years in the remnants of the Forty-mile Bush around Dannevirke. Some of these can usefully be distinguished as true-breeding forms when one is working on a local scale. Names that are in popular use for certain widespread or characteristic species are used in the text. Their formal equivalents are listed in Appendix 2.

SPORADIC DISTRIBUTION. The *Flora* records geographical distribution in general terms. Consequently a number of species, such as those occurring on the volcanic plateau and again in NW Nelson, are given a range which includes the Ruahine, though they have not in fact been observed there. Others are known only from one small colony, as that of semi-juvenile *Pittosporum turneri* (Mangaohane forest margin), or even from solitary plants, as *P. colensoi* (Oroua) and *Phymatodes novae-zelandiae* (Pohangina) at considerable distances beyond their previously known distribution. There are probably others, but none of these is likely to prove of any significance in their communities. This sporadic occurrence applies to two species for which the Ruahine Range is the type locality, *Lycopodium novae-zelandicum* and *Nothofagus truncata*, neither of which has been recorded in field surveys in the past 30 years; in fact there is a gap in the known occurrence of the *Nothofagus* at the present day of 100 miles or more along the East Coast. *Ascarina lucida* may be mentioned here. Its pollen has been recognized in a Western Ruahine bog though the living plant has not been recorded.

ALTITUDINAL BELTS. The most striking feature of high-country vegetation is its stratification into well marked altitudinal belts, and the examination of these is the most obvious line for investigation of distribution. These belts were used as the basis of an earlier survey of the Tararua Range, but there was a suspicion there that there had been a tendency to lump groups of species into belts on rather too arbitrary a basis. Therefore from the commencement of work in the Ruahine care has been taken to check on this tendency by establishing a network of corrected spot heights and noting the altitude at which different species occur. Frequencies also have been recorded on a scale which, though necessarily approximate, is as consistent as it can be made on a personal estimate. Field experience with Forest Service survey plots has afforded a valuable check on the accuracy, within limitations, of such estimates.

Analysis of these records for a selection of the more important species shows, of course, variations recognizably due to exposure, aspect, and presumably in some instances to soils, but these average out to give mean altitudinal ranges which can be accepted with confidence. Upper limits are very sharp and in practice it is fairly easy to select a line above which any given species ceases to be a recognizable component of its community; occasional individuals which may occur above this are most commonly limited to a vertical interval of the order of as little as 200ft.

The corresponding lower limit is usually less sharply defined and the sporadic scatter of individuals of a species to lower altitudes is wider. However, sufficient information is available to indicate that the vertical range of nearly all the main species examined (that is to say, the range within which they can be classed as a definite component of their community) is with quite striking constancy, between 900 and 1,200ft.

Red beech (*Nothofagus fusca*), on first calculation, was the chief exception, with some wide downward fluctuations below a fairly regular upper boundary. A re-examination of observations showed that these were associated with the absence of red beech from both ends of the range. In either case as it approaches its limit it is increasingly replaced, in the north by mountain beech and in the