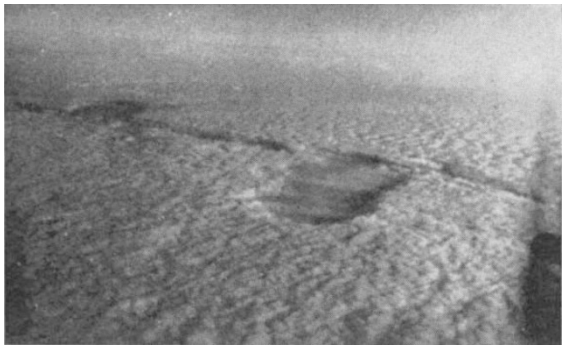
On January 25, 1950, a suitable cloud sheet covered most of southern England. The cloud was some 2,000 ft. deep, with top at about 4,500 ft. Temperatures within the cloud ranged from −5° to −10° C. Over East Anglia the upper surface of the cloud, otherwise fairly uniform, was disturbed along a line running roughly north-east from somewhere near Shefford, out to a large clear area visible on the horizon. This disturbance will be referred to as a 'rift'. The winds at 2–4,000 ft. were north-easterly, 5–15 m.p.h., that is, roughly parallel to the rift.

The seeding aircraft flew on a course of 315°, at right angles to the rift, and dry-ice pellets were dropped along a track 12 miles long, this track being bisected by the rift. A lane of ice crystals rapidly appeared. This lane widened at about 3 m.p.h. and *was sheared cleanly into two parts along the rift line.*



The whole infected area after 30 min., looking east-south-east

The accompanying photograph, taken thirty minutes after seeding, shows the rift running from lower right to centre left. The two halves of the infected area are now each about six miles long (at right angles to the rift) and about 1½ miles wide; and are about five miles apart.

The experiment thus reveals the existence of a horizontal wind shear of the order of 10 m.p.h. across a rift which was, before the seeding, less than a quarter of a mile wide. This is probably the first evidence that strong wind shear can occur at heights well above the ground, and in apparently non-frontal conditions. A full report is to be published elsewhere.

Acknowledgment is due to the Director of the Meteorological Office for permission to publish this note; and to the members of the Meteorological Research Flight who conducted the experiment.

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[1] See, for example, Schaefer, *Science*, **104**, No. 2707 (1946).

Breaking of Diapause in the Winter Egg of the European Red Spider

ON the strength of the results obtained by Slifer[1], which prove that it is possible to influence the development of grasshopper eggs by treatment with a wax-solvent agent, a similar experiment has been made to investigate the possibility of breaking the diapause in winter eggs of the European red spider (*Metatetranychus ulmi* Koch).

Small pieces of apple twigs with winter eggs on them were collected in the orchard just before treatment. They were dipped into xylene for a certain time, while being gently shaken; the twigs were then glued on a glass slide surrounded by a ring of sticky material and stored at 20° C. and 95 per cent relative humidity above a saturated solution of sodium sulphite for the incubation of the eggs. At certain intervals the hatched spiders, caught in the sticky band, were counted and removed from the slides.

Eggs collected on November 30, whether dipped or untreated, hatched during two distinct periods of time, namely, from 9 to 22 days later and from 40 to 80 days later. Approximately 10 per cent of the untreated eggs hatched in the first period. Dipping for five minutes had no effect; but longer treatment increased the proportion of eggs hatching in the first period, depending on the treatment-time as shown in the accompanying table.

Length of dipping time	% viable eggs hatched during 1st period	2nd period
No treatment	about 10	90
5 min.	,, 10	90
10 ,,	,, 25	75
20 ,,	,, 85	15

If the eggs were collected at a later date, the same results were obtained except that the time between the two hatching periods decreased until, with eggs collected in February, both treated and untreated eggs readily hatched after incubation for only ten days.

The breaking of diapause at an earlier date and the influence of different degrees of humidity are being investigated.

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[1] Slifer, E. H., *J. Exp. Zool.*, **102**, 333 (1946).

Copper-Deficiency Disease of Apple Trees

THE communication by Mr. J. O. Jones[1] dealing with the copper-deficiency disease of pear trees has tempted me to write briefly of my experience of the summer-spraying of apple trees in Northern Ireland with Bordeaux mixture. In the early nineteen-twenties, the 6,000 acres of apple orchards in the north of County Armagh and the south of County Antrim, which are mainly planted with the variety Bramley's Seedling, were in a very poor condition. The position was so serious that unless something could be done to restore the health of the trees, it looked as if the apple crop might become entirely unprofitable. Except for occasional winter-spraying with lime or caustic soda (tar-oil washes had only just been introduced) and the application of lead arsenate in summer to control caterpillar attack, no regular spraying programme was in operation and no suitable spraying machinery was available. Apple scab (*Venturia inœqualis* Aderh.) had just commenced to attack the variety Bramley's Seedling, and it was obvious that the control of this disease presented a major problem.

Experimental work was commenced in 1924 and, in the main, was framed with the view of determining