founded during Her Majesty's reign. At the same time the establishment of similar institutions in other localities is encouraged by the promise of grants to them also under certain specified conditions. But in relation to our advance in this direction, it is a matter of regret to all friends of the higher education that the so-called University of London, which was established in the year before Her Majesty came to the throne, is not yet a University in the true sense. Is it too late to hope that the Jubilee year may yet be signalised by bringing London in this matter up to the level of the smaller cities of the world?

In still another direction an important advance must be noted. We refer to the inclusion of men of science among those upon whom the Sovereign confers distinction for services rendered to the State. More than forty years ago the Queen expressed her desire to include among her Privy Councillors two distinguished men of science, and yet, owing to one cause and another, the conferring of this distinction upon a man of science did not take place till a few years ago, when Huxley was enrolled among the members of that body. There are signs that the opinion is rapidly growing that if the function of a Privy Council is to give wise counsel in the nation's need, the increased utilisation of science in every part of the national machinery, whether it deal with the arts of peace or war, renders it not only desirable but necessary that the ranks of the Privy Council shall be strengthened in this direction. There can be little doubt that in a not distant future the Lords of the Committee of the Privy Council who deal with matters concerning science will contain among them many members of the Royal Society.

There is also another matter to be considered in relation to the Queen's reign. It is the steady increase in the usefulness, the utilisation, and the dignity of the Royal Society. This throws an ever-increasing responsibility upon its Officers, Council and Fellows, among other things in the selection of their successors.

Other vast fields of activity are gradually and necessarily being added to the original ones of discussion and publication, and wisdom as well as knowledge is now essential in the proper direction of its energies. The view, therefore, still held by some, that the Society is a kind of superior college of preceptors of a strictly limited number of branches of knowledge, is rapidly disappearing as Her Majesty's reign continues.

At the present time, on the one hand, the Government does not hesitate to consult the Society when need arises, and, on the other, it rarely refuses to accede to demands made upon it to assist research in various directions where the State influence or machinery, or both, can be utilised. The memorable voyage of the *Challenger* and various eclipse expeditions are excellent cases in point. The gigantic work recently undertaken by the Society in organising the production of an International Catalogue of Scientific Literature has only been rendered possible by the sympathy and assistance of the Government; and the more similar works of large grasp the Society is connected with in the future, the more respected British science will be all the world over, for the responsibility of the Royal Society is no longer confined to these islands.

DUCAL HUSBANDMEN.

A Great Agricultural Estate, being the Story of the Origin and Administration of Woburn and Thorney. By the Duke of Bedford. Pp. 254. (London: John Murray, 1897.)

First Report on the Working and Results of the Woburn Experimental Fruit Farm. By the Duke of Bedford and Spencer Pickering, F.R.S. Pp. iv + 194. (London: Eyre and Spottiswoode, 1897.)

ONE is tempted to believe that agriculture has been in the blood of the Russell family not only by inheritance, but by heredity. It has been to the Earls and Dukes of Bedford what politics has been to some families and drink to others—a deadly recurrent outbreak. It apparently began with a lady, the wife of the third Earl, who, according to Sir William Temple, contrived ‘the perfectest figure of a garden’ at Moor Park. Her offspring in successive generations have been famous improvers of estates, plantations, fields and gardens. It was John, the fourth Duke, who in defiance of the remonstrance of the celebrated Philip Miller, his gardener, thinned his famous plantation of pines and firs, and so that there might result no injury to Miller's reputation as a planter, caused a board to be fixed in the plantation, facing the road, on which was inscribed, ‘This plantation has been thinned by John, Duke of Bedford, contrary to the advice and opinion of his gardener.’ The draining, planting and experimenting has gone forward almost continuously from the time when Francis, the fourth Earl, devoted attention, capital and reputation to draining the fen lands. The great drainage works of the Romans, maintained by the monks of Thorney, Crowland, Ely, &c., had fallen out of repair by the end of the sixteenth century, and ‘it was only on the maps that the rivers [of the fen country] ran into the sea’ when he undertook the task afresh. The reward for this, as related by the present Duke, was that Charles I. sent Earl Francis to the Tower, and his son Earl William, who incurred the enmity of the Parliament during the Civil War, had his estates sequestered for a time. But through bad times and good the Bedfords have been of like mind with Sir Walter's Laird of Dumbiedikes, who, on his death-bed, remarked, ‘Jock, when ye hae naething else to do, ye may be aye sticking in a tree; it will be growing, Jock, when ye're sleeping.’ The present Duke has, fortunately both for science and practice, not only maintained the famous Woburn experiments, but has broken out in a new place with the establishment of a splendid experimental fruit farm, designed quite as much for purely scientific as for economic ends. With the scientific advice of Mr. Pickering, who in this matter also appears to his fellow scientific workers in a new character, this great garden has been laid out and the work of record begun. Even in these first years results of interest appear, but they are small compared with what future generations will reap. It is difficult from this first Report to gather more than admiration of the plan; but those who have seen the fruit farm, cannot fail to have carried away the conviction that it is one of the most notable experiments in rural economy now in progress.

In addition to this solid service, his Grace has compiled a statistical account of the management of the estates of

Woburn and Thorney as material for a discussion of the land question. To review it adequately here is impossible, since it would lead one straightway into political discussion. The returns from the Beds, Bucks and Thorney estates, as set forth in the appendix, show the following financial results. "On Thorney the expenditure, from 1816 to 1895, amounted to 1,598,353*l.*, and on Woburn, from 1816 to 1895, it was 2,632,186*l.* After spending nearly four and a quarter millions sterling since 1816 on some 51,643 acres of land, a large proportion of which is some of the best wheat land in England, and after excluding all expenditure on Woburn Abbey, its park and farm, it will be seen that at the present time an annual loss of more than 7000*l.* a year is entailed on their owner." Elsewhere we read: "As to the pleasures to be derived from the ownership of an estate like Thorney, if the reader conjures up a beautiful mansion and park with endless game preserves he is mistaken. They do not exist. The only pleasure which I and my forebears can have derived from Thorney is the kindly feeling which has existed," &c. It would be a fatal mistake to suppose that the Duke has compiled these tables of statistics, and written this most interesting book to demonstrate the philanthropic principles of his ancestors, or to justify his own position as a landlord—"such pride is hardly wrong," as Mr. Gilbert sings—but rather to enable him to have a fling at John Stuart Mill, and to justify all landlords. Without entering on politics, one may point to the weak spot in his argument. He innocently fancies all or most landlords to be as the Russells. If they were, the land agitator would carry on his operations with a plough.

GEORGE MURRAY.

AN ISLAND OF THE EASTERN ARCHIPELAGO.

With the Dutch in the East. By Captain W. Cool (Dutch Engineers). Translated by E. J. Taylor. Pp. viii + 365. (London: Luzac and Co., 1897.)

THE past few years have been marked in a peculiar degree by disturbances in the various colonial dependencies of European nations. Not only in Central Africa—where the recent forward movement for the opening up of the continent has naturally led to collisions with native races—but in many of the older colonies in other parts of the world, it has been necessary for the paramount power to maintain its supremacy by force of arms. The recently translated work of Captain W. Cool gives a detailed narrative of one such war, undertaken by the Dutch in 1894 to deliver the subject population of the island of Lombok from the oppression of their Balinese rulers. The author tells the story of the expedition in a somewhat dramatic style, giving it almost the complexion of a national epic. In fact, accustomed as we are in this country to such small colonial wars, we might be inclined to think that he has attempted to raise it to a level unwarranted by the facts of the case. But the expedition had an importance beyond what might appear at first sight. It may even be said to have formed in some way a turning-point in Dutch colonial history. The difficulties encountered during the Achin war, and the unfortunate experiences of the Flores expedition had seriously threatened the Dutch prestige in the archipelago, and

failure or only partial success at Lombok might have been regarded as indicating that Holland was now unequal to the task of maintaining her hold on her extensive colonies in the East. In spite of some reverses, which necessitated the dispatch of considerable reinforcements, the general result of the war was fortunately most successful, and will, it may be hoped, have conferred a lasting benefit on the island in the form of good and settled government for the future.

English literature on the subject of the Eastern Archipelago is so scanty, and the works of Dutch writers—naturally by far the most numerous—are so little known in this country, that any addition to our knowledge of that part of the world is welcome. With regard to Lombok, we believe that almost the only information—obtained at first hand—to be found in English works, is that contributed by Dr. A. R. Wallace, who, in 1856, crossed from side to side of the island; and in his "Malay Archipelago" devotes two interesting chapters to the manners and customs of the people. Apart from the story of the military operations, Captain Cool gives, in his third and fourth chapters, a useful summary of all that is known of the island and its inhabitants, with a sketch (considerably shortened in the English translation) of the connection of the Dutch with it from the time of their first voyages to the Far East. Being confined to the neighbourhood of the west coast, the expedition did not, unfortunately, add much to our knowledge of Lombok, which, though small compared with other islands of the archipelago, is still little known apart from a narrow strip across the centre. Captain Cool's information is therefore necessarily compiled in great part from previously published works, those of Zollinger and Jacobs in particular being largely drawn upon. He gives a most unpleasant picture of the state of morals in the island, the Brahminical Balinese rulers being decidedly worse in this respect than the subject Mohammedan Sassaks. The oppression and tyranny of the former is likewise painted in strong colours, although Wallace thought the Sassaks in his time reconciled to their then new rulers. The island has undoubtedly everything to gain from being brought more closely under the influence of the Dutch authorities.

The author's style is one which hardly lends itself well to exact reproduction in English, and might perhaps with advantage have been somewhat modified by the translator. The short paragraphs, constant use of question and answer, and of the note of admiration, are apt to be worrying. The book contains a sketch-map of Lombok, and some good illustrations, both of scenery and people, and is provided with a full and well-arranged index.

OUR BOOK SHELF.

Die elektrodynamischen Grundgesetze und das eigentliche Elementargesetz. Von Franz Kerntler. 8vo. Pp. 68. (Budapest: Buchdruckerei der Pester Lloyd-Gesellschaft, 1897.)

THOSE who take up the present book with the expectation of finding in it a full and comprehensive sketch of the principles of electro-magnetism will be disappointed. Dr. Kerntler's work might, perhaps, be best described as an essay on "Ampère's Law and Allied Theories,"