

CONVOCAATION OF WORMS

By "SUNDOWNER"

BECAUSE half my sheep will not come down for hay, and the other half, now that they have learnt to like it, will not leave it. I have separated the hay-eaters from the grass-feeders. So far the result has been good. The halt and the maimed and the indifferent and the stubborn have less competition for the green leaves and the bold and brazen none for the lucerne and mangolds. These greedy ones have learnt that chained dogs don't even bark, and they will lie down within ten yards of the kennels. But I have had to surrender the paddock I was saving for the mothers of young lambs.

Meanwhile I don't know whether to feed out faster, on the ground that spring is almost here, or conserve the extras for the winter that has not yet come, but so easily still could. I have, of course, discovered that Romneys eat at least 20 per cent more than half-breeds, and go back faster and look worse if their big bellies are not filled. Fill their bellies, however, give them enough to eat within reasonable travelling range, and you will understand what Sir James Scott Watson meant last year when he called Romneys "one of the most remarkable creations of the stock-breeder."

It is certainly strange that a marsh sheep does as well in most parts of New Zealand as sheep brought from mountains and hills. The sheep I saw on the Romney Marsh itself were not noticeably different from those I can see outside my window, yet none of these until I bought them had ever lived on soft country. I am not sure that they had ever eaten roots or hay or English grasses, and if they had it would be for brief periods only. They are hill sheep, born, bred and fed on tussock, fern, and scrub-clad hills with a rainfall

of 40 to 50 inches, and a carrying capacity of one sheep to the acre. Yet I have frequently read, and always at least tried to believe, that on the best parts of the Romney Marsh sheep are fattened at the rate of 12 to the acre year in and year out without cultivation or topdressing. Moving such sheep to the rougher parts of New Zealand is like taking a herd of Jerseys from the Waikato and turning them out with a bull on Molesworth. They would not all die. There would still be some cattle there after ten years and some after 20 years. But they would show as much resemblance to their Waikato ancestors as an Ayrshire does to a Yak.

I WAS greatly impressed once when a fellow student in Dunedin caught my arm and solemnly assured me that a little man who had just passed us knew more about worms than anyone else in the world. The little man was Professor (afterwards Sir William) Benham, and although I was to learn later that the statement was slightly exaggerated it gave the professor a halo that he never quite lost. So my first thought this morning, when I climbed the hill after the rain, and saw the grass covered with tens of thousands of moving earthworms, was that the spectacle would have interested Professor Benham.

Everybody has seen roads and footpaths littered with worms after rain. Most of them dead, and there was probably nothing unusual in what I saw today. But there were three unusual features to me: the immense number of worms, their activity, and their uniform appearance and size (six to nine inches). I was never a student of Benham's or I would know why these worms were all out at nine in the morning, why they were all moving uphill, why

they had all disappeared an hour or two later, and why they all seemed to be about the same stage in life. I imagine, of course, that they had been flooded out by the rain, which had come on ground already wet and penetrated deeply, and that what I saw in broad daylight is a frequent, and perhaps normal, occurrence during the hours of darkness.

If I am right in supposing that worms come to the surface for food, partly because the chief source of supply is there, and partly because it is safer to be above ground in the dark than below the surface and exposed to subterranean enemies, they must swarm on the grass every night. If they do I have never been aware of them. Half as many as I saw this morning would cause everything that walks on the earth by night to crush so many worms that it would be difficult not to see them when the sun rises. I made a rough count on an area of about five paces by three, and the tally was 87. I chose that spot because the grass had been nibbled short on it and counting was easy; but when I examined other areas where the grass was longer there seemed to be quite as many worms. Oddly enough, I did not once see a bird busy among them, though I followed a row of trees for 20 chains. Perhaps they had been busy, and were gorged and resting when I arrived; perhaps they were busy somewhere else; perhaps they are not at present interested. I don't know what the facts are. I do know that it is greatly understating the case to say that in circling a paddock of 20 acres I must have passed through half a million worms.

Darwin's estimate was, I think, that 50,000 worms would bring ten tons of soil to the surface of an acre in a year, and cover the surface three inches deep every 15 years. It is the kind of estimate I am usually tempted to question or ridicule, but today I can almost accept it.

AUGUST 15 It looks as if authority is not going to allow me to enjoy my giant kelp triumph in peace. I am holding on as stubbornly as I can, but all I have left to cling to is the fact that no one can be sure that the ocean has surrendered all its secrets. If we can't be sure yet that there is not an abominable snowman on Everest, we can be less sure that the oldest, longest and biggest plant of kelp in the ocean has been cast up and found on some lonely beach. It took more than a year or two



Department of Agriculture photograph
"Darwin's estimate may have been right"

to identify, measure, and finally describe the monster of Loch Ness, and who guessed, before the facts were known, what family the creature belonged to? The ocean may no longer be as unfathomable and dark as it was to Byron, but it could still have secrets in its caverns deep that no one yet has uncovered. I will give up when every plant of *Macrocystis pyrifera* has been discovered, charted and taped.

Meanwhile, I will confess, since I must, that the known facts are strongly against me. Professor V. J. Chapman, who occupies the Botany Chair in Auckland University College, is "pretty sure the facts are not correct."

I looked into the matter some years ago when writing my book on seaweeds and their uses. The earliest explorers gave lengths of 700-1500 feet long, but these are now discounted. It is extremely doubtful if plants ever exceed 200 feet in length, which is well short of the height of the giant redwoods. I am sorry to debunk the story and to deprive New Zealand of the privilege of having the largest plant in the world.

The day before that reached me I had been warned that another authority (Miss Lucy B. Moore, of the Botany Division of the Department of Scientific and Industrial Research) was against me, too—if I could be for or against anything about which I know nothing. It was Hooker, she said, who started these inflated theories. The pictures some of us may have seen in childhood of a plant rooted in the abysmal deeps and sending up vast stems (about half a chain through) for perhaps 1500 feet were, she insists, fantastic nonsense.

My only hope now is that a deep-sea scientific expedition will foul-hook a kelp plant a thousand feet down and bring up 2000 feet of stem and frond before it cuts itself free. If there is a blackberry bush in Westland 75 miles long, with a single root system, the Pacific Ocean should be equal to a freak kelp plant of half a mile or so.

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men who boarded with a pakeha farmer and did light work on the farm. Their faces lit up at the sight of the car.

"Gee, Nurse, we thought you weren't coming."

"Nice day now, eh? Let's go about sixty, Nurse—Government car, she go fast!" This amused them both. Both, in fact, were unusually jovial and talkative all the way there. They waved to people they passed on the road, opened the windows and exchanged jokes with a driver they met, leading his tired sheep up one of the hills; they even teased Nola herself, and begged her to come to the dance down at the pa the next Saturday.

But it was another matter coming back. Nola had to keep the conversation going almost alone. They were crestfallen, as deflated as children, about their reports from the clinic. Neither was good, and Nola was worried, too. She felt tired and dispirited. The task seemed hopeless. There was so much to be done, but was it possible to do it? She felt again the relief of routine . . . dozens of temperatures, dozens of meals, dozens of nurses all saying "Yes, Sister," and getting things done. Regular hours, certain freedom when you were off duty—nothing like this sense of responsibility, of entanglement, all the time.

There was a curious knot of people at Mrs. Parakura's gate; they waved

vigorously as the car drew up, and looked expectantly at Nola as she got out. There must have been about twenty of them, including some of the children who had come home on the school bus. The sun was low now, and their faces glowed in its light.

"I say, Nurse—," "Listen, Nurse—," said several voices. It was Mr. Williamson, leaning on his bike, on the way home from the market gardens where he worked, who told her.

"Going to have a big do, Nurse, and Miri here says you'll help us make a whole heap of money for the new pa. We thought we'd all get things—you know, all sorts of stuff—and you help us fix it all up, and maybe we make so much we start building in the spring, eh?" The others grinned encouragingly at her.

She smiled back at them, with a queer mixture of feelings. She only half understood the way they thought and reacted; often they seemed hopelessly indolent and casual; nearly always she felt they were beyond her reach. For the first time she saw enthusiasm, a sort of energy, on those pleasant brown faces. Were they perhaps offering her a key to the understanding of their strange world? Suddenly she laughed in immense affection for them. I am committed to this, she thought. The test is over.

"Yes," she said, "I'll help. Now when shall we have it, this big do?"