NOTES ON MYXOMYCETES VIII

A NEW SPECIES OF DIDYMIUM FROM THE NETHERLANDS

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(*Doorwerth*)

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Specimens of a *Didymium* collected at Endegeest near Oegstgeest, a suburb of Leiden, on holly leaves, were put aside by Prof. Dr. W. K. H. Karstens as being near to *Didymium squamulosum* (Alb. & Schw.) Fries, but not identical with it. Some of the specimens were collected in August 1944 by Dr. S. J. van Ooststroom, whereas several other ones were collected in October of the following year by Prof. Karstens at the same locality; they are all very similar, and remarkable in the smooth white calcareous crust, which is distant from the membranous inner part of the peridium, and in the rather dark spores, which are nearly all encircled by a thin, sometimes fragmentary ridge. Comparison with a large number of specimens of *D. squamulosum* has convinced me that the specimens collected at Endegeest are indeed distinct from that species. LISTER, in a footnote to *D. squamulosum* (3rd ed. 1925, p. 118), mentions a form collected on holly leaves, but the description and figure prove that this is plainly *D. squamulosum*, and certainly not identical with the above mentioned specimens.

The specimens from Endegeest are not identical with *D. praecox* de Bary either. The latter is described by Lister "as so inconstant that the name cannot be applied to mark even a variety". However, *D. praecox* was described by BERLESE in SACCARDO (Syll. 1306) and by MASSEE (Mon. p. 223) (the two descriptions, probably based on that given by Rostafinsky, which was not seen by me, are practically identical) as possessing a double peridium. Study of a duplicate of de Bary's type specimen in the Rabenhorst "Fungi Europaei" collection no. 367, 1861, preserved at the Rijksherbarium at Leiden (no. 910243–676), shows this to be *D. squamulosum*, as the crystalline lime crust closely adheres to the membranous inner layer of the peridium, a condition which is characteristic of this species; this is seen quite clearly at the time of dehiscence, as the two layers break away simultaneously. The spores were found by me to be 10–11 μ in diam., and not 8–9 μ, as they are said to be in Massee's description (which, however, comes within the range allowed for the spores of this species by Lister and by Martin in their monographs, viz. 8–11 μ), and they are spinulose; some of the dark spinules are grouped in clusters, whereas the remaining ones are unevenly and sparingly scattered between these clusters. In the specimens collected at Ende-

geest the crystalline lime layer of the peridium, as stated above, is distinctly separated from the membranous inner layer, the latter, moreover, is often provided with light brown areolae, a feature which is seen also in *D. nigripes* and in *D. melanospermum*, but which I myself have not met with in *D. squamulosum*. However, Lister describes the inner peridium of the latter as "sometimes mottled with red-brown towards the base"; this, therefore, is a point which deserves further study. Other noteworthy points are that the spores of the new species are provided with a ridge and that the spinules are not arranged in clusters.

Didymium karstensii nov. spec. Sporangia gregaria, brevissime stipitata vel sessilia, basi contracta; altitudo totalis circ. 0.5 mm. Hypothallus sporangii basin in forma disci vix conspicui cingens. Stipes altitudine dimidiam partem sporangii haud excedens, plerumque multo brevior vel ad nihilum redactus, albus vel eburneus, calcareus, fragilis, tenuior. Sporangium oblatum vel subglobosum, usque ad 1.2 mm in diametro. Peridium e stratis duobus compositum; stratum exterius calcareum, calcis crystallos dense aggregatos exhibens, album, tenue, laevius, saepe rugosum, fragile sed haud in squamulos derumpens, a strato interiore distincte separatum; stratum interius membranaceum, sine colore vel areolis dilute brunneis, lucem orientem versus visis eis specierum quae *D. nigripes* et *D. melanospora* appellantur similioribus sed pallidioribus instructum, in lumine reflexo argenteum vel submicans. Dehiscentia irregularis, peridii strato exteriore et strato interiore suo more derumpentibus. Columella calcarea, alba, nunc in forma incrassationis parvae ad sporangii basin apparens, nunc continuationem brevem stipitis formans. Capillitium e filamentis pallidis vel incoloribus, hic inde coherentibus compositum; filamenta e peridii strato interiore vel e sporangii basi orientia, hic inde incrassata vel nodulis dilute vel saturatius purpureo-brunneis instructa. Sporae per saturam saturatissime purpureo-brunneae, lucem orientem versus visae purpureo-brunneae, globosae, 10–12 μ diam., spinulosae, plerumque cristula continua vel interrupta cinctae, rarius reticulatione laxa et disrupta instructae. Plasmodium adhuc ignotum.

Habitat provinciam Hollandiam Meridianam proper Lugdunum Batavorum in loco "Endegeest" dicto, ubi in foliis putrescentibus ilicis lecta est.

Sporangia gregarious, very shortly stipitate or sessile, on a contracted base; total height about 0.5 mm. Hypothallus forming a hardly conspicuous disk around the base. Stipe not exceeding half the height of the sporangium, usually much shorter or entirely suppressed, white or yellowish white, calcareous, brittle, rather thin. Sporangium slightly depressed or subglobose, up to 1.2 mm in diam. Peridium consisting of a calcareous outer crust containing closely packed lime crystals and a membranous inner layer; the outer crust is white, thin, rather smooth, often wrinkled, brittle, but not breaking away in flakes, whereas the inner layer, which is distant from the outer one, is colourless or provided with pale brown areolae, very much like those found in *D. nigripes* and in *D. melanospermum* when seen by transmitted light, but paler; in reflected light they are silvery or slightly iridescent. Dehiscence irregular; the outer crust breaking away separately from the inner layer of the peridium. Columella a small white calcareous thickening at the base of the sporangium or a small, hardly raised continuation of the stipe. Capillitium consisting of pale or colourless anastomosing threads, provided with thickenings and nodules which show a pale or dark purplish brown colour, and attached to the inner layer of the peridium and to the base of the

sporangium. Spores in mass very dark purplish brown, purplish brown by transmitted light, globose, 10–12 μ in diam., spinulose, usually with a continuous or broken ridge, more rarely showing a broken lax reticulation on the epispore. Plasmodium as yet unknown.

NETHERLANDS: Province of South Holland, "Endegeest", Oegstgeest near Leiden, van Ooststroom 14.8.1945, collection Prof. Karstens 306; Karstens 6.10.1945, collection Prof. Karstens 382; Karstens 6.10.1945, collection Prof. Karstens 387, type; van Ooststroom 7945, 14.8.1945, L. 945235 . . .3; id. 7946, 14.8.1945, L. 945235 . . .2; all on decaying holly leaves.

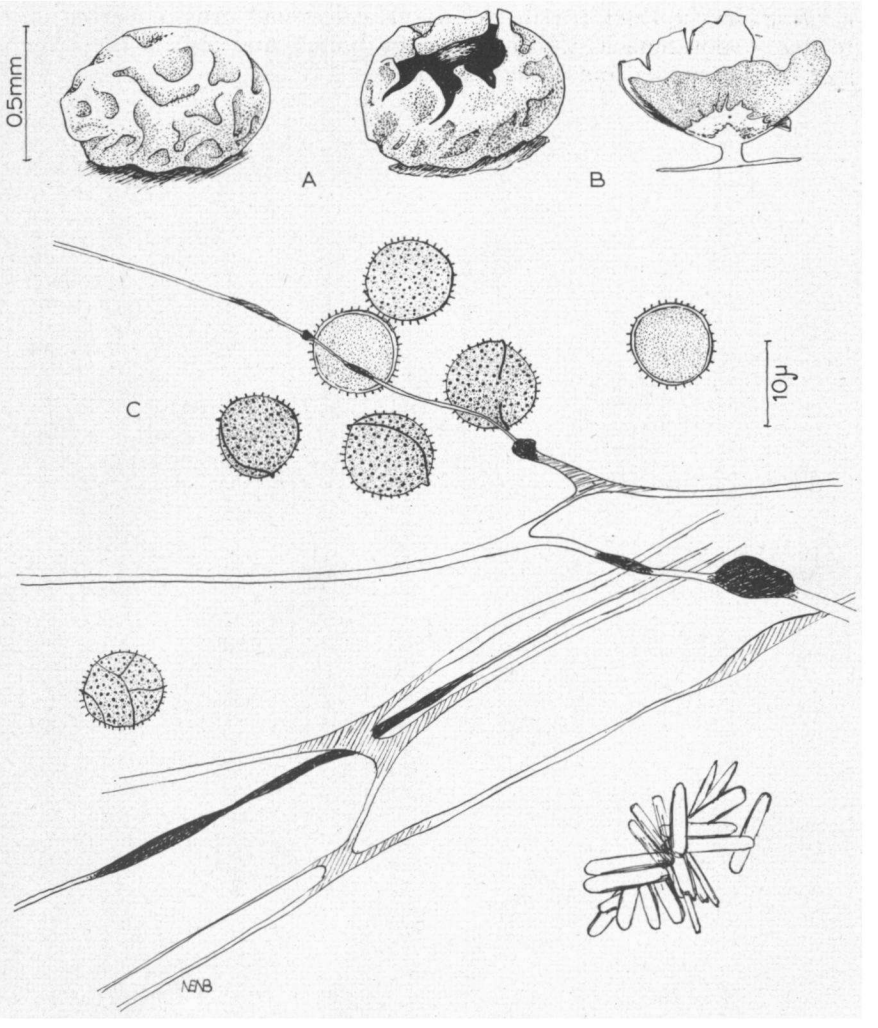

Fig. 1. A, sporangia before and during dehiscence; B, empty sporangium halved; C, spores (two in optical section), capillitium threads and cluster of lime crystals.

D. karstensii is closely related to *D. squamulosum* (Alb. & Schw.) Fries, which, although very variable in other characters, has the calcareous outer crust always firmly connected with the inner layer of the peridium, with the result that in dehiscence both come away together, with the capillitium adhering to the inner layer. In *D. karstensii* the calcareous outer crust is distant from the membranous inner layer; the spores, moreover, are darker than they usually are in *D. squamulosum*, and they are mostly encircled by a ridge. Similar spores, however, were seen by me in specimens which to all appearance belong to *D. squamulosum* and which were collected by Dr. D. Bramanti at Fiesole near Florence (Italy). *D. crustaceum* Fries differs from *D. karstensii* in the thick fragile deciduous calcareous crust covering one to many sporangia as well as the hypothallus, and also in the larger size of the spores and lime crystals.