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A CASE OF INADVERTANT WEATHER MODIFICATION PRODUCED BY FIRE

This is to report a case of inadvertant weather caused by a fire at Madras on 25 October 1978. On that day at about 0830 hrs a large stock of camphor and wattle bark (a tanning material) stored at the Madras Port caught fire and a huge smoke plume was drifted south westwards towards Fort St. George. At about 0940 hrs when the sun was shining brightly and about four to five octa of clouds were present, there was a brief shower for about 3 or 4 minutes over the Fort area there being no rain at the same time in other parts of the city.

On that day low pressure area off the Sri Lanka-Tamil Nadu coasts made conditions favourable for convective precipitation in and around Madras. Madras (Nungambakkam) had 12.6 mm of rain between 0315 and 0320 hrs IST and 1.0 mm of rain between 0820 and 0840 hrs IST but there was no rain after 0840 hrs. Radar observations at 00 and 03 GMT showed scattered convective cells all round Madras. Winds at the surface and in upper levels were generally north easterly. This resulted in the smoke plume drifting south-westwards. A photograph of the plume taken from the Madras Cyclone Warning Radar Station which is about 1 km to the south of the site of fire (Camera facing North) is shown in Fig. 1.

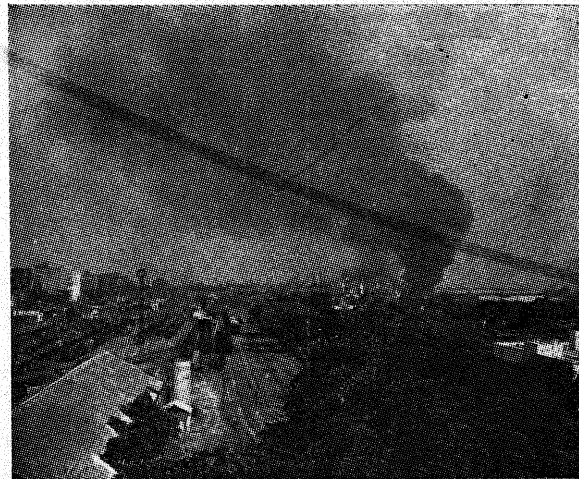


Fig. 1.

Fire can usually trigger a convective shower in two ways in an otherwise favourable atmosphere. One is the introduction of condensation nuclei and the other is the heat input stimulating convection. Camphor being a hydrocarbon, is expected to contribute to the condensation nuclei in the atmosphere. The injection of heat could have also stimulated the convection over a small area resulting in the localised shower.

Cyclone Warning Radar, Madras
12 March 1979.

P. P. NARAYANAN