

there are few fungi more widely distributed than the *Pythiaceæ*, though the actual number of species appears to be small. They merely require to be sought for definitely, since their presence is not disclosed by a casual observation. A simple process will usually give three or four species almost anywhere that humus-rich soil and pond water are available, yet without this their presence is almost certain to escape detection. The following method has rarely failed to give me satisfactory results. Garden earth, preferably from the neighbourhood of the roots of higher plants, is taken three to six inches below the surface of the soil and placed in a large shallow vessel to which enough tap water is added to leave a layer free above the earth. In this the substratum is floated. Numerous trials have shown that the nature of the latter is by no means a matter of indifference. Flies and meal-worms, so much used for the growth of aquatic fungi, are exceedingly liable to attract minute protozoa and also zooglæa-forming bacteria which may interfere seriously with subsequent work. By far the best medium which I have found for general use is boiled sliced root of *Abutilon*<sup>1</sup> either plain or steeped in decoction of flies. For an animal substratum centipedes were found much cleaner than flies. For small cultures ants are very satisfactory.<sup>2</sup> Small softened twigs of elm and various other trees which have lain in water for some time are also suitable in some cases. So also are cress seedlings (for *P. de Baryanum*) potato, slabs of Basidiomycetes (*Agaricus*, *Clathrus*, &c.) and various other substances. Working in the tropics I have found it very useful to acidify slightly with citric acid the water used during the first step in the isolation from earth, in order to keep down bacteria which are capable of strongly inhibiting the growth of fungi. The acid often, however, interferes with spore-formation, so that it is necessary to shorten the time in it as much as possible. After twenty-four hours, the culture substratum is removed and placed in a relatively large quantity of

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<sup>1</sup> None of the other *Malvaceæ* which I have tried gave as good results.

<sup>2</sup> Species of *Aphanomyces* seem to have a special liking for ants.