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LIGHTNING DISCHARGE AT KODAIKANAL OBSERVATORY.

In the afternoon of May 2, 1949, a severe thunderbolt struck the Kodaikanal Observatory area. Its effects were somewhat unusual and a description of these as well as of the weather at the time may be of interest to your readers.

On the two previous days the weather was rather warm in the forenoons with considerable growth of convective clouds in the afternoons, which was quite characteristic of the season. But the usual afternoon showers, locally known as "Season Showers," did not occur, the large Cb. clouds forming in the west with their anvils spreading overhead and gradually dissolving away after peals of thunder. On May 2 large Cb. clouds had formed by noon and were spreading over-head from the west and the southeast. The surface wind was light, but the swirling Cb. clouds from the east were moving very fast westwards. There was practically no rain except for a few isolated drops. But about 14 h. 30 m. peals of thunder could be heard, but not quite over-head. In a few minutes the centre of active discharge had evidently shifted right overhead, for there was a blinding flash of lightning and instantaneous, deafening thunder. The phenomenon was so violent that one of us (A. K. Das) thought that the room in which he was at the moment had been struck by the lightning. The thunder could be recognised as two distinct reports, the first being like a gunshot followed immediately by another report and rumbling.

The severe electric discharge had affected practically the whole Observatory area, in which almost every electric fuse had been burnt out and the electric installations at the local Post and Telegraph Office just outside the Observatory grounds had been thrown out of action. But the

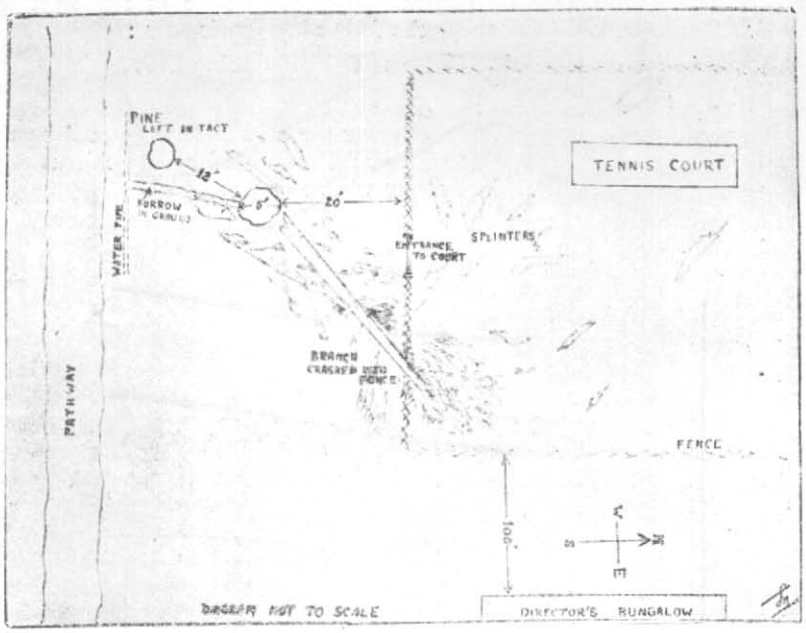

Fig. 1

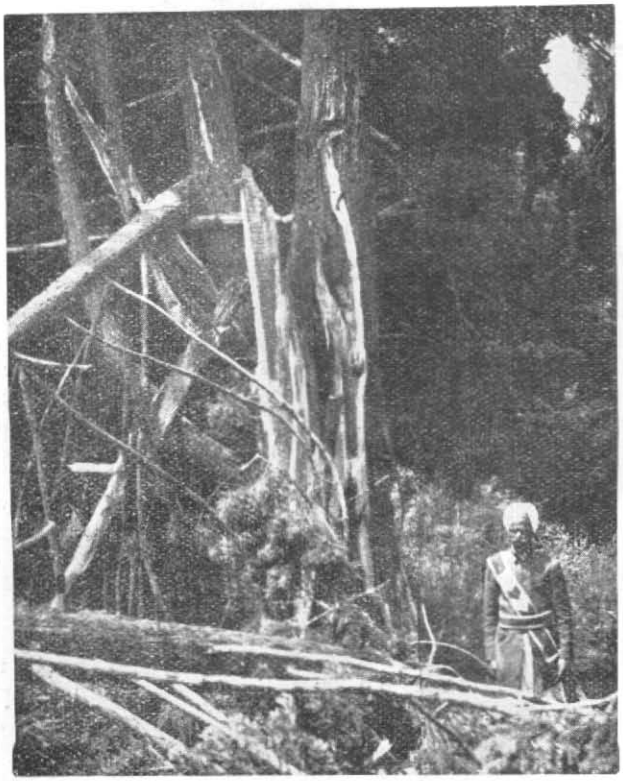

Fig. 2

spot that had received the discharge directly would appear to be immediately to the south of the Observatory Tennis Court (Figs. 1 and 2), where a tall, old pine tree had its giant trunk split in two and two of its large branches broken down. Splinters from the tree were scattered as far as 30 feet away. A furrow about 6 inches wide and 2 inches deep was dug in the ground from the bottom of the tree to a distance of about 12 feet where it met a water pipe; apparently this was done by the electric discharge. Yet there was no visible sign of charring on the tree struck or on the ground. Other trees within 10-12 feet were not affected in any way nor did woodcutters, who were felling trees in the Reserve Forest some 20 yards away, suffer any ill effects. Usually a tree struck by lightning dies soon after, but the tree concerned in the present instance appears still to be

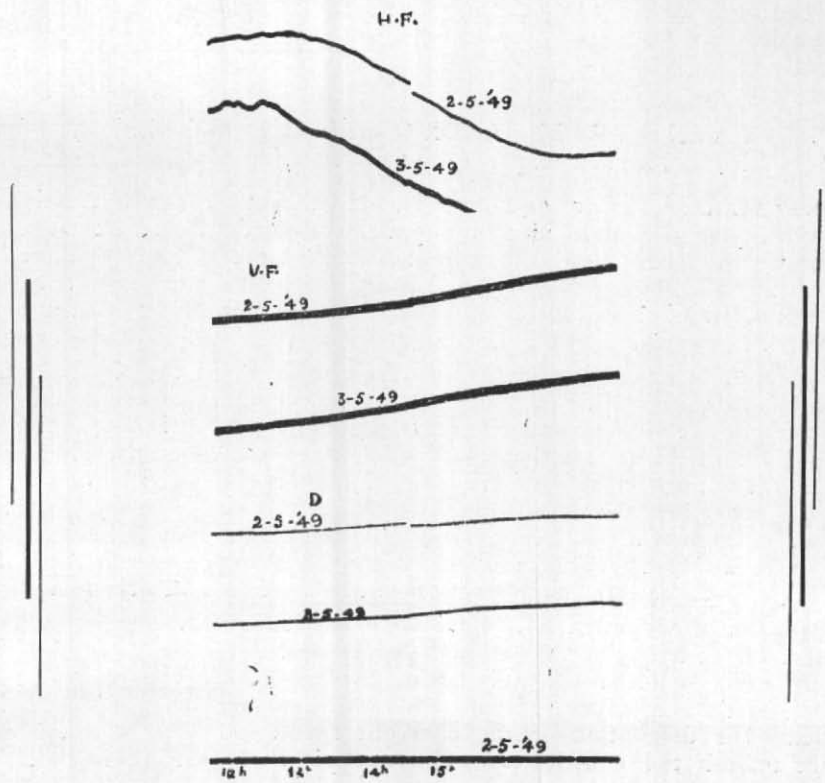

FIGURE 3

perfectly healthy in spite of the severe damage suffered by its trunk and large branches.

Some 200 yards away in the office building of the Observatory sparks were seen to jump from the gabled roof (made of corrugated iron sheets with an overlay of tiles) to the matting-covered floor—a distance of about 20 feet, but there was no visible mark produced by the discharge either on the floor or on the roof. In the workshop some 20 yards farther away the mechanic, who was working on a piece of metal tubing, experienced a heavy electric shock. The effects of the lightning discharge on the self-recording instruments are also interesting : each of the three magnetograms shows a sharp kink synchronous with the discharge (Fig. 3). Simultaneously, the micro-barograph in the office building shows a sudden drop of about 0·25 mb., while the anemograph on the tower reveals a pronounced backing of the wind. It is to be noted that the wind at the time was neither squally nor even gusty, the average speed being about 10 m.p.h.

A. K. Das,
P. V. Sanker Narayan.

Solar Physics Observatory,
Kodaikanal.

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