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(2) புதுக்கித் திருப்பிய நாள் 2/00

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

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அச்சகம்
பல்வகை

நாள் : 26 — 9 — 1889 1988.

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

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GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following letter from C. TAYLOR, Esq., of the Scrub Exterminator Manufacturing Company (Limited), late Taylor, Murchison and Sharpe, to the Chief Secretary to the Government of Madras, dated 30, King Street, Melbourne, 25th July 1889 :—

I have been advised by the "Executive Engineer," Poona and Kirkee, to address you on the subject of the prickly-pear, and I have the honor to forward you copies of reports from the Government of New South Wales, relative to the effect of our "Exterminator" in destroying this pest.

2. The reports and circulars we enclose will give full directions for using the specific. I may also state that it will not injure the fertility of the soil.

3. A small rotary pump with hose and a fine rose attached has been found very effective here in distributing the fluid.

ENCLOSURES.

From A. RUDDER, Esq., Forest Ranger, dated Booral, 25th January 1888.

I have the honor to submit to you the following preliminary report of experiments made by me with the "Scrub Exterminator" on the property of G. S. Waller, Esq., of Wallarobba, on the 18th and 21st instant, with the view of testing its efficacy in the destruction of the prickly-pear.

2. The experiments alluded to were made in accordance with instructions as follows :—

(1) Applied to the roots.
(2) Sprinkled over the plants.
(3) Sprinkled over the plants after they had been splashed.
(4) Injection impossible ; but the stems of the plants were wounded and subjected to the mixture.

The mixture used was of the maximum strength, viz., one pound of the chemical to three gallons of water, and the implement with which it was applied, a large garden syringe.

3. On the second day after the first experiment I found in case 1 no visible effects excepting that the grass around the roots of the grass was mostly dead. In cases 2, 3 and 4 the results were very much the same, the plants drooped in places more or less, and where the mixture adhered it seemed to cut its way into the leaves, but the intervening spots appeared to retain their vitality almost unimpaired. The liquid does not lodge well on the plants owing to their smoothness, but in many cases runs off as from a duck's back. In all, I expended fifty-one gallons of the mixture, and applied it carefully myself. In one instance, on the 19th instant, I applied three pounds of the chemical to one large plant, which had several times fallen down and taken root again, and occupied about four rods of space, but even this large quantity seemed to me, judging by effects, to be insufficient for its destruction. In the cases of shrubs and weeds growing with the prickly-pear, where these were well sprinkled with the mixture, they were mostly dead.

4. In concluding this report, I regret to have to state my conviction that the "Scrub Exterminator" will not be found effective in the destruction of the prickly-pear, but to speak positively at present would be premature : it may require more time to judge of its effects. I propose, therefore, immediately after the holidays, to visit the ground again to ascertain what may be the effects of the "Exterminator" by that time and will extend experiments on the adjoining property of Mr. James Hood. If only effective, the "Exterminator" would doubtless be invaluable.

From A. RUDDER, Esq., Forest Ranger, dated Booral, 3rd February 1888.

With reference to my report of 25th ultimo in connection with experiments made with the "Scrub Exterminator" upon the prickly-pear, I have the honor to inform you that I returned here last night from Wallarobba, where the experiments in question were made, and have

much satisfaction in being able to report them a success. I found the pear mostly dead and in a rapidly decaying state.

2. I have subsequently during the last few days continued my experiments on the property of Mr. G. S. Waller, of the "Grange," with a weaker mixture than the first used, and have also experimented on the adjoining property of Mr. James Hood, but it will be some time before the results of such experiments will be developed. I will, however, visit the ground again within a fortnight and afterwards send in my final report.

From A. RUDDER, Esq., Forest Ranger, dated Peterson, 16th February 1888.

I have the honor to inform you that I have now completed my trials of the "Scrub Exterminator" in various ways, and much satisfaction in being able to report it a complete success. In my first trials I had unusual difficulties to contend with in the presence of a thick growth of weeds with the pickly-pear, together with creepers and shrubs, which greatly obstructed the full action of the mixture, so that I found it necessary to apply it again, but in much smaller quantities than at first and only in places which proved effectual in the majority of cases, but there are a few very exceptional instances where even a third application, in the case of the pear being both closer and heaped together in a mass; but the labor and cost of this third application is comparatively very trifling.

2. My latest experiments were with a mixture half the strength of that first used, which was one pound of the chemical to three gallons of water, the later trial being six gallons which I found nearly as effective as the first.

3. In dealing with the pears I found it undesirable to disturb the plant by breaking or cutting it down in any way, and the most effectual way of using the mixture to cause a fine spray to fall all over the plants down to the roots. The experiments were made very carefully by myself assisted by two of Mr. Waller's men and I did not find a slight abrasion of the skin to result in any very special inconvenience from coming in contact with the chemical, though I used up about 140 gallons of the mixture, if the hands were carefully washed afterwards; but with respect to the finger-nails it seemed to find its way down to the quick, so that they would require some sort of protection for a long job.

4. By a rough estimate I am of opinion that in the use of the "Exterminator" that labor and cost of destroying the prickly-pear with it is reduced to at least one-eighth part of what it now is by the ordinary method of cutting it down and burying it or burning it with fire and that it is of very special value in rough and stony places.

5. The grass and weeds are killed around the pear plants in applying the mixture, and when thoroughly dry a match may often be applied with advantage.

From A. RUDDER, Esq, Forest Ranger, dated Booral, 17th April 1888.

I have the honor to acknowledge the receipt of your letter of the 12th instant, in which you refer to my reports of the 3rd and 16th February last respecting experiments made with the "Scrub Exterminator" and in which you request that I will forward an estimate of the area over which a given quantity of the liquid of a specified strength has been applied with successful results, also particulars of the period that elapsed after the first application before the plant was killed. In reply to the above queries, I beg to inform you first: after careful consideration, I cannot give the estimate asked for as to the area operated upon, as the pear was mostly growing in isolated patches, nor do I think it possible to furnish any reliable data on this head under ordinary conditions as the prickly-pear according to kind varies immensely in bulk; *O. vulgaris* rarely exceeding about 3 feet in height when *O. Brasiliensis* not unfrequently attains to 14 or 15 feet or more and is of much more massive growth. Under almost any circumstances the growth and distribution of the prickly-pear over the ground is singularly irregular, scarcely any two acres of any extent being alike.

2. Under these circumstances I judged it better to form some sort of estimate of the cost and labor of destroying the prickly-pear with the "Exterminator" as compared with the previously adopted methods of cutting it down and burning or burying it, with the result arrived in my report of the 16th February, viz., that it was reduced to about one-eighth part.

3. With the view, however, of ascertaining Mr. G. S. Waller's opinions on the matter, I wrote to him and forward herewith his reply. I should remind you that most of my experiments were made on Mr. Waller's property, and I afterwards left him some of the chemical which remained for still further experiments. I think Mr. Waller's estimate of the chemical rather too favorable, but his opinion is of value since he has gone to great labor and expense in burning the prickly-pear with heavy timber, at which he has had several men almost constantly engaged for many months.

4. Mr. E. W. Doyle of "Elvedon," Gresford, destroyed what put together might make about half an acre of prickly-pear of the variety *O. Brasiliensis*; this he buried at a cost, so he informs me, of about £60. I was several times on the ground before he commenced and while engaged

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at the work, and believe I could have effectually destroyed it with the chemical for about £8 (I feel confident that with the chemical I could have got rid of it for £6); this pear was of very massive growth and some of it fully 18 feet in height.

5. In respect to the period that elapsed after the first application of the "Exterminator" before the plant was killed, this was about 8 or 10 days where the first application was effectual, by which time it seemed quite dead, but, where not effectual, after a second application 5 or 6 days was required; but a good deal seemed to depend upon the weather, its action being quicker during very hot days.

6. The strength of the mixture I used was 3 and 6 gallons of water to the pound of chemical (which is in the form of a clay or stiff paste), the weaker mixture being nearly as good as the former, and its action as quick; but a still weaker mixture does not seem so effectual.

7. Before concluding this supplementary report I should inform you that I visited the scene of my experiments on the 14th instant and found, even where the plants seemed quite dead and no greenness was visible, that some of the more woody parts had in some places shot out again, so that they would require further attention—not to such an extent, however, as would very seriously impair the value of the chemical. In the ordinary method of cutting down the prickly-pear for burning and burying, a great deal of the debris is scattered about and often lies hidden away in the grass, where the least portion, even the green immature fruit, readily grows, which, owing to the almost invariable carelessness of those destroying the pear, is the cause of much further trouble and is a severe tax upon the patience of a careful inspector. This is all avoided in using the "Exterminator." I am sending a few of these immature fruit *O. Brasiliensis*, which are, in my opinion, a far more fruitful source of reproduction than the ripe seeds.

From G. S. WALLER, Esq., to A. RUDDER, Esq., Forest Ranger, dated Wallarobba, 14th April 1888.

With reference to the relative cost of destroying the prickly-pear with the chemical or under the old method by burning with wood, I may say that I had the pear on my piece of land destroyed with the chemical, the cost of which, together with the labor, would be about fifteen shillings (15*s*); if they had been burned with wood the cost would have been about £8. I would recommend a solution of, say, 8 gallons to the pound.

P.S.—On second thoughts it would be safer to use 6 gallons to the pound, however there need be no question about the chemical being the cheapest mode of destruction.

From J. W. BRODIE, Esq., Prickly-pear Inspector, dated Murrurundi, 24th March 1888.

In compliance with your instructions I have had the "Scrub Exterminator" tested on prickly pear. I am of opinion that it has proved to be a most useful agent for their destruction, that, if properly applied, will destroy any and all prickly-pear. It takes considerable time to eat its way through the old plants, but will be most efficacious on plants of a younger growth, as it acts much more quickly on them (plants not more than five years old). I may state that the place selected for operation on at J. H. Doyle's "Inverman" was chosen because it was easily accessible to and close by running water. At the same time it is one of the most heavily infected spots that could be picked, therefore it cannot be taken as a fair criterion as to expense. The prickly-pear here is supposed to be 30 years of age; it literally covers the ground and will be much harder to destroy than young growth. The owner of this land has been paying £6 per acre for eradication here and the laborers cannot make more than rations. Per central office 1 now forward, for your information, specimens taken from the experimented ground yesterday.

(1) On the 29th February 1888, applied the "Scrub Exterminator," recommended ordinary strong, to about a quarter of an acre and 20 lb. of mixture with 60 gallons of water (in two lots) on the prickly-pear growing in its ordinary state. Three days after the application of the stuff it commences to show along the edges and around the eyes of the plants as the moisture seems to be retained in the thorns. The plant around these portions commences to decay and wither; about 8 days after the application the plant seems to lose its vitality, and droops over, apparently dying (the fruit dropping off without being touched), increasing until the leaves dry up like a chip.

(2) 3rd March 1888.—Applied ordinary strength to one-eighth of an acre after the plant had been cut and slashed freely. Two days after the application the plant commences to wither and decay increasing daily.

(3) 6th March 1888.—Applied double the ordinary strength on one-eighth of an acre; about two days after the application, the plant commences to wither and dry up, dying away gradually.

(4) 7th March 1888.—Plants tried with injections into the bulb only; in about a week the plant shows the decay commencing, then extending up the stems and right through the plant, gradually decaying the same as the others.

The fruit herewith is from plants after the ordinary dose.

The following is the result of my examination of the specimens of prickly-pear leaves, fruit and seeds, forwarded by Inspectors Rudder and Brodie, to which the "Scrub Exterminator" had been applied, viz.:—

Prickly-pear fruit per Inspector Rudder.

(1) Of ten fruits examined, only three of the fruits were mature and the whole only contained five mature seeds.
(2) Two of the mature seeds, out of the ten fruits, were apparently destroyed by the chemical.
(3) Three sound seeds, which would germinate, were found in the fruits.

Prickly-pear leaves and fruits per Inspector Brodie.

(1) Quite dead, destroyed by ordinary strength of chemical.
(2) Quite dead, destroyed after the plants had been cut and slashed.
(3) Quite dead, destroyed with double the ordinary strength of the chemical.
(4) Of ten fruits examined from plants, destroyed with ordinary strength of chemical, the outside of the pulp of seven of the fruits was only partially damaged and the seed contained in them was uninjured.

Three of the ten fruits and seeds were completely destroyed.

20th April 1888. (Intld.) J. D.

From J. W. BRODIE, Esq., Prickly-pear Inspector, dated Murrurundi, 16th April 1888.

I beg to acknowledge the receipt of your letter, No 88-2162 F., and to state that the quantity of the mixture of the "Scrub Exterminator" applied to experiment No. 2 was 10 lb., boiled in ten (10) gallons of water and then added 20 gallons (10 lb. to 30 gallons).

2. Experiment No. 3, 14 lb. boiled in 7 gallons of water, then added 14 gallons (14 lb. to 21 gallons).

3. Experiment No. 4, about 4 lb. boiled in 4 gallons of water, then added 4 gallons (4 lb. to 8 gallons).

From E. STANLEY, Esq., Government Veterinarian, dated 23rd May 1888.

Mr. Armstrong of Rowan and Co. informs me that this agent will poison stock, if they eat scrub saturated with this material. He says stock should be kept separate, the land being operated on until it has been purified by rain.

From A. BRUCE, Esq., dated 23rd May 1888.

I think it would be well to give the information here obtained to the press by way of caution to stock-owners and others, as there is no doubt but large quantities of the Exterminator will be used.

Submitted.

25th May 1888. (Intld.) H. W.

The Under Secretary for Mines.

Approved.

26th May 1888. (Intld.) T. A.

Report by F. PIPER, Esq., Head of Forests Branch, Department of Lands, dated 29th March 1888.

[*Scrub Exterminator applied to eradicate prickly-pear.*]

Inspectors Rudder and Brodie have made experiments with the "Scrub Exterminator" and both report the result as satisfactory.

2. As noted on 88-1651, Mr. Rudder applied it of the full strength, viz., one lb. to three gallons of water by means of a garden syringe and subsequently at half the strength with nearly as satisfactory result. He estimates the cost of nearly one-eighth of the ordinary mode

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of destruction by burning or burying. His report would have been more valuable, if he had furnished an estimate of the area over which a given quantity of the liquid of a specified strength has been applied with successful results, also particulars of the period that elapsed after the first application before the plant was killed.

3. Mr. Brodie applied it first of the full strength, but in the proportion of 240 gallons to the acre instead of 20 or 80 lb. instead of $6\frac{2}{3}$, the quantity named by the proprietors as sufficient; this would make the cost for the material alone nearly £2 10*s.* per acre, but the prickly-pear was very dense and cost £6 per acre by the ordinary mode.

4. In experiments 2, 3 and 4, the quantity used is not furnished. This is a matter that materially affects the value of the "Scrub Exterminator."

5. As Mr. Rudder states that he found the mixture in the proportion of 3 lb. to 40 gallons pretty effectual, it is probable that the larger quantity has the effect of merely accelerating the process, and is not really necessary.

6. The matter now awaits report of the Inspector of Forests respecting the vitality of the seed after the plant has been treated.

7. In the meantime, Inspectors Rudder and Brodie may perhaps be asked to supplement their reports in regard to the points noted above.

8. It may be pointed out that the success of the "Scrub Exterminator" must, in those cases, where it can be applied without danger, materially affect the question of leasing or clearing lands infested with the prickly-pear.

ORDER—dated 6th September 1889, No. 764, Revenue.

Miscellaneous.

Communicated to the Local and Municipal and Public Works Departments, to the Commissioner of Revenue Settlement and Director of the Department of Land Records and Agriculture, and to the Government Botanist.

(True Extract.)

Secretary to Government.

To the Commissioner of Revenue Settlement, Land Records and Agriculture.
„ the Public Works Department.
„ the Local and Municipal Department.
„ the Government Botanist.

Exd. A. D. Xavier.

70 Copies.

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27/C No 8964

Govt. of {1889} Madras.

REVENUE.

No 2710 Wdf Sept 27, 1889

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Issued

Recd. 24-9-89 Encl.

25.9.89

Recds 25.9.89

G.O., 6th September 1889, No. 764.

SECRETARY TO GOVERNMENT
24 SEP. 89
P.W. DEPARTMENT, MADRAS.

SEPTEMBER.

Perused & noted 25.9.89

Prickly-pear.

Reports on experiments made in New South Wales for the destruction of the — by means of the "Scrub Exterminator," manufactured by Messrs. Taylor, Murchison and Sharpe of Melbourne, communicated to certain officers and departments.

S. Es
Surgeon
A to Gov
C Engr
C Engr
C Engrs
Conservator of Forests

(3)

D 27/9 J 25/11.

to the Govt
2 Copies each