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A SEVERE HAILSTORM IN SECUN-
DERABAD ON 11 MARCH 1957

At 1350 IST on 11 March 1957, hailstorm started with small stones of about 1 cm in diameter. In about 2 minutes, much bigger ones began to fall in large abundance till about 1405 IST, after which they stopped. The rainfall continued for another five minutes. An impressive feature was that the total rainfall was very small, though large heaps of hailstones were seen all over the streets. The wind velocity was also very high, variously estimated at 60 to 90 mph.

The structure of the hailstones was sought to be studied by the writer by measuring the diameters of the layers similar to what was reported by him some time back (Rajeswara Rao 1952). They were of various shapes and sizes, the largest observed being about $2\frac{1}{2}$ " in diameter. The newspapers, however, reported to have observed some of 10" long. Measurements were made on 25 stones, but about a hundred of them were visually studied to verify the following conclusions—

1. All of them had an opaque nucleus of diameter 2 mm.
2. From the nucleus, thin opaque rings of varying diameter and number extended upto 6 to 10 mm, after which the region was transparent.
3. After a diameter of about 16 mm two thick rings of elliptical shape appeared. The average dimensions of these rings on 10 stones were respectively of minor axes 16 and 24 mm and major axes 23 and 33 mm. The outermost ring was often wavy, like on the periphery of a toothed wheel.
4. No ring structure existed beyond about 35 mm, though regular transparent mass extended to in some cases upto 45 mm. Beyond this diameter, the stone was opaque and structure irregular. None of these

big stones were of regular spherical shape.

It may not be unreasonable to think that as a fully developed hailstone with a thin layer of water at 0°C is pushed up by a strong wind, at higher levels small stones at temperature much below the freezing point can strike against and stick to the former causing sudden freezing of the thin layer of water, thus forming a bigger

stone. If this is correct, it helps one not only to understand the irregular structure of the outer layers but also avoid postulating unduly strong winds to form and lift these heavy stones.

N. RAJESWARA RAO

*Department of Physics,
Nizam College, Hyderabad
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