

UNUSUAL HAILSTONES

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On 31 October 1973, at 1655 Eastern Summer Time during a heavy thunderstorm oddly shaped hailstones fell at East Sale, Victoria (see photographs, Fig 1). There were many stones of this shape, mixed with many others which were spherical, or almost so, and about the same size. It can be seen that the stones each comprised a small centre, apparently a rime pellet, surrounded by mostly clear ice.

Hail 'as big as golf balls' also fell about 16 km northwest of East Sale, injuring cattle and stripping leaves in an orchard.

Thunderstorms were widespread in southern Victoria on that afternoon. In separate storms near Melbourne, one boy was killed by lightning and another almost drowned when swept away by flash flood waters.

The radiosonde ascent at Laverton (16 km southwest of Melbourne) at 0900 showed the air to be unstable throughout the troposphere, except for a stable layer between 670 mb and 590 mb. The freezing level was at 730 mb. Using the method of Fawbush and Miller (1953) hail of diameter 2.5 cm could be expected.

Some of the stones at East Sale appear to have begun as spherical stones, and those with well developed arms seem to have these bent in the same direction, as if the arms froze after being thrown out by a spinning motion. However, Weickmann (1953) considers such a process unlikely, as very rapid rotation would be required to overcome the drag forces of the air rushing past the stone.

Oddly shaped hailstones have also been reported previously on rare occasions in Australia. Sketches of hailstones which fell at Sydney at 1315 on 8 March 1881 are shown in Fig 2.

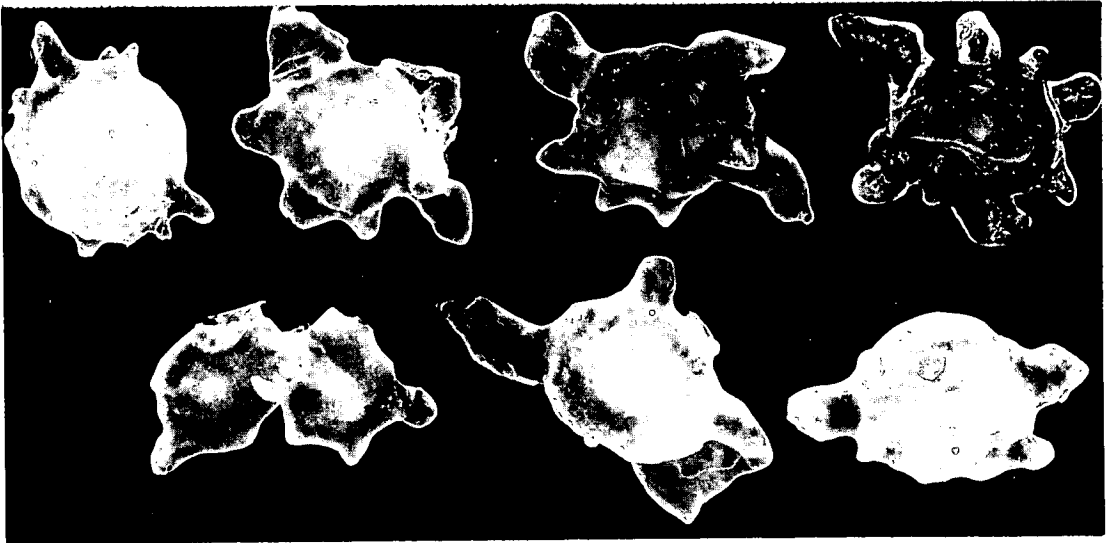
The Melbourne *Argus* of 22 October 1901 reported that, at Gordon (near Ballarat, Victoria), hailstones (some over 1 inch in diameter) looked more like circular pieces of ice run out of a mould, and that many of them partook of the form of various birds and animals.

REFERENCES

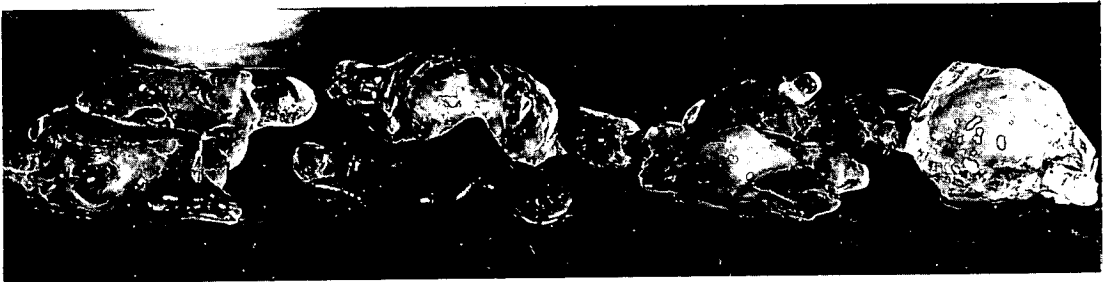
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- Weickmann, H. 1953. Observational data on the formation of precipitation in cumulonimbus clouds. In Byers, H.R. (ed.), *Thunderstorm Electricity*, 125. (University of Chicago Press: Chicago.)

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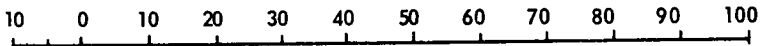
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PLAN VIEW



ELEVATION



SCALE: MILLIMETRES

Fig 1 Hailstones of unusual shape which fell at East Sale, Victoria on 31 October 1973.

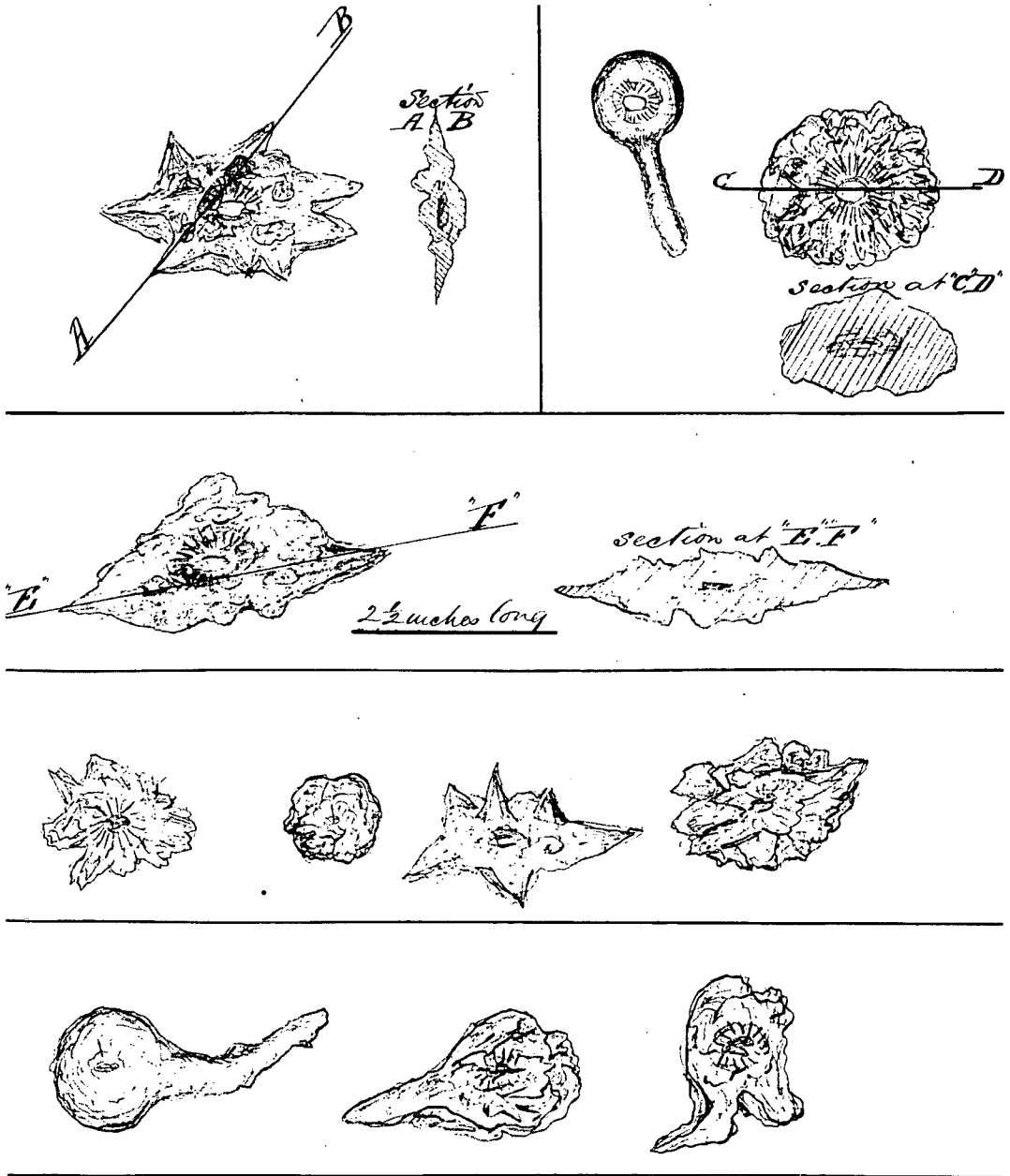


Fig 2 Sketches of hailstones of unusual shape which fell at Sydney, New South Wales on 8 March 1881 at 1.15 pm.

