was peeled back the stains appeared as short brown streaks in the spring wood.

The fungus which grew from the plantings of small pieces of the discolored wood on acidified potato dextrose agar produced a grayish white rather sparse and appressed mycelium showing zonation. Some of the colonies were yeast-like in appearance. Conidia approximately 1.5 x 3.5 μ were produced in heads on branched conidiophores. Budding of many conidia was observed. Coremia with spores approximately 3.3 x 1.7 μ formed on the wood plantings and on the agar.

A part of the lot of the original specimens sent to the Ohio Agricultural Experiment Station were forwarded to Dr. Christine Buisman, of Holland, at present at the Arnold Arboretum. She also isolated *Graphium ulmi* Schwarz from the diseased twigs.

The cases observed in Ohio have shown marked evidence of parasitism. The disease has been very destructive in Europe, and we should know as quickly as possible how wide-spread the disease is here. Specimens sent to the writer will be appreciated and will receive prompt attention.

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THE PHOTOTROPY OF ULTRA-VIOLET-TRANSMITTING GLASSES

Two years ago when the Boyce Thompson Institute entertained the local sections of the American Chemical Society, I noticed that a sheet of ultra-violet-transmitting glass, said to be Corex, which had been used in a hot bed frame and exposed to a quartz mercury lamp, showed a distinct pinkish brown tinge. A more striking observation was that a piece of the same glass, exposed also to a mercury lamp and in addition to sunlight, showed no coloration whatever and had remained perfectly colorless.

This observation suggested that Corex was phototropic, and that the longer wave-length light supplied by the sun tended to reverse the colorizing action of the mercury lamp.

This supposition has been confirmed by more recent observations. Wood and Leathwood[1] determined quantitatively that ultra-violet-transmitting glasses which had been colored by exposure to a mercury lamp were completely restored to their original transparency by exposure to sunlight. Shrum, Patten and Smith[2] and Nitchie and Schmutz[3] have shown that the color produced by mercury lamp solarization can be completely destroyed by heating the colored glass. Clearly, then, the colorizing action of short wave-length light is reversed by longer wave-length light, and by heat. That is, the phenomenon is one of phototropy.

The purpose of this note is to draw attention to the striking similarity between the behavior of ultra-violet-transmitting glasses and the more extensively studied though little known phenomenon of phototropy. It is thought that the history of lithopone and other phototropic substances[4] may be useful to those who have occasion to handle these new glasses and who may wish to control the solarization effects either in manufacture or in use.

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THE RATE OF WORK DONE BY A RICKSHA-COOLIE

PROFESSOR BASLER'S article in the May 3, 1929, issue of SCIENCE on "Rate of Work Done by a Ricksha-Coolie," in which he finds one tenth horse-power as his work expended for short periods of time, is interesting. For comparison with his result, I present the following computation of the rate of work done by a man in walking (climbing) in the White Mountains, in going from the Ravine House in Randolph, New Hampshire, to the summit of Mt. Washington, by way of the Randolph path and the Gulf Side trail, a distance of nine and one half horizontal miles. The altitude of the Ravine House is 1,280 feet and of the summit of Mt. Washington 6,290 feet, thus giving a gain of 5,010 feet in making the ascent. To this should be added 270 feet as an allowance for two notable dips in the trail. This gives a total gain in elevation of 5,280 feet.

The trip can be made under favorable weather conditions in four hours. This would correspond to an average gain in elevation of 22 feet per minute. In the case of a man whose weight is 150 pounds, the power developed in merely raising his weight would be 3,300 foot pounds per minute, or exactly one tenth of a horse-power.

As in the case of the coolie, the man has also to expend energy in traveling the horizontal distance, and, of course, in overcoming numerous slight obstacles on the uneven path of the mountains. A sustained average of one tenth horse-power for a period of four hours would appear to be a creditable performance as measured by the figures reported by Professor Basler.

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[1] Wood and Leathwood, *Nature*, 124: 441, 1929.

[2] Shrum, Patten and Smith, *Transactions Roy. Soc. Canada* (3), 22: 433, 1928.

[3] Nitchie and Schmutz, SCIENCE, 71: 590, 1930.

[4] For a bibliography see *Chemical Reviews*, 6: 217, 1929.