

New Zealand's Secret Army

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I saw a leguminous creeper which had been grown from a seed attached to an Indian jute sack, and also a handful of seed from hay packing of overseas merchandise.

There is a group of immigrants which have followed the footsteps of man over the face of the globe to such an extent that they are now cosmopolitan. Some perhaps originated in cast-out straw fillings of the colonists' mattresses; some came in earth around roots of the colonists' garden plants, and still others came in packing material of the colonists' merchandise. Within New Zealand, man has unknowingly helped these wandering soldiers of the invading legion. To my dismay, I found that my own activities in research on weeds were liable to help the wanderers—I was becoming a fifth columnist for the weed army. After a week's field work in tussock grassland in North Canterbury, I found nearly ¼oz. of seeds of 33 different plants, mostly weeds, in the turn-up cuffs of a pair of trousers, and a small quantity from several pairs of socks!

Unwilling Allies

This experience had a moral for me, and I pass it on to others. It is a good idea to turn out the cuffs of one's trousers before leaving an area where serious weeds occur, and thus avoid helping them to wander about the country. Even the mud on my boots was not without guilt—there were seeds there, too. This unconscious personal transport of weeds must have been responsible for many weeds travelling around the world. It is suggested in classics that England received some plants per medium of the boot soles of soldiers of the Roman Legions. Within New Zealand, whether we be home gardeners, farmers, or commercial workers, we all at some time or another help these invading units of the weed army. The wandering weed has taken advantage of such natural agencies as wind, water, and birds as means of travelling. Many of you will recall the dainty thistle-down which fills the air in the summer—the seeds are carried by these silken parachutes for varying distances to extend the area of occupation. Canterbury and Marlborough people are familiar with the *nassella* tussock, whose graceful heads, each bearing 50 to 100 seeds, are carried long distances by the wind. During the last flowering season, heads of this plant were carried over six miles on the Wairau Plains—a very fast invasion rate for plant species.

Rivers and Birds

Perhaps some of you have noted the variety of weeds which occur along riverbeds. The seeds are carried on the flood waters and deposited on the inundated land, to grow when the flood waters have subsided. The spread of ragwort along the South Karori Stream, Wellington, and the Waipa River in the Waikato has been ascribed to this agency. Other weed seeds are present in the gravel of river beds, and when the gravel is used for ballasting of railway lines and metal for roads, the weeds spring up on the road verges. Typical of this is the spread of goatsrue in the Manawatu from railway ballast.

Birds play a part in the spread of weeds with succulent fruits. You must



"... Unwilling allies of the weeds"

have seen the blackberry growing from cracks in fence posts, where the seeds had been deposited by birds. Very recently, Mr. McCaskill, of the Christchurch Teachers' Training College, has shown that birds have carried a number of plants to the vicinity of a bird bath which he has kept under observation—more members of the weed army's fifth column.

Hitch-hikers

In recent work on *nassella* tussock, I found that the weed literally "hitch-hiked" from place to place—the heads were blown on to cars and other vehicles, on to farm implements, on to railway rolling stock—a choice of travel equal to that of human beings. This same plant travelled in mud in car tyres and wheels of implements, and in soil about garden plants—its means are legion.

In conclusion, we may note that the wandering weed has already become modern—some have taken to air travel, and might be termed the paratroops of the weed army—some plants with spiny seed have been transported by means of aeroplane wheels over thousands of miles of ocean to enter distant countries.

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