

of the fungus in the root region of sprouting setts of Co. 413 in pots. After 15 days the roots were found to be reddened and rotten and the fungus was reisolated from the diseased roots. Some plants were allowed to remain in the pots for two months. But they did not make good growth as compared with the controls. It was found that the root system in the inoculated plants was poor and consisted of a high percentage of dead and diseased roots. Thus the pathogenicity of this isolate on sugarcane roots was established.

Le Beau³ has noticed in his experiments that applications of nitrates increased root-rot by *Pythium* in sugarcane. In Coimbatore the root-rot trouble commenced after the application of ammonium sulphate to the fields and it was more evident in the areas at a lower level. The fields were then flooded and drained alternately with water for a week with the idea of removing the excess of salts. The progress of the disease was arrested and there was no fresh infection after a week. This confirms Le Beau's observations on the relation between nitrate application and root-rot caused by *Pythium*.

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¹ Butler, E. J., *Mem. Dept. Ag. Ind. Bot. Series*, 1907, 1.

² Rands, R. D., and Dopp, E., *U. S. Dept. Ag. Tech. Bull.*, 1938, 666.

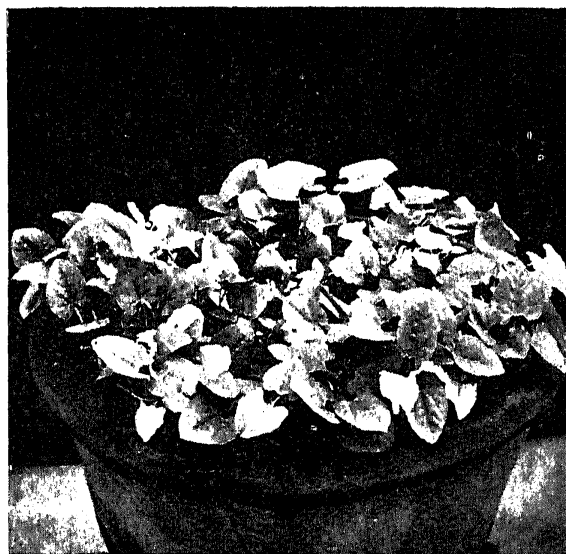
³ Le Beau, F. J., *Rev. App. Myc.*, 1939, 18, 618.

ALBINISM IN LABLAB

THE occurrence of a chlorina type of chlorophyll deficiency which has little or no lethal effect has been reported in the garden variety of lablab (*Dolichos lablab* L.).¹ The chlorina type is produced by a factor c_a while its allelomorph C_a is necessary for the normal green.

The occurrence and inheritance of an albina type in the field variety of lablab (*Dolichos*

lablab Roxb.) is reported herein. Like the chlorina type, the albina type is met with in many species of plants.² It is more common in cereals than in pulses. The albina seedlings in lablab were observed in the F_2 generation of a cross for the pursuit of inheritance of testa colour pattern. The parents and the F_1 were normal green while the F_2 gave 156 normal green and 44 albina (Fig.). The albina



Normal green and albina seedlings

plants died when about 12 days old. From the normal green plants 20 selections were carried forward to the next generation. Eight of these bred true for normal green while twelve segregated, giving a total of 663 normal green and 210 albina plants. This experience is the first record of a monogenic segregation for albinism in the pulse *Dolichos lablab* Roxb.

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¹ *Proc. Ind. Acad. Sci. (B)*, 1935, 1, 857.

² *Bibliogr. Genet.*, 1933, 10, 357.

TRICOTYLEDONY IN LABLAB

THE occurrence of tricotyledonous seedlings is a fairly common phenomenon in the dicots. According to Buchholz¹ who examined the embryos of pine, spruce, larch, juniper, etc.,

the polycotyledonous condition is primitive and the dicotyledonous one derived. On the basis of this theory, Gager² concludes that the rather common abnormal appearance of supernumerary cotyledons in the dicots is a reversion to a more primitive condition. De Vries³ calculated the heredity percentage of tricotyls in several species of plants and observed that this percentage is higher in the cultivated plants.

At the Millets Breeding Station, Coimbatore, a tricotyledonous seedling was observed in the garden variety of lablab (*Dolichos lablab*, L.). The seedling had three distinct cotyledons, of which one was more or less normal in size, the other two being smaller. The first foliar leaves in this seedling were as usual simple, but were three in number instead of the normal two. This tricotyledonous seedling was grown to the adult stage and out of 449 of its seeds examined (from 100 pods) 10 were found to be tricotyledonous as well as having three simple first foliar leaves.

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¹ *Amer. Jour. Bot.*, 1919, 6, 106.

² Gager, C. S., *Heredity and Evolution in Plants*, 1920.

³ Vries, Hugo de, *Species and Varieties: Their Origin by Mutation*, 1906.

A NEW TYPE OF MECHANICAL CONSTRUCTION IN THE STEM OF *PANICUM PUNCTATUM* BURM.

MONOCOTYLEDONS are particularly characterised by an extraordinary degree of variation in the types of mechanical construction of their inflexible organs. Schwendener² noted 28 types of such construction in this class alone, and arranged them into a number of mechanical systems. But the type under discussion has not been reported, so far as the writer can find out, by Van Tieghem, Schwendener or

Haberlandt.¹ As a detailed report on the anatomy of this plant will form the subject-matter of another paper, only the mechanical construction of the adult stem is described here.

The epidermis and one or two hypodermal layers have their walls thickened and lignified to form the hard rind characteristic of the Grass family. The subhypodermal ground tissue is characterised by the presence of a ring of air cavities which run in longitudinal rows through the internode. The vascular bundles are arranged in radial rows at regular intervals occupying the regions between successive air cavities, the largest bundles being always towards the centre of the stem. The stereome runs in the form of an inverted arch encircling more than half of each air cavity on the inner and lateral sides and joining firmly to the top of the vertical pillars built up of the composite girders formed by the bundles in each radial row. The centre of the stem is occupied by a big cavity formed by the disorganisation of the pith cells (Fig. 1).

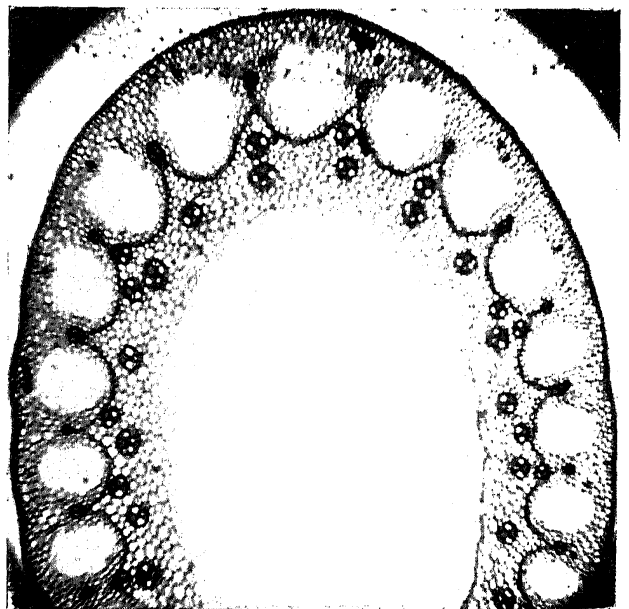


FIG. 1

T. S. of adult stem

The plant grows in water and mud, and is subjected to lateral compression and bending. In this case the mechanical construction, it appears, has been followed on the principle of the construction of a suspension bridge instead of that of an I-girder. A suspension bridge