



FIG. 1.—Left: Map showing the location of Purau Stream, the Cass Basin and the Selwyn River relative to Christchurch in the South Island of New Zealand. The Selwyn River sampling stations are marked. Right: The Cass Basin in more detail showing the streams containing *Coloburiscus* nymphs (cross hatched).

ECOLOGY OF PURAU STREAM, BANKS PENINSULA

1. GENERAL DESCRIPTION, RAINFALL AND TEMPERATURE

Purau Stream drains Purau Valley into Lyttelton Harbour (Fig. 1). It is short (c. $3\frac{1}{2}$ miles) and runs from south to north draining the slopes of Mt. Evans (2,308ft) from the east and Herbert Pk. (3,014ft) from the west. Most of the original timber has been felled and the slopes are now used for grazing sheep and cattle. Native tussocks (*Poa caespitosa*, *Festuca novae-zelandiae* and *Danthonia pilosa*) occur, together with imported English pasture grasses. Native trees and shrubs have been left along many of the tributary streamlets, and in some of the gullies; the main species present are *Griselinia littoralis*, *Carpodetus serratus*, *Meliccytus ramiflorus*, *Edwardsia tetraptera*, *Podocarpus spicatus*, *P. dactydiodes* and *P. totara*. There seems to be little evidence of overstocking, or of erosion.

The rainfall is not accurately known. Speight (1916) estimated an average annual rainfall of 30–40in for the whole of Banks Peninsula. Barley (1946) presented figures for Kaituna Valley, which adjoins Purau Valley but lies on the slightly wetter, southern side. For 1923–1946, and at an altitude of 400ft six miles up the valley, the average annual rainfall was 54.50in with a range from