

### LOWER LEVEL WINDS ALONG THE DELTAS OF THE NORTH MADRAS COAST IN THE MONSOON

WHEN the pilot balloon observatory was started at Masulipatam in 1942, it filled a gap between the observations at Madras and at Vizagpatam on the east coast of India. Soon after, it was noticed that the actual wind speed at lower levels of 0.5 and 1.0 km. at Masulipatam was much greater than at corresponding levels either at Madras or Vizagpatam. An application of the equation of continuity was attempted. The weather along the north Madras coast is free from precipitation except when a monsoon 'pulse' is passing over the place. At other times the upward velocity can be assumed to be negligible: Only the horizontal velocities need be considered. The modifications in the latter can only be due to orography (see figure).

Masulipatam is on the northern side of the Krishna delta and within 30 miles of the southern stream of the Godavari delta. The two deltas almost overlap. Taking account of the 1000 ft. contour, the Godavari valley is almost N.W. to S.E.; and the Krishna valley (north of the Nallamalai Hills) is almost W. to E. At a station situated on the overlapping portion of the deltas of Godavari and Krishna, the winds flowing down the two valleys must blow together or coalesce. The directive effect of the orography persists up to twice or thrice the height of the valley from the sea level (or up to about 3,000 ft. or 1.0 km. above sea level).

Above this height, there would be very little influence.



The west to east stream in the monsoon on the north Coromandel coast is the monsoon air mixed with other air while the northwesterly is