[MICROSCOPIC ENDOPHYTIC/EPIPHYTIC/ENDOZOIC CHLOROPHYTA]

DRAFT KEY TO SECTION A: version 1

1. Plant unicellular.....2

1. Plant multicellular, siphonous or saccate.....7

2(1). Cells in chains; on mud in saltmarshes.....
Stichococcus bacillaris

2(1). Cells not in chains; not in saltmarshes.....3

3(2). Cells in clusters of 2, 4 or 8; band-forming at high tide level, particularly in estuaries.....
Pseudendoclonium submarinum

3(2). Cells not so.....4

4(3). Plant with thickened cell wall, forming distinct rhizoidal processes; epilithic or shell-boring.....
Codiolum stages including *Eugomontia*

4(3). Plants without thickened cell wall; attachment processes if present very small; endophytic or epiphytic.....5

5(4). Cells large to ....um diam.; endophytic.....
Chlorochytrium

5(4). Cells less than ....um diam.; epiphytic.....6

6(5). Cells globular, epiphytic on Rhizoclonium.....
..... *Sykidion dyeri*

6(5). Cells elongate, epiphytic on Pilayella.....
Characium marinum

7(1). Plant siphonous or saccate.....8

7(1). Plant multicellular.....9

8(7). Plant a saccate, bladder-like structure, bladders linked by colourless rhizoid-like thread; hairs present; endophytic.....*Blastophysa rhizopus*

8(7). Plant siphonous, filamentous, much branched, with irregular swollen vesicles; shell-boring.....
.....*Ostroebium queketii*

9(7). Plant regularly or irregularly discoidal; may develop into a pustule.....10

9(7). Plant basically filamentous; filaments often aggregate to form a pustule or sheet.....13

10(9). Irregular shaped disc or pustule.....11

10(9). A regular shaped disc of radiating filaments.....12

11(10). Disc monostromatic, except when fertile; hairs not reported; 1 pyrenoid per cell.....*Syncoryne reinkei*

11(10). Disc or pustule polystromatic; produces hairs in large numbers from globular cells in the central part of the thallus; 1 - 5 pyrenoids per cell.....
.....*Ochlochaete hystrix*

12(10). Discs monostromatic only at margin, central region polystromatic; disc diam to ....um.....Ulvella lens

12(10). Disc monostromatic throughout except when fertile; disc diam. to .. um (smaller)....Pringsheimiella scutata

13(9). Filaments often alternately or oppositely branched; hairs absent; grows in the perostracum of Littorina.....
.....Tellamia intricata

13(9). Filaments irregularly branched; hairs may or may not be present; not in the periostracum of Littorina.....14

14(13). Plant shell-boring; producs long thin hairs.....15

14(13). Plant not shell-boring; may or may not produce hairs..16

15(14). Cells of a filament 13-25um across, longer than broad, intertidal.....Phaeophila dendroides

15(14). Cells of a filament 3-12um across, 4-10 x longer than broad; subtidal.....Phaeophila tenuis

16(14). Hairs have characteristic basal swellings; cell-wall separates swollen hair base from the cell below; plants epiphytic not epizoic.....17

16(14). Hairs may or may not be present; if present then not as above; plants epiphytic, epizoic, or epilithic 19

17(16). One pyrenoid per cell.....Acrochaete viridis (endozoic)
(on varous algae)
Acrochaete witrockii
(on brown algae)

17(16). More than one pyrenoid per cell.....18

18(17). Filaments 10-25um across; 2-(6) pyrenoids per cell; chloroplast slightly lobed; on various algae.....
.....Acrochaete leptochaete

18(17). Filaments 4.5-13um across; 3-(6) pyrenoids per cell; chloroplast reticulate; grows among paraphyses of Chorda.....Acrochaete repens

19(16). Plant on or in animals (Bryozoans and hydroids); do not produce hairs.....20

19(16). Plants on other substrates; may or may not produce hairs
.....22

20(19). Endozoic in Alcyonidium; filaments to 3.5um across, x6-12 as long as broad; filaments aggregate to form a layer.....Epicladia phillipsii

20(19). Not in Alcionidium; filaments more than 3.5um diam. and cells less than x6-12 as long as broad; filaments aggregate to a pustule or layer.....21

21(20). Endozoic in Dynamena; filaments 4.5um across, cells x2-4 as long as broad; central cells 2-3um diam.....
.....Pseudoendoclonium dynamenae

21(20). In/on Flustra and Securiflustra; filamenst to 5um across, cells x2-4 as long as broad; central (pseudoparenchymatous) cells 10-15um diam.....
.....Epicladia flustrae

22(19). Does not produce hairs; 1 pyrenoid per cell; grows on various substrates (Zostera, Fucus, wood and rock) 23

22(19). Produces characteristic hairs - hairs a part of a cell containing a chloroplast; 3-12 pyrenoids per cell; epi/endophytic in the decaying parts of various algae (especially Dumontia).....*Bolbocoleon piliferum*

23(22). Filamentous; epiphytic on Zostera marina..... ..... *Epicladia perforans*

23(22). Filaments aggregate into sheets or pustules; not on Zostera.....24

24(23). Plant pustular, on Fucus..... .....*Pseudendoclonium fucicola*

24(23). Plant sheet-forming, on wood and stone..... ..... *Pseudendoclonium submarinum*