Observations on the Recent Frost Damages.

COLD waves have become rather of regular occurrence since 1929, and this year (1935) the almost total loss of a promising harvest, has attracted keen attention from scientific standpoint.

Full meteorological data have been kept up at the Station since June 1932. Table I shows the occurrence of two mild cold waves during the first season.

TABLE I.

Days	Max. (F.)	Min. (F.)	Soil temperature at 1′ depth (F.)
1932 December 25 ..	70°	43°	75°
1933 January 22 ..	86°	41°	74°
23 ..	86°	42°	74°
26 ..	76°	42°	75°
27 ..	78°	43°	74°
29 ..	76°	41°	73°

Frost for the subsequent years—1934 and 1935—became comparatively very severe and occurred during the same period, *viz.*, 13th to 21st January. The data for these years are graphically represented in Fig. 1.

Observations on the damage done to plants were made almost immediately after each spell. Thus, in addition to cotton and tobacco in 1933, potatoes, cabbage, castor and papayas also suffered to a certain extent in 1934. The intensive study of this year has yielded more exact data regarding the damage. Thus, Cotton (*Gossypium herbaceum* and varieties), *Nicotiana tabacum* (varieties), *Cajanus indicus* and Soya Beans (*Glycine hispida*) were totally destroyed. Others like *Capsicum frutescens* (varieties), *Ricinus communis* (smaller varieties), *Solanum melongena*, *Solanum tuberosum*, *Lycopersicum esculentum* suffered from 95 to 90 per cent. The rest *Saccharum officinarum*, *Brassica oleracea*, *Cuminum cyminum* were affected to varying extents from 45 to 10 per cent. Amongst the few crops that escaped any injury may be mentioned *Allium Cepa*, *Cicir arietinum*, *Linum usitatissimum*, *Triticum sativum*, *Medicago sativa* and *Fœniculum valgare*.

Amongst the orchard and garden plants that have been affected are *Ficus carica* (100 per cent.), *Carica papaya* (90 per cent.), *Mangifera indica* (10 per cent.), *Anacardium occidentale* (50 per cent.), *Musa paradisiaca* (90 per cent.), *Eranthenum bicoler* (100 per cent.), *Jasminum Sambac* (90 per cent.), *Jasminum arborescens* (90 per cent.), *Tabernæmontana coronaria* (45 per cent.), *Rosa* sps. (10 per cent.) and *Miehœlia champak* (10 per cent.).

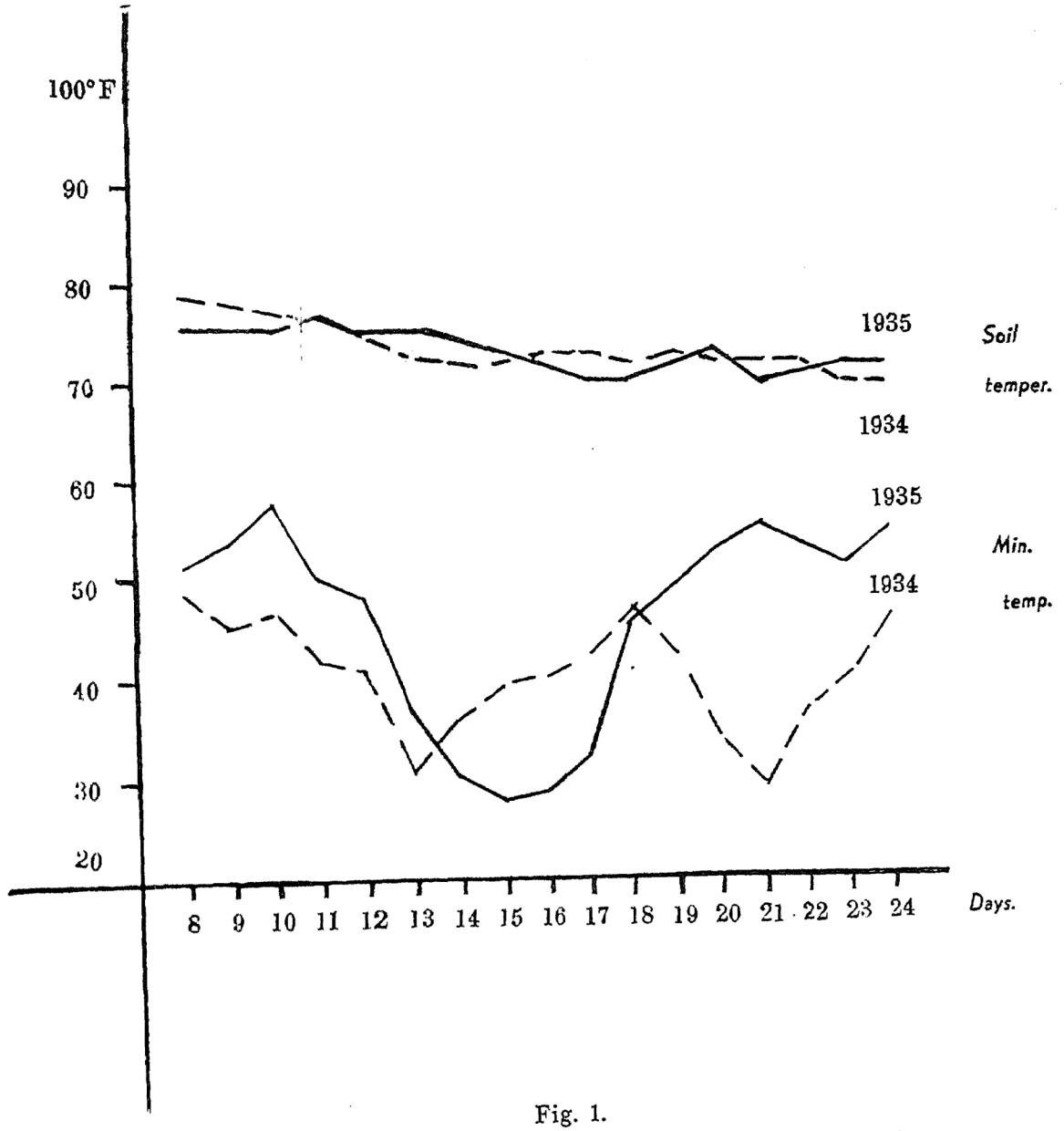

Fig. 1.

Minimum and soil temperatures for 1934-35 during the frost period.

From amongst the weeds *Crotolaria retusa*, *Mallugo hirta*, *Ocimum canum*, *Vioca auriculata* and *Trichodesma zeylanicum* suffered total destruction while the loss to *Celosia argentea*, *Leucas aspera*, *Cassia occidentalis*, *Bergia odorata*, *Cyperus rotundus* and *Phyllanthus Niruri* ranged from 10 to 90 per cent.

It may be noted that the soil temperatures up to 1 foot or below never went below 70° F. and injury had been mostly to the aerial parts of the plants. All the plants sprout fresh after the regain of the normal temperature but without any economical advantage.

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