

A NEW SYNCHYTRIUM ON PHASEOLUS MUNGO

A VERY severe disease on *ulid* (*Phaseolus mungo* L.) causing defoliation was noticed on the Government Farm, Jalgaon, East Khandesh in August, 1948. A reference through literature showed that no species of *Synchytrium* was reported so far on this plant and that those reported on other legumes differed a great deal and hence it is proposed to assign it a specific rank.

Synchytrium phaseoli Patel, Kulkarni and Dhande sp. nov.

Leaves are covered on both sides with quadrilateral to polygonal crusts, measuring 1-2 x 1 mm. when quadrilateral. Several crusts when limited by veins coalesce. Colour of crust on the upper surface is deep-brown while it is pale brown on the lower surface. Infection occurs rarely on petioles.

Resting sporangia many in a crust, but one in each host cell, spherical to slightly ellipsoidal, smooth, with thick dark brown wall, measuring 18.0-26.6 μ (average 22.8 μ) in diameter. Endospore spherical, olive brown, smooth, thick walled, 3.5 μ thick episporium.

On leaves and petioles of *Phaseolus mungo* L. (Urd bean), Jalgaon, India, August 1948.

The authors are thankful to Rev. Fr. H. Santapau, S.J., of St. Xavier's College, Bombay, for the following Latin rendering of the description.

Synchytrium phaseoli Patel, Kulkarni and Dhande pec. nov.

Foliorum utraque facies cooperta costris quadrilateralibus vel polygonalibus, quadrilateralibus quidem 1-2 x 1 mm. magnit. Plures costrae, cum venis limitantur, coalescunt. Costrarum color in facie superiore est fusce brunneus, in inferiore vero facie pallide brunneus. Infectio raro in petiolis invenitur.

Sporangia quiescentia plura in singulis costris, sed singula occurrunt in singulis plantae hospitis cellulis. sphaerica ad tenuiter ellipsoidea, levia, crassis et fusce brunneis parietibus ornata, magnit. 18.0-26.6 μ (mediet. 22.8 μ) in diam. Endosporium sphaericum, olivaceo-brunneum, leve, crassis parietibus praeditum; episporium 3.5 μ crassum.

In foliis et petiolis *Phaseoli mungo* L.,

(Urd bean), in loco Jalgaon, India, mense augusto 1948.

Plant Path. Laboratory, M. K. PATEL.
Agricultural College, Y. S. KULKARNI.
Poona, G. W. DHANDE.
January 15, 1949.

A CASE OF SIMULTANEOUS MUTATION OF TWO INDEPENDENT GENES IN THE CHILLI CAPSICUM ANNUUM L.

THERE are several cases of spontaneous mutation involving a single gene, but cases of simultaneous mutation of two or more genes occurring spontaneously are perhaps rare. A case of simultaneous mutation of two independent genes, one determining the colour of ripe fruit and the other plant habit, has been recorded in the chilli crop in this Division. The colour of ripe fruit, red or yellow, is only a varietal difference, the bulk of the commercially grown chillies being red fruited. In the chilli collection in this Division both red and yellow fruited varieties are present. As regards compact plant habit with fruits appearing in clusters no variety in the collection of this Division possessed these characteristics, nor is the author aware of the existence of such a variety. A plant with such characteristics, which arose as a mutant, was first observed in this Division and described as "Bunch" mutant (Deshpande, 1940).

Genetical investigations in this crop have shown that red colour of fruit is a single dominant to yellow and normal plant habit dominant to compact habit (Deshpande, 1933, 1941).

In the year 1943-44 in the progeny of a single, unselfed plant of N. P. 34, which has red fruits and normal plant habit (Shaw and Khan, 1928), plants with compact habit and plants with yellow fruits also were observed. On taking counts the frequencies were found to be as follows:--

	Normal habit		Compact habit		Total
	Red fruited plants	Yellow fruited plants	Red fruited plants	Yellow fruited plants	
Frequencies observed	12	3	4	1	20
Frequencies calculated on 9:3:3:1 ratio	11.25	3.75	3.75	1.25	20