

NOTES ON MYCETOZOA FROM JAPAN.

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(PLATE 458.)

In the spring of 1902, Prof. Marshall Ward enquired of Prof. Miyoshi, of the Botanical Institute, Imperial University, Tokio, whether the study of Mycetozoa had been pursued in Japan, and added that he would be grateful for any examples of the group that could be supplied to him. In October of the same year Prof. Miyoshi sent eighteen excellently preserved specimens, which Prof. Ward kindly submitted to us for examination. The list is as follows:—

PHYSARUM POLYMORPHUM var. *GYROCEPHALUM* Rost., Botanical Gardens, Tokio, leg. S. Kusano, Aug. 1901. This specimen corresponds in all respects with those from the United States; the clusters of yellow, compressed, and convoluted sporangia form somewhat globose heads, each supported on a yellowish brown stalk about 1 mm. long.

P. COMPRESSUM A. & S. *l. c.*, leg. S. Kusano, July, 1901. It is the form commonly met with in Europe; the sporangia are much compressed, more or less clustered on short thick stalks, or sessile.

P. DIDERMOIDES Rost. *l. c.*, leg. S. Kusano, Aug. 1899. The sporangia are crowded and sessile on a scanty, white, membranous hypothallus; the capillitium and very dark spores are typical of the species.

P. GYROSUM Rost. *l. c.*, leg. S. Kusano, Sept. 1902. On dead leaves. This is an interesting gathering; there are several small clusters of compressed and confluent sporangia; they are similar to those described and figured in this Journal* from specimens supplied by Dr. Jahn from a hothouse in the University Gardens, Berlin, and from Blumenau, Brazil, recorded by him in 1902;† but the bulk of the Japanese specimen consists of a labyrinthine network of compound sporangia attaining the uniform height of about 0·7 mm., and covering an area 15 mm. across. Among the specimens from Brazil, referred to above, there is also an æthaliump‡ of the same character as that described from Japan, and nearly equalling it in size; the statement in our former paper that *P. gyrosum* formed only small æthalia, though true with regard to the gatherings hitherto obtained in Germany, is thus shown to be not of universal application; for, though the Japanese growth is small as compared with the dense æthalia of *Fuligo septica*, it is large in comparison with the type in

* Journ. Bot, 1902, p. 210, where, on line 41, for 0·2-0·3 mm., read 2-3 mm.

† Ber. Deut. Bot. Ges. 1902, Bd. xx. Hft. 5, p. 272, fig. 4.

‡ The term æthaliump is here used for convenience, though not in all cases strictly applicable.

the Strassburg collection and those from Berlin; the capillitium and spores, $8\ \mu$ diam., are similar to those in former gatherings.

ERIONEMA AUREUM Penzig, Pl. 458, *l. c.*, leg. S. Kusano, Sept. 1902. This gathering represents the second recorded occurrence of the species; the first was obtained by Prof. Penzig in Java in December, 1896, and was described by him in his account of the Mycetozoa of the Buitenzorg Gardens.* The minute round granules of lime composing the calcareous deposit of the sporangium-wall and the presence of lime-knots in the capillitium indicate the close relation of this form with the genus *Physarum*; but the reasons given by Prof. Penzig may warrant its being placed in a separate genus. The specimen from Japan presents precisely the same characters as that from Java, and, as no figure has hitherto been published, we give a plate to illustrate its exceptional habit. The prominent features are the bright yellow cylindric and often branching sporangia, and the remarkable capillitium. The latter consists of a uniform, close, elastic network of very slender colourless threads, interspersed with a few scattered yellow lime-knots; on maturity the column of capillitium expands longitudinally, often to several times its original length, carrying with it fragments of the sporangium-wall; this is strikingly seen in the bunches of pendulous sporangia which are connected by long branching yellow stalks. The spores are violet-brown, minutely spinulose under the $\frac{1}{15}$ in. obj., and measure $6-7\ \mu$ diam. Some ecorticate forms of *Fuligo septica* show a near relationship to *Erionema*.

DIACHÆA ELEGANS Fr. *l. c.*, leg. S. Kusano, July, 1898. Quite typical. This widely-spread species is very constant in its characters; specimens from Europe, N. and S. America, India, Central and S. Africa, and Australia show little or no variation.

DIDYMIUM DIFFORME Duby, var. *COMATUM*, *l. c.*, leg. S. Kusano, Aug. 1898. This specimen is the variety described in a previous article in this Journal.† The sporangia are of the usual form met with in this country; the capillitium consists of crowded, straight, colourless, anastomosing threads; they are of equal thickness throughout their length, and do not taper upwards from a thickened base, as in the typical form. In January, 1903, we met with this variety in abundance on dead fern and nettle leaves on the Under-cliff, Lyme Regis; the normal form was also present, but sparingly; several sporangia had capillitium of intermediate character showing various stages connecting the profuse slender threads of the var. *comatum* with those of the normal type; this confirms the view that the var. *comatum* is not a distinct species.

D. NIGRIPES var. *XANTHOPUS* Fr. *l. c.*, leg. S. Kusano, Aug. 1898. On decaying herbaceous stalks. Typical.

STEMONITIS FUSCA Roth, *l. c.*, leg. S. Kusano, Aug. 1901. On grass. The sporangia are 6 mm. in total length; the capillitium

* *Die Myxomyceten der Flora von Buitenzorg*, 1898, p. 37.

† "On Cultivation of Mycetozoa from Spores," *Journ. Bot.* 1901, p. 8.



Lister, Arthur and Lister, Gulielma. 1904. "Notes on Mycetozoa from Japan." *Journal of botany, British and foreign* 42, 97–99.

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