CONIDIA FOMATION IN TRICHODERMA NARCISSI TOCHINAI ET SHIMADA

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(With one text figure)

In 1930 and 1931 Prof. Y. TOCHINAI in collaboration with the writer reported on *Trichoderma Narcissi* TOCHINAI et SHIMADA parasitic on Narcissus bulbs. In the cultures of this fungus white aerial mycelium grew rapidly over the surface of the media, and within a few weeks after inoculation tiny mycelial knots were produced abundantly. They were white in color at first, turning gradually to deep green in pace with the formation of conidia.

During an investigation of this fungus, it was found that the cultures kept in the dark yielded no conidia while those in the light always produced a copious number of conidia. The cultures grown under the diurnal change of diffused light in the laboratory room developed alternate zonations of mycelia with and without conidia. From these facts, it is evident that the light exerts certain beneficial effects upon the formation of conidia of the fungus.

Hence, an experiment was carried out to ascertain the effect of light upon the formation of conidia of this fungus. Twenty cubic centimetres of onion decoction agar were poured into sterilized Petri dishes, 9 cm. in diameter. Each plate was inoculated at the centre with a bit of the mycelium. Some of these plate cultures were kept in the dark and the others were exposed to diffused daylight during a definite period of time noted as follows:

(1) January, 8, 11.30 a.m. 1932 (inoculated)
(2) January, 9, 9.30 a.m.—4.30 p.m.
(3) January, 11, 11 a.m. —4.30 p.m.
(4) January, 12, 9.30 a.m.—4.30 p.m.
(5) January, 13, 9.30 a.m.—4.30 p.m.

The peripheral margin of the mycelial growth at the end of each period was carefully lined with ink on paper strips pasted crosswise on the under surface of each dish. On the 14th of January, the entire surface of the culture medium was occupied uniformly by the fungus mycelium. From this date on

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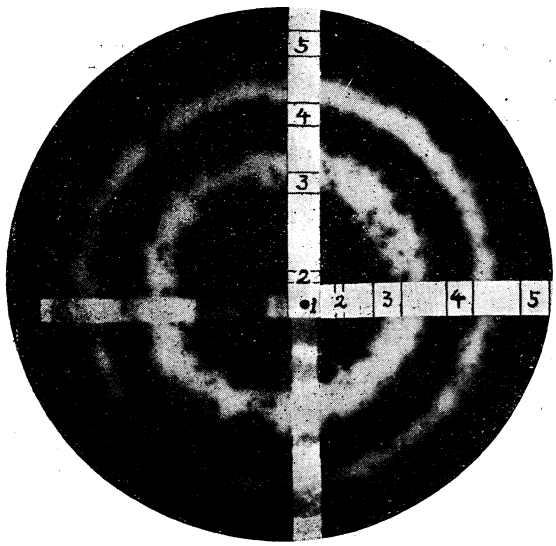

they were exposed to a diurnal alternation of daylight and darkness. On the 18th of January, concentric zones of the mycelium with and without conidia were found as shown in the text figure, in which white zones represent the mycelium with dark green conidia and the numbers denote the sequence of exposure to light. Three white, conidia-bearing zones are found in the culture, covering the peripheral region of the fungus growth which have been exposed to the light, and likewise an inner region of mycelia grown in the dark immediately next to the former. In the remaining parts of the culture the mycelial knots bearing conidia were very scarce and scattered. Such zonation has never been found in cultures grown continuously in the dark. These facts seem to show that the growth of mycelium in diffused daylight causes the production of conidia in the subsequent fungus growth and that light may act as a causal stimulus for the formation of conidia. BISBY working with *Fusarium discolor sulphureum*, reported that macroconidia were formed on the portion grown under the influence of daylight. However, the writer's observations on the fungus under consideration differ somewhat from BISBY's results. On the outer margin of the mycelial growth exposed to light which is designated as 2 in the text figure, no conidia were produced. In this case the culture might have been too young to produce conidia.

In conclusion, the writer wishes to express his sincere thanks to Prof. S. ITO and Prof. Y. TOCHINAI for their kind advices.

Literature Cited

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