DEPARTMENTAL.

No remarks are necessary regarding the ordinary routine of correspondence, of preparing certificates of title, and other miscellaneous work. It may, however, be mentioned that there are many gratifying assurances received from time to time of the extensive interest created in the administration and modes of settlement in operation in New Zealand through the wide circulation of the Crown Lands Guide. No. 6 was issued during the year, and 7,000 copies struck off and extensively distributed in the Home-country, India, and the Australian Colonies. There have been many notices taken of the publication, both in the Home and colonial press, and two of the Australian Colonies have shown their appreciation of the value of such a work by issuing similar Crown Lands Guides for their respective territories.

I have to acknowledge with satisfaction the able and zealous co-operation of Mr. H. J. H. Eliott in the work of the department, and also the cordial relations existing between the head office and the Commissioners of Crown Lands in the eleven land districts of the colony.

J. MCKERROW.

# APPENDICES.

## No. 1.

The AGENT-GENERAL to the Hon. the MINISTER of IMMIGRATION.

SIR,— 7, Westminster Chambers, London, S.W., 10th December, 1883.

I regret to have been prevented by incessant occupation from earlier writing to you on the subject of Mr. Federli's silk graine.

On the arrival of the graine in the "British King" I had it brought up here and surrounded for a time by ice, so as to prevent its being exposed to any sudden rise of temperature; but, at the season of the year when it came into my hands, it was very difficult to meet the requirement, mentioned by Mr. Federli, of the atmosphere in which it was placed being both dry and cool.

I was just then going to Paris, and endeavoured to see M. Pasteur there about the graine; however, I was not fortunate enough to meet him. On my return I communicated with the President of the Royal Society (Mr. Huxley), and I then decided to send some of the graine to Captain Mason, of the Manor House, Yateley, who is well known in sericulture, and had had much experience in rearing eggs sent to him from Australia, besides possessing a good magnanerie of his own. Captain Mason was in doubt whether the graine could be hatched out by artificial means in less than about seven months from the time they were laid. The graine reached him in a generally sound condition, though the cards "showed some little sign of damp." It was clear that it had taken no harm from being sent in the refrigerator; but, with regard to the transmission of any further ova, there is no risk in simply sending them by post, as a number of eggs which came from Sydney at the end of last year by the San Francisco mail arrived safely and hatched out perfectly well within a few days of seven months.

From time to time Captain Mason and I corresponded on the progress of the experiment, and at last, on the 30th July, the December and January eggs began to hatch out, the January eggs taking six months and fifteen days from the time they were laid, which was earlier by a fortnight than any Captain Mason had ever succeeded in hatching. He did his best to carry them on to cocooning, but, as it would not pay him to give fuel and attendance in his magnanerie for so small a quantity, I undertook to defray this expense, which however only came in the end to a couple of pounds. He gave the experiment the best chance, but, although successful at first, the difficulty was, as usual, in the later stages. In one instance (of Australian graine), where the hatching had been perfect, and the insects had fed well without any loss happening in the first ages, they died off rapidly afterwards, and only a few cocoons were saved. This result Captain Mason attributed to the difficulty of properly drying the air of his room (45 feet) in such wet summers as there have been in England of late years, and it led him to fear that the experiment of acclimatizing the *Bombyx mori* would fail.

Seeing that the experiment promised at first to be a success, I sent Captain Mason a second supply of Mr. Federli's graine early in August; and, although the cards had naturally absorbed a good deal of damp meanwhile, some of the December and January eggs from this second supply began to hatch out on the 23rd August, and the *bivoltini* of March on the succeeding day. The first card of *bivoltini* began in five months and two days, while those of the annual (15th January) took six months fourteen days, and (24th December) seven months six days. Captain Mason feels sure that, even with the stimulus of artificial hibernation, it will be "impossible to force nature much further than rousing the insects from their dormant state in about seven months." All the worms looked healthy at the end of August, and a few days afterwards he wrote to me that, although he could not yet give a more decided report, they had hatched well; but there was still the last age (on which they were just entering) to be feared. Early in October there were a few *bivoltini* alive, but the weather was not dry, and by the middle of that month all had ceased to feed except two. The result in the end was therefore unsuccessful. The following are extracts from Captain Mason's letters to me stating what had happened: "Three cards of graine were placed in the magnanerie at a temperature of 75°. The eggs laid on the 24th December and the 15th January began to hatch on the 30th July, and finished on the 16th August. One card of *bivoltini* of the 1st March began on the 3rd August, and ended on the 31st. Of the three cards (second supply) sent in August (with greater signs of damp), *bivoltini* began hatching on the 21st August, and ended on the 30th September; those of December and January began on the 23rd August, and finished on the 11th September.