

for assessing the amount of potential food in the habitat. The following discussions based on the invertebrate samples (Appendix III) are therefore largely speculative.

Among foliage feeders, caged Silvereyes presented with foliage invertebrates devoured every form but Hymenoptera, and this was consistent with stomach contents examined (Fig. 9). If this is true with other foliage feeders, food supply is much the same in all types of forest studied. Podocarp forest has slightly lower density of food organisms per sample, but the amount of foliage per unit area is greater than in *Nothofagus* forest, providing more components of insect-spider habitats and making the density of food animals higher. There are also more flowering plants in podocarp forest. The figure does not include samples taken from flowering trees, but separate samples from flowering trees contained three to five times more Diptera and Coleoptera per sample. These facts may account for greater densities of some insect-eaters in podocarp forest and low hardwood forest.

Relative abundance of litter animals in low hardwood forest and podocarp forest was very similar, though the density was greater in low hardwood forest. The most abundant form, Amphipoda (*Orchestia*), was very little utilized by naturalized ground-feeding birds (e.g., Blackbirds and Song Thrushes in Fig. 9). The composition of litter animals in *Nothofagus* forest was somewhat different, Coleoptera being the most abundant. However, there was no significant difference in the population density of Blackbirds and Song Thrushes between podocarp forest and *Nothofagus* forest. The high densities of these species in low hardwood forest are largely due to the fact that these forests have developed in settled areas where the birds have access to pastures and gardens in which earthworms are abundant, providing much food during the breeding season.

In low hardwood forest bark samples were taken from *Fuchsia* and *Leptospermum*, while in podocarp forest and *Nothofagus* forest most samples were taken from moss on the trunks of canopy forming species. Many species of invertebrates in this habitat are either unpalatable or protected under cover during the day. Some spiders are probably the only significant sources of food for birds. However, Rifleman, Brown Creepers and Yellowheads in *Nothofagus* forest must take small insects from the bark, but no samples of birds were taken to find out major food items.

The scarcity of passerine populations in *Nothofagus* forest was pronounced in Fiordland, where the climatic factors probably give added pressure. Robertson (1951) summarized the few data available on the climate of Fiordland. The prevailing north-westerly winds reach their maximum velocity (often attaining gale force) in the breeding season of passerine birds. The rainfall at sea level at Milford averages 23 inches with 18 raindays per month during summer. The number of raindays in the southern part averages over 20 days per month. Temperature in summer is persistently low for the temperate region, fluctuating only little (mean daily minimum, 29° F. (September) to 50° F. (January); mean daily maximum 54° F. (September)—64° F. (January)). The population density of birds which are not specially adapted to such conditions has probably been low since their distribution to the area. There is indication in Reischek's notes (1884) that very few passerine species were numerous even before predators could have influenced the bird population in Fiordland. An interesting fact is that those indigenous species that maintain greater densities in high rainfall areas of Fiordland today (Weka, Kaka, Kea, Parakeets, Morepork, Rifleman, Rock Wren, Yellow-breasted Tit, Yellowhead) all nest in sheltered sites, e.g., tree hollows, under bark, and rock crevices. Such nesting habits must have adaptive significance in wet environment. It may be significant that (1) *Acanthisittidae* (Rifleman, Rock Wren, Bush Wren), endemic to New Zealand, occur in high rainfall