

British Capitellidae

Capitellids are represented by relatively few species in British waters, but their identification has caused considerable difficulty. Essentially they are morphologically uncomplicated, and consequently have few features readily useable for identification.

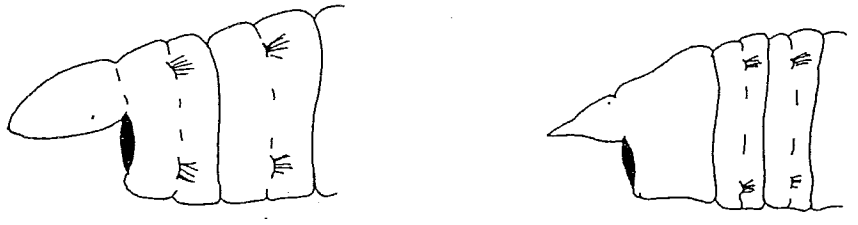
A typical capitellid is composed of 2 body regions - an anterior thorax of relatively few segments and a longer abdomen. Much confusion has arisen from referring to the number of thoracic segments in generic definitions, and I shall refer only to the number of thoracic setigers, i.e. the number of segments bearing chaetae in the thorax. The distinction between the thorax and abdomen is usually readily seen, with a little practice, being evident in a change in shape of the segments, in the position of the 4 chaetal bundles, and, in some cases, in chaetal type.

The chaetae of capitellids are of 4 basic types:

- 1. Capillary chaetae, which are often winged or limbate
- 2. Hooded hooks, with a complex arrangement of teeth within the hood
- 3. Large genital spines replacing the notochaetae in some thoracic setigers in mature specimens of one or both sexes of species of the genera *Capitella* and *Branchiocapitella* (not British)
- 4. Specialised chaetae of various types

In British capitellids, capillary chaetae are found in anterior thoracic setigers, whilst posterior thoracics and abdominal setigers have hooded hooks. Specialised chaetae are found in the posterior thoracic setigers of *Peresiella clymenoides*.

Much has been made of the presence or absence of an anterior achaetous segment, and the degree of fusion between it (where present) and the prostomium. Unfortunately, this has led to a degree of confusion. In all British genera except *Baldia* and *Capitella*, the prostomium is a relatively small pointed structure, clearly separate from the large achaetous segment which bears the mouth. The lower or posterior lip of the mouth is formed by this achaetous segment. In the species of *Baldia* and *Capitella*, the situation is different in two respects. What appears to be the prostomium, lying in front of the mouth, is large and somewhat flattened, and actually includes the peristomium - the achaetous segment of the other genera. The lower or posterior lip of the mouth is, in these 2 genera, clearly formed by the first setiger. It is this feature which clearly separates the genera *Capitella* and *Baldia* from other capitellids. The anterior fusion of the peristomium to the prostomium is of entirely secondary importance.



British species:

Baldia johnstoni
Capitella capitata
Capitella giardi
Capitella hermaphrodita
Dasybranchus caducus
Dasybranchus gajolae
Heteromastus filiformis
Mediomastus fragilis
Notomastus latericeus
Notomastus profundus
Peresiella clymenoides

A. Species in which the lower lip of the mouth is formed by the first setiger: genital spines may be present in one or both sexes at maturity

Baldia johnstoni
Capitella capitata
Capitella giardi
Capitella hermaphrodita

Baldia johnstoni is recognisable for having no capillary chaetae at all, whilst the 3 *Capitella* species all have capillary chaetae on some anterior thoracic segments. In *Capitella giardi*, capillaries are present on the first 6 thoracic setigers, with genital spines in both sexes at maturity; in *Capitella hermaphrodita* capillaries are present in only the first 4 thoracic segments, with genital spines present in some individuals, the species being hermaphrodite; in *Capitella capitata*, capillaries are present in the first 6 or 7 thoracic setigers, with genital spines in mature males only.

Capitella capitata is known to be a species complex, the morphological characteristics of the different species having not yet been adequately described, although they show differences in reproduction and larval development. Within the *Capitella* complex capillary chaetae are present on the first 3 setigers in the first chaetigerous larvae, and subsequent growth is accompanied by gradual movement towards the definitive chaetal arrangement for the adult of the species. However, this clearly means that animals with fewer than the fully developed adult chaetal arrangement for the species will be encountered. This, together with any natural variation in adult chaetal arrangement, has led to much confusion. When in doubt, it is perhaps best to refer to the *Capitella* species complex, unless and until further progress can be made.

B. Species in which the lower lip of the mouth is formed by the anterior achaetous segment; genital spines are never present.

Dasybranchus caducus
Dasybranchus gajolae
Heteromastus filiformis
Notomastus latericeus
Notomastus profundus
Peresiella clymenoides

These genera can be separated by examination of the thorax; *Dasybranchus* has 13 thoracic setigers, all of which bear capillary chaetae; *Notomastus* has 11 thoracic setigers, all of which bear capillaries; *Heteromastus* has 11 thoracic chaetigers, with only 5 bearing capillaries; *Mediomastus* has 10 thoracics, with only 4 bearing capillaries; *Peresiella* has 11 thoracics, but has capillaries on only the first 3, the remaining thoracics bearing special winged pseudo-hooks, and has a strange flattened dorsal part to its head, reminiscent of some maldanid species. Poorly developed abdominal branchiae are present in *Notomastus*, as are more obvious branchiae composed of several filaments on some abdominal setigers in *Dasybranchus*.

The two species of *Dasybranchus* can be separated according to Tebble (1954) by details of their abdominal hooded hooks. The two species of *Notomastus* are separable, according to Fauvel (1927), by details of the arrangement of the poorly developed abdominal branchiae present in species of this genus.

NOTES

Species likely to be encountered intertidally are *Baldia johnstoni*, *Capitella* spp., *Mediomastus fragilis* and *Notomastus latericeus*. All of these, with the exception of *B. johnstoni* are also known from the shallow subtidal, whilst only *Notomastus profundus* can readily be described as a true deep-water form. *Mediomastus fragilis* and *Heteromastus fragilis* may occur together, and are very similar in general body shape. Separation of these 2 may require close examination of the thoracic region.

Selected references

- von Boletzky, S. and W. Dohle, 1967. Observations sur un Capitellide (*Capitella hermaphrodita* sp. n.) et d'autres polychetes habitant la ponte de *Loligo vulgaris*. Vie et Milieu, 18: 79-98.
- Fauvel, P. 1927. Polychetes sedentaires. Fauna de France, 16; 494pp.
- Fredette, T.J., 1982. Evidence of ontogenetic setal changes in *Heteromastus filiformis* (Polychaeta: Capitellidae). Proc. Biol. Soc. Wash., 95: 194-197.
- Garwood, P.R., and R.N. Bamber, 1988. A new genus and species of capitellid polychaete from Northeast England. Ophelia, 29: 119-126.
- Harmelin, J.G., 1968. Note sur trois Capitellidae (Annelides Polychetes) recoltés en Mediterranée, avec description d'un nouveau genre: *Peresiella*. Rec. Trav. St. Mar. End., 59: 253-259.
- Tebble, N., 1954. On the polychaete *Dasybranchus caducus* (Capitellidae) from British waters. Ann. Mag. Nat. Hist., :316-320.
- Warren, L. M., 1976. A review of the genus *Capitella* (Polychaeta Capitellidae). J. Zool. Lond., 180: 195-209.
- Warren, L.M., 1979. *Mediomastus fragilis* Rasmussen (Polychaeta: Capitellidae), a species newly recorded from British waters. J. mar. biol. Ass. U.K., 59: 757-760.