

## NOTES AND ILLUSTRATIONS OF MYXOMYCETES FROM CHILE AND OTHER COUNTRIES

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(WITH 23 FIGURES)

Most of the species of Myxomycetes reported from Chile were collected in the Juan Fernandez Islands and in the southern part of the country. The earlier reports were by Bertero (1828), Montagne (1852) and Johow (1896). Sturgis (1916) reported on specimens collected by Thaxter in the provinces of Valdivia and Magallanes, and R. E. Fries (1920) on those of the Juan Fernandez Islands.

During the past four years, I have had the opportunity to collect Myxomycetes in the provinces of Santiago, Valparaíso and Coquimbo, in the central part of Chile, approximately between lat. 29-34° S. It is noteworthy that the favorable time to collect Myxomycetes in this area is limited to the period between the last week of July and the middle of September, or, in rainy years, the middle of October, whereas in the south the favorable months are from September to March. The abundance of Myxomycetes in Santiago, Valparaíso and Coquimbo during this brief period is also remarkable. In 1961, after unusual spring rains, some logs at Hacienda Illapel, Coquimbo, appeared to be painted red due to the extraordinary proliferation of *Arcyria denudata*. In the Jardín Botánico Nacional (Parque del Salitre), Viña del Mar, Valparaíso, it is common to find, two or three days after a rain, decaying wood and logs covered with extensive fructifications of *Stemonitis axifera*, *Physarum compressum*, *Didymium iridis*, *Ceratiomyxa fruticulosa* or *Mucilago spongiosa* much more luxuriant than any such growths I have seen in the United States. It seems that all the Myxomycetes fruit suddenly during the short rainy season. During these few weeks it is possible to collect specimens of species which in places with longer periods of rain are less abundant but appear during a longer period. Does the short season affect the vigor and morphology of species concerned? Evidence that this may be so is provided by the peculiarities

in size and color of many of my specimens. Dr. G. W. Martin has told me that specimens collected in New Zealand, India and the American tropics are often somewhat different from specimens of the same species collected in the United States and Europe but that the differences are not sufficiently great to warrant their description as distinct species.

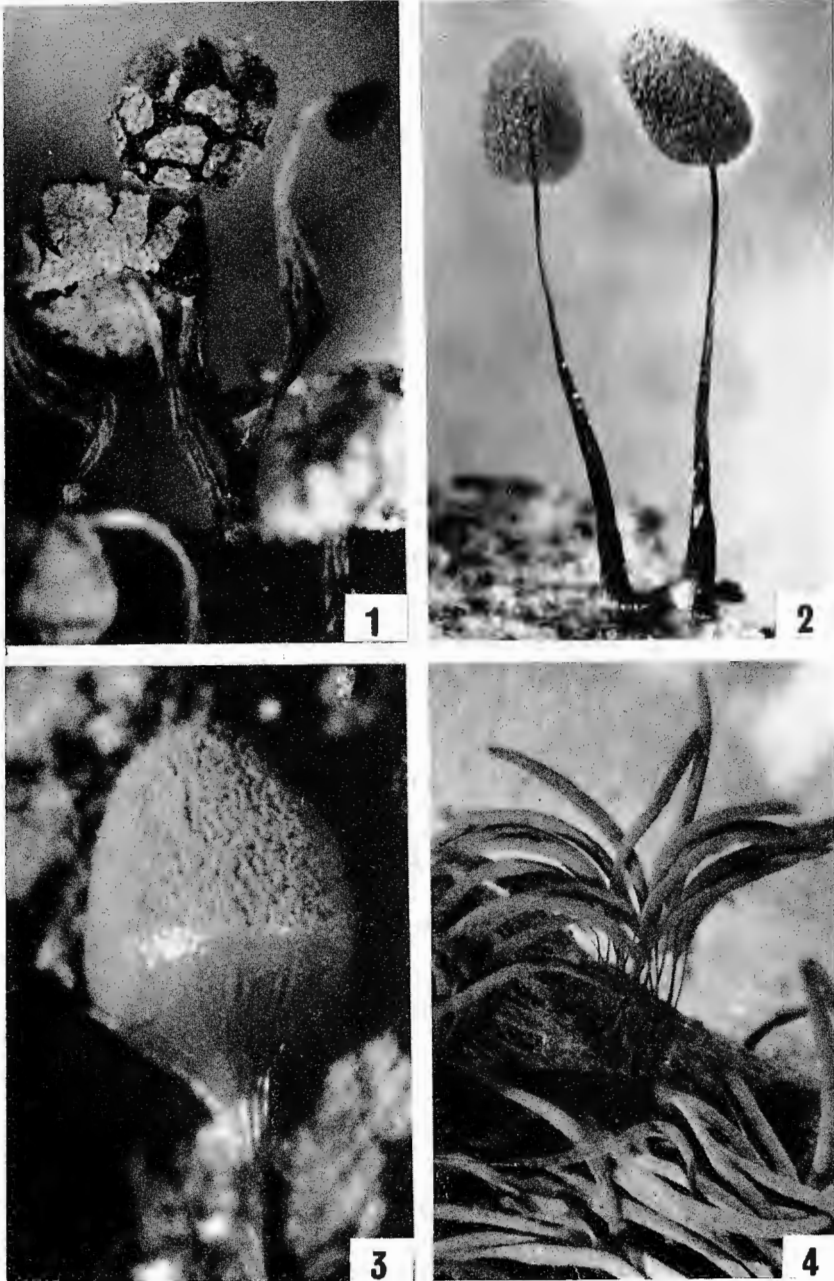
In my experience, the commonest species occurring during the rainy season in the three central provinces mentioned is *Comatricha typhoides*. It also appears during the dry season if pieces of wood are placed in moist chambers or wet and covered with straw. *Fuligo septica* and *Reticularia lycoperdon* are also abundant. It is amazing to note how easily Myxomycetes may be obtained if pieces of dry wood are placed in moist chambers. Dr. G. W. Martin has told me that dry material collected in arid coastal zones of Ecuador and Peru and in the Galápagos, as well as in arid regions of the southwestern United States, have been more prolific in Myxomycetes than comparable material collected in areas with a much longer rainy season.

I have been able to cultivate in the laboratory on pieces of decayed wood or on 2% agar sprinkled with oats, some of the Myxomycetes collected in the field. On agar and oats, *Fuligo septica* has produced decorticated aethalia with viable spores somewhat larger than usual. FIG. 16 shows such a decorticated aethalium, which may be compared with a normal aethalium, FIG. 15.

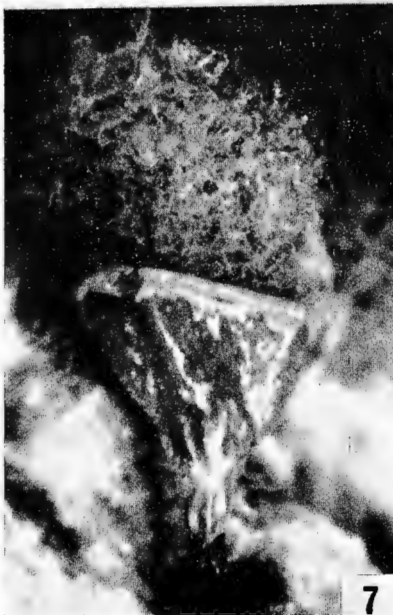
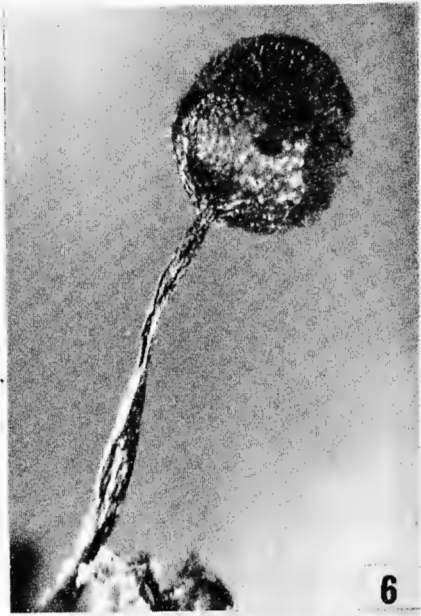
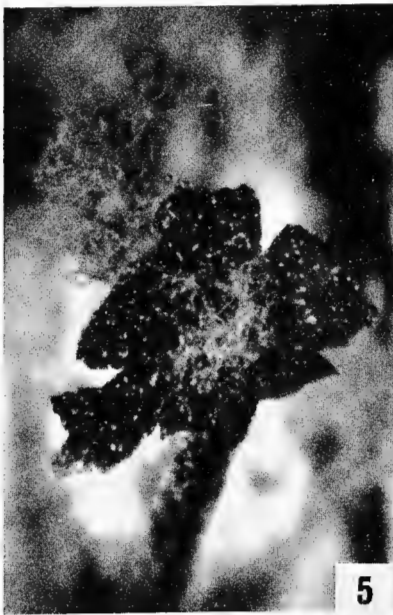
In the Province of Coquimbo, there are relict forests on the western slope of some mountains of the Cordillera de la Costa. Although this is semi-desert, these forests have a high rate of precipitation and high humidity all through the year due to the fog that condenses on the foliage and falls to the ground like rain. In the Bosque Fray Jorge, I have collected *Comatricha typhoides*, *Stemonitis axifera* and *Hemitrichia stipitata*. In another relict wood at Cerro La Silla del Gobernador, Pichidangui, I have found abundant fructifications of *Trichia floriformis* and *Diderma spumarioides* during November.

The present paper includes a list of 77 species of Myxomycetes reported from Chile, 15 for the first time (indicated by an asterisk). The collections have been deposited in the Museo de Historia Natural, Sección Criptógamas, Santiago, Chile, and in the Estación Experimental Agronómica, Universidad de Chile.

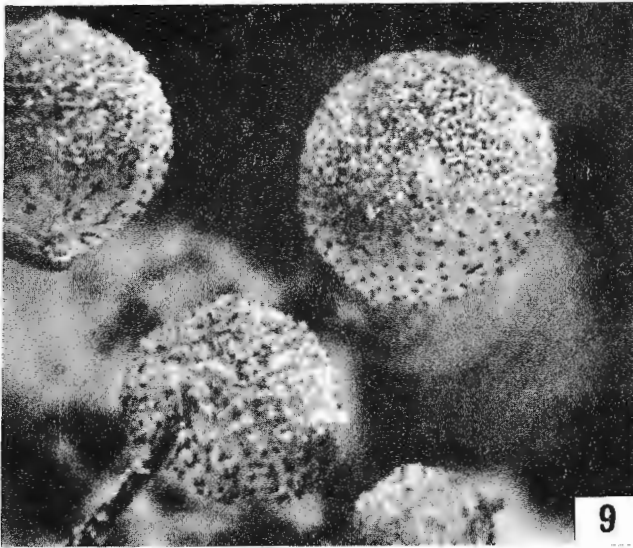
The specimens of *Lamproderma columbinum*, *Cribraria intricata*, *Craterium leucocephalum* and *Perichaena chryosperma* shown in FIGS. 6, 9, 10 and 19 were collected in the United States and kindly supplied by Dr. G. W. Martin.



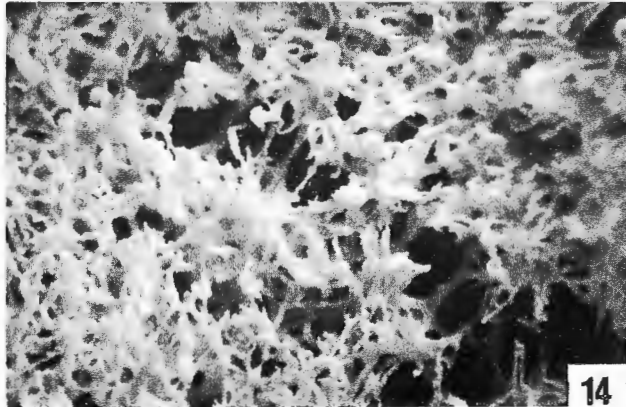
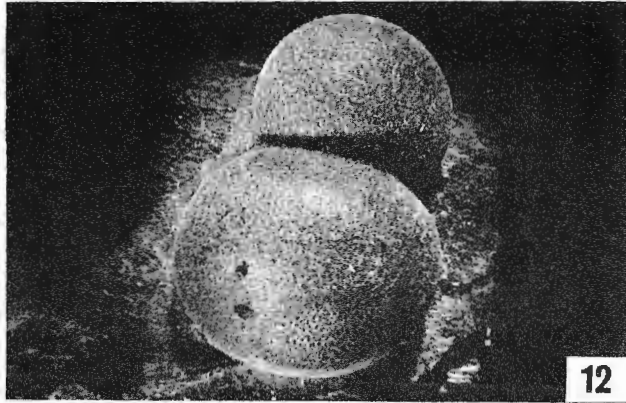
FIGS. 1-4. 1. *Physarum viride*  $\times 40$ . 2. *Comatricha nigra*  $\times 25$ . 3. *Arcyria cinerea*  $\times 40$ . 4. *Stemonitis axifera*  $\times 7$ .



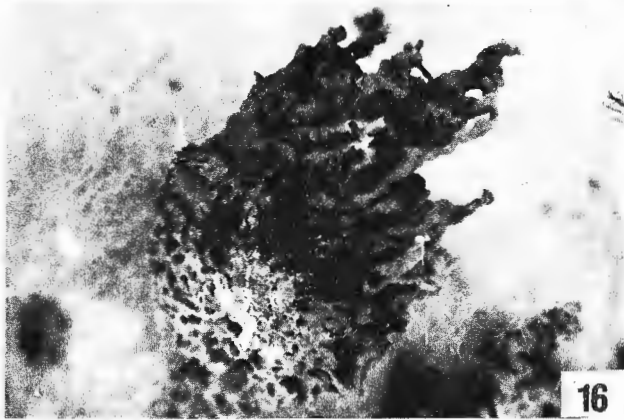
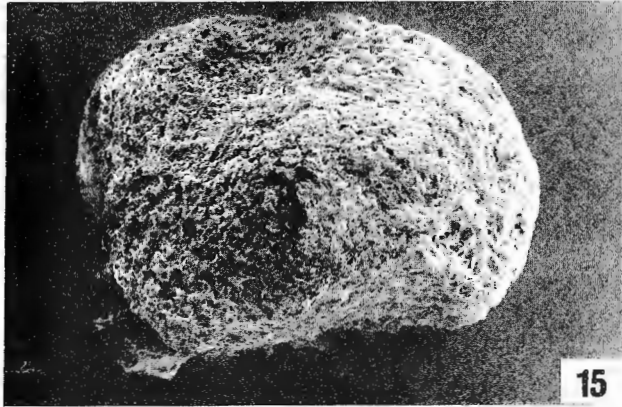
FIGS. 5-8. 5. *Trichia floriformis*  $\times 40$ . 6. *Lamproderma columbinum*  $\times 30$ .  
7. *Hemitrichia stipitata*  $\times 40$ . 8. *Didymium iridis*  $\times 50$ .



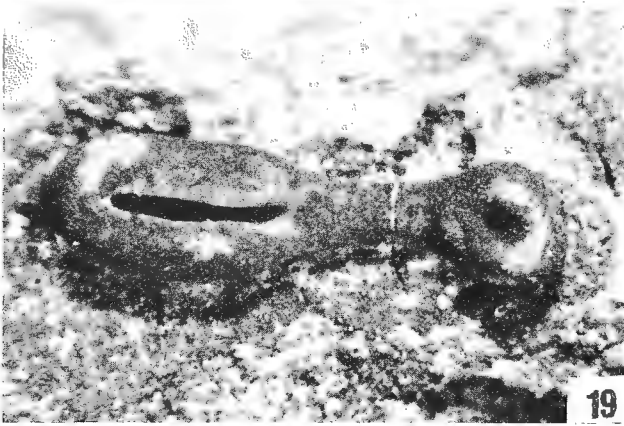
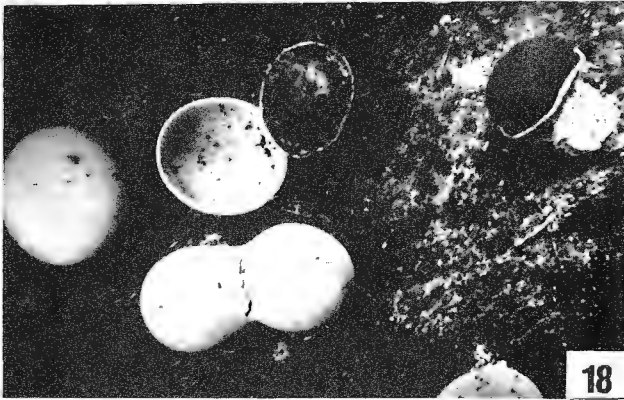
FIGS. 9-11. 9. *Cribraria intricata*  $\times 70$ . 10. *Craterium leucocephalum*  $\times 40$ .  
11. *Physarum compressum*  $\times 40$ .



FIGS. 12-14. 12. *Lycogala epidendrum*  $\times 6$ . 13. *Dictydium cancellatum*  $\times 60$ .  
14. *Ceratiomyxa fruticulosa*  $\times 25$ .

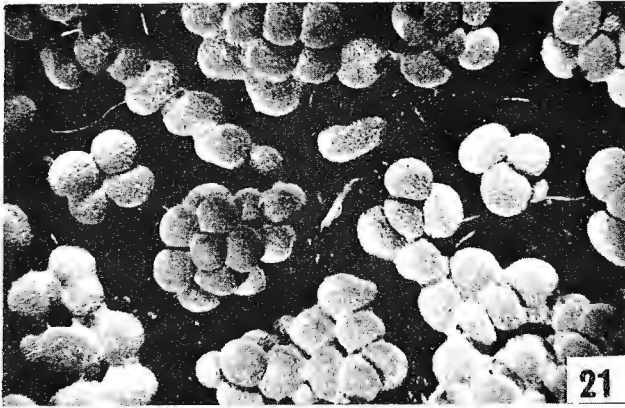


FIGS. 15-17. 15. *Fuligo septica*  $\times 4$ . 16. *Fuligo septica*, decorticated aethalium,  $\times 4$ . 17. *Diachea leucopodia*  $\times 100$ .



FIGS. 18-20. 18. *Diderma radiatum*  $\times 20$ . 19. *Perichaena chrysosperma*  $\times 40$ .  
20. *Badhamia gracilis*  $\times 35$ .





FIGS. 21-23. 21. *Badhamia populina*  $\times 10$ . 22. *Dictydiaethalium plumbeum*  $\times 4$ .  
23. *Hemitrichia serpula*  $\times 8$ .

## CERATIOMYXALES

## Ceratiomyxaceae

*Ceratiomyxa fruticulosa* (Müll.) Macbr. FIG. 14

## LICEALES

## Liceaceae

*Licea variabilis* Schrad. (syn. *L. flexuosa* Pers., *L. schoenleinii* Johow)  
*Tubifera ferruginosa* (Batsch) J. Gmel.

## Reticulariaceae

*Lycogala epidendrum* (L.) Fries, (syn. *L. miniatum* Pers.) FIG. 12

*Dictydiaethalium plumbeum* (Schum.) Rost. FIG. 22

*Reticularia lycoperdon* Bull.

*Enteridium olivaceum* Ehrenb. (syn. *E. antarcticum* Speg.)

*Enteridium splendens* (Morgan) Macbr. (syn. *E. rozeanum* (Rost.)  
Wingate)\*

## Cribrariaceae

*Cribraria aurantiaca* Schrad.

*Cribraria macrocarpa* Schrad.

*Cribraria piriformis* Schrad.

*Cribraria splendens* (Schrad.) Pers.

*Dictydium cancellatum* (Batsch) Macbr. FIG. 13

## TRICHIALES

## Dianemaceae

*Calomyxa metallica* (Berk.) Nieuwl. (syn. *Margarita metallica* Berk.)  
Lister

## Trichiaceae

*Perichaena corticalis* (Batsch) Rost. (syn. *P. populina* Fries)

*Arcyodes incarnata* (Alb. & Schw.) O. F. Cook (syn. *Lachnobolus incarnatus* Schroet.)

*Arcyria cinerea* (Bull.) Pers. FIG. 3\*

*Arcyria denudata* (L.) Wetts. (syn. *L. punicea* Pers.)

Specimens collected show a cup unusually ample and capillitium strongly cogged.

*Arcyria incarnata* (Pers.) Pers.

*Arcyria insignis* Kalchbr. & Cke.

- Trichia affinis* de Bary  
*Trichia botrytis* (J. F. Gmel.) Pers.  
*Trichia contorta* (Ditm.) Rost.  
*Trichia favoginea* (Batsch) Pers.  
*Trichia floriformis* (Schw.) G. Lister (syn. *T. lateritia* Lév.) FIG. 5  
*Trichia persimilis* P. Karst.  
*Trichia pusilla* (Hedw.) G. W. Martin (syn. *T. decipiens* (Pers.) Macbr.)  
*Trichia varia* (Pers.) Pers.  
*Trichia verrucosa* Berk.  
*Hemitrichia clavata* (Pers.) Rost. (syn. *Trichia clavata* Pers.)  
*Hemitrichia serpula* (Scop.) Rost. FIG. 23 \*  
*Hemitrichia stipitata* (Massee) Macbr. FIG. 7 \*

## STEMONITALES

## Stemonitaceae

- Diachea elegans* Fries  
*Diachea leucopodia* (Bull.) Rost. FIG. 17  
 Specimens collected have dark and somewhat large spores.  
*Enerthenema papillatum* (Pers.) Rost.  
*Stemonitis axifera* (Bull.) Macbr. (syn. *S. ferruginea* Ehrenb.) FIG. 4  
*Stemonitis fusca* Roth  
*Stemonitis splendens* Rost.  
*Comatricha elegans* (Racib.) G. Lister \*  
*Comatricha nigra* (Pers.) Schroet. (syn. *Stemonitis ovata* Pers.) FIG. 2  
*Comatricha typhoides* (Bull.) Rost.  
*Clastoderma debaryanum* A. Blytt

## PHYSARALES

## Physaraceae

- Fuligo septica* (L.) Weber. FIG. 15  
*Badhamia affinis* Rost.  
*Badhamia capsulifera* (Bull.) Berk.\*  
*Badhamia macrocarpa* (Ces.) Rost.  
*Badhamia panicea* (Fries) Rost.\*  
*Badhamia populina* A. & G. Lister. FIG. 21 \*  
*Physarum bethelii* Macbr.\*  
*Physarum bivalve* Pers. (syn. *P. sinuosum* Weinm.)  
*Physarum brunneolum* (Phill.) Massee

- Physarum cinereum* (Batch) Pers.  
*Physarum compressum* Alb. & Schw. FIG. 11 \*  
 Specimens have green peridium.  
*Physarum dictyospermum* A. & G. Lister  
*Physarum flavicomum* Berk.\*  
*Physarum globuliferum* (Bull.) Pers.  
*Physarum lateritium* (Berk. & Rav.) Morgan  
*Physarum leucophaeum* Fries \*  
*Physarum nutans* Pers.  
*Physarum ovisporum* G. Lister \*  
*Physarum penetrale* Rex  
*Physarum psittacinum* Ditmar  
*Physarum straminipes* A. Lister  
*Physarum viride* (Bull.) Pers. FIG. 1  
*Leocarpus fragilis* (Dicks.) Rost.

#### Didymiaceae

- Diderma antarcticum* (Speg.) Sturgis (syn. *Licea antarctica* Speg.)  
*Diderma niveum* (Rost.) Macbr.  
*Diderma radiatum* (L.) Morgan. FIG. 18 \*  
*Diderma simplex* (Schroet.) G. Lister  
*Diderma spumarioides* (Fries) Fries  
*Diderma testaceum* (Schrad.) Pers.  
*Diderma trevelyani* (Grev.) Fries  
*Didymium difforme* (Pers.) S. F. Gray (syn. *Diderma difforme* Pers.)  
*Didymium iridis* (Ditm.) Fries. FIG. 8 \*  
*Didymium melanospermum* (Pers.) Macbr. (syn. *D. farinaceum*  
 Schrad., *Physarum capitatum* Link)  
*Didymium nigripes* (Link) Fries  
*Didymium squamulosum* (Alb. & Schw.) Fries (syn. *D. costatum* Fries)

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