

**EASTERN LIMIT OF THE 1943  
SWARMING OF THE DESERT LOCUST,  
*SCHISTOCERCA GREGARIA* (FORSKAL),  
IN INDIA\***

Pruthi<sup>1</sup> (1944) has stated Patna (lat. 25° 41' N., long. 85° 17' E.) in Bihar as the most eastern Indian limit reached by Desert Locust swarms in 1943.

Several months ago Mr. J. C. Mukerji, of Khurdah, 24-Parganas, Bengal, brought to me a male specimen of the Desert Locust that he had collected on June 25, 1943, from a swarm at Deogarh (lat. 24° 30' N., long. 86° 42' E., Santal Parganas, Bihar), where the swarm was observed on two days (June 24 and 25, 1943), passing from the S.W. to the N.E. without stopping at Deogarh. Mr. Mukerji's specimen was one of the few stray individuals which, however, did alight. It has been deposited in the Zoological Survey of India (Reg. No. 1231/H5), and is a typical yellowish *phasis gregaria* male of *Schistocerca gregaria*. The above swarm has also been independently confirmed by the Subdivisional Officer of Deogarh.

The Deogarh record extends the Patna limit by about ninety miles farther east.

Mr. D. R. Bhatia (New Delhi) recently informed me that since the publication of Pruthi's note, he had information of the 1943 swarms reaching Pothia area (lat. 25° 33' N., long. 87° 15' E., Bhagalpur District, Bihar), which means that the Deogarh limit is extended by some thirty miles to the east. Deogarh, however, remains the most southern point of the eastern limit reached by the Desert Locust in 1943.

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1. Pruthi, H. S., *Curr. Sci.*, 1944, 13, 174.

**LARGE-SCALE APPLICATION OF  
MERCURY FOR PREVENTION OF  
INSECT PESTS IN STORED  
FOOD GRAINS**

It was pointed out by the author<sup>1</sup> that since mercury vapour is the active reagent in sterilising insect eggs and killing small larvae, a very small quantity of mercury is necessary for preservation of grain. Vapour pressures of mercury at ordinary temperatures are very small and the quantity required to saturate a particular space with mercury vapour is also very small; e.g., 12 mgms. of mercury per cu. metre) is the equilibrium concentration at 25° C., and 40 mgms. at 35° C. It was also pointed out that since vapour pressure of mercury is a function of temperature, the point of prime importance is the rapid attainment of the equilibrium concentration of mercury vapour at that temperature in the space in which the grain is stored. A simple way of facilitating this process is to disperse the mercury so as to expose as large a surface as possible for its evaporation. This

was achieved by spreading mercury between ribbons of porous paper or converting it into very fine dust. After making sufficient allowance for the loss of mercury by diffusion it was expected that about one gram of mercury per bag of 240 lbs. of grain would suffice to preserve it from insect attack for about one year (Dole, loc. cit.).

It was also pointed out<sup>2</sup> that mercury vapour is acting as a fumigant and not as a contact or stomach poison, so all means to conserve the mercury vapour would prove effective against breeding of insects.

These expectations were fulfilled in small-scale experiments and, therefore, they were tried on a large-scale at Kirloskarwadi (Dist. Satara, Bombay Presidency) in the godown owned by Messrs. Kirloskar Brothers, Ltd. In all 408 bags of different grains were treated with the dust and stored for a period of five months, i.e., from the end of June to the beginning of December 1944. The preserved bags consisted of the following grains:—

Jowar 216 bags, gram 92 bags, wheat 50 bags, tur dal 50 bags. Each bag weighed about 200 to 225 lbs. They were stored in a godown of 65 ft. × 30 ft. × 15 ft. and besides the above bags there were about 1,500 bags of untreated and infested grain. Treated bags were kept separate and an equal number or more of untreated bags were kept as control (with the exception of wheat) not very far off from the treated bags. The bags were arranged so as to conserve the mercury vapour as far as possible. The bags in the centre of the stack were treated with 1 gm. of mercury and the outer ones were treated with 5 gms. of it. At the end of five months the bags were examined and the samples from different bags were collected and studied.

Following is the summary of the mean of the various counts of the damaged grains:—

Name of the grain	Original condition	Condition after treatment of 5 months	Condition of the untreated grain after 5 months
Gram	Some eggs seen on the grain	Not a single grain bored	Cent per cent. grain holed, some with 2 or 3 holes
Jowar	Slightly infested	3 % grain affected	34 % grains holed with some powder formed
Wheat	Not infested	Not a single grain affected	-----
Tur dal	" "	" "	Slight damage seen, some powder formed

The gram was infested with eggs of *Bruchus chinensis* and jowar was infested by *Calandra oryzae*, *Rhizopertha dominica* and *Triboleum castaneum*.