8. Key to families

Note: Some (marine) Polychaetes may resemble oligochaetes in habitus (e.g. Capitellidae, Levinsenia gracilis, Ctenodrilus serratus, and Cauleriella (syn. Tharyx) killariensis). In polychaetes the chaetal bundles are usually closely paired laterally and they may have gills in one or more anterior segments, but the chaetae are usually more complex. Oligochaetes never have gills or gill-like structures in the head region only.

If you have an annelid which doesn’t fit in this key, then most likely you have a polychaet. The following key can be used together with Table 13.

A Can you find the head, with the oral opening?
............................................................................................. Continue with family key (1) and/or use Table 13
- Head with the oral opening missing or indistinct ................................................................. B
B. Both ends of the worm are intact with the body wall closed
........................................................................................................some regenerating oligochaete of an archimotic species: family key (11)
- One or both ends distinctly damaged ................. stop, you have an incomplete specimen

1. Proboscis present ................................................................................................................................................................. 2
- Proboscis absent ........................................................................................................................................................................ 4
2. Hairs present in dorsal bundles ............................................................... naidid (in part) (page 76)
- Hairs absent in dorsal bundles ........................................................................................................................................ 3
3. Large, thick and reddish species (Ø >1 mm) with two chaetae in each bundle. Chaetae simple-pointed or with reduced upper tooth. Body quadrangular in cross-section .............................................................................................................. Lumbriculidae (Rynchelmis) (page 62)
- Smaller, thinner and whitish species (Ø <0.3 mm) with about three chaetae in each bundle. Chaetae with reduced upper tooth. Body rounded in cross-section .............................................................................................................. Propappidae (Propappus) (page 230)
4. Filamentous gills present (hairs present) ............................................................................................................................................. 5
Filamentous gills absent (or tail missing) (hairs present or absent) ................................................................................................. 7
5. Gills present almost throughout the entire body. In posterior segment gradually becoming smaller and eventually absent. Gills covering dorsal chaetae in anterior segments.
............................................................................................................... naidid (Branchiadorulus) (page 76)
- Gills restricted to one or more posterior segments and not covering the chaetae ......................... 6
6. Numerous tail segments with pairs of gills, one gill dorsal and one gill ventral. Dorsal bundles beginning from II, containing bifid chaetae with shorter upper tooth and hairs. Anterior part quadrangular in cross-section .............................................................. tubificid (Branchiura) (page 143)
- Gills restricted to the last tail segment. Dorsal bundles at least lacking in II-III, containing bifid needles with short (sub)equal teeth and hairs. Anterior part rounded in cross-section ................................................................................................................................. naidid (Dero, Aulophorus) (page 76)
7. Eye-pigment present ........................................................................................................................................................................ 7
- Eye-pigment absent ................................................................................................................................................................. 8
8. Up to one chaeta in each bundle, always simple pointed. In ventral bundles the chaeta is sigmoid, large and thick, in dorsal bundles the chaeta is straight, small and thin or missing in many to all segments. Long threadlike species with a length up to 30 cms.
Freshwater ................................................................................................................. Haplotaxidae (Haplotaxis) (page 74)
- Usually two or more chaetae in each bundle. In some cases absent or few in anterior segments, but always with chaetal shape otherwise. Dorsal and ventral chaetae of about the same shape or at most with one thick simple-pointed ventral chaetae in the genital area'.

9. Dorsal bundles absent in at least segment II, in some species also in other anterior dorsal and/or ventral bundles or even totally absent ................................................................. 10
- Dorsal bundles present in all segments, including segment II ................................................... 11

10. All chaetae simple-pointed and all of about the same size and shape. Hairs absent ......................................................... Enchytraeidae (in part) (page 231)
- At least ventral chaetae bifid. Dorsal crotchets, when present, mostly differently shaped as ventral chaetae, in many species thinner (needles). Hairs absent or present. ................................................................. naidid (in part) (page 76)

11. Hairs present in dorsal bundles, sometimes lacking in one to few anterior bundles ......................... 12
- Hairs totally absent in dorsal bundles ......................................................................................... 13

12. In dorsal bundles, next to the hairs, long thin simple-pointed or bifid needles, with long and thin teeth, the upper tooth as long as or shorter than the lower tooth or even very small and indistinct so it appears simple-pointed. Needles in many species without intermediate teeth. Small white worms of up to 6-7 mm long and less than 200 µm thick. Body-wall without papillae ................................................................. tubificid (in part) (page 143)
- Dorsal crotchets variable: bifid, pectinate, palmate or spoon-shaped. In some species posterior segments with simple-pointed crotchets. When dorsal crotchet is bifid with the upper tooth shorter than the lower, than teeth short and blunt or distal tooth multiplied. Longer and thicker species, usually more than 10 mm long and at least 200 µm thick. Body-wall with or without papillae .................................................................

13. Each segment with up to 8 chaetae, usually four pairs of two chaetae. Chaetae simple-pointed or with a reduced upper tooth ........................................................................................................... 14
- At least the anterior bundles with more than two chaetae per bundle ............................................. 16

14. Large thick worms, earthworm like appearance. Chaetae always simple-pointed and usually thicker than 10µm. In sexually mature specimens, the clitellum always begins after segment XII, but usually after XIX and covers many segments. Body never with secondary annuli. In XV-XIX a thick muscular stomach present, even in juveniles ................................................................. Megadrides (page 233)
- Smaller and thinner worms. Chaetae simple-pointed or bifid, with reduced upper tooth. When simple-pointed, chaetae thinner than 10 µm. Secondary annuli absent or present. Clitellum in sexually mature specimens starts in XII or before. No muscular stomach ........................................................................................................... 15

15. Chaetae always simple-pointed. Sexually mature specimens with clitellum in XII. No secondary annuli. Usually with rigid body when preserved ................................. Enchytraeidae (in part) (page 231)
- Chaetae simple-pointed or bifid, with a reduced upper tooth and larger lower tooth. Sexually mature specimens with clitellum in one or more segments in VII-XI. Secondary annuli absent or present, when absent than chaetae bifid. Body weak and soft. ........................................................................................................................................ Lumbriculidae and Dorydrilidae (page 62)

- At least some ventral chaetae bifid. In a few marine species the chaetae can be simple pointed, but in some bundles at least with a reduced upper tooth. One pair of chaetal bundles dorso-laterally and one

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1 Note that in sexually mature naidid species the genital chaetae can be modified (spermathcal chaetae in V, penial chaetae in VI) into thicker often simple-pointed chaetae, but in this case the other ventral chaetae are normally bifid.