

Sess. II.—1884.  
NEW ZEALAND.

# THE RABBIT NUISANCE

(ANNUAL REPORT ON), BY THE SUPERINTENDING INSPECTOR.

*Presented to both Houses of the General Assembly by Command of His Excellency.*

Mr. B. P. BAYLY to the Hon. the COLONIAL SECRETARY.

SIR —

Wellington, 2nd June, 1884.

I have the honour to furnish my annual report upon the rabbit nuisance, steps taken, and results obtained, for the year 1883-84.

The amended Act of 1882 having been in operation for two years, its utility or otherwise may now be fairly judged, and I submit that the results shown by the reports attached prove the unmistakable benefit that has been derived principally from this measure, and is a guarantee of its efficacy.

During the past year, as heretofore, the great stumbling-block has been the numerous reserves throughout the colony in rabbit districts; and again I would strongly impress upon the Government the absolute necessity of letting for grazing any of these areas available for that purpose. These blocks are a continual tax on the department, both in labour and expenditure, and invariably afford an excuse to owners bounded by them for whatever rabbits they may have on their properties, the reserves always being assigned the credit of being breeding-places, from which the other properties are overrun. With the exception of the very small blocks and bush reserves, nearly all could advantageously be disposed of, and both State and department relieved of this constant expenditure. There are at present about 350,000 acres of reserves of different descriptions, varying in area from ten to thousands of acres, the clearing of which devolves upon the State.

To effectually deal with these lands that have been set aside for certain purposes, and persistently neglected by those who are beneficially interested in them, it becomes a question whether they should not be declared abandoned lands, then be let for such periods as the case might necessitate, on the condition that the tenant cleared them thoroughly of rabbits, and at the expiration of such tenure they might again revert to the original purpose for which they were set aside. There are other portions of the waste lands of the Crown that can never be dealt with except by the natural enemy. I refer to that country west of the River Waiau (south) to Te Anau Lake, thence to Lakes Wakatipu and Wanaka; in fact, comprising the western watershed of the South Island to the Mackenzie Country in Canterbury. The greater part of this country is unknown and inaccessible, but the river- and creek-beds afford occasionally warm gullies and grass, where the pest increases in safety, and again inundates the occupied country to the southward and eastward of this watershed, and should the Canterbury country ever be inundated with the pest it will be from this quarter.

With a view to stock the margin of this inaccessible country with the natural enemy an endeavour is being made to introduce the stoat and weasel for that purpose, and an agent sent Home to procure them. It has been proved by Mr. Rich, of Palmerston South, that they can be imported, and the same man who brought his out has been engaged by the Government; and, as a certain amount of success attended Mr. Rich's efforts where a sailing-vessel was the means of transit, better success may be anticipated by utilizing one of the large steamers now trading to these ports, and the result of this venture should be soon determined.

During the past year nearly 4,000 ferrets have been bred and turned out by private individuals. Marlborough heads the list with 3,041, bred and turned out there, and over 800 were liberated on one run alone. It is still a moot point whether the ferret will do equally as well over all parts of the colony. The weight of evidence is decidedly favourable to the supposition that when turned out in sufficient numbers their utility is unquestionable. Mr. Bullen, of Kaikoura, who first adopted the ferret as a means of coping with the rabbit, has been so far successful that at present he employs no rabbiters, and his run is officially reported to be remarkably free from the pest, so much so that the man who is employed to breed ferrets by Mr. Bullen states that he has a difficulty in getting sufficient rabbits to supply those on hand. By papers attached it will be seen that even far south they are found in considerable numbers, and in some places are said to be doing good work, but as yet cannot have increased enough or sufficient time elapsed since their liberation for any positive conclusion to be arrived at as to actual results; but, wherever the ferrets have been systematically used, the preponderance of evidence is decidedly in favour of this remedy. Where-

ever they are it must be patent that to exist they must destroy a certain number of rabbits; and it is amongst the stops or breeding-places the ferret would be most useful as well as destructive, and under any circumstances it must be some years before they will be sufficiently numerous to balance the fecundity of the rabbit.

A great mistake is made by many owners when turning out ferrets. In some cases it is done without their being even hardened off or fed upon live rabbits prior to their release. In this case certain loss of the greater number inevitably occurs. Another error is turning them out in small numbers on ground thickly infested; in the latter case, the ordinary means of trapping or dogging is resorted to, and the ferrets, together with other natural enemies, are destroyed simultaneously with the rabbit. To be a success, or to give the ferret a fair chance, the country on which it is intended to turn them out should first have the rabbits reduced to a minimum; then the ferret should be released, and in any locality where the pest may again appear a few from the stock of ferrets on hand could be liberated to meet this increase; in fact, a systematic procedure is necessary to entail success.

Owing to the heavy losses sustained, and the unsatisfactory results obtained after arrival, the importation of ferrets has been discontinued, and the course of purchasing by Government all bred in the colony at so much per head adopted. The private demand for all procurable ferrets last year has been so great that only two or three lots were purchased by or offered to the department. Over 400 ferrets have been turned out on Government lands during the past twelve months: 384 in Otago, and 36 on the Napier boundary; there are still 184 at Government dépôts, and 112 were disposed of; 50 have been distributed to private individuals for breeding purposes on the usual terms.

Phosphorized grain is still the recognized means of really dealing with the pest, and more systematic methods are each year being adopted in this direction. The block system attempted last year is this season pretty generally followed, and with the best results.

No new methods of destruction that have proved effectual have been brought under notice during the past season. The great desideratum would be to ascertain some poison that would act as well in summer, when grass is green and plentiful, as the phosphorized grain does in winter. Could some attractive bait be discovered for the summer season the greatest part of the difficulty would be overcome, as then the work could be made continuous, instead of having only a certain season that can be utilized thoroughly with success, all other means during remainder of year being only moderately efficacious. In shearing and harvest time the difficulty of obtaining hands, together with the rapidity with which the rabbit increases at this season, to a great extent nullifies the autumn and winter efforts.

I would submit that, with a view of discovering some other means than phosphorus alone, upon which we now principally depend, a special branch of this department might be established, where experiments could be systematically carried out and reported upon. The expenditure need not be very great, and were good results obtained the benefit would be incalculable.

While referring to the various modes of destruction, I may state that I am not in favour of the use of large packs of dogs; one or two well-trained ones with the gun may be utilized, but, when the large packs are used, for every rabbit killed as many more are distributed over the country, stock are disturbed, often worried, and all natural enemies destroyed. It also tends to create and establish the professional rabbitier, whose interest it naturally becomes to conserve the means of his livelihood and destroy all enemies of his industry. Systematic poisoning in winter, followed up by the natural enemy, must eventually be the real solution, and, if poisoning could only be adopted in summer with same effect as in the winter months, the most efficacious method would be secured, and the professional rabbitier could be dispensed with; but, as long as a class are employed whose livelihood depends upon the pest they are paid to destroy, so long will they in their own interest farm this same pest for their benefit.

It may be worth while mentioning that the disease reported to have broken out amongst the rabbits is pretty generally distributed throughout Otago, but does not seem to thin their numbers to any great extent. I have procured samples of this from several localities, and to all appearance they are similar. By some it is said to be tuberculosis; by others a kind of liver-rot caused by parasites only visible under microscopic power. Inquiry into the matter is still being pursued, and will be duly reported. My own impression is that, although some disease undoubtedly exists, it is neither contagious nor virulent enough to seriously affect the question at issue.

In conclusion, I may refer to last season's work as attended, generally speaking, with satisfactory results. The diminution of the pest all through Otago, but especially in the Counties of Wallace and Southland, during the past two years, is most marked, and the general improvement throughout the colony satisfactory. A wet season certainly destroyed numbers of the young rabbits, checked their usual increase, and gave plenty of pasture for stock, yet the number of rabbitskins exported shows that the efforts made by owners in destroying the pest must have been greater than in former years. Consequent upon this reduction, the number of sheep are again increasing in what was at one time the country worst infested, and several of the abandoned runs have been retaken and stocked. Although the above information is satisfactory, it is apparent that the usual routine of destruction must be continued until some other more effectual means than those at our present disposal are discovered. The natural enemy is now generally admitted to be the only agent likely to finally solve the question, and I am thoroughly of that opinion myself. With the satisfactory knowledge that the pest has been largely reduced upon the occupied country, it must be patent that the huge areas of unoccupied waste lands fringing the West Coast, mostly unknown and inaccessible, will be a standing menace to the occupied country adjoining them, especially that portion near the provincial boundary of Canterbury, from Mount Cook to the head of the Rangitata. It may not perhaps be generally known that at present there are in Canterbury twenty-five stations on which there are rabbits, the largest number killed for the year on

any one station amounted to five thousand, and there are five runs on which severally from two up to five thousand were destroyed during the same period; these numbers are quite sufficient to warrant the utmost vigilance being exercised. A colony of rabbits was also discovered towards the head-waters of the Rangatata upon unoccupied Crown lands; where these originally sprang from is not certain, but immediate steps have been taken to have this ground thoroughly poisoned; and all along this line of country a constant supervision should be carried out, so that the pest can be grappled with at once should it appear.

Returns attached show the Government expenditure for year and other tabulated matter connected with working of the department.

BENJN. B. BAYLY,  
Superintendent Inspector.

STATEMENT of EXPENDITURE, &c.

District.	Number of Tenders accepted.	Amounting to	Quantity of Phosphorus used in District.	Quantity used for Crown Lands.	Quantity sold.	Quantity on hand on 31st March last.	Total Number of Skins exported from the Colony.	Value.	Estimated Area of Crown Lands to be dealt with this Year.
		£	lb.	lb.	lb.	lb.		£	Acres.
Napier ...	...	...	...	...	...	20	...	...	...
Masterton (Wellington) ...	20	209 9 0	479	79	400	88	706,894	7,901	30,000
Nelson ...	1	37 0 0	55	20	35	15	...	...	...
Blenheim ...	...	...	310	...	310	40	...	...	...
Kaikoura ...	...	...	275	150	125	70	...	...	4,000
Timaru ...	...	...	...	...	...	...	...	...	...
Lyttelton ...	...	...	...	...	...	...	1,745,954	16,491	...
Oamaru ...	1	45 0 0	...	...	...	...	...	...	...
Palmerston ...	5	62 10 0	378	...	378	522	...	...	8,977
Dunedin ...	4	357 0 0	...	...	...	560	...	...	34,000
Naseby ...	1	12 0 0	...	...	...	...	...	...	...
Clyde ...	7	947 6 5	640	...	640	820	6,514,884	67,055	...
Tuapeka ...	11	349 10 0	490	25	465	460	...	...	...
Balclutha ...	2	89 0 0	412	72	340	288	...	...	123,101
Queenstown ...	10	464 3 4	660	232	428	40	...	...	55,000
Invercargill ...	15	715 0 0	400	90	310	400	924,609	9,230	...
Southland ...	14	598 6 9	780	234	556	1,050	...	...	159,780
Totals ...	91	3,886 5 6	4,879	902	3,987	4,373	9,892,341	100,677	414,858

GENERAL REMARKS.—Payments to agents, labour, material purchased, and other contingencies not included in this expenditure. It is impossible to give the number of skins from each district; but the total export for the whole colony from the 1st April, 1883, to the 31st March, 1884, is shown herein, as exported from the different ports.

APPENDIX.

SIR,— Colonial Secretary's Office (Stock Branch), Wellington, 4th April, 1884.

I have to request that you will be good enough to furnish replies to the following questions with as little delay as possible. The period to which these questions refer is between the 1st April, 1883, and the 31st March, 1884.

I have, &c.,

B. P. BAYLY,  
Superintending Inspector.

Rabbit Inspector,

- (1.) What means have been adopted for destroying rabbits?
- (2.) Have you any recommendations to make?
- (3.) What progress has there been made?
- (4.) How many tenders have been accepted?
- (5.) What did the whole of them amount to?
- (6.) Number and description of reserves you will require to deal with, and the approximate area of such available for grazing purposes?
- (7.) What quantity of phosphorus was used for Government purposes?
- (8.) What quantity was sold to private individuals?
- (9.) What was the quantity on hand on the 31st March last?
- (10.) Number of skins exported?
- (11.) Number of prosecutions?
- (12.) Number of convictions?
- (13.) Number of dismissals?
- (14.) Names of owners of properties dealt with under section 11?
- (15.) Number of ferret-breeders?
- (16.) Have any ferrets been turned out, and, if so, with what results?

*General Remarks :*

From Rabbit Inspector PASLEY, Napier.

(1.) Hunting with dogs and shooting. (2.) None. (3.) The prosecutions instituted last year have had a good effect, and a sharp look-out is kept by owners : at times no rabbits are seen, and then a few appear. (4.), (5.), (6.), (7.), (8.) None. (9.) 20lb. at Waimata. (10.), (11.), (12.), (13.), (14.) None. (15.) At Waimata Dépôt on the 31st March there were 150 ferrets. (16.) Thirty-five have been turned out near Waimata, thirty about the fence and Akiteo hills near the boundary, five at the back of Akiteo, and two in a small clearing ; results good. *General Remarks.*—In August last I was at Waimata, and the tracks of rabbits were pretty numerous on the sandhills across the Waimata Creek. Ferrets were turned out there with very good results, all traces disappearing for some length of time. About a month ago a rabbit was killed against the fence, and there are slight signs again on the sandhills. When at Waimata a fortnight ago I instructed the agent to turn out some ferrets on the sandhills and to lay poisoned grain at the back where he thought suitable. The fence has proved a great safeguard to this district. The sheepowners have let a contract for extending it three miles, and have ordered material for eight miles altogether.

From Rabbit Inspector ORBELL, Masterton.

(1.) Phosphorized grain during the winter months, fumigating with bisulphate of carbon, charcoal and sulphur, and chemicals ; hunting with dogs, shooting, ferreting, trapping ; burrows broken up, thousands of acres of scrub and bush cleared, cover destroyed. (2.) Owners of infested land to be compelled to breed or procure ferrets to turn out (when practicable), to the satisfaction of Inspector ; ferrets to be turned out on Crown lands, and Government to have substantial breeding dépôts. (3.) Good progress ; diminution of the pest very satisfactory. (4.) Twenty. (5.) £209 9s. (6.) Twenty-five, including Crown lands ; about two-thirds bush, remainder pastoral ; approximate area, 30,000 acres. (7.) 78½lb. (8.) 400½lb. (9.) 88lb. (10.) Skins from Wairarapa exported, Port Nicholson. (11.) Thirty-three. (12.) Thirty-one ; fines inflicted, £134 10s. (13.) Two. (14.) Tunuiarangi. (15.) Unknown. (16.) Yes ; with very satisfactory results. *General Remarks.*—Simultaneous poisoning with phosphorized grain during the winter months, with concerted action ; systematic method in poisoning large tracts of infested country ; breeding and turning out unlimited number of ferrets (the dark, African ferret preferred) and other natural enemies of the rabbit. I anticipate great results, and that the pest will be combated with success, provided owners work with energy and a will of determination. Dogging, trapping, fumigating being detrimental to the natural enemies, I would strongly recommend that an uniform rule and some definite system should be adopted where rabbits abound in numbers, to protect the ferret and other natural enemies. Wild ferrets are fast increasing, and their good work is already perceptible, with grand results.

From Rabbit Inspector PRICE, Nelson.

(1.) Traps, guns, dogs, and poison. (2.) None at present. (3.) Satisfactory. On all properties the rabbits have been kept under, especially in the Wairoa Gorge, where they were most numerous. (4.) One, namely, Joseph Andrews. (5.) £37. (6.) Three that I shall have to deal with this winter. With the exception of the sections that Mr. Andrews dealt with last year, the others are useless for grazing purposes. (7.) 20lb. on Crown lands. (8.) 35lb. (9.) 15lb. (10.), (11.), (12.), (13.), (14.), (15.), (16.) None. *General Remarks.*—With the exception of Sellon's run, and the Wairoa Gorge, I do not think the rabbits will increase to such an extent as to become a nuisance, as most of the properties upon which there are rabbits are held by small holders, and can be easily kept down. I did not commence poisoning till August, and found it, in most instances, a perfect success.

From Rabbit Inspector BLUNDELL, Blenheim.

(1.) Poisoned grain has been very extensively used, and men have been employed to hunt, shoot, and trap. (2.) None. (3.) On those runs where the poisoning has been systematically carried out there is a marked improvement, but I cannot say the same of the district on the whole, although on taking the returns for 1883-84 it will be seen that more than double the number of skins were exported during the latter when compared with the previous year, showing that extra exertions were made to cope with the pest. (4.), (5.) None. (6.) One, known as Awatere Shearing Reserve ; contains 5,696 acres, the greater portion of which is covered with manuka scrub. (7.) None. (8.) 310lb. (9.) 40lb. (10.) 646,997. (11.) One. (12.) One. (13.), (14.) None. (15.) Nine. (16.) 2,041 ferrets have been turned out, and where rabbiters are not employed ferrets are certainly increasing in numbers. *General Remarks.*—Ten mongooses have been imported, and are being kept for breeding purposes. An attempt has been made to cross them with the ferret, but so far unsuccessfully. Now that so many ferrets are being bred and turned out in the district, I should like to see all rabbiters dispensed with, as there is no doubt they destroy the ferrets and all other natural enemies of the rabbit.

From Rabbit Inspector PASSAU, Kaikoura.

(1.) Phosphorized wheat, with marked success. Shooting over ferrets, and continuous breeding of ferrets by the runholders. (2.) That pressure should be brought to bear upon the Land Board re the unsold suburban land, the whole of which is totally unfit for agriculture, and most of it unfit for pasture in its present state. If leased at a nominal rental for seven or ten years I think settlers

would take them up, and thus reduce a large outlay of the department. (3.) A very marked and substantial decrease of the pest throughout the whole district, and I feel justified in stating that there is not one rabbit now for every hundred at this time last year. (4.), (5.) None. (6.) Native, Hapuka, Kincaid, South Bay, and Peninsular North and South Beaches, and unsold Crown lands; total, about 4,000 acres. Fit for grazing, about 600 acres. (7.) About 170 lb. (8.) 125 lb. (9.) 70 lb. (10.) 50,000. (11.), (12.), (13.), (14.) None. (15.) Twelve, including six runholders. (16.) About 1,000 have been turned out on the runs; wild ferrets increasing rapidly all over the district; result, that young rabbits are very scarce. *General Remarks.*—The Act is working well, and, although the wet summer has been against successful poisoning, the pest is so far diminished that rabbiters cannot find sufficient remuneration to work. Trapping has been abolished on account of the large number of ferrets that are all over the district. Smith and Stenhouse's fumigator has been tested, but was not a success. I feel confident that, if during the ensuing winter the same success in destroying the pest as heretofore attends the combined efforts of the settlers and the department, there will be very little expenditure needed to assist the ferrets in keeping the pest down.

From Rabbit Inspector REES, Timaru.

(1.) Dogs and the gun have been the only means employed, except in one instance, when portions of the country on Mr. Tripp's boundary were poisoned by the Rabbit Agent. (2.) Poisoned grain should be used during this winter on islands in Takepo and other rivers, and every encouragement given to the breeding and turning-out of ferrets. (3.) In nearly all cases satisfactory progress has been made in the destruction of rabbits. (4.), (5.) None. (6.) A portion of the property of the late W. McDonald on and near the Rangitata, railway and other reserves; about 5,000 acres fit for grazing; whilst on snowy unoccupied land there may be a few spots to deal with (see Remarks). (7.), (8.), (9.), (10.) None. (11.) One. (12.) None. (13.) One. (14.) None. (15.) Four or five. (16.) A few have been turned out; no results as yet known. *General Remarks.*—As a rule rabbits have not increased in the South Canterbury District; on very many properties they are much less numerous. They are, however, more scattered, and will require care that these few scattered ones do not become centres for future increase. I would earnestly wish the weka to be protected, as we have no better natural enemy to the rabbit; also that, where possible, all reserves should have the rights of depasturing thereon put into fixed hands, responsible for the keeping down of the pest. There are very few rabbits on all the properties that face towards the Rangitata and the sea-coast as far as the mouth of the Waitangi. Thus, Mesopotamia, Mount Peel, Orari Gorge, Four Peaks, and so on all along the south-east facings of this district, from all I can learn, contain fewer rabbits than formerly. The centre of the infected country extends up the Hakateramea River along the Dalgety Range (where there are two branch lines of rabbits—one extending into Mount Nimrod, and the other through the Grampians to the warmer slopes facing the Waitangi); then on the course of the Two-Thumb Ranges to the end of the Richmond Run. Again, another small stream of rabbits up the bed of the Tokepe River to the Fork Stream, and an off-shoot along the warm facings of the Hunter Hills facing the Waihao. The recent discovery of rabbits on the unoccupied Crown land on the high ranges at the back of Mesopotamia leads one to suppose that they are making their way from Richmond, whilst the presence of rabbits opposite Mesopotamia, on the north side of the Rangitata, is a standing menace to the comparatively clear country I have mentioned. I say comparatively, because there are a few rabbits on the south-east side of Upper Rangitata in my district already. Taking the district as a whole the rabbits, in actual numbers, appear to have decreased; but then they are more widely spread, and will require the more care to keep them in check; and that is the reason why I feel my hands so tied by the decision of the Resident Magistrate in *Rees v. Begg*, my being unable to insist on efforts to kill even one rabbit—if the rabbit is there—as that rabbit may by increase ruin the property. I estimate the number of rabbits destroyed in South Canterbury at 35,000. Owners of properties as a rule are most anxious to take all precautions to keep down and destroy rabbits; whilst managers, especially of companies, are more difficult to deal with, and are liable to try and avoid the necessary expense. There are one or two points which I have brought forward on former occasions, and now again urge for the consideration of the Government: (1.) The necessity of protection to the weka. (2.) The advisability of giving right of occupation (temporarily) to some fixed person or persons in regard to reserves, &c., on condition that the rabbits are destroyed thereon.

From Rabbit Inspector FULLARTON, Oamaru.

(1.) Poisoning, killing with dogs, shooting, digging-out, trapping, ferreting, and in two or three places bisulphide of carbon has been used. (2.) In my opinion great benefit would result by united action in conducting the poisoning operations at a given time, could such be secured by statute. (3.) Good progress has been made, and rabbits in any number are mostly confined to where the country is very rough and inaccessible. (4.) One. (5.) £45. (6.) Two; the land is poor with rough broken gullies and patches of bush and scrub; about 4,000 acres are available for grazing. (7.), (8.), (9.) None. (10.) Returned by head office, Dunedin; ascertained through Customhouse. (11.) Ten. (12.) Four. (13.) Six. (14.) None. (15.) One. (16.) Yes, results not yet well known. *General Remarks.*—I find most of the settlers are now alive to the necessity of taking every means to destroy the rabbits; and I expect by the end of this season's poisoning the diminution will be much greater than last year, as simultaneous action will be taken wherever rabbits abound. In two or three localities of my district I found rabbits affected with disease of the liver. I forwarded some of them to Dr. De Lantour of Oamaru, who pronounced it to be a kind of rot. It is not very fatal, and is principally confined to young ones. I attribute it to the unusually wet season.

## From Rabbit-Inspector MILLER, Palmerston, Otago.

(1.) Poisoned grain, shooting, dogging, trapping, and ferrets. (2.) None. (3.) Satisfactory progress. (4.) Five. (5.) £62 10s. (6.) Mining Reserve, Dunback, Sections 11, 12, 13, and 14, 262 acres; decided by Land Board to lease these for grazing purposes. Government Sections 11 and 14, Waihemo, 400 acres (agricultural); decided also to lease these for grazing purposes. Mount Royal Bush Reserve, about 200 acres. Goodwood Native Reserve, 215 acres. Country reserved for a hundred in Waikouaiti District, from Runs 171 and 171A, 7,500 acres. Sections 14 and 15, Block IV., Dunback, 400 acres. Total, 8,977 acres; and nearly all fit for grazing. (7.) None. (8.) 378lb. (9.) 522lb. (10.) None. (11.) Eleven. (12.) Eight. (13.) Three. (14.) None. (15.) Four. (16.) Ferrets have been used and turned out in some places and with fair results. *General Remarks.*—I have convened meetings of landowners in different parts of my district with the object of discussing the best means of dealing with the pest this season, and to arrange for simultaneous action in the matter. Most landowners appear willing and anxious to do their utmost this winter in the destruction of the pest.

## From Rabbit Inspector JOHNSON, Dunedin.

(1.) Phosphorized grain, bisulphide of carbon, trapping, dogging, and shooting. (2.) Consider the Rabbit Act as it at present stands quite satisfactory. (3.) Satisfactory. (4.) Four. (5.) £357. (6.) Four (Hundreds); approximate area, 34,000 acres; all available for grazing purposes. (7.) (8.) None. (9.) 570lb. (10.) 6,514,884. (11.) Three. (12.) Three. (13.) (14.) None. (15.) Six. (16.) Ferrets have been turned out, but not in sufficient numbers to mark result. *General Remarks.*—The Act generally has worked well, and been marked with satisfactory results: rabbits have been considerably reduced throughout the whole Provincial District of Otago.

## From Rabbit Inspector SHAW, Naseby.

(1.) Poisoning during the winter; dogging, shooting, trapping, and digging-out for the remainder of the year. (2.) None. (3.) Great progress has been made during the year to eradicate the pest, and the efforts have been successful. (4.) One. (5.) £12. (6.) Township reserves (Hyde). On other reserves the rabbits are being destroyed for grazing right. (7.), (8.), (9.) None. (10.) 457,000. (11.), (12.), (13.), (14.) None. (15.) One. (16.) Eighty-eight ferrets have been turned out on Linuburn Station, but sufficient time has not yet elapsed to prove results. *General Remarks.*—All owners of land have willingly and energetically done their utmost to keep the rabbits under in Maniototo County, with the exception of one who held a grazing right on condition of destroying rabbits thereon, but, failing to do so satisfactorily, the said right has been cancelled.

## From Rabbit Inspector BOURCHIER, Queenstown.

(1.) Phosphorized grain, trapping, ferrets, and in places shooting, together with the use of patent exterminators. (2.) One that I think would be the wisest would be to have a breeding establishment formed at Queenstown for ferrets. If something like this is not done, the whole Province of Canterbury will be inundated from this district in the course of a few years, the country at the head of the lakes being densely covered with forest, through which no persons can travel. Ferrets I think would work there to perfection. (3.) There has been a marked diminution of rabbits during period mentioned, but hardly so great as last year. Owing to the nature of the country and the mildness of the winter, rabbits on the high ground escaped, and restocked the low ground in the spring. (4.) Ten. (5.) £464 3s. 4d. (6.) Five hundred reserves; about 55,000 acres, not counting unoccupied runs; most of the reserves are from one to ten to fifty acres; and seven commonages. (7.) 232lb. (8.) 428lb. (9.) 40lb. (10.) Impossible to state from this district. (11.) Three. (12.) Three. (13.) None. (14.) Robertson and Co., McBride, Evans, O'Kane, Patterson, Coffee, Black, Trotter, Brown, Flint, Hallenstein, Gunn, Cameron, Hazel. (15.) Nine. (16.) So few have been released that it is impossible to say with what results. *General Remarks.*—This year there is far less Government land to deal with than last, as most of the Shotover runs were taken up at a reduced rental, but lately some more have been thrown up, viz., Nos. 5, 11, 12, 13, and 15. These, together with the old Run 438, and commonages, besides those portions of blocks taken out of runs for settlement, comprise the land to be operated upon in this district by the Government.

## From Rabbit Inspector MILES, Clyde.

(1.) During winter months poisoned grain; rest of year dogging, shooting, and trapping. In some cases ferrets have been worked in hand, and on some stations ferrets have been turned loose; also drowning-out, digging-out, and in some instances, where suitable, patent exterminating machines have been used. (2.) That the weka, or Maori hen, be gazetted as a natural enemy, as, to my certain knowledge and personal observations, they help greatly to keep down the increase. No doubt many are caught in traps, so are ferrets; but I know that many rabbits kill them purposely, knowing them to be a great enemy to the rabbit. (3.) Very good; 443,819 more skins having been returned this year than last. The sheep have in most cases come in remarkably well, are in good condition and healthy, and the loss has not been so heavy this year as last; also a very good show of grass. (4.) 1st, two let, and expired during year; 2nd, five let, and unexpired—see answer to (6). (5.) 1st, amounted to £225 6s. 5d.; 2nd, amounted to about £722, more or less. (6.) Clyde Commonage and Mining Reserves adjoining, about 7,000 acres; Cromwell Commonage and Mining Reserves

adjoining, about 8,000 acres; Hawea Hundreds, about 12,000 acres; Black's Commonage, about 1,700 acres; Mining Reserve, Cardrona River, about 300 acres; Mining Reserve, Molyneux River, about 200 acres. In all these cases contracts have been let this year for keeping rabbits clear for twelve months—see answer to (4.). (7.) None; but about 50lb. have been lost by taking fire. (8.) 640lb. (9.) 820lb. (10.) 1,664,168 skins. (11.) Two. (12.) Two. (13.), (14.), None. (15.) To the best of my knowledge, two, at Wanaka and Kawarau Stations. (16.) Some have been turned out on one or two stations; results not known. *General Remarks.*—I entertain great hopes that next year I shall have a most satisfactory report to give, owing to the united and simultaneous action at present being taken to destroy the pest; this being the result of meetings convened by me throughout the Vincent County, and which were exceedingly well attended, and the spirit of the business thoroughly entered into by all interested. I must also mention that a few rabbits in the county have been found, on being opened, to have a disease of the liver, which, however, I do not consider to be tuberculosis, but the subsequent effects of half-spent poisoned grain, the liver being charged with matter. Not many, to my knowledge, have been picked up dead from this disease, but have been found to be so affected on being caught and opened.

From Rabbit Inspector HICKSON, Tapanui.

(1.) The means that have been adopted are: Poisoning with phosphorized grain in the proper season, the remainder of the year trapping and snaring Burt's and Watson's exterminators, bisulphate of carbon, shooting, ferreting, dogs, and digging-out. (2.) Yes; that all lands as mentioned in my memorandum (No. 31/84) of the 26th March should be dealt with as mentioned by me. I find, however well I attend to reserves in keeping the pest under, they are always brought forward as an excuse if you take proceedings against any person who has land near them. (3.) Very good progress has been made; and, as I mentioned in my reply last year that it would take another season to show the benefit to be derived from the continual destruction of the pest, the country now shows for itself that what I then stated to be correct. (4.) Eleven. (5.) £349 10s. (6.) Bush reserves, Taupeka West, 2,801 acres, part suitable for grazing; Ettrick domain, Benger District, 420 acres; Tapanui bush reserve, Glenkenich District, 911 acres, could be leased with timber right reserved. (7.) 25lb. (8.) 465lb. (9.) 460lb. (10.) Not aware of number of skins exported. (11.) Eleven. (12.) Eleven. (13.), (14.) None. (15.) Four; know of several who are starting establishments. (16.) Know of five persons having turned ferrets out, and as far as known they are thriving. *General Remarks.*—As an idea of the number of men employed, and skins sent away, I mention the following: The number of bales sent away from Messrs. Cargill and Anderson's Teviot Station for year ending the 31st March, 123; number of skins, 374,976; average number of men employed, 56. Mr. D. P. Keogh, Moa Flat Station, from the 1st January to the 30th April—number of skins sent away, 206,015; average number of men employed, 55. I may also state that at the present time I have seven men employed on wages, whom I move from one place to another as required, which I find answers well.

From Rabbit Inspector MACKAY, Balclutha.

(1.) Phosphorus, dogs, guns, exterminators, traps, and ferrets. (2.) That Inspectors have the power to compel landowners to keep gorse hedges and all other sorts of hedges within certain limits, as they afford great harbour in winter and breeding-places in the summer months. (3.) I have not been in the district long enough to form an opinion. (4.) Two. (5.) £89. (6.) Bruce, thirty-eight reserves (bush, mining, and quarry), 17,484 acres; 8,746 acres available to let for grazing purposes. Clutha, sixty-eight reserves, 105,617 acres, Crown lands, bush, coal, quarry, and ferry reserves; none available for grazing purposes. (7.) 72lb. (8.) 340lb. (9.) 288lb. (10.) None. (11.) One. (12.) One. (13.), (14.) None. (15.) Seven. (16.) Ferrets have been turned out with very good results. *General Remarks.*—The Act as it stands at present works satisfactorily.

From Rabbit Inspector MACDONALD, Gore.

(1.) Poisoning chiefly to October, from that to January trapping and hunting; fumigators and bisulphide of carbon have been of great value in low ground, as has also been digging-out burrows in the nesting season. (2.) In any amendment of the existing law I would give landowners power to sue for damages, but would limit its application to injury to cereals and root crops: this would go a long way to clear the country—would act like magic. (3.) Very satisfactory, more than was thought possible in the time, sufficiently showing that with attention and firmness the rabbit can be so kept down as to cease to be little more than a cry. (4.) Fourteen, besides weekly work. (5.) £598 6s. 9d. on Crown lands. (6.) 22,000 acres open land, comprising hundreds, special blocks for settlement, mining reserves, and commonages, in addition to 137,780 acres of forest surrounded by settlement. (7.) 234lb. (8.) 556lb., by local agents. (9.) 1,050lb., at various agencies. (10.) No return procurable. (11.) Five under sections 11 and 13. (12.) Summary convictions none. (13.) None. (14.) School Commissioners of Otago, Bluff Harbour Board, University Council, and twelve others—absentees, bankrupts, &c. (15.) None special. (16.) Forty, where none were known to be. Wild ferrets are numerous in Southland. I have no opinion of them as an enemy. They would be as numerous as rabbits before their effect was felt. They now cover a large area. They are destroyed by fumigating. *General Remarks.*—The summer-killing is what tells, but it must be general and on a uniform scale. The system of paying for skins must cease if landowners would clear their holdings. This is what leads to rabbit-farming.

## From Rabbit Inspector DOUGLASS, Invercargill.

(1.) Phosphorized grain, bisulphide of carbon, charcoal fumigators, trapping, snaring, ferreting, shooting, dogs, digging-out, and long nets set at edge of bushes at night. (2.) None. (3.) Very considerable improvement in district as a whole, especially on runs. Mixed bushes, overgrown gorse fences on some of the farms, and scrubby patches on river banks being worst spots. (4.) Subsidy given to fifteen runholders. (5.) £715. (6.) There are several Native and township reserves, also waste patches along rivers, but none suitable for leasing. Several hundreds of miles of bush frontages will require poisoning again this winter. (7.) 90lb. (8.) 310lb. (value deducted from subsidy). (9.) 400lb. (300lb. only received the 28th March). (10.) Cannot say, but not half so many as last year. (11.) Six. (12.) Five. (13.) One (informality in notice). (14.) Duncan Carmichael, Flint's Bush; Donald Cameron, Run 133, Waicola. (15.) Two under contract. (16.) 268 ferrets have been turned out since middle of January; cannot at present state results. *General Remarks.*—Very general satisfaction has been expressed with the working of the Act during last twelve months, the benefits being apparent. More energy will be shown by small owners this winter, and I do not anticipate same trouble with gorse fences, &c. The abandoned Run 415, 64,500 acres, has been leased by Carmichael and Co., and Mr. Mackinnon last week took up 5,400 acres of the Takitimo, thus showing confidence in the means taken to keep down the rabbit pest. Far more ferrets will probably be bred in district next summer. The Donald Cameron named under answer to question 14 took up small run (2,000 acres) two years ago, but never settled on it.