in the family Tettigoniidae (Rentz 1996; pp. 105).

We collated records on the diet of tree weta observed in captivity and in the wild (Table 1). From this, it is apparent that plants are indeed an important component of tree weta diet. Leaves generally dominate the food types eaten by individuals of four species of weta (*H.* , *H.* , *H.* and *H.* ; Table 1). However, availability of information is variable and almost certainly incomplete. For instance, published records for one of the most well known species, the Auckland tree weta *H.* , consists of seed predation, cannibalism in captivity, two instances of leaf eating and one instance of fruit eating. e majority of published observations are of captive weta and include the foods eaten under experimental conditions (e.g. food choice trials). As tree weta are generally treated as herbivorous and thus usually provided only with leaves, captive studies may not be informative about food preference. Field observations of natural diet include nocturnal observations of weta eating and identi cation of food particles in the faeces collected in the wild.

Direct eld observations provide valuable information but their signi cance is di cult to quantify when there are so few data. Similarly, determining diet from the remains of food components in faeces also has intrinsic problems as digestion di ers among food types (Fitzgerald 1976; Trewick 1996). Soft tissues from fruit esh may not be obvious in weta droppings so quanti cation of fruit eating may come only from the presence of seeds in the faeces and then only when seeds are small

Food type	**Captivity**	**Field**
Leaves - Gymnosperms		
Pinus radiata		crassidens[8]*
Podocarpus nivalis	maori[10]	maori[10]
Leaves - Angiosperms		
Aniosotome imbricate		maori[7]
Parsonia heterophylla	ricta[9], femorata[9]	
Pseudopanax arboreus	crassidens[3,4, 11]	
Pseudopanax colorata	ricta[9], femorata[9]	
Schefflera digitata	ricta[9], femorata[9]	
Celmisia viscose		maori[7]
Helichysum selago	maori[10]	maori[10]
Raoulia hectori		maori[7]
Sonchus oleraceus	crassidens[3], ricta[9], femorata[9]	
Taraxacum officinale	ricta[9], femorata[9]	
Euonymus sp.	crassidens[3]	
Coriaria arborea	crassidens[1]	
Griselinia littoralis	crassidens[1,4], ricta[9], femorata[9,10]	
Corynocapus laevigatus	crassidens[11]	
Sophora sp.	crassidens[3]	
Trifolium repens	ricta[9], femorata[9]	
Ulex europeaus	ricta[9], femorata[9]	
Hoheria sp.	crassidens[3]	
Myoporum laetum	crassidens[3,11], thoracica[3], maori[3]	
Eucalyptus sp.	crassidens[1]	
Kunzea ericorides	crassidens[3], ricta[9], femorata[9,10]	femorata[10]
Leptosermum scoparium	maori[10], femorata[10]	
Metrosideros sp.	crassidens[1]	
Nothofagus solandri	femorata[10]	femorata[10]
Fuchsia excortica	crassidens[1]	
Macropiper excelsum	ricta[9], femorata[9], crassidens[11]	crassidens[12]
Pittosporum eugenioides	ricta[9], femorata[9]	
Plantago sp.	crassidens[3], maori[3]	
Poa colensoi	femorata[10]	maori[7]
Rumex obtusifolius	ricta[9], femorata[9]	
Polytrichem juniperinum		maori[7]
Coprosma foetidissima	crassidens[11]	
Coprosma repens.	crassidens[3, 11], maori[3], thoracica[3]	
Coprosma rhamnoides	femorata[10]	
Coprosma robusta	crassidens[3], maori[3], thoracica[3]	
Hebe sp.	crassidens[3], maori[3]	
Buddliea sp.	crassidens[3]	
Salix sp.	crassidens[3], maori[3]	
Kelleria villosa		maori[7]
Melicytus ramiflorus	crassidens[1,4, 11]	

preference for leaves over the other food types o ered. In this experiment, seeds of *C.* were the least preferred food when given a choice of leaves, fruit, seeds and invertebrates. Two adult weta appeared to recognise the food potential of seeds and demonstrated an ability to access the kernel of *C.* seeds, further demonstrating a capacity for seed predation by tree weta (Table 1). In our experiment, tree weta that ate moths also tended to eat the fruit, but no weta ate only leaves. is is inconsistent with the original inference that tree weta are obligate herbivores, instead indicating an omnivorous or polyphagous habit, but is in keeping with other observations of carnivory amongst anostostomatids (Little 1980; Barrett 1991; Wilson & Jamieson 2005). e majority (24/32) of weta in our experiment ate two or more food types over just two nights, which further demonstrates a polyphagous habit.

e occurrence of folivory in individual tree (*H.*) and giant (*D.*) weta distinguishes them from most other members of the Anostostomatidae, which appear to be predominantly carnivorous (e.g. *H.* Cary 1983; but see Morgan-Richards . 2008). However, even if not essential in the diet, carnivory appears to be important and might have strong implications for growth rates and fecundity of individual weta. Carnivory may be important in maximising tness, by enabling the development of enlarged heads in males that may be important in securing mates (Kelly 2005; GW Gibbs pers. comm.), and enhancing egg number and/or quality in females.

e feeding habits of other Orthoptera are diverse, although many are herbivores; eating living plant tissues (Crawley 1983). For example, shorthorn grasshoppers app10(e e9( )]Td)6(ong implicatio3ant shor)-8(thorn n &)11[(a)sn10 Tc 0 Tr)nge. Jong im$90 1 Tfhorn Hes s e.-2.062CloAarthorn ates a-9(co-0.01oluatesmof e917(y ia