

contortion was found to be once again identical forming mirror image pattern. The mirror image pattern thus described in *Xanthosoma* is comparable to the one described in various Araceae by Reddy and Bahadur⁵ and even with the cyathia of *Euphorbia milii*, where there are only two bracts which contort in clockwise or counter-clockwise pattern and form various clustering patterns (Bahadur and Reddy²).

Whether the bioisomerism of spathes in *Xanthosoma* is genetical or chemically controlled is presently not known. The hypothesis that biological handedness variously termed bioisomerism or isomerism (Bahadur and Venkateswarlu³) is due to stereoisomerism of hormone molecule appears to be attractive as suggested by Bahadur and Reddy². Alternately, Bahadur and Venkateswarlu³ have also suggested that optically active, i.e., levo and dextro compounds determine handedness in biological objects. The molecular chirality is thus expressed in biological chirality. Onslow observed that, "The plant form is an expression of its chemical constitution" (Arber¹). Recently, however, Kasinov⁴ has shown that the left and right handedness in fronds of *Lemna gibba* (Lemnaceae) is inherited, although the fronds transmit asymmetry by vegetative reproduction only.

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BACTERIAL LEAF SPOT OF BANYAN—A NEW DISEASE IN INDIA

A SEVERE leaf spot disease was observed on trees of 'Banyan' (*Ficus bengalensis* L.) during winter of 1973 in Aurangabad. In nature, the disease was manifested as foliar spotting and necrosis. The small spots, later coalesced to form irregular patches, some remaining isolated and dark in colour. Each spot had a greyish centre surrounded by dark coloured border. As the disease advanced the affected leaves dropped down. Young leaves were more diseased than the old ones.

In repeated isolations, a yellow pigmented bacterium, growing as circular, flat, smooth, glistening and butyrous colonies with entire margins on NA, was obtained.

The phytopathogenic organism was gram-negative, rod-shaped, $0.5-1.2 \times 0.2 \mu$ in size, single, capsulated, non-sporing and non-acid fast. The biochemical and physiological characteristics of the bacterium were, strictly aerobic, gellatin liquified; starch not hydrolysed; ammonia, hydrogen sulphide and catalase produced but not indole; nitrate reduced; Voges-Proskauer and methyl red tests positive; milk peptonized without coagulation; litmus reduced; acid produced without gas from glucose, lactose and sucrose; amino acids not decarboxylated.

The cultural, morphological and physiological properties of the phytopathogenic organism indicated that the bacterium belongs to the genus *Xanthomonas*.

The xanthomonad was found to be specific to *F. bengalensis* as it failed to infect other 6 hosts when tested. The incitant of the leaf spot of 'Banyan' is, therefore, identified as a new species and the binomial *Xanthomonas ficae* sp. nov. is proposed.

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AWARD OF RESEARCH DEGREES

Utkal University, Bhubaneswar, has awarded the Ph.D. degree in Chemistry to Shri Sashi Bhusan

Mohanty; Ph.D. degree in Zoology to Shri Hari Sadhan Maity.