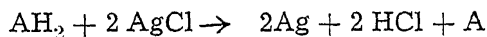
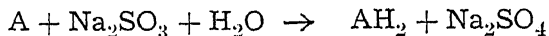


It will be seen from the above results that the rate of the induced oxidation increases with increasing concentration of the inductor.

The mechanism of this induced oxidation may be as follows:—



Ascorbic acid

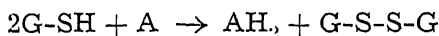


Dehydroascorbic acid

This is similar to the mechanism suggested by Pandalai and Gopala Rao¹ for the reaction between silver chloride and sodium sulphite induced by hydroquinone or metol.

In order to obtain confirmation of this mechanism we prepared dehydro-ascorbic acid by oxidation of the vitamin in aqueous solution with Norit Charcoal and found that the oxidized form thus prepared is incapable of reducing silver chloride by itself, while it can do so in the presence of sodium sulphite.

It will be of interest in this connection that Hopkins and Morgan,² Borsook and Jeffries³ found that glutathione reduces dehydro-ascorbic acid to ascorbic acid.



Glutathione

It is by this mechanism that Hopkins and Morgan explained the protection of vitamin C from oxidation in tissues.

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November 15, 1940.

¹ *Zeit. Anorg. Chemie*, 1933, 215, 23.

² *Biochem. J.*, 1936, 30, 1446.

³ Borsook and Jeffries, *Science*, 1936, 83, 397.

STRAINS OF COLLETOTRICHUM FALCATUM WENT

Colletotrichum falcatum Went is widely known as the causal organism of red rot of sugarcane, a disease present wherever sugarcane is grown. While surveying the red rot flora in the cane-growing tracts of America, Abbott¹ came across differences in the cultural characters of the

parasite. He could distinguish two principal races among his collection which for convenience he designated as light and dark races. He found also that these two types varied in their virulence.

Red rot broke out in an epidemic form in North Bihar during 1939-40 season and did considerable damage to the crop. Specimens of diseased canes were obtained from several localities and cultures taken from affected tissues adopting a standard method of culturing in all cases. Differences in the morphology of the cultures obtained could be noticed in one month when two distinct types and an intermediate form could be distinguished. The following are the descriptions:

Type A.—The colony of this type is cottony and floccose in texture, white in colour during the first two weeks assuming a very light tint of gray with age. Slimy pink masses of conidia are absent in this culture.

Type B.—The texture of the colony is loose and silky. For the first two weeks the aerial mycelium is almost translucent and on account of this character it is difficult to define the actual shade of gray to which it belongs even with the help of Ridgway.² Abundant dark pseudopycnidial masses are to be seen in the aerial mycelium while an enormous number of slimy masses of conidia are produced on the surface of the medium; the slimy masses are of salmon colour (Ridgway, *loc. cit.*). Old cultures exhibit a more compact texture with the loose silky mycelium more or less disappearing with age. On oatmeal agar this grows much faster than Type A.

Type C.—The colony of this type has a compact velvety texture and is darker than Type A. Conidia are produced in pink masses sparingly with a tendency to confine themselves to the margins of the media. This is perhaps an intermediate form of A and B.

In certain cases during the tissue-culture examination two types of the parasite were met with and no antagonism was observed between the races. This is in agreement with the findings of Abbott.¹

In the absence of actual specimens of Abbott's light and dark races the three types met with in Bihar red rot flora cannot be designated in terms of Abbott's descriptions but Types A and C seem to answer closely to the light and dark races respectively except that the former does not appear to produce abundant pink masses of conidia. The culture sent by Dr. Mundkur to America for comparison belonged to the dark race according to Abbott.¹

A preliminary test was conducted to see whether the morphologic differences noticed could be correlated with physiologic differences also. The rates of spread of the two races in 3-eye setts of four varieties, Co 213, 299, 421 and B. 04 were taken as a basis. The setts were inoculated in the middle internode with 8 days' old cultures of Types A and B and kept at room temperature (30–32° C.) for a fortnight. The length of spread was measured and it was found that the linear spread was equal on both sides of the point of inoculation. The organism spread along the entire width in all cases and hence this feature was not taken into account for measuring the index of virulence.

The index was arrived at by dividing the length of the sett by the length of the spread of the organism. The average spread is tabulated below.

TABLE I

Variety	Index of Virulence	
	Type A	Type B
Co 213	3.71	1.96
Co 299	1.49	2.52
Co 421	2.08	2.95
B. 0.4	1.37	4.35

The two races appear to vary as regards their rate of spread within the sett and the variety of the host also influences the rate of spread. This index of virulence, however, is not an indication of the varietal susceptibility which should also take into account the entry of the parasite.

The relation between the specialisation exhibited by *Colletotrichum falcatum* Went and the epidemic outbreak of red rot in North Bihar is under investigation.

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Mycology Section,
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August 13, 1940.

¹ Abbott, E. V., *Tech. Bul.*, 641, U. S. Dept. Agri., 1938.

² Ridgway, R., *Colour Standards and Colour Nomenclature*, Washington, 1912.

PRODUCTION OF FRUIT-BODIES OF *AGARICEUS POLYPORUS* BERK. IN ARTIFICIAL CULTURE

Polyporus agariceus Berk. is a saprophyte, usually growing on prostrate logs or dead branches. Bose¹ reported it from Barkuda Islands, Orissa with *P. arcularius* (Batsch) Fries and *Favolus ciliaris* Mont. given as synonyms. The species has been collected from Darjeeling (Hooker f.), Mussoorie (Gollan), Ceylon and several other parts of the world. Though of rare occurrence, it has also been collected on several occasions from Behala, Ballygunj and Shyambazar in the suburbs of Calcutta (Bose, Banerjee).

While making an extensive cultural study of some of the wood-rotting fungi common in Bengal, a fresh sporophore of *Polyporus agariceus* was collected in October, 1940, from Shyambazar, Calcutta, growing saprophytically on logs of *Shorea robusta* (sal). Spore-deposits were taken immediately on sterile agar plates from which several polyporus cultures were made in potato-dextrose agar and kept under different conditions of light and temperature. In all cases germination of spores started within 24 hours.

On the 10th day of inoculation the whole surface of the slant was covered with a felty growth which condensed irregularly making