## CLASSIFICATION

As originally defined by Prescott (1944) and later modified by Stephens (1961), the Mid-Loddon Valley lies mainly in the zone of grey and brown soils of heavy texture, but partly in the zones of solonised brown soils and red-brown earths. Recently, the group of grey and brown soils of heavy texture has been redesignated grey, brown, and red clays (Stace et al. 1968) .

Using basically the criteria published by Stace et al. (1968), the great soil group classifications of the principal soil series and soil types are considered to be as follows:

***Grey, Brown and Red Clays-***

Boort, Janiember, Kerang, Macorna, Minmindie, Towangurr, Tragowel, Wandella and Yando series, Fernihurst friable clay, Kinypanial friable clay and Loga friable clay.

***Red-brown Earths-***

(a) Ferrimorphic.-Wychitella series.
(b) Sodic.-Catumnal, Lyndger, Mologa, Mysia, Pompapeil, Terricks, Wool-shed and Yarrowalla series; the hydromorphic variants Loga clay loam, Myella clay loam and Tumnal clay loam.
(c) Intergrading to Grey, Brown and Red Clays.-Fernihurst clay loam and Kinypanial clay loam.

***Solonetz (?)***

Coombatook and Marmal series.

Three series, viz., the Fernihurst, Kinypanial and Loga overlap two great soil groups. This is a consequence of different approaches to the classification of gilgaied soils. In such soils, two distinctly different profiles, the "shelf" and the "puff" can be recognized. The present soil survey commenced by following the principles used in the soil survey of the adjoining Kerang Irrigation District (Baldwin et al. 1939) in which the "shelf" and the "puff" profiles were not named separately, but were regarded for mapping convenience as components of the one soil type. This is the case with the gilgaied soils, Macorna clay and Kerang clay. Later thinking was that the different profiles of gilgai soils should be placed in separate series, particularly as mappable manifestions of the " puff " profile occur in some soils. Although the " shelf " (clay loam) and " puff " (friable clay) profiles have not been given series status in this survey, they have been designated as different soil types in each of the above three gilgaied soil series.

The Mid-Loddon Valley area is shown in the Atlas of Australian Soils (Northcote 1960, 1962) to lie mainly in two landscape units where the soils are dominantly, *(a) cracking clay soils* (Ug5), *and (b) hard setting loamy soils with red clayey subsoils* (Dr2).

It is difficult to relate all of the soil types to the categories of Northcote's classification (Northcote 1965) using the profile descriptions given in this bulletin, because these were derived before his classificational differentiae were known and, therefore, are not sufficiently complete in some aspects. For example, the presence of A. horizons with sporadic bleaching is not recorded, although such horizons are now known to occur widely in Dr2 soils in northern Victoria. These profiles are *class* Dr2.3 and since they also have an alkaline reaction trend they have a Dr2.33 *principal profile form.* It is likely that the Dr2.33 principal profile form is widespread in the Catumnal, Lyndger, Mologa, Mysia, Terricks and Woolshed series, and in Fernihurst clay loam.

The principal profile forms likely to occur most commonly in occurrences of the hydromorphic variants of the red-brown earths (Myella loam, Loga clay loam, Tumnal loam) and in Kinypanial clay loam are Dbl.33 and Dbl. 43, the former having a sporadically bleached, and the latter a conspicuously bleached, A. horizon. Some Dy2 profiles occur in the greyer occurrences of these soil types.

The profiles of the grey cracking clays, Tragowel clay, Wandella clay, and Kinypanial friable clay are mainly class Ug5.2, while those of the brown cracking clays, Fernihurst friable clay and Yando clay are class Ug5.3.