

cow which must be milked with all one's force when one is at the helm. In addition to this there is the want of scruple as regards public money, which, according to a very general view, exists in order to be appropriated to any plausible pretext or to be secured for one's family or friends. . . ."

The author also condemns the wasteful system which exists in municipal bodies of embarking on costly enterprises, which are discontinued after the next municipal election when another party comes into power. In this way the money of the ratepayers is squandered away with no return. In regard to the confiscation of the monasteries, the following sentences may be quoted :—

"These regulations, however, have been applied in the half and half manner characteristic of Italy."

"The vast ecclesiastical possessions seized by the State were sold or squandered in the course of a few years."

"Thus the enormous source of income which might have proved a blessing to thousands and created a small class of landed proprietors has failed to bestow the expected benefit on the country."

On p. 279 we are told, "The Building Societies are almost a public calamity." "The hideous new quarter near the railway station at Naples, on the Vomero at the same town, and in the Campus Martius at Rome are the best proofs of the results of carrying on business in this manner."

Speaking of universities, Prof. Deecke makes the following remarks, which are equally applicable to our English system :—"There is another difference as compared with Germany, namely, that the Professor appointed to hold a course of lectures is not allowed to take a general survey of his subject or to handle it fully, but has to dispose of a prescribed section of the subject in the three hours a week, so that at the final examination questions can be set within this narrow circle. The instruction given at the Universities naturally suffers, and still more the scientific training of the students, which can only be described as unsatisfactory."

The chapter on art, language and science contains a list of the principal learned academies of Italy.

In connection with music, the author remarks :—"The music of Wagner, poor in melody and difficult to understand, has not become naturalised in Italy."

As illustrating more fully the wide and varied range of the subjects treated, we may instance the statement that there are ten times as many murders in Italy as in Germany, the regulations limiting the number of barrel-organs in Naples, the number of pedlars, the method of smelting sulphur, the statistics of Italians abroad, observations of terrestrial magnetism, the superstition according to which cats' tails are docked, a portrait of Garibaldi and a plan of the harbour of Genoa, photographs of Roman cattle, and descriptions of Italian cheese.

The section on topography might be very well studied by anyone contemplating a tour in Italy. It gives an excellent account of the features worth noticing in different districts, and it includes the Maltese group as well. It is well illustrated. But for that matter the whole book would well repay reading before or after visiting Italy. The average tourist contents himself when visiting a new country with seeing the principal churches and picture galleries, usually conducted by a guide, but to visit a country properly a wider survey should be taken, and a book like the present consulted. To the writer this book brings back the most pleasant reminiscences of bygone travels in Italy; to the reader who has stayed at home it presents as graphic a picture as any book can present of everything that is Italian.

G. H. BRYAN.

DISEASE-PROOF POTATOES?

THE recently established National Potato Society has as one of its many objects the discovery of a "disease-proof" potato. Even if it only succeeds in throwing some light on the relative immunity of some varieties, and on the causes of that comparative exemption, it will do some good. Next to wheat, there is no crop more important in this country, and whilst wheat-growing seems to be getting more and more unprofitable, the culture of potatoes is extending so much that it is evident that the growers must find some good reason for the increased production. The enormous importations from Germany, Holland, and other countries should serve as a stimulus to our farmers, for it is obvious that, excepting in the comparative cheapness of labour, those countries possess no special advantages over our own in the matter of potato-growing.

In dealing with the question of the potato disease, by which we mean the rotting caused by the fungus *Phytophthora infestans*, there are two principal subjects of inquiry: first, the life-history of the fungus; second, the "constitution," if we may use so vague a term, of the potato plant.

Neither of these subjects can be thoroughly investigated by the average potato grower. All important as they are, they lie outside the range of his capabilities. It is to our research stations or to individual experimenters that we must look for guidance. Even now the life-history of the fungus is imperfectly known. We do not know for certain what becomes of it in the winter, nor why it suddenly bursts into activity under certain atmospheric conditions. We do not know for certain whether it can pass any portion of its life on some other plant under another guise. We do not know for certain if a resting spore is formed, and our knowledge of the mycelium during the winter is, for the most part, conjectural rather than real. Here, then, are subjects for inquiry at once of the deepest physiological importance and of the greatest practical value.

As to the so-called disease-resisting varieties, also, further information is wanted, and this the practical man might supply. A visitor to the recent display of potatoes at the Crystal Palace, seeing the innumerable varieties there exhibited, might well wonder whether they all "supplied a want," and it was consolatory to the casual observer to hear even experts acknowledge the impossibility in some cases of discriminating one variety from another by the tubers alone. Had it been possible to show the haulms, the foliage, and the flowers and fruits with the tubers, as was, in fact, done in one or two cases, some points of distinction might have been forthcoming.

But although there is often a close resemblance between the tubers of one variety and those of another, and although it frequently happens that tubers of quite different shapes may occur on the same plant, yet it does not appear, from our present knowledge, that this similarity on the one hand, or this diversity on the other, is associated with any structural change which shall indicate either immunity from disease or increased susceptibility to its attacks. In the case of potatoes, certain varieties, like Sutton's Discovery, are unusually robust, producing haulms almost woody in their character, and these are found to be less susceptible to disease than are others of softer, more juicy consistence, which are more easily penetrated by the fungus hyphæ. Differences of this character, dependent on increased vigour of growth, are recognised by the growers, but we are not aware that microscopists have as yet made any researches into the structure of the potato foliage with special reference to its immunity from, or susceptibility to, disease. It

is certainly desirable that such investigations should be made, although, in view of the investigations on various species of *Bromus* and their liability to disease made by Marshall Ward, Salmon, and others, it is doubtful whether mere microscopic investigation of the internal economy will furnish more valuable results than comparative macroscopical study of the haulm and foliage. Great physiological differences may, on the one hand, exist in conjunction with uniformity of structure, and, on the other hand, great external differences may exist without appreciable physiological diversity.

Some improved method of investigating the nature and construction of the protoplasm seems to be required, and when this is obtained our knowledge of the relation of function to structure will of necessity be much enhanced. At present the three most efficient means of preventing or combating the disease are the production of immune varieties, the use of sulphate of copper in the form of Bordeaux mixture, and the adoption of "high-moulding," by means of which access of the fungus spores to the tubers is at least in part prevented.

NOTES.

WE regret to announce that Dr. Selim Lemström died at Helsingfors on October 2, in the sixty-sixth year of his age. Dr. Lemström devoted much attention to experimental investigations on the uses of electricity in stimulating the growth of cereals, vegetables, and other plants.

As already noted in these columns, a distinguished party of French physicians and surgeons has during the past week paid a visit to London in order to become acquainted with our medical schools and hospitals and to study their methods and administration. About 150 gentlemen availed themselves of the opportunity, amongst others M. Lucas Championnière, Prof. Poirier, Prof. Marie, Prof. Netter, M. Louis Martin, M. Huchard, M. Triboulet, president of the French committee, and Dr. Sillonville, secretary. An English committee, with Sir W. Broadbent as president, Sir T. Barlow and Dr. Dundas Grant as treasurers, and Drs. Dawson Williams and Jobson Horne as secretaries, made arrangements for the reception and entertainment of the visitors. Visits were paid to the hospitals, general and special, the physiological laboratories of the University of London, University and King's Colleges, the Lister Institute, the Royal College of Surgeons, cancer research laboratories, the County Council laboratories at Claybury, the London School of Tropical Medicine, and to the Islington Infirmary. The visitors expressed themselves as specially pleased with the order and neatness, the decorations, &c., and the home-like comfort of the wards of our hospitals. During the visit they were the guests of the editors of the *Lancet*, Dr. and Mrs. Dundas Grant, the Dean of the Faculty of Medicine of the University of London and Mrs. Butlin, and on Wednesday evening, October 12, they were entertained at a farewell banquet at the Hotel Cecil, at which Sir W. Broadbent presided. The chairman, in proposing the health of the King, alluded to His Majesty's interest in hospitals and medical work. The other toasts were the President of the French Republic, and "Welcome and *Au revoir*," proposed by the chairman; our guests, by Dr. George Ogilvie, responded to by M. Championnière and Prof. Huchard; and the Faculty of Medicine of Paris, by Dr. Pye-Smith, responded to by Prof. Poirier, Prof. Chauffard, and M. Triboulet. The visit has been a great success, and should prove a benefit to both nations.

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REUTER reports that the commander of the *Neptune* Scientific Research Expedition to Hudson Bay and the northern waters has returned to Ottawa with several interesting mementoes of the Franklin Expedition.

MR. H. MARTIN LEAKE, of Christ's College, Cambridge, has been appointed economic botanist to the Government of the United Provinces, India, and proceeds at once to the botanic gardens, Saharanpur, N.W.P.

A CONFERENCE of members of the Museums Association and others interested will be held at Warrington on Saturday afternoon, October 29, for the purpose of discussing subjects of common interest to those concerned in the work of museums, art galleries, and kindred institutions.

THE *Electrician* announces that a congress for the purpose of discussing the production and application of Röntgen rays will be held in Berlin on April 30, 1905. The occasion is the tenth anniversary of the discovery, and Prof. Röntgen will be present as the guest of honour.

A COURSE of twelve Swiney lectures on geology will be commenced by Dr. J. S. Flett at the Victoria and Albert Museum, South Kensington, on Monday, November 7. The subject of the lectures will be "Geology—the Record and its Interpretation." Admission to the course is free.

THE King has consented to give his patronage to the Sanitary Institute, which is carrying on a large work in teaching and examining in hygiene and sanitary science, both in the United Kingdom and in other parts of the Empire.

At the opening meeting of the new session of the Royal Geographical Society, to be held at the Albert Hall on November 7, Captain Robert F. Scott will deal with the leading features of the National Antarctic Expedition. At subsequent meetings Lieut. Roys will deal with the meteorology of the expedition, Mr. Ferrar with the geology, Dr. Wilson with the zoology, and Mr. Bernacchi with the terrestrial magnetism.

THE inaugural meeting of the Association of Economic Biologists will be held at the rooms of the Linnean Society, Burlington House, on Tuesday, November 8, at 3 p.m. All who signify to Mr. W. E. Collinge, the University, Birmingham, their intention of becoming members before October 31 will constitute the list of original members.

WE learn from a note in the *Isle of Man Times* that within the last few days the large pond at the biological station and fish hatchery, Port Erin, has been in great part emptied for the purpose of examining the condition of the stock of fish of spawning size and the state of the bottom of the pond. Out of 180 large adult plaice which had been, at various times since the autumn of 1903, deposited therein, 168 were safely transferred to the lower supply tank. The condition of these fish was all that could be desired; they were thick, strong, and well fed; many were very large. There were also very many young plaice which were hatched at the station last Easter from parents in captivity—the large fish alluded to, and so have been under artificial conditions—made as natural as possible—during the whole of their existence. These young plaice, four to five months old, were from one to four inches long (the large variation in size is noteworthy), active, and well nourished. Some hundreds were picked out for experiment in rearing in small wooden tanks lately fitted up. There were also found some shrimps, some young of the cod tribe, and a small shoal of young herring (whitebait size). All these must have passed through the pumps from the sea, probably in a larval condition. The young plaice examined were found to be feeding mainly on Copepoda.