Trichosanthes, and *Asclepias* sp.[1]; and from California on *Gardenia*.[2] It will be observed that the above list includes well known Indian cultivated vegeteables and garden plants, on none of which the fungus has so far been reported from this country.

The specimens have been deposited at the Imperial Mycological Institute, Kew, Surrey, England.

The author is indebted to Dr. E. W. Mason of the Imperial Mycological Institute, Kew, Surrey, for identifying the fungus.

Central Rice Research Institute,
Cuttack, S. Y. PADMANABHAN.
January 9, 1948.

1. Preston, N. C., *Trans. Brit. Mycol. Soc.*, 1943, **26**, 158. 2. Barrel, J. T., and Doris Ann. Hardman, *Phytopath.*, 1947, **37**, 360.

ENATION MOSAIC OF *DOLICHOS LABLAB* LINN., A NEW VIRUS DISEASE

IN August 1939 a mosaic disease accompanied by chlorotic streaks was observed in *Dolichos lablab* grown on the Agricultural College Farm, Poona. The disease reoccurred on the farm for three consecutive seasons, but was observed only occasionally afterwards. It has not been found to occur in other localities of this province.

The first symptoms of mosaic appear in young leaves of *Dolichos lablab* about twenty days following inoculation under controlled conditions with sap expressed from diseased plants. Subsequent leaves show severe mosaic accompanied with chlorotic streaks (Fig. 1). The

FIG. 1. Leaf of *Dolichos lablab* affected by enation mosaic virus.

leaves of affected plants are malformed and produce foliar enations on their undersides (Fig. 2). There is also a marked reduction in size of leaf-lamina due to inhibition of growth of the interveinal areas.

FIG. 2 Leaflet of *Dolichos lablab* showing large foliar enations as a result of infection with enation mosaic virus.

Transmission.—The virus is readily transmitted by sap inoculation. But transmission tests done with *Empoasca devastans* Dist., *Empoasca* sp., *Aphis medicaginis* K., *Ayyaria chætophora* K., *Tæniothrips distalis* K., the insects which colonise on *Dolichos lablab*, and *Aphis gossypii* Glover collected from cotton plants unsuccessful.

The dilution end-point of the virus in crude sap lies between 5×10^{-6} and 3×10^{-6}. It can withstand heating for 10 minutes at 90° C., but is inactivated at 95° C. The virus was still active after six years at laboratory temperature.

The virus has a wide host range. Besides *Dolichos lablab*, it infects a large number of

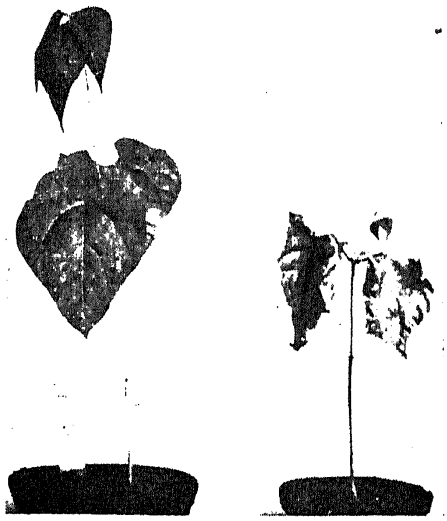

FIG. 3. Healthy and diseased plants of *Phaseolus vulgaris*. The affected plant shows systemic necrosis,

leguminous plants. In *Phaseolus vulgaris* it induces systemic necrosis which kills the whole plant (Fig. 3). In *Nicotiana tabacum*, variety White Burley, it produces primary lesions which appear as thin, white rings of necrotic tissue enclosing green areas, and the disease, on becoming systemic, appears as mosaic mottling after about 65 days following inoculation. The virus does not infect *Cucumis sativus*, *Datura alba* and a large number of other plants.

Although the physical properties of *Dolichos* virus closely resemble those of the tobacco mosaic virus,[1] it markedly differs from the latter in respect of its host range and in the type of symptoms produced in tobacco itself. In addition, the cross immunity tests carried out with the two viruses in *Nicotiana tabacum*, variety White Burley, indicated that neither of the two viruses protects tobacco plants from infection with the other. The *Dolichos* virus is, therefore, not related to the tobacco mosaic virus.

The *Dolichos* virus has no relationship with any of the legume viruses,[1] except that its thermal inactivation point approximates to those of the Bean viruses 4 and 4A[2], and its dilution end-point is as low as that of the Pea Streak virus.[3] It is proposed that this new virus may be known as '*Dolichos enation mosaic*' virus.

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College of Agriculture, S. P. CAPOOR.
Poona, P. M. VARMA.
January 15, 1948

1. Smith, K. M., "A Text-Book of Plant Virus Diseases", London, 1937. 2. Zaumeyer, W. J., and Harter, L. L., *J. Agric. Res.* 1943, **67**, 305. 3. Chamberlain, E. E., *New. Zealand. J. Sci. and Tech.*, 1939, **20**, 381A (in *Rev. Appl. Mycol.*, 1939, **18**, 648).

PENAEID PRAWNS BREEDING IN FRESH WATER

IN a recent note in *Current Science* on the migratory fishes of the inland waters of Madras, Chacko[1] states that berried individuals of four prawns, namely, *Palæmon malcolmsoni* Milne-Edwards, *Palæmon scabriculus* Heller, *Penæus indicus* Milne-Edwards and *Metapenæus monoceros* Fabr. were found in the Godavari river both above and below the anicut. On the basis of this it is presumed by this author that these prawns breed in the river.

As Penæid prawns are well known to hatch out as naupalii, and the adult females of *Penæus* spp., and *Metapenæus monoceros* are not known to carry eggs attached to the abdominal pleopods[2] it is most unusual if *berried* individuals of *P. indicus* Milne-Edwards and *M. monoceres* Fabr., have been observed. All available evidence is that in the Penæid prawns the eggs are shed in the surrounding water.[3] What seems probable is that there has been some confusion in regard to the species dealt with by Chacko, and it appears to me that the berried prawns seen near the Godavari anicut could not have been Penæids but only Caridian prawns, probably Palæmonids. The statement that *P. indicus* breeds in inland waters at a distance of 100 miles from the sea has also to be re-examined and, if confirmed, it is in substantial disagreement with our knowledge of this species. But as this is based on the occurrence of so-called berried specimens of *Penæus* spp., it need not be taken seriously.

It may be added that recent experiments which I have carried out indicate that the Penæid, most tolerant to fresh water, is *M. monoceros*. This species probably breeds in coastal zones not directly connected with the sea as found from Dakin's results in Australia and the observations made at Madras.[4] Of the other two Penæids of commercial importance on Coromandel coast, *viz.*, *P. carinatus* and *P. indicus*, the one less tolerant to low salinity is *P. indicus*. The field data at Madras, the Collair Lake and at the Chilka Lake are also in agreement with this experimental result.

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Research Station, N. KESAVA PANIKKAR.
Triplicane, Madras,
January 29, 1948.

1. Chacko, P. I., *Curr. Sci.*, 1947, **16**, 290. 2. Dakin, W. J., *Nature*, 1947, **158**, 99. (Most of the early references are cited by Dakin.) 3. Gurney, R., "Larvae of Decapod Crustacea," *Ray. Soc.*, 1942. 4. Panikkar, N. K. and Aiyar, *R. G. Proc. Indian Acad. Sci.*, B, 1939, **9**, 343.

PHOTOSENSITIVE GLASS

Glass exposed for years to light and heat has been observed to change its colour. Based on this observation, researches have been carried out at the Corning Glass Works of U.S.A. Reactions taking place in crystal-clear ruby glass on application of ultra-violet light and heat treatment gives rise to several shades of colour. A photosensitive glass has now been developed in which pictures may be printed with a three-dimensional effect, caused by depth of image penetration, and with a variety of colours and extremely fine detail.

The light-sensitive ingredients are mixed into the batch before melting and, therefore, form an integral part of the glass. Prints are made, first by exposure to ultra-violet light and then, in an oven, to a temperature of 1,000°-1,100° F. After baking for half an hour a picture is formed with coloured particles so fine that they cannot be seen under a microscope. Photographic designs in blue, purple, ruby or orange is said to be possible with transparent glasses.