THE BUCKINGHAMSHIRE TORNADO

'. . . a storm is coming on the Chiltern Hills.'—G. K. C.

J. WILFRID STADDON

ON 21st May, 1950, Buckinghamshire became conscious of the fact that the incidence of tornadoes was not confined exclusively to the other side of the Atlantic, but that tracts of the Home Counties were liable to destruction by such meteorological freaks. The numbers actually witnessing it were probably few, since the weather conditions and the time of day combined to keep the majority within doors.

This circumstance resulted in lack of observation of the phenomenon, even by the layman, but at the same time it tended towards elimination of casualties. The latter is fortunate, but the former helps to perpetuate the inadequate explanation of the causes of these unusual storms. The precise time for an eclipse is found in the almanac, but the capriciousness of a tornado prevents prearranged observation.

It may still be said, therefore, that exact knowledge of its origin is still not truly comprehended. It may, however, with confidence be stated that it is, roughly speaking, the eddy caused by the rapid movement of adjacent air masses in different directions, and of temperatures and moisture content.

Tornadoes originate in the clouds, and they are revealed by the funnel at the point of maximum disturbance directed towards the ground, or, in the case of a waterspout, towards a sheet of water. This funnel may be likened to the vortex of the water escaping down the waste of the bath in the later stages of emptying, except, of course, that the direction is reversed. The speed of revolution is enormous, and no instrument could stand up to it, even if opportunity presented itself to use one, but it may be empirically computed from the weight of objects lifted by its force. This velocity may well exceed 300 m.p.h.

The funnel rises and falls erratically, and it may be vertical or trail at a very marked angle. The Buckinghamshire Tornado was true to type. The writer first became aware that an unusual weather phenomenon was afoot by noticing low fragmentary cloud scudding over the Coombe at Wendover at quite unprecedented speed, and in opposition to the general wind direction which was towards the north-west. These clouds were, in fact, being drawn towards the incipient tornado forming in the Chilterns in the vicinity of Dunsmore.

The progress was subsequently on the usual north-easterly course, and its career was conspicuously marked by the tiles and other small debris flung into the air from roofs of Wendover dwellings, accompanied by the alarming noise, as of escaping steam.

(Parenthetically it may be remarked that the Spanish for 'to thunder' is Tronar, and for 'to turn' is Tornar, so that Tornado may be an assimilation of both.)

The funnel was ascending and descending as it proceeded; it was seen to pick up

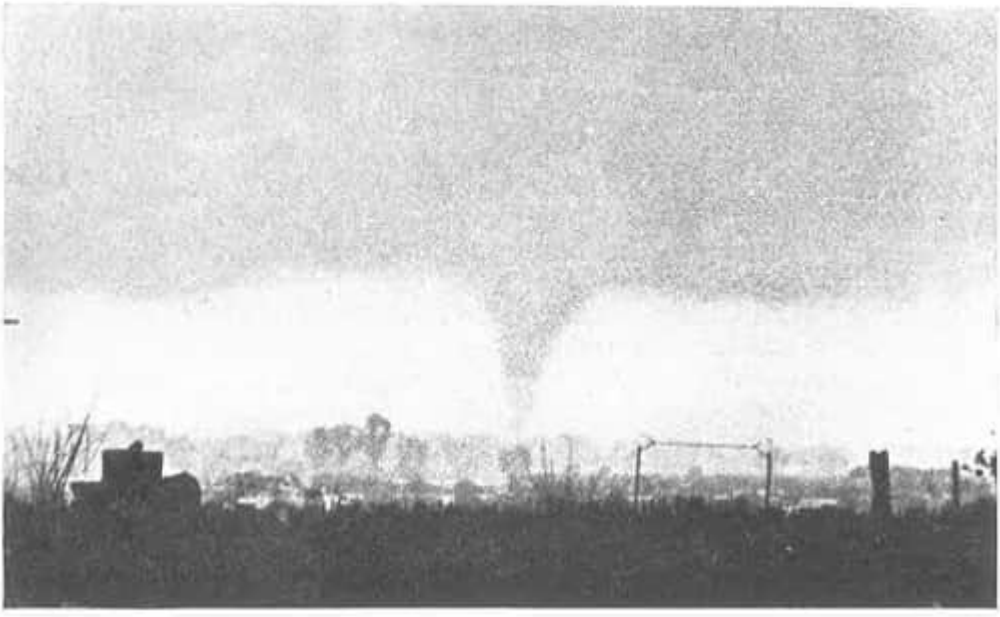

PLATE 1. THE BUCKINGHAMSHIRE TORNADO

water from the canal, and was most conspicuous in its transit over the Halton Camp Electricity Station, where the debris and dust in the air gave the impression, at a distance of one mile, that an explosion had occurred in the building. Descent of the funnel occurred again at Aston Clinton, where damage was considerable, especially to Ginger's Farm and the school building; there was a repetition at Puttenham with similar results, and before leaving the County it dipped to cause great havoc in the built-up area of Linslade.

A bakery was demolished and fifty house-roofs were badly damaged.

On its route to the coast, which it reached at about 8.45 p.m. to the west of Sheringham in Norfolk, destruction was wrought in the outskirts of Bedford, a pond emptied at Houghton Conquest, and a double-decker bus overturned at Sutton, near Ely.

Damage may be incurred in three ways: (1) From surface winds; (2) in explosive action; (3) by uprushing air movement close around the central vortex.

In the incident under review, probably most of the damage was caused by (1), as evidenced by the direction of the uprooted trees, but in all localities traversed there was not a little caused by (3). In (2) the pressure is so reduced within the vortex by centrifugal force of the whirl that the difference between such pressure and that of the internal pressure of, say, a house, is sufficient to burst the walls apart, providing that doors and windows are shut and there is insufficient time for adjustment of these two pressures.

The absence of this effect was, no doubt, due to the fact that the diameter of the funnel at ground-level was at no time greater than 50 yards, and was mostly considerably less. Thus the chance of a building being completely within the funnel and with no facility for pressure adjustment was remote. As is customary, the phenomenon was accompanied by thunder and hail, the latter being still visible on the following morning in some districts. Rain was quite remarkably heavy, and darkness was such that artificial light was necessary in the area of the tornado's formation, albeit an hour after its passage. In Wendover over one inch of rain was recorded during the twenty-four hours ending at 9 o'clock on Monday morning, and at a pumping-station on the Watling Street just outside the County near Hockcliffe, a fall of 2·10 inches was registered.

The fact that there were no casualties is no indication that the tornado lacked violence. While it could not be compared with perhaps 10 per cent. of those that occur, say, in the Mississippi Valley, the fact that no lives were lost was actually due to the luck of its route, combined with the incidence of the descent of the funnel. It was one of the three worst in the British records of the last eighty years, and its track was amongst the longest recorded here or on the continent of Europe. A similar phenomenon took place in October 1913, and it extended from Devon to Cheshire, causing several deaths in its transit across Wales. In October 1638, also on a Sunday, the church at Withycombe in Devon was enveloped by what was undoubtedly a tornado, and the congregation of 60 were all injured or killed.

The photograph of the Buckinghamshire Tornado here reproduced was taken by Mr. J. D. Dugdale, of Walton Dene, Aylesbury, at the Stoke Turn, along the Aylesbury–Wendover Road at about 17.10 hours, and the vortex is very clearly shown in the vicinity of Puttenham. The rarefication of the air within it, due to the internal reduction of pressure, gives rise to condensation of the moisture in the enveloping atmosphere, and thus the vortex becomes visible.