

- (ii) *Sun-scald Following Heavy Thinning of Insignis Pine*.—Again in Rotorua there occurred another case of unforeseen damage probably attributable to the unusual summer climate of the two preceding seasons. A compartment of insignis pine in Waiotapu State Forest was felled some ten years ago and had regenerated naturally to a dense, though uneven, stand. In 1945, having formed full canopy in all the well-stocked patches it was heavily thinned to a density of between 600 and 700 trees per acre. An undue proportion of deaths in the stand in 1947 focussed the pathologist's attention on the stand, and it was found that there were numerous lesions on the north side of the dead stems, and cross-sections of these stems showed one-sided cambium-killing two years previously. It seems almost certain that the thin bark of trees naturally regenerated in dense stand had been unable to withstand the unusually hot summers of 1945, 1946, and 1947. Again this is a combination of what could be regarded as a locally safe forest practice with a climatic extreme which is rarely encountered. It may be that the sun-scald diagnosis, which at this late date is of necessity partly conjectural, is not the whole story of the incident, but there seems to be little doubt that it was a major contributing factor, and it is a type of injury which has never before been detected under local temperate climate conditions.
- (iii) "*Lammas Flowering*" of *Beech Species*.—In February, 1948, there occurred a scanty second flowering of beech species, at least in the southern portion of the North Island. This is a phenomenon which is known to occur occasionally in forest trees everywhere, but its significance is not understood, save that it usually occurs in a summer of unusual climatic conditions, and that it is frequently followed by a poor seed year of the species that flower out of due season. It is set down here, because no such record has been made previously for the inconspicuously flowering native beeches. Whether it will be followed or not by a poor flower and seed year in 1948–49, it certainly occurred in a poor seed year, 1947–48. The beeches flowered quite profusely in September to October, 1947, but the seed did not mature in quantity, the seeding in places at least being replaced by the scanty second flowering in February already referred to, when the summer had been long and pleasant without undue heat but with less than average rain. These are the unpredictable and uncontrollable vicissitudes that regulate the efforts of the forester who is committed to a programme of natural regeneration.

52. *Forest Offences*.—The number of convictions for offences against the forest laws during the year was 45 (49) and the total fines, costs, and damages amounted to £598 1s. 7d. (£567 14s. 11d.), being made up as follows: fines imposed, £174 (£125); costs and damages, £424 1s. 7d. (£442 4s. 11d.). Particulars of these offences are given in Appendix IX.

Included in the costs and damages for lighting fires in a fire district contrary to the provisions of the Act was the sum of £44 1s. 4d. which was recovered in a single case as fire-suppression costs. For aiding and abetting in the unlawful lighting of fires an offender was fined £5 with 10s. costs. The heaviest fine imposed this year was £20, which was for failure to report a fire. Altogether 5 convictions were obtained for failure to report fires or take proper steps to suppress fires in State forest, whereas there were no convictions for this offence in the previous year.

There was an increase in the number of prosecutions for unlawful cutting and removal of forest produce, convictions being entered in 16 (9) cases; but, as in the previous year, there was no large amount of forest produce cut or removed before discovery.