

extent of devastation has been less severe, destruction of the standing crops as a result of the floods that followed the earthquake has led to marked economic distress and malnourishment. This fact together with the presence of drug-resistant virulent kala-azar infection in this area emphasizes the need for close watch and adoption of measures for control.

In view of the fact that mass treatment of cases has failed to control kala-azar in Assam, it is necessary to consider what other measures may be adopted for the purpose. It is well known that insecticides particularly DDT and similar compounds are highly effective against the sand-fly, the insect vector of kala-azar. If DDT spraying of the endemic foci can be adopted, it is highly probable that the cycle of transmission of kala-azar would be interrupted by the destruction of the vector and this measure will help in the control of kala-azar. It will be necessary to continue treatment of all cases of kala-azar and post-kala-azar dermal leishmaniasis (the latter condition is being more frequently seen now) more thoroughly using the most effective pentavalent antimonials and/or aromatic diamidines.

The following words of Knowles (1934) that proved prophetic may rightly be borne in mind at the present time :

'The virus is everywhere in endemic areas and a new generation of susceptible persons is growing up. Anything in the way of widespread epidemic disease, famine conditions or such catastrophes as the recent earthquake in North Bihar may very possibly be followed by a renewed epidemic of kala-azar. The present is *not* the time to lessen public health activities against the disease; it is rather a period in which vigorous measures should be taken to eradicate all foci'.

The investigations on kala-azar in Assam were undertaken under the auspices of the Indian Council of Medical Research. I am very thankful to the Director of Public Health, Assam, for providing full facilities and help in carrying out the survey and for various epidemiological data. I appreciate the great help I received from the various members of the Public Health Department, Assam, *viz* Assistant Directors of Public Health, the Medical Officers of Health of the districts and subdivisions and the Medical Officers of remote dispensaries in the villages, in studying the cases and collecting various data from the dispensaries and departmental offices. My thanks are due to the Inspector-General of Civil Hospitals, Assam, and the staff of the various hospitals and dispensaries under the medical department, to the Principal and the staff of Assam Medical College, Dibrugarh, to the Principal Medical Officers of several groups of tea estates, and mission hospitals and to the Indian Tea Association and the Ross Institute at Cinnamara for help in study of the kala-azar problem in Assam.

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## PRESENCE OF ARGEMONE MEXICANA SEEDS IN MUSTARD SEEDS GROWN IN BIHAR

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OUTBREAKS of epidemic dropsy have been reported at varying intervals from different parts of this state. In a previous communication (Lal, 1951), details of each outbreak have been described including the severe outbreaks of the disease from various parts of Bihar including Patna the capital town in late 1949 and early 1950. In the course of the steps taken to stop the outbreaks, a large number of oil mills and wholesale mustard seed dealers' godowns were visited. Mustard seeds mixed with argemone seeds were found in only those samples imported from other states and in none of the indigenous samples. Doubts were raised by some on this observation.

The paper attempts to give the results of an investigation regarding the presence of argemone seeds in mustard seeds grown in this state and the reasons for the seasonal incidence.

#### *Technique of investigation*

In early March 1950 a circular letter was sent to all district officers of this state requesting them to collect samples of mustard seeds, through reliable magistrates without giving any prior information to any body,

- (i) by actually harvesting a portion of the plant standing in fields,
- (ii) from the stock of big oil seed dealers, and
- (iii) from the stock of big oil mills engaged in the production of mustard oil.

The letter asked them to report if argemone seeds were available in their respective districts in large quantities without much trouble and also the harvesting experience of the labourers as to whether argemone seeds were or could possibly be harvested either separately or jointly with mustard seeds.

The district officers got the samples collected between April to June 1950 and sent the same to this laboratory. Each sample was thoroughly examined by the author in bright daylight with

hand lens for the presence of argemone seeds and the findings confirmed by the Director of Public Health, Bihar. Thereafter they were crushed, and the oil extracted by ether was tested for the presence of argemone oil by Sen's modification of Sarkar's ferric chloride test (1946). Table below gives the results :—

not hold good for this state. In view of the above findings, the seasonal incidence of the disease in this state is due to the fact that this state being short of oil seeds begins importing the same when the indigenous produce starts getting exhausted, by about August or September. The oil of these adulterated

TABLE  
Showing source of mustard seeds and presence of argemone seeds in them

Total number of districts which sent samples	Total number of samples received	PLACE FROM WHERE COLLECTED			SOURCE OF SUPPLY OF SEEDS				Number found adulterated with argemone
		Oil mills	Wholesale seed dealers and oil mills	Mustard fields	Local	U.P.	Madhya Pradesh	Punjab	
10	175	45	106	24	164	6	4	1	1

Harvesting of mustard was over in some of the districts, hence samples collected after actual harvesting could not be sent by all. Of the total number of 175 samples only one was found to contain argemone seeds and the extracted oil gave positive ferric chloride test. This sample was obtained from a wholesale seed dealer and the particular consignment was received from Bilaspore in the Madhya Pradesh. District officers reported that argemone seeds were not available in large quantities without much trouble; further that the two plants were not harvested together in the state, wilfully or accidentally.

#### Conclusion

Serious doubts have been raised as to why argemone seeds be mixed with mustard seeds and in which part of the state such adulteration was done. The author from his findings had earlier reported that the imported mustard seeds only were found to contain argemone seeds and that those grown in the state of Bihar were free from the same (Lal, *loc. cit.*). The present investigation carried out through reliable agencies confirms this view. The reasons why only one sample of mustard seeds was found to contain argemone were twofold : (A) Due to the outbreak of epidemic drowsy in the state in early part of 1950 vigorous steps were taken to seize all such adulterated samples and hence those that escaped or avoided seizure had put the whole stock in a place where it could not be detected. (B) Mustard seeds locally grown were available in plenty at the period when collection of these samples was done and hence there was no import in the state at that time.

In the previous publication (Lal, *loc. cit.*), it has been shown that the explanation given by Lal and Das Gupta (1942) regarding the seasonal incidence of the epidemic drowsy did

imported seeds give rise to the epidemics as it takes about a month or two to crush the oil, and two to three weeks for the incubation period, and hence the onset of the disease in the last quarter of the year.

As to why argemone seeds are mixed with mustard seeds, Sanyal (1950) has given an explanation which is in conformity with the views of the author.

#### Summary

1. Investigation made in this state revealed that indigenous mustard seeds do not contain argemone seeds.

2. A reasonable explanation as to the seasonal epidemic drowsy in this state has been given.

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## The Indian Medical Gazette Fifty Years Ago

### THE DYSENTERY OF ENGLISH ASYLUMS : A REVELATION

(From the *Indian Medical Gazette*, July 1901,  
Vol. **36**, p. 261)

WE have on at least two former occasions discussed the nature and existence of dysentery