the temperature distribution over the neighbourhood was favourable for convection and the consequent lifting of locusts into the free air, particularly at the time of the maximum temperature on the 8th October. Upper air temperatures were also favourable for locust flight.

TABLE II

Records of temperatures at Veraval

7-9 *October* 1952

Dates	Maximum	Temp. in °F. at 20-30 hrs. I.S.T.				Remarks
		Surface	1,000 ft.	2,000 ft.	3,000 ft.	
Oct. 7	87	82	90	87	84	Inversion (stable) up to 500 ft.
Oct. 8	95	84	82	81	80	Stable up to 4,500 ft. Super adiabatic (unstable) from 4,500 ft. to 7,500 ft.
Oct. 9	98	84	90	90	84	Inversion up to 1,200 ft.

On the basis of the above data, it may be surmised that an emigration of swarms of the Desert Locust had occurred from the coasts of Kutch and Saurashtra in the course of the 7th and the 8th October 1952, and that they had been carried by upper air currents across the Arabian Sea in the course of 4 or 5 days and cast on the Malabar Coast between the 12th and the 14th October. It is not unlikely, however, that the great majority of the locusts had dropped into the sea out of sheer fatigue, which would account for the large sheets of drowned locusts found in the sea In this connection, it may be stated that in the year 1862, there is a record of locusts having been similarly driven into the sea along the coasts of Kutch. According to the *Gazetteer of the Bombay Presidency* (Vol. V, 1880), "Rainfall in 1862 was heavy—34". The rains closed in October with a tremendous rainstorm, which not only caused damage to crops and life, but also drove locust swarms westwards out into the sea. Ship captains from Muskat and Zanzibar, some 100 miles from Mandvi found the sea covered with their dead bodies".

4. ACKNOWLEDGMENTS

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1. Rao, Y. Ramchandra, *Indian J. Ent.*, 1953, **15** (2), 126.
2. Waloff, Z., *Proc. Roy. Ent. Soc. Lond. (A)*, 1946, **21** (10).
3. Rainey, R. C. and Waloff, Z., *J. Anim Ecol.*, 1948, **17** (2), 101.

PERFECT CRYSTALS OF PURE IRON

THE General Electric Company have reported the development of perfect crystals of pure iron, a hundred times stronger than any known metallic crystal and inherently resistant to rust. These perfect crystals represent for the first time metals that are as strong as theory predicts they should be and, as such, "provide a new and exciting dimension in metallurgy". The crystals are metallic whiskers about one thousandth of an inch thick and an inch or so in length. They were produced in the company's Research Laboratory in Schenectady, New York, by Dr. Robert L. Fullman and Arno Gatti. It is hoped that in time, applied science and technology will find a practical use for this form of metal.

Ordinarily the strength of actual crystals is a hundred times or so less than the theoretical value Metal parts used in machinery and other equipment similarly fall far short of the strength they might theoretically have. This is on account of the irregularities in the crystal on an atomic scale. As against this, the perfect crystals which have been made are stronger than any previously known metal or alloy, and actually attain a tensile strength of nearly a million pounds per square inch.

Moreover, these tiny perfect crystal wires of pure iron do not appear to rust. Finely divided iron, or fine wires of ordinary iron, rusts almost immediately upon exposure to air. The same atomic perfection that gives them strength probably also prevents oxidation.