articulosa*. The palm denticulated.

Banff, *Mr. Edwards*.

Subdivision II. DOMICOLA.

Being those of the normal *Gammarina* which live in abodes of their own construction: some burrow in wood, some in clay; some erect tubes of mud, or stones and weed, and others build nests with materials united by a substance secreted by the animal.

Family III. Corophiidae.

With the segments of the pleon not fused together.

Section I. *Nidifica*.

Comprising those which construct their own nests.

Subfamily I. **PODOCERIDES**.

The peduncle of the upper antenna much shorter than that of the lower. Lower antenna very strong, and used in climbing. Last pair of pleopoda terminating in short strong hooks.

Genus 1. **PLEONEXES** (mihi.)

Upper antenna without secondary appendage. Peduncle of the lower antenna reaching nearly to the extremity of the upper antenna. The gnathopoda subcheliform. Posterior pereopoda prehensile.

1. *P. Gammaroides*. Lower antenna not pediform. Second gnathopod with hand nearly square and larger than the first.
Penzance, *G. Barlee, Esq.*

Genus 2. **AMPHITOË** (Leach).

Filament of the upper antenna long and slender; filament of lower not pediform. Gnathopoda subequal. Posterior pereopoda subprehensile. Posterior pair of pleopoda with one branch terminating in hooks, the other squamiform. Telson simple.

Build nests made of weed and material of their own secretion.

1. *A. rubricata* (Montagu). Filament of the upper antenna extending far beyond that of the lower.

Plymouth, *Col. Montagu, C. S. B.* Strangford Lough, *Thompson (Ann. Nat. Hist. Oct. 1847)*.

2. *A. littorina* (mihi).

A. punctata, Johnston (not Say).

Antennæ subequal. Construct nests with a material apparently secreted by the animal.

Coast of Berwickshire, *Johnston (White's Catalogue of the British Crustacea)*. Spring Vale, co. Down, *Thompson (Ann. Nat. Hist. 1847)*. Plymouth, *C. S. B.* Probably all round our coasts.

Genus 3. **SUNAMPHITOË** (mihi).

Second gnathopod larger than the first. Posterior pleopoda with one branch squamiform, the other terminating in two hooks. Telson terminating in a single strong hook.

1. *S. Hamulus* (mihi). Antennæ subequal. Posterior pereopoda scarcely prehensile.

Moray Frith, *Rev. G. Gordon*. Penzance, — *Harris, Esq.*

2. *S. conformata* (mihi). Upper antenna longer than the lower. Posterior pereopoda subprehensile.

Plymouth, *C. S. B.*

Genus 4. *PODOCERUS** (Leach).

Upper antenna with a rudimentary second filament. Lower antenna pediform, and terminating in strong spinous hooks. Posterior pleopoda with one branch styliform, the other terminating in hooks.

Construct nests.

1. *P. falcatus* (Montagu). Hand of the second gnathopod large, with a tooth pointing anteriorly in the middle of the palm. Plymouth; Wales, *C. S. B.* Devon, *Montagu*.
2. *P. variegatus* (Leach). Hand of second gnathopod large, without a tooth on the palm. Plymouth, *C. S. B.* Bell Rock, *Stevenson* (*White's Catalogue of the British Crustacea*).
3. *P. pulchellus* (Leach). Hand of second gnathopod large, with a well-developed thumb at the posterior extremity of the palm. Plymouth, *H. Stewart, Esq.*, *C. S. B.* Swansea, *C. S. B.* Banff, *Mr. Edwards*.
4. *P. punctatus* (Edwards, MS. Brit. Mus.). Antennæ subequal; inferior not pediform. Carpus of the gnathopoda forming part of the hand. Dactylos on all the limbs denticulated. Telson rudimentary. Northumberland, *J. Alder, Esq.*

Genus 5. *CYRTOPIHIUM* (Dana).

Pereion inflated; pleon compressed. Posterior pleopoda rudimentary. Telson squamiform.

1. *C. Darwinii*. Dorsal surface imbricated. First of the posterior pleopoda longer than the second. Falmouth, *W. Webster, Esq.*

Section II. *Tubifica*.

Dwell in tubes, some formed by burrowing, some constructed by the union of materials.

Subfamily II. *CERAPIDES*.

Construct abodes by the union of materials.

Genus 6. *ERICTHONIUS* (Edwards).

Lower antenna not pediform. Thumb developed on carpus of

* It is usual to divide this genus into two, *Podocerus* and *Jassa*, but there is great reason to believe that the difference is merely sexual. It is evidently synonymous with Dana's genus *Cratophium*; the species *C. validum* being almost identical with *P. pulchellus*.

the second gnathopod. Posterior pleopoda single-branched, terminating in hooks. Telson furnished with curved spines.

1. *E. difformis*. Thumb on the second gnathopod two-pointed. Swansea, Plymouth, *C. S. B.*

Genus 7. SIPHONOCETUS (Kröyer).

Lower antenna subpediform, longer than upper. First and second gnathopoda prehensile. Posterior pleopoda single-branched, terminating in hooks. Telson furnished with teeth or hooks. Posterior pereopoda terminating in curved spines.

1. *S. Kröyeranus* (mihi). Upper antenna short. Dactylos of the anterior pereopoda styliform and without a curve. Weymouth, *Prof. Williamson*.

2. *S. crassicornis*. Basal joint of upper antenna having the anterior superior margin developed into a *horn* reaching to the end of the second joint.

Northumberland, *J. Alder, Esq.*

Subfamily III. COROPHIIDES.

Construct abodes by burrowing in clay or mud, &c.

Genus 8. COROPHIUM (Latreille).

Lower antenna very large, much more powerful than upper, pediform. Gnathopoda not prehensile. Posterior pleopoda short and single-branched.

1. *C. longicorne*. Lower antenna longer than the whole animal. Filament fused into a single articulation. A large tooth on the inferior surface of the penultimate joint of the peduncle. Moray Frith, *Rev. G. Gordon*. Glamorgan; Devon, *C. S. B.* Medway, *Dr. Leach, Coll. Brit. Mus. (White's Cat. Brit. Crust.)*

Family IV. Cheluridæ.

The three segments of the posterior pleon fused into a single joint.

Construct abodes by burrowing in wood, &c.

Genus 1. CHELURA (Philippi).

Upper antenna shorter than lower, furnished with a secondary appendage. Lower antenna with segments of filament fused. Telson single.

1. *C. terebrans* (Philippi). Gnathopoda imperfectly cheliform. Last segment of the anterior pleon produced into a large spine dorsally and posteriorly.

Dublin Bay, *Thompson*. Plymouth, *C. S. B.* Britain, *Dr. Leach (White's Cat. of the Brit. Crustacea)*. Ayrshire, *Major Thomson*.

Division II. HYPERINA.

Family V. Hyperidæ.

Pleon not folded beneath the pereion. Antennæ well developed and exposed. Pereiopoda not prehensile.

Genus 1. HYPERIA (Latreille).

Head large. Antennæ short. Gnathopoda scarcely prehensile. Telson lanceolate.

1. *H. Galba* (Montagu).

Hyperia Latreillei (Edwards).

The first six or seven articulations of the filament of upper and lower antennæ fused. Upper antenna longer than the lower. Pereiopoda short.

2. *H. oblivia* (Edwards). Lower antenna longer than the upper, and the segment of the filament of the upper antenna only fused. Pereiopoda long.

Moray Frith, *Rev. G. Gordon*.

Family VI. Phronomidæ.

Some of the pereiopoda prehensile.

Genus 1. PHRONOMA (Latreille).

The first of the posterior pereiopoda cheliform.

1. *P. sedentaria* (Latr.). Antennæ short. Feet of first two pairs compressed. The two fingers which terminate the fifth pair of legs are large, curved, and armed with a tooth on the internal border.

Shetland, *Dr. Fleming (White's Cat. of the British Crustacea)*.

Family VII. Typhidæ.

Antennæ not exposed. Pleon compressed beneath the pereion. The squamiform process of the posterior pereiopoda largely developed, and acting the part of an operculum.

Genus 1. TYPHIS (Risso).

1. *T. nolens* (Johnston) (*White's Cat. of the British Crustacea*).

Group B. ABERRANTIA.

Family VIII. Dyopedidæ.

The last segment of the pereion and the last of the pleon absent. Coxæ of last two pereiopoda fused with the body of the animal.

Genus 1. DYOPEDOS (mihi).

The *sixth* and *seventh* pairs of legs attached to the *sixth* segment of the pereion. The last pair of *pleopoda* absent. Telson single.

1. *D. porrectus* (mihi). Upper antenna half as long as the body. Second gnathopod with a long, straight, spine-like thumb proceeding from the posterior extremity of the palm. Hands not armed in female.

Macduff, *Mr. Gregor*.

2. *D. falcatus* (mihi). Upper antenna as long as the animal. Thumb at the extremity of the palm, crooked.

Macduff, *Mr. Gregor*.

Family IX. Caprellidæ.

With the pleon rudimentary. Coxæ fused with the body of the animal.

Genus 1. PROTO (Leach).

Legs developed on each segment of the pereion.

1. *P. pedata* (Leach). The palm of second gnathopod convex, and slightly denticulated.

Moray Frith, *Rev. G. Gordon*. Plymouth, *C. S. B.*

2. *P. Goodsirii* (mihi). The palm of second gnathopod concave.

Moray Frith, *Rev. G. Gordon*.

Genus 2. PROTELLA (Dana).

With legs reduced to a rudimentary state on the third and fourth segments of the pereion.

1. *P. longispina*, Kröyer.

Ægina longispina? (Kröyer). *Caprella spinosa?* (Goodsir).

C. Phasma? (Latr.).

With four long spines on the three anterior segments.

Plymouth, *C. S. B.*

Genus 3. CAPRELLA (Lamarck).

Has no legs developed on the two middle segments of the pereion.

1. *C. linearis* (Latr.). Without spines or rostrum.

Weymouth, *P. H. Gosse, Esq.* Wales; Plymouth, *C. S. B.*

2. *C. Pennantii* (Leach). With a rostrum.

Plymouth, *Mr. Boswarva*.

3. *C. tuberculata* (Goodsir). Spine on head; four tubercles on the fourth segment.

Strangford Lough, *Thompson (Annals, 1847)*.

4. *C. lobata* (Müller).

5. *C. acuminifera* (Edwards).

C. acanthifera (Leach).

With three spines on the back of each of the four central segments, two near the centre, and one at the posterior extremity

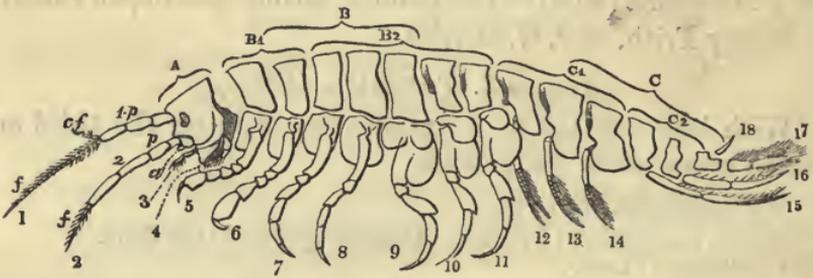
of each except the last. Head vaulted, craniform. In the female, the spines are reduced to tubercles.

Drake's Island, *G. Barlee, Esq.*

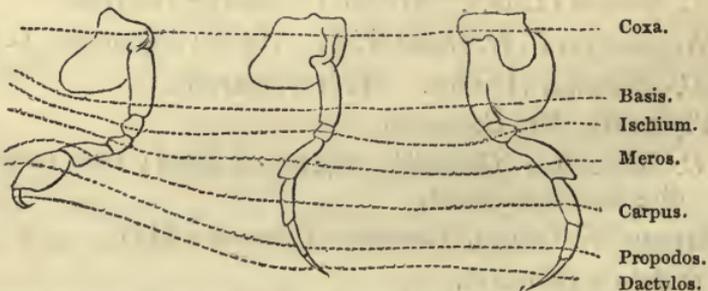
Genus 4. *CYAMUS* (Latreille).

Head small, body depressed. Abdomen rudimentary. Third and fourth pereiopoda rudimentary. Inferior antenna rudimentary. Parasitic.

1. *C. Ceti* (Linnæus). Body moderately developed. Branchiæ simple, furnished at the base with two unequal and pointed appendages.
2. *C. ovalis* (Roussel de Vauzème). Body very large. Four pairs of branchiæ to both sexes; those of the third segment have a solitary appendage, while those of the fourth have two.
3. *C. gracilis* (Roussel de Vauzème). Body slight and narrow.
4. *C. — ?*
C. gracilis (Gosse).



A. Head. B. Pereion. B 1. Anterior pereion. B 2. Posterior pereion. C. Pleon. C 1. Anterior pleon. C 2. Posterior pleon. 1. Upper antenna. 2. Lower antenna. a. Olfactory denticle. p. Peduncle. f. Filament. cf. Complementary or secondary filament. 3. Palp of mandible. 4. Maxilliped. 5 & 6. Gnathopoda. 7 to 11. Pereiopoda. 12, 13, 14. Anterior pleopoda. 15, 16, 17. Posterior pleopoda. 18. Telson*.



These terms are abbreviated from M. Milne-Edwards.

* The terms used in this paper are suggested instead of the old and incorrect synonyms of thorax, abdomen, &c., which authors frequently employ to signify different parts of the animal.