The temperature of the water-bath was kept at an uniform temperature of 30° C. for all the observations.

The data obtained in the investigation and meteorlogical observations are presented in the table.

TABLE

Observations on 4-10-1947 (The experiment was repeated on another Sunny day and more or less similar data were obtained

Time	Shade temperature °C.	Light	Catalase activity Oxygen liberated in c.c. (mean of three findings) Petals	Leaves	Ratio : catalase activity of leaves/catalase activity of petals
Morning 7·00–8·00	28·6	Bright sunlight	6·00	21·56	3·6
Noon 12·00–1·00	31·0	Intense sunlight	6·43	15·16	2·4
Evening 7·30–8·30	30·0	Dark	14·30	16·60	1·2

From the data it is clear that the catalase activity of the petals are less than the leaves. In case of the petals the catalase activity slightly increases in the noon but a sharp rise is obtained in the evening, when the flowers have started to fade. In case of the leaves, the results obtained for catalase activity are different. In leaves the catalase activity is high in the morning and the values obtained in the noon and the evening are comparatively low. The results obtained are interesting but further study is necessary before any explanation can be offered with reasonable accuracy.

My thanks are due to Principal Das, B.A. (Lond.), for the facilities provided for this work in the Sambalpur College and his valuable encouragement.

SHYAMANANDA PATTANAIK.

Dept. of Botany,
R. College, Cuttack,
March 3, 1949.

* Paper read at the Botany Section meeting of the Indian Science Congress, 1948.

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XANTHOMONAS DESMODII, A NEW BACTERIAL LEAF-SPOT OF *DESMODIUM DIFFUSUM* DC.

THE disease appears as yellowish brown, water-soaked, angular spots on the underside of leaves of *D. diffusum* used sometimes for green manuring at Poona. The pathogene differs from other bacterial leaf-spots of legumes in several respects and therefore it is proposed to assign it a specific rank *Xanthomonas desmodii* Uppal & Patel sp. nov.

Short rods with rounded ends, single or in pairs but never in chains; motile with a polar flagellum; capsule absent; no spores, no involution forms and non-acid fast; Gram negative; strict-aerobe; stains readily with common dyes. Colonies on neutral potato dextrose agar round, viscid, smooth, shining, wet, amber yellow with colourless margins and no internal markings. Excellent butyrous growth on potato cylinders and potato dextrose agar slants; odour is absent. Optimum temperature for growth lies between 25° and 30° C., maximum 38° C., minimum 11° C., while thermal death temperature about 50° C. Gelatin liquefied; starch hydrolysed; casein digested; litmus in milk reduced; milk peptonised; slight hydrogen sulphide produced. Ammonia and nitrites not produced; asparagine not utilised; blood serum not liquefied; no growth in Fermi's, Uschinsky's and Cohn's solutions. Acid but no gas in dextrose, galactose, lactose, mannite, maltose and sucrose; poor growth in salicin, arabinose, xylose, dulcitol, glycerol, raffinose and levulose.

Pathogenic only to *D. diffusum*, producing angular, yellowish brown leaf-spots and sometimes causing defoliation.

A detailed paper is being published elsewhere.

Plant Path. Lab., M. K. PATEL.
College of Agriculture,
Poona,
March 28, 1949.

TRIALS OF U.S.A. HYBRID CORN (MAIZE)

IN 1947-48, 7¾ million acres were under cultivation of corn (maize) in India. Our estimated total yield was a little over two million tons, but 20% short of the demand, and 400,000 tons had to be imported from abroad. Our average yield in 1947 was