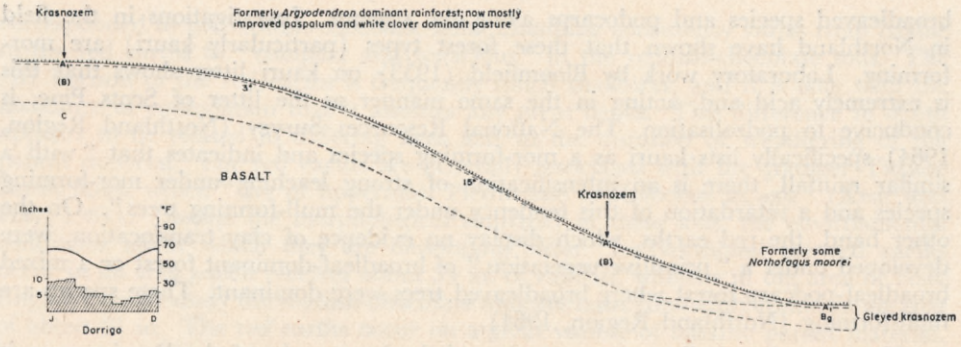

FIG. 5.—Dorrigo Plateau, N.S.W. Generalised catenary sequence of soils on basalt. Even higher rainfall at Dorrigo (inset) produces some gleying where there is interference from the ground-water table, but these soils otherwise have very little catenary differentiation.

terms of international usage these soils would seem to correspond with latosols (as noted by Stephens, 1962) or with tropical red earths, since the fabric of the (B) horizon in thin section is more of an *Erde* than a *Lehm*.

DIFFERENT SOIL TYPES IN SIMILAR ENVIRONMENTS

The most comparable environments between the two areas are the Dorrigo Plateau and the Kerikeri basaltic plateau. The basalt in both is fine-grained, compact, and dark, with olivine crystals. Although the Dorrigo basalt is older than that of Northland, it may be suggested that this is unimportant as in both areas there has been ample time for soil formation. Climatically the areas are similar——the higher altitude of Dorrigo compensating for its lower latitude. Using Kerikeri and Dorrigo as examples, the insets in Figs. 2 and 5 indicate that the monthly temperature averages of the two areas are almost identical, and an examination of the diurnal ranges, so far as these are available, indicates that these do not differ significantly. Although the seasonal rhythm of monthly rainfall totals is different (see Figs. 2 and 5) the yearly totals of 64 in. at Kerikeri and 74 in. at Dorrigo are reasonably comparable.

Yet on identical degrees of slope there are red-yellow podzolic soils on the Kerikeri Plateau and krasnozems at Dorrigo. The former show evidence of clay movement and the latter are stable homogeneous soils. It may be suggested that something in addition to the flocculating effect of the clay minerals is responsible for the differences, as this to some extent characterises the soils in both areas. It could be argued that the rainfall in the Bay of Islands is more effective than that at Dorrigo, since the maximum falls are in the winter, when the effect of evaporation is at a minimum. However, this is amply compensated for by the larger falls and greater yearly total at Dorrigo. Thus it appears that lithologic, climatic, topographic, and time differences are insufficiently divergent for clay translocation to occur in one area and not in the other, even given the importance of clay-mineral flocculation. In any explanation of this the different vegetation patterns and humus forms must therefore merit serious consideration, even though Muir (1961) indicates that there is no clear connection, on a world scale at least, between a clay-depleted A_2 and the presence or absence of raw humus.

In the Bay of Islands red-yellow podzolic soils developed under a primitive vegetation[1] of either kauri forest or a kauri-podocarp forest with a narrow fringe of

[1] From unpublished "Primitive Vegetation" map compiled by the Department of Forestry, Kaikohe, and reproduced with permission in Woods (1963). It represents the distribution of the vegetation of the area before cultural intervention, but in a climatic environment similar to that of the present.