TABLE I

Percentage of healthy seeds and of various fungi obtained from seeds of different types of groundnut, tobacco and Castor.

Arachis Hypogea Linn. (GROUNDNUT)					*Nicotiana Tabacum* Linn. (TOBACCO)					*Ricinus Communis* LINN. (CASTOR)		
Fungi	Type (T. 25)	Type (T. 4110)	Type (R2)	Type (T. 9)	Fungi	Type (Napani Surti)	Type (H.S. Chirala)	Type (I.P. 28)	Type (F.D. Local	Fungi	Type (T. 3)	Type (T. 12)
Fusarium Sp.	25	20	10	97	*Aspergillus niger* van Tieghem	11	8	5	49	*Cercosporina ricinella* (Sacc. & Berl.) Speg.	26	29
Rhizoctonia solani Kuhn	30	5	2	1	*Aspergillus* sp.	4	2	0	7	*Aspergillus niger* van Tieghem	74	71
Cercospora personata (B. & C.) Ellis	25	25	10	0	*Fusarium* sp.	0	0	2	0	Healthy seeds	0	0
Aspergillus niger van Tieghem	10	50	75	2	*Alternaria* sp.	0	0	0	5			
Aspergillus sp.	10	0	3	0	Sterile fungus	2	0	0	9			
Healthy seeds	0	0	0	0	Healthy seeds	83	90	93	30			

to be exported to China as required by the Director of Agriculture, China. Randomized samples of 100 seeds from each type were examined after plating out ten seeds kept at an equal distance from each other in each plate containing 10 c.c. of 2 per cent. malt extract agar medium after incubating them for five days at the room temperature according to Ulster method as given by Muskett and Malone (1941). The data are given in Table I. The per centage of parasitic fungi in different types of groundnut, *viz.*, T. 25, T. 4110, R2 and T. 9 was 80, 50, 22 and 98. The per centage of healthy seeds in different types of tobacco, *viz.*, Napani Surti, H. S. Chirala, I.P. 28 and F. D. Local was 83, 90, 93 and 30. The percentage of parasitic fungi in castor, Type T. 3 was 26 and in Type 12 was 29.

U. B. SINGH.

Plant Pathology Section,
Department of Agriculture,
United Provinces, Kanpur,
July 30, 1948.

1. Muskett, A. E., Malone, J. P., "The Ulster method for the examination of flax seed for the presence of seed-borne parasites," *The Annals of Applied Biology*, 1941, **28**, 8-13.

DODDER OR LOVE VINE ON BERSEEM IN U.P.

THE dodders or love vines are of importance in foreign countries as pests of clover, alfalfa and flax. Some of the common names are "strangleweed", "goldthread", "hairweed", "pulldown", "hailweed", "devil's-hair", "devil's ringlet", "devil's-guts" and "hellbind".

These belong to the single genus *Cuscuta*, of the *Cuscutaceæ*, a family very closely related to the *Convolualaceæ* or morning glory family. Perhaps the ancestral habit of the genus of twining around other plants for support lead to the permanent habit of parasitism. According to Yuncker (1932) there are 158 species of *Cuscuta* on a great variety of hosts. In the month of April 1948 the whole canal irrigated crop of berseem grown partly for fodder and partly for seed purposes at the Government Agricultural Farm, Haldwani (District Naini Tal), U.P., got severely affected by dodder, *Cuscuta arvensis* Bey. This is the first record of dodder *Cuscuta arvensis* Bey. on berseem (*Trifolium alexandrinum*) from the United Provinces. It may have been introduced into this farm through irrigation water or seed. The contaminatad seed is generally the first source of infections, but after that other means of spread, *viz.*, (i) by hay from infested field, (ii) contaminated manure and (iii) by farm operations and (iv) the movement of livestock. It is carried over from one season to another either by seed or by established stems on perennials.

Control.—At first it is necessary to pay full attention to practices to prevent introduction of dodder, and if present to guard against its spread by (1) the selection of dodder-free seed; (2) the avoidance of dodder infested berseem fodder; (3) preventing the movement of grazing animals from infested to clean fields; (4) restricting the flow of irrigation water so as to avoid passing through infested areas, (5) avoidance of the use of dodder-containing

manure, (6) destruction of the crop by burning before seeding and (7) by leaving the ground fallow after the selected eradication measures have been completed and then followed with a five-years rotation beginning with a non-leguminous tilled crop.

The seeds of *Cuscuta arvensis* Bey are much smaller in size than berseem seeds and these could be separated by means of suitable sieves. In U.S.A. the separation of dodder from commercial seeds is now generally done by seed companies provided with special cleaning machinery. Three types of cleaners are in use; (1) power driven graders with special screens, (2) the Dosser machine, in which the velvet linings retain the small dodder seed that cannot be screened out and (3) by an electromagnetic process, in which the crop seed is mixed with iron powder. Much of the powder sticks to rough dodder seed which is then drawn out of the crop by magnets.

Plant Pathology Section, U. B. SINGH.
Department of Agriculture,
Kanpur, U. P.,
July 30, 1948.

Yuncker, T. G., *Mem. Torry Bot. Club*, 1932, **18**, 113-31.

XANTHOMONAS DESMODII-GANGETICII, SP. NOV., UPPAL, PATEL AND MONIZ; A NEW BACTERIAL LEAF-SPOT OF *DESMODIUM GANGETICUM* DC.

THE disease appears as light yellow, watersoaked, round spots on the undersides of leaves of *D. gangeticum* found at Bassein in Thana District where it seems to be localised. It differs from other bacterial leaf-spots on legumes in its host range, morphological, cultural and biochemical reactions. The description of the pathogene causing this leaf-spot is as under:—

Short rods with rounded ends, single or in pairs but never in chains. Capsules present. Motile with a polar flagellum. Gram-negative. No spores and non-acid fast. Stains readily with gentian violet, carbol fuchsin and methylene blue. Colonies on potato dextrose agar are circular with entire margins, smooth, convex, glistening and butyrous. Odour is absent and colour of the medium remains unchanged. Colour of the colonies is empire yellow. Internal markings (striations) not coming upto the margin. Moderate cloudiness in nutrient broth with no floccules and pellicle. Colour remains unchanged and odour is absent. Optimum temperature for growth is 20°-25°C., minimum about 5°C. and maximum about 35°C. Thermal death point is between 50° and 52°C. The organism liquefies gelatin and has a strong diastatic action on starch. Casein is digested. Nitrates are not reduced and indole and ammonia are not produced. Hydrogen sulphide produced. Asparagin utilised as a sole source of carbon and nitrogen. Litmus reduced in litmus milk and plain milk is cleared. Utilises dextrose, sucrose, raffinose, galactose, maltose, xylose, lactose, arabinose, levulose, mannitol and salicin. Growth good in Uschinsky's solution; no growth in Cohn's and Koser's uric acid medium.

The organism is pathogenic to *Desmodium gangeticum* DC.

A detailed paper is being submitted separately for publication.

Plant Pathological Laboratory, M. K. PATEL.
College of Agriculture, L. MONIZ.
Poona,
August 20, 1948.

PRELIMINARY OBSERVATIONS ON THE ROLE OF BLUE GREEN ALGÆ IN FISHERY PONDS AND IN THE CONTROL OF MOSQUITO BREEDING*

IT has now been realised that for tackling the urgent problem of increased fish supplies in the country, a rapid extension of fish culture through the utilisation of the neglected village ponds is one of the most hopeful ways. Public Health authorities interested in the control of mosquito breeding spray the same ponds with insecticides at frequent intervals and thereby make the ponds ineffective for fish culture. Thus there is great need at present for co-operative research with a view to integrating malaria control with fish culture.

In the course of a scheme of co-ordinating anti-malarial measures with pisciculture, Blue Green Algæ were found to play an important part.

It was observed that the fish culturists very often plant Blue Green Algæ [1,2] in nursery ponds in order to ensure a quick and healthy growth of carp fry. The utility of algæ as food for Indian Carps, has already been noted by Mookerjee[4] and Biswas[5]. The latter found that Blue Green Algæ "either epiphytic on the submerged water plants or floating freely as plankton serve as food to mosquito larvæ" while Senior White regards Blue Green Algæ as "inimical to *Anopheles* larvæ," (private communication). The observations recorded here will show that the growth of these algæ is inimical to the breeding of *Anopheles* larvæ.

Experiments have shown that Blue Green Algæ in a pond influences the pH of the water. The following table indicates the relative growth of Blue Green Algæ and the pH of water.

Correlation between the relative growth of Blue Green Algæ and the pH of water.

pH	Cases of algal frequency				
	Nil	Very thin	Thin	Thick	Total
8·0 to 8·4 ..	445	42	28	8	523
8·5 to 8·8 ..	11	3	10	24	48
Above 8·8 ..	0	0	0	12	12

The particular species found in these tanks is *Mycrocystys aeruginosa* (Kutzing)‡