## ARTIFICIAL INFECTION OF SORGHUM WITH LONG SMUT

LONG smut of sorghum caused by *Tolyposporium ehrenbergii* (Kuhn.) Pat. has been recorded in South India (Barber, 1909), the Punjab and Bombay. The sori are reported to be few in each ear and an inch or more in length.

The mode of infection of this smut is so far unknown. Several inoculation experiments carried out at the Indian Agricultural Research Institute, New Delhi, have failed to reproduce the disease (Scientific Reports, 1947). Mundkur (1945) surmises that infection may be through the flower.

In May 1949, a severe outbreak of this smut was noticed in several places. Many sori were noticed in each ear and a high percentage of the plants was affected. Viable spore material from this crop was utilised for inoculation at Coimbatore. The spores readily germinated producing many sporidia. Preliminary inoculation experiments were carried out in August in the field on a crop of Co 11 strain of sorghum, by (1) spraying a suspension of germinating spores on the ears, just emerging from the boot leaf, (2) brushing the spikelets of similar ears with the germinating spores, and (3) pouring a suspension of germinating spores inside the sheath of the boot leaf before the ears emerged. Controls were kept in all cases.

Fifteen days after inoculation, sori were observed only among plants inoculated by the third method. The experiments were repeated in an isolated plot in the pot culture house on a crop raised from disinfected seeds. Method (3) was adopted. Two days later, the ears emerged from the boot leaf. Successful infection was obtained again, the period of incubation being 12 to 15 days. The cultures of sorghum that were inoculated were Co 11, A. S. 7589 and 7571 and all of them were affected. This successful artificial inoculation of sorghum by the smut proves that infection is through the young flower before the ear emerges from the boot leaf. In the second series, the ears were enclosed inside paper bags for four days after inoculation. The number of flowers infected per ear varied from one to seven. This is in keeping with the intensity of infection observed in Coimbatore.

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## ULTRA-VIOLET ABSORPTION SPECTRUM OF IODOBENZENE

ABOUT 100 red-degraded bands have been photographed in the absorption spectrum of iodobenzene in the region $\lambda 2850$ to $\lambda 2400$. As in other monosubstituted benzene spectra[1], this band system corresponds to the allowed electronic transition $A_1 \rightarrow B_1$ with the electronic moment lying in the plane of the ring and perpendicular to the axis of substitution. The (0,0) band is located at $\nu 36352$. Towards the red end, the bands correspond to Raman frequencies[2] 230, 340, 780, 900, 1010, 1100 and 1300. A strong band at 61 units from (0,0) is interpreted as giving a difference frequency of the $1 \rightarrow 1$ type of transition, analogous to 67 and 60 in monofluoro and monochlorobenzenes[1]. A similar difference frequency of 90 $cm^{-1}$ is also detected. Progressions of totally symmetric vibrations are observed on the violet side leading to upper state frequencies, 950 and 780.

A detailed discussion of the analysis will be published elsewhere.

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