Key to the British species of Enteromorpha

1. Diameter of filaments more or less exactly the same along whole length of plant the same from base to apex, cells in 3 or more longitudinal rows. 2

   Diameter of filaments increasing from base to middle. 3

2. 3-12 distinct longitudinal rows of cells; filaments with cavity about 12 µm in diameter; majority of cells with one pyrenoid, a few with up to 3 pyrenoids usually unbranched. E. torta

   3-8 distinct longitudinal rows of cells; filament cavity about 8 µm in diameter; majority of cells with more than one pyrenoid, usually 2-8 often branched. E. ralfsii

3. Cells irregularly arranged in the basal and middle regions of the frond; small areas of at least 10-12 cells regularly arranged not uncommon in the middle region; chloroplast usually hood-shaped and apically polar. E. intestinalis
   include E. compressa with branches

   Cells in the middle region of frond in longitudinal and usually also in transverse rows; chloroplast not always apically polar. 4

4. The majority of cells at the base of the frond with one pyrenoid, only a few with two or more. 5

   The majority of the cells at the base of the frond with 2-4 pyrenoids, only a few with one. E. flexuosa

   The majority of the cells at the base of the frond with more than 5 pyrenoids, usually 8-10 or more. 6

5. Frond highly compressed, unbranched; walls of central cavity closely adpressed together, free only at margins and extreme base. E. linza

   Frond not compressed, cavity free throughout. E. prolifera

6. Frond repeatedly branched with alternately long and short spine-like branches. E. ramulosa

   Frond repeatedly branched without spine-like branches E. clathrata

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E. torta (Mert. in Jurg.) Reinb.

Diameter of filaments more or less the same from base to apex, usually unbranched; filament cavity about 12 µm; cells in 3-12 distinct longitudinal rows; majority of cells with one pyrenoid per cell, a few up to 3.

E. ralfsii Harv.

Diameter of filaments more or less the same from base to middle, usually branched; filament cavity about 8 µm; cells in 3-8 distinct longitudinal rows; majority of cells with more than one pyrenoid, usually 2-8.

E. prolifera (O.F. Mull.) J. Ag.

Diameter of filaments increases from base to middle, usually branched; cells at base in longitudinal rows, cells in the middle in longitudinal and usually also in transverse rows: chloroplast parietal, ring-shaped, but not always obviously so; majority of cells at the base with one pyrenoid, a few with 2 or 3.

E. flexuosa (Wulf. ex Roth) J. Ag.

Diameter of filaments increases from base to middle, branched, cells at base in logitudinal rows, sometimes also in transverse rows; cells in the middle region in longitudinal rows and usually also in transverse rows; majority of cells at the base with 2-4 pyrenoids, a few with one.

E. clathrata (Roth) Grev.

Diameter of filaments increases from base to middle; branched usually repeatedly; cells at base and middle unordered or arranged in longitudinal rows and sometimes also in transverse rows; chloroplast in surface view disc-shaped with entire or lobed margin, if side view is seen parietal, rod-shaped with curved ends, but not always apically polar; majority of cells at the base with more than 5 pyrenoids, usually 8-10 or more.

E. ramulosa (Sm.) Hook.

Diameter of filaments increases from base to middle; repeatedly branched with alternating long and short spine-like branchlets; cells at base and middle un-ordered or arranged in longitudinal and sometimes also in transverse rows; chloroplast in surface view disc-shaped with entire or lobed margin, if side view is seen parietal, rod-shaped with curved ends, but not always apically polar; majority of cells at the base with more than 5 pyrenoids, usually 8-10 or more.

E. linza (L.) J. Ag.

Thallus highly compressed, width is much greater in the middle than at the base, unbranched; the walls of the central cavity closely appressed together, free only at margins and extreme base; cells at base usually rhizoidally elongated, arranged

in longitudinal rows, sometimes in transverse rows; cells in the middle predominantly arranged in longitudinal and in transverse rows; chloroplast in surface view parietal, ring-shaped at least in basal regions; usually with one pyrenoid per cell at the base, forms with up to 3-5 pyrenoids in some cells have been recorded.

E. intestinalis (I.) Link

Width of filaments greater in middle than at the base; branched or unbranched; cells irregularly arranged at base and middle, small areas of at least 10-12 cells being regularly arranged in middle region not uncommon, rarely in circles round a centre of growth; chloroplast in surface view usually hood-shaped and apically polar which may be disturbed due to injury or cell division; majority of cells at the base with one pyrenoid, few have 2.

There is strong evidence to suggest that there are two ecotypes in this species, one unbranched associated with high shore positions and other branched associated with low shore positions, where sexual isolation is developing between them.