
Article

First Checklist of the Myxomycetes of Malta

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Summary: 71 species of Myxomycetes occurring in Malta are reported for the first time in the form of an annotated Systematic checklist.

Among the most curious groups of living organisms are the *Myxomycetes*, meaning 'slime fungi', or as they are popularly known the 'slime moulds'. They are minute creatures, mostly measuring no more than a few millimeters. Their life-cycle is divided into two main stages: the assimilative, vegetative stage, in which they take the form of a moving mass of protoplasm, and the reproductive stage, in which they assume the form of fungus-like structures reproducing by spores. When the spores 'germinate', they release haploid protoplasts, which later unite in pairs to form diploid zygotes. Successive mitotic nuclear division in the zygotes takes place without cell division, thus giving rise to an acellular, multinucleate, slime-looking, naked mass of protoplasm, the 'plasmodium', to which the 'slime moulds' owe their name. When it reaches the reproductive stage, the plasmodium gradually transforms itself into fungus like fruiting bodies. In fact many of the species were mistaken for 'puff-balls', and included in the order *Gasterales*, by the early mycologists. It was only in 1833 that Wallroth introduced the name *Myxomycetes*, separating the slime moulds from the rest of the fungi. In 1864, following intensive investigations, De Barry established that slime moulds are closer to protozoa than to fungi, and he called them *Mycetozoa* meaning 'fungous animals'. He was followed by distinguished authorities, including Rostafinski, the Listers, Hagelstein, and more recently by Olive. However, this designation has never been fully accepted, and students of slime moulds kept using both names: mycologists calling them *Myxomycetes* and zoologists calling them *Mycetozoa*. At present, although everybody is convinced that slime moulds are not fungi, the name *Myxomycetes* seems to have prevailed. In fact, practically in all the published scientific papers, both in Europe and the United States, not to mention the far east, slime moulds are being referred to as *Myxomycetes*.

Although *Myxomycetes* have been studied for over two centuries, there seems to be no trace of any records from the Maltese Islands. The only mention of Malta that could be found in the available literature was in Carlos Lado's 'Checklist of Myxomycetes of the Mediterranean Countries' (1994), in which he includes Malta together with San Marino, Sardinia, Sicily, and the Vatican with Italy. However, Dr. Lado (pers. comm.) confirms that the inclusion of Malta with Italy was not based on any

specific records. Of the 71 species occurring in Malta, 12 have not been reported from Italy (Lado, 1994). These include: *Comatricha anomala*, *Craterium rubronodum*, *Didymium quitense*, *D. trachysporum*, *Echinostelium colliculosum*, *Enteridium splendens*, *Physarum echinosporum*, *P. lividum*, *P. perfectum*, *Stemonitis virginensis*, *Trichia contorta* and *Tubifera microsperma*. Of these, *Craterium rubronodum*, *Physarum echinosporum* and *Tubifera microsperma* are new records for the Mediterranean Region. Much remains to be done. There are other equally suitable localities to be explored. No field work has yet been done in our sister island of Gozo and as yet, no moist chamber culture has been attempted.

Material and Method

Six localities in Malta were chosen for their suitable topography and ecology. Over a three year period (1995/97), 43 excursions were made to search for specimens of *Myxomycetes*. Numerous specimens belonging to 66 species were collected. These together with a few others collected previously, and information received on *Echinostelium colliculosum*, make up the present checklist. All the specimens supporting this checklist are deposited at the author's herbarium.

The localities explored were the following:

- a) **Ghajn il-Kbira** a deep, sheltered, damp, cultivated fault-valley planted with old fruit trees including *Prunus spp.*, *Citrus spp.*, and *Eriobotrya japonica*. At the bottom of the valley there are also small surviving native stands of *Populus alba* and *Ulmus canescens*.
- b) **Buskett** dominated by *Pinus halepensis*. Hitherto, however, no *Myxomycetes* have been found on pine needles. On the contrary many have been collected from a neglected part of the valley among the debris of old planted trees of *Carya olivaeformis*.
- c) **Maqluba**, at the bottom of a circular fault about 60 meters broad and 30 meters deep. It was used as an orchard in the 16th century. In fact *Punica granatum* still survives, together with *Laurus nobilis* and *Ceratonia siliqua*, which are possibly of indigenous origin.
- d) **Wied Babu**, a deep damp river-valley of the last

glacial (stadial) period, dominated chiefly by dispersed old trees of *Ceratonia siliqua*, under which many specimens were found.

e) **Ballut tal-Wardija**, a residual population of *Quercus ilex*, believed to be a surviving relic of the primitive Maltese evergreen forests. Some trees are estimated to be more than 800 years old. Among these also occur a few trees of *Ceratonia siliqua* and *Olea europea*.

f) **Ballut tal-Imgiebah**, another native stand of *Quercus ilex* and *Ceratonia siliqua*, sheltered from the prevailing north westerly winds by a high cliff.

The identification of the collected material was mainly based on the keys and descriptions in the monographs of Lister (1925) and Martin & Alexopoulos (1969). Taxonomic difficulties and doubtful identifications, were resolved with the expert help of many colleagues abroad. These persons are listed in the acknowledgement section at the end of this article.

Explanatory note on the Checklist

The classification follows the one adopted by Martin & Alexopoulos (1969), except for *Reticulariaceae* which has been replaced by *Enteridiaceae* and *Dictydiaethaliaceae* and for the insertion of the subclass *Stemonitomycetidae*, separating the order *Stemonitales* from the subclass *Myxogasteromycetidae*.

Each species listed is followed by the herbarium reference-number of the selected examined specimen/s supporting it, together with the relative data. For the sake of brevity, the names of the collectors and the authorities who determined or confirmed the identification of the specimens, are replaced by their initials. They are those of the author and of those whose names are mentioned in the acknowledgements. In some cases remarks concerning certain specimens have been added.

The frequency of occurrence of each species, based on the collected material, is indicated by the following: "rare", collected from only one locality; "frequent", collected from two localities; "common", collected from three or more localities.

THE CHECKLIST

Division: MYCOTA

Subdivision: MYXOMYCOTINA

Class: MYXOMYCETES

Subclass: CERATIOMYXOMYCETIDAE

Order: CERATIOMYXALES

Family: Ceratiomyxaceae

Ceratiomyxa fruticulosa (O.F. Muell.) T. Macbr.
MB1036 Maqluba 8 Oct. 1996 on fallen branch of

Ceratonia siliqua. Leg. AB & MB, det. MB, test. WN.
Frequent.

Subclass: MYXOGASTEROMYCETIDAE

Order: LICEALES

Family: Liceaceae

Licea variabilis Schrad.

MB1003 Qormi 6 Nov.1983 on dead leaves. Leg. C. Briffa & MB, det. PC. Rare.

Family: Cribrariaceae

Cribraria argillacea (Pers.) Pers.

MB1196 Buskett 28 Oct.1997 on dead stump of *Ceratonia siliqua*. Leg. AB & MB, det. MB, test. CL.
form with distinctly warted spores. Rare.

Cribraria cancellata (Batsch) Nann. -Bremek.

MB1028 Ghajn il-Kbira 30 Oct.1995 on dead wood of *Populus alba*. Leg. AB & MB, det. MB. Frequent.

Cribraria violacea Rex

MB1209 Ghajn il-Kbira 27 Nov.1997 on unidentified stem among debris of *Ulmus canescens*. Leg. AB & MB, det. MB, test. WN. Rare.

Family Enteridiaceae

Enteridium splendens (Morgan) T. Macbr.

MB1035 Maqluba 8 Oct.1996 on dead branch of *Ceratonia siliqua*. Leg. AB & MB, det. WN. This specimen is referable to *v. juranum* (Meyl.) Haerk. (WN). Frequent.

Lycogala epidendrum (L.) Fr.

MB1018 Ballut tal-Wardija 29 Sept.1995 on fallen branches of *Quercus ilex*. Leg. MB, det. MB. Common.

Lycogala flavofuscum (Ehrenb.) Rostaf.

MB1006 Wied il-Luq 1 Oct.1985 high up living trunk of *Fraxinus angustifolia*. Leg. A. Valletta & MB, det. MB, test. WN. Rare.

Tubifera microsperma (Berk. & M.A. Curtis) G.W. Martin.

MB1194 Buskett 28 Oct.1997 on decaying stump of *Ceratonia siliqua*. Leg. AB & MB, det. MB, test. CL.
First record for the Mediterranean. Rare.

Family Dictydiaethaliaceae

Dictydiaethalium plumbeum (Schumach.) Rostaf.

MB1137 Ghajn il-Kbira 3 Feb.1997 on unidentified dead branch. Leg. AB & MB, det. MB. Common.

Order: ECHINOSTELIALES

Family: Echinosteliaceae

Echinostelium colliculosum K.D. Whitney & H.W. Keller

Moist chamber culture 1 May 1995 on bark of living unidentified tree from Malta. Leg. & det. H. Mueller. (WN pers. com.)

Order: TRICHIALES

Family: Arcyriaceae

Arcyria cinerea (Bull.) Pers.

MB1063 Buskett 5 Jan.1996 on the hymenial surface of *Ganoderma lucidum*. Leg. AB & MB, det. MB. Common.

Arcyria denudata (L.) Wettst.

MB1053 Buskett 16 Nov.1995 on dead wood. Leg AB & MB, det. MB. MB1045 Ghajn il-Kbira 10 Nov. 1995 on remains of *Prunus sp.* Leg. AB & MB, det. MM, (faded form). Common.

Arcyria incarnata (Pers.) Pers.

MB1112 Ballut tal-Imgiebah 24 Oct.1996 on dead branch of *Quercus ilex*. Leg. AB & MB, det. WN. Common.

Arcyria insignis Kalchbr. & Cooke

MB1033 Maqluba 8 Oct.1996 on dead bark of *Laurus nobilis*. Leg. AB & MB, det. WN. Frequent.

Arcyria minuta Buchet

MB1107 Ballut tal-Wardija 23 Sept.1996 on dead branch of *Quercus ilex*. Leg. AB & MB, det. WN, spores 10-11µm. Macroscopically 1107 looks like *A. insignis*, but large spores indicate *A. minuta*. (WN). MB1111 Ballut tal-Imgiebah 24 Oct.1996 on dead wood of *Quercus ilex*. Leg. AB & MB, det. WN, spores 8µm (Type 2 = *A. gulielmae* Nann. -Bremek.). Common.

Arcyria obvelata (Oeder) Onsberg

MB1037 Maqluba 8 Oct 1996 on fallen branch of *Ceratonia siliqua*. Leg. AB & MB, det. MB. Common.

Arcyria oerstedtii Rostaf.

MB1044 Ghajn il-Kbira 10 Nov.1995 on decaying wood of *Prunus sp.* Leg. AB & MB, det. MB. test. WN. Rare.

Arcyria pomiformis (Leers) Rostaf.

MB1059 Ballut tal-Wardija 18 Dec.1995 on dead wood. Leg AB. & MB, det MB. MB1152 Wied Babu 13 Feb.1997 on dead wood of *Ceratonia siliqua*. Leg. AB & MB, det. YY, (a variant; it had been mistaken for a form of *A. nigella* showing affinity with *A. glauca*). Common.

Metatrichia vesparium (Batsch) Nann. -Bremek.

MB1017 Ghajn il-Kbira 23 Jan.1995 on dead wood of *Populus alba*. Leg. AB & MB, det. MB. Rare.

Perichaena chryosperma (Curr.) A. Lister

MB1073 Girgenti 26 Feb.1996 on dead wood. Leg. AB & MB, det. MB, test. WN. Frequent.

Perichaena corticalis (Batsch) Rostaf.

MB1022 Buskett 16 Oct 1995 on fallen trunk. Leg. AB & MB, det. MB. Rare.

Perichaena depressa Lib.

MB1090 Ghajn il-Kbira 23 Mar.1996 on dead wood. Leg. AB & MB, det. MB, test. WN. Rare.

Family Trichiaceae

Trichia contorta (Ditmar) Rostaf.

MB1014 Ghajn il-Kbira 23 Jan.1995 on dead wood of *Populus alba*. Leg. AB & MB, det. PC. MB1015 Ghajn il-Kbira 23 Jan.1995 along with typical form (1014). Leg. AB & MB, det. PC. 1015 is referable to var. *inconspicua* (Rostaf.) A. Lister, with unbranched elaters (PC). Rare.

Trichia decipiens (Pers.) T. Macbr.

MB1087 Ghajn il-Kbira 23 Mar.1996 on dead wood of *Populus alba*. Leg. AB & MB, det. WN. Rare.

Trichia lutescens (A. Lister) A. Lister

MB1066 Ballut tal-Wardija 16 Jan.1996 on dead branch of *Quercus ilex*. Leg. AB & MB, det. MB test. WN. Rare.

Trichia persimilis P. Karst.

MB1105 Ballut tal-Wardija 23 Sept.1996 on dead branch of *Olea europea*. Leg. AB & MB, det. WN. Frequent.

Trichia varia (Pers.) Pers.

MB1086 Ghajn il-Kbira 23 Mar.1996 on dead wood. Leg. AB & MB, det. MB. test. WN. Rare.

Order: PHYSARALES

Family: Physaraceae

Badhamia foliicola A. Lister

MB1060 Ballut tal-Wardija 18 Dec.1995 on dead leaf of *Ceratonia siliqua*. Leg. AB & MB, det. MB. MB1181 Wied Babu 17 Mar.1997 on dead wood of *Ceratonia siliqua*. Leg. AB & MB, det. WN, test. GM & CI, a critical form with limeless sporangia! Total absence of lime confirmed by author: sporangia show no reaction at all to lactic acid in lacto-phenol medium. Common.

Badhamia utricularis (Bull.) Berk.

MB1012 Ghajn il-Kbira 15 Nov.1994 on dead branch of *Prunus sp.* Leg. AB & MB, det. WN. Rare.

Craterium aureum (Schumach.) Rostaf.

MB1052 Ballut tal-Wardija 13 Nov.1995 on dead leaf of *Ceratonia siliqua*. Leg. AB & MB, det. MB. Frequent.

Craterium leucocephalum (Pers.) Ditmar

MB1119 Ballut tal-Imgiebah 16 Jan.1997 on dead leaves of *Quercus ilex*. Leg AB & MB, det. MB. test. WN, specimen referable to var. *scyphoides* (Cooke & Balf.) G. Lister, (WN). Rare.

Craterium rubronodum G. Lister

MB1206 Ballut tal-Imgiebah 21 Nov.1997 on leaf litter of *Quercus ilex*. Leg. AB & MB, det. MB, test. CL. First

record for the Mediterranean Region. Rare.

Leocarpus fragilis (Dicks.) Rostaf.

MB1013 Ballut tal-Imgiebah 23 Dec.1994 on debris of *Quercus ilex*. Leg. MB, det. PC. Frequent.

Physarum bitectum G. Lister

MB1140 Wied Babu 13 Feb.1997 on dead wood of *Ceratonia siliqua*. Leg. AB & MB, det. WN, (spores 10-11µm). MB1159 Wied Babu 20 Feb.1997 on dead leaf. Leg. AB & MB, det. WN, (spores 13-14µm). Rare.

Physarum bogoriense Racib.

MB1075 Maqluba 1 Mar.1996 on moss growing on dead wood. Leg. AB & MB, det. MB. Rare.

Physarum cinereum (Batsch) Pers.

MB1008 Ballut tal-Imgiebah 10 Dec.1993 on dead leaf. Leg. MB, det. PC. MB1160 Wied Babu 20 Feb.1997 on decaying legume of *Ceratonia siliqua*. Leg. AB & MB, det. GM & Cl. Unlike all specimens of this species seen so far, MB1160 is a critical form consisting of groups of heaped sporangia with no sign of any plasmodiocarps. Common.

Physarum compressum Alb. & Schwein.

MB1148 Wied Babu 13 Feb.1997 on dead herbaceous stem. Leg. AB & MB, det. MB, test. WN. Frequent.

Physarum echinosporum A. Lister

MB1208 Imgiebah 21 Nov.1997, on dead wood of *Quercus ilex*, leg. AB & MB, det. WN. First record for the Mediterranean Region. Rare.

Physarum gyrosum Rostaf.

MB1139 Wied Babu 13 Feb.1997 on dead twig of *Rubus ulmifolius*. Leg. AB & MB, det. MB, test. WN. An atypical form, however, spores indicative of species (WN). Rare.

Physarum leucophaeum Fr.

MB1009 Ghajn il-Kbira 28 Dec.1993 on stump of *Prunus* sp. Leg. AB & MB, det. PC. Frequent.

Physarum leucopus Link

MB1024 Ballut tal-Wardija 25 Oct.1995 on dead leaf. Leg. AB & MB, det. MB typical form, (several other variants were determined by WN and MM). Common.

Physarum lividum Rostaf.

MB1176 Wied Babu 17 Mar.1997 on decaying legume of *Ceratonia siliqua*. Leg. AB & MB, det. WN. Specimen with defective maturation (WN). Rare.

Physarum melleum (Berk. & Broome) Massee

MB1050 Ballut tal-Wardija 13 Nov.1995 on dead leaves of *Quercus ilex*. Leg. AB & MB, det. WN. Specimen not fully mature, but identifiable (WN). Frequent.

Physarum nutans Pers.

MB1040 Buskett 30 Oct.1995 on dead wood. Leg. AB &

MB, det. MB. Occurs on dead wood of various tree species in all localities visited. Common.

Physarum perfectum Peck

MB1147 Wied Babu 13 Feb.1997 on dead leaf of *Ceratonia siliqua*. Leg. AB & MB, det. WN. Frequent.

Physarum pusillum (Berk. & M.A. Curtis) G. Lister

MB1177 Wied Babu 17 Mar.1997 on dead wood of *Ceratonia siliqua*. Leg. AB & MB, det. MB, test. WN. Frequent.

Physarum viride (Bull.) Pers.

MB1088 Buskett 23 Mar.1996 on dead wood of *Carya olivaeformis*. Leg. AB & MB, det. MB. Several specimens were met with on dead wood of various tree species in all localities visited. Common.

Family: Didymiaceae

Diderma hemisphaericum (Bull.) Hornem.

MB1005 Maqluba 10 Feb.1985 on leaf of *Ceratonia siliqua*. Leg. E. Lanfranco & MB, det. MM. Common.

Diderma spumarioides (Fr.) Fr.

MB1132 Ballut tal-Wardija 17 Jan.1997 embracing living herbaceous stem. Leg. AB & MB, det. MB. Rare.

Didymium clavus (Alb. & Schwein.) Rabenh.

MB1122 Ballut tal-Wardija 17 Jan.1997 on dead leaves. Leg. AB & MB, det. MB. Rare.

Didymium difforme (Pers.) Gray

MB1070 Ghajn il-Kbira 12 Feb.1996 on dead leaves of *Populus alba*. Leg. AB & MB, det. MM. Rare.

Didymium iridis (Ditmar) Fr.

MB1164 Wied Babu 20 Feb.1997 on decaying legumes of *Ceratonia siliqua*. Leg. AB & MB, det. MB. Rare.

Didymium melanospermum (Pers.) T. Macbr.

MB1165 Wied Babu 20 Feb.1997 on dead leaves of *Ceratonia siliqua*. Leg. AB & MB, det. WN. Rare.

Didymium minus (A. Lister) Morgan

MB1098 Ghajn il-Kbira 8 Apr.1996 on dead leaves of *Carya* sp. Leg. AB & MB, det. WN. MB1095 Ghajn il-Kbira 23 Mar.1996 on dead leaves of *Eriobotrya japonica*. Leg. AB & MB, det. MM (a sessile form). Common.

Didymium nigripes (Link) Fr.

MB1021 Ghajn il-Kbira 2 Oct.1995 on dead leaves. Leg. AB & MB, det. MB. Common.

Didymium quitense (Pat.) Torrend

MB1174 Maqluba 17 Mar.1997 on dead wood of *Punica granatum*. Leg. AB & MB, det. MB, test. WN. A form with very large spores showing affinity with *D. rugulosporum* (WN). Rare.

Didymium squamulosum (Alb. & Schwein.) Fr.

MB1048 Ballut tal-Wardija 13 Nov.1995 on dead leaf of *Ceratonia siliqua*. Leg. AB & MB, det. MB. MB1134 Buskett 3 Feb.1997 on dead leaf of *Carya olivaeformis*. Leg. AB & MB, det. MM, a sessile form. Common.

Didymium trachysporum G. Lister

MB1173 Maqluba 17 Mar.1997 on dead wood of *Laurus nobilis*. Leg. AB & MB, det. BI. Rare.

Subclass STEMONITOMYCETIDAE

Order: STEMONITALES

Family: Stemonitaceae

Comatricha anomala Rammeloo

MB1183 Ballut tal-Wardija 27 Aug.1997 on dead wood of *Quercus ilex*. Leg. AB & MB, det. GM & CI. From all the countries bordering the Mediterranean, this species had only been reported from Spain (LADO 1994). Frequent.

Comatricha nigra (Pers.) J. Schroet.

MB1102 Ghajn il-Kbira 6 Feb.1992 on stump of *Prunus sp.* Leg. AB & MB, det. PC, test. WN, (with ovate or shortly cylindrical sporangia on relatively short stipes). MB1079 Maqluba 1 Mar.1996 on dead wood. Leg. AB & MB, det. MB, test. WN, (with globose sporangia on tall stipes). These represent two extreme forms of *C. nigra*. Nannenga-Bremekamp includes several varieties of this species in an unpublished key to a planned Monograph (WN). Common.

Comatricha tenerrima G. Lister

MB1200 Ghajn il-Kbira 6 Nov.1997 on stem of *Acanthus mollis*. Leg. AB & MB, det. MB. Rare.

Diachea leucopodia (Bull.) Rostaf.

MB1004 Ballut tal-Imgiebah 10 Jan 1985 on leaf of *Ceratonia siliqua*. Leg. MB, det. MB. MB1166 Wied Babu 20 Feb.1997 on leaf of *Ceratonia siliqua*. Leg. AB & MB, det. MB, test. WN, a form with fused stipes. Occurs practically everywhere, common.

Enerthenema papillatum (Pers.) Rostaf.

MB1031 Maqluba 8 Oct.1996 on branch of *Ceratonia siliqua*. Leg. AB & MB, det. MB. Frequent.

Lamproderma scintillans Morgan

MB1199 Ghajn il-Kbira 6 Nov.1997 on twig and leaf of *Hedera helix*. Leg. AB & MB, det. MB. Rare.

Stemonitis flavogenita E. Jahn

MB1019 Ghajn il-Kbira 2 Oct.1995 on dead wood of *Populus alba*. Leg. AB & MB, det. WN, a short form, total height 2.7-3.6mm. MB1034 Maqluba 8 Oct.1996 on dead wood of *Ceratonia siliqua*. Leg. AB & MB, det. YY, a critical form with undeveloped surface net showing affinity with *S. splendens*. (YY); at first it was mistaken for a *Stemonaria sp.* (See iconography). Frequent.

Stemonitis fusca Roth

MB1141 Wied Babu 13 Feb.1997 on dead branch of *Ceratonia siliqua*. Leg. AB & MB, det. GM & CI, a critical atypical form with total height up to 2.6mm and stipe more than one half of total height. GM & CI studied the type material of *S. fusca*, *S. nigrescens* and *S. virginensis* and concluded that *S. fusca* is a variable species, *S. nigrescens* is synonymous to *S. fusca*, and *S. virginensis* is characterised by small size and small spores with little reticules. (GM & CI pers. com.). Rare.

Stemonitis smithii T. Macbr.

MB1032 Maqluba 8 Oct.1996 on dead wood of *Ceratonia siliqua*. Leg. AB & MB, det. WN. Identification based on small size of spores (4µm). Rare.

Stemonitis splendens Rostaf.

MB1010 Buskett 10 Nov.1994 on fallen trunk of *Carya olivaeformis*. Leg. MB, det. WN. Rare.

Stemonitis cf. virginensis Rex

MB1092 Ghajn il-Kbira 23 Mar.1996 on dead herbaceous stem. Leg. AB & MB, det. WN. MB1096 Maqluba 1 Mar.1996 on dead wood. Leg. AB & MB, det. WN. Surface net of 1096 is strikingly finer than the one of 1092 (WN). The identification of these specimens may have to be reviewed following research on type material by GM & CI. Frequent.

Stemonitopsis typhina (F.H. Wigg.) Nann. -Bremek.

MB1016 Ghajn il-Kbira 23 Jan.1995 on dead wood of *Populus alba*. Leg. AB & MB, det. PC. Rare.

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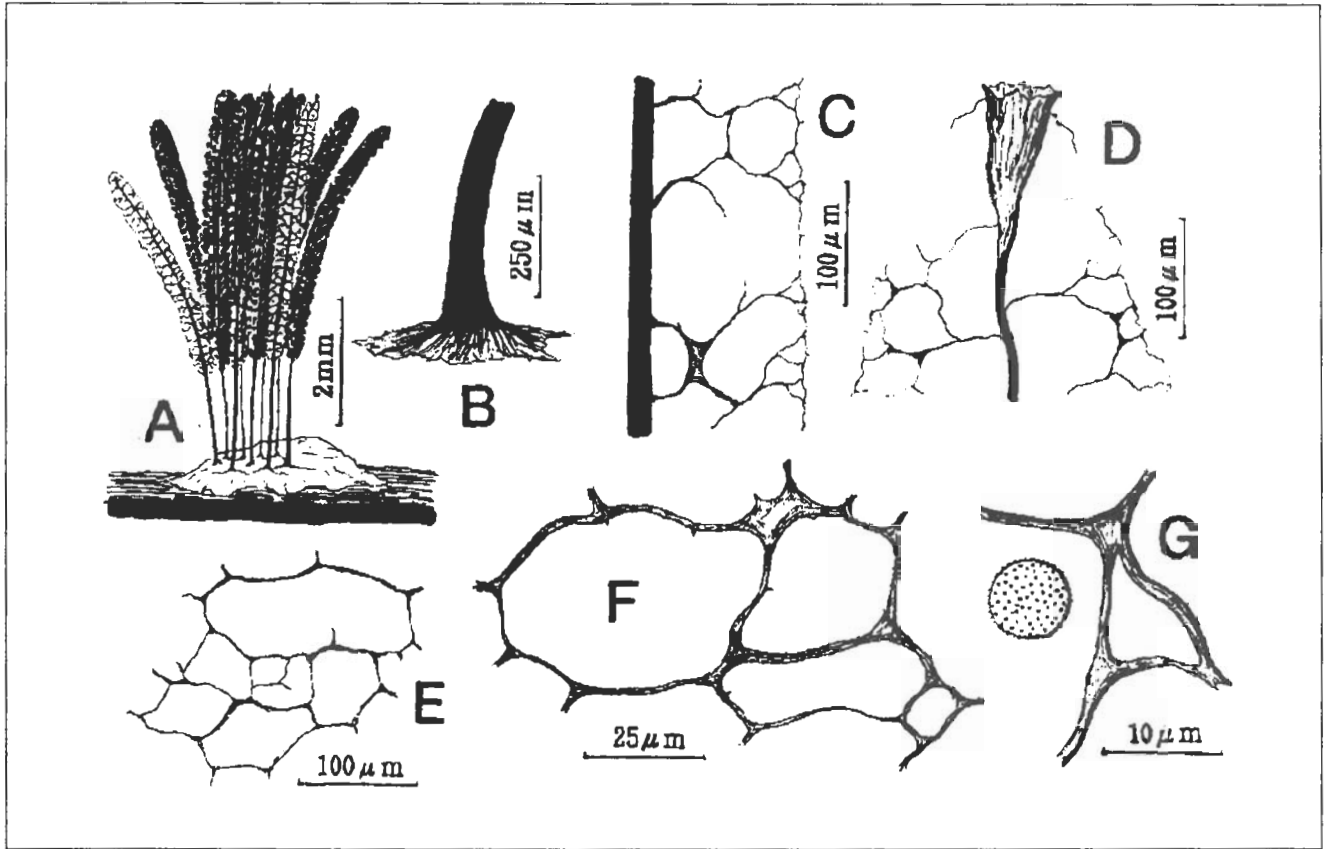


Figure 1 MB1034 *Stemonitis cf. flavogenita* showing very fine traces of the undeveloped surface net, which at first seemed to be absent. (Iconography by Yukinori Yamamoto).

- A. Habit.
 B. Base of stipe.
 C. Branches of capillitium uniting with traces of surface net.
 D. Apex of columella with cupulate expansion characteristic of *S. flavogenita*.
 E. & F. Different magnifications of sections of surface net with large irregular meshes indicative of *S. splendens*.
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