ADVERTISER

AGRICULTURAL SCIENCE.

The second of a series of lectures on the extension of agricultural science will be delivered at the University by Dr. A. E. V. Richardson, director of the Waite Agricultural Research Institute. The subject will be "The creation of new varieties of plants." The lecture will outline scientific methods of breeding and the remarkable improvements effected in plants by selection and hybridisation. The actual method employed to develop new varieties of garden flowers, orchard fruit, and cereals will be explained and illustrated.

REGISTER, 28.7.25.

ELDER CONSERVATORIUM.

Excellent Concert by Students.

The eighth concert of the 1925 session of the Elder Conservatorium attracted an appreciative audience to the Elder Hall on Monday evening. The occasion was an entertainment by students, and the high standard reached by those representatives was indicated by a programme that might have been set upon professional standards. Instrumental and vocal numbers comprised 13 items, the former section including the pianoforte, violin, and violoncello. The introductory performance was given by Mr. Alex. Burnard, who presented Chopin's "Scherzo in B minor" with remarkable insight, viewed from the student's standpoint. The young pianist approached the theme with requisite thoughtfulness, and his finger work revealed great facility as well as a clear, firm touch. From so intensely musical a student, greater things should be confidently anticipated. The vocal section was commenced by Miss Grace Cussion, who rendered "Micaela's song," from "Carmen." This youthful soprano is the possessor of a sweet, fresh voice, and in the artistic rendition, there were evidences of careful training in the forward production, evenness of tone, enunciation and perfect intonation. The third number was a revelation in scholarly interpretation and good technique when the Misses Alice Meegan, A.M.U.A., and Eileen Cashman were associated in the first movement of Grieg's "Sonata in F," for piano and violin. Distinctly clever pianistic work and a most promising exhibition from the violinist, indicated careful joint preparation. A capital young player was Miss Jean Baldwin, whose piano solos, "Sea pieces, No. 1" (MacDowell), and "Scherzo in E minor" (Mendelssohn) revealed great refinement of outlook, wedded to a lovely touch. A bracket of songs brought out Miss Jessie Anderson in "Whether I live" (Parry) and "Robin's song" (White), and this junior acquitted herself to the obvious satisfaction of the audience.

An extremely difficult item—the slow movement from Saint Saens's "Concerto in B minor"—was the violin solo of Miss Helen Magarey. Latterly this talented artist has made great headway and her exhibition of technique last evening has, for instance, in the complex harmonics passages, stamped the performance as an extremely fine one. To Miss Edith Lucas falls an equal meed of praise for her skilful playing of Debussy's "Prelude in A minor." A firm decisive touch brought out all the appeal of this popular work. Executive brilliance allied to a soulful interpretation lifted the 'cello solo of Miss Helena Harris to praiseworthy heights. Tenaglia's "Aria" was played with ease, meticulous correctness, and with strong appeal. For her vocal appearance, Miss Dorothy Mansom selected "Requiescat" (Stanford) and rendered that tranquil item with requisite artistry. Cyril Scott's "Handelian rhapsody" was a pianoforte number that indicated a clever young pupil in Miss Bessie Francis, and one who had bestowed great care in the preparatory stages. Mr. Lindsay Colquhoun and his violin were jointly responsible for a splendid presentation of the second and third movements of Rode's "Concerto in A minor." The student not only gave an extremely impressive reading, but his manipulation of the bow showed the promise of still bigger things. "Shepherd, thy demeanour vary" (Thomas Brown), was Miss Elsie Cook's contribution to the song section, and this favourite old-world composition was very sweetly rendered in spite of nervousness. Miss Cook's diction was a treat, every word being clearly heard. The concluding item was Mendelssohn's "Capriccio brilliant, opus 22," for two pianos, Miss Constance McGrath distinguishing herself in the solo portion, and Mr. I. G. Reimann supplying the orchestral part on the second piano. Miss McGrath, who is an extremely capable and sound player, gave a brilliant rendition of the classic, her digital ability being pronounced, and was ably assisted by Mr. Reimann's musicianly support on the other instrument. The duties of accompanist were shared by the Misses Alice Meegan, A.M.U.A., and Muriel Prince, A.M.U.A., both of whom acquitted themselves with credit.

REGISTER, 28.7.25

AGRICULTURAL RESEARCH.

Importance in Other Countries.

Australia in the Background.

Professor A. E. V. Richardson (Director of the Waite Agricultural Research Institute), in a recent lecture on science and agriculture, dealt pungently with the manner in which Australia as a whole lags behind other countries of the world in agricultural education and research.

He commented that as a State or as a Commonwealth Australians were spending on agricultural education and research a trifling amount compared with the total value of their agricultural production, and trifling in comparison with what other countries were doing. If they were to make the fullest use of the great natural resources of their continent, and maintain it as a great white continent, they must develop it to the utmost, not only by encouraging immigration, developing their transport systems, conserving all their available water supplies, and promoting land settlement, and also by applying all the resources of science to the development of their primary industries, on which the whole fabric of the nation rested.

Justification for Research.

In other countries the public revenues were the main source of funds devoted to agricultural education and research. The expenditure of public funds on agricultural education and research was justified from two points of view—(a) on cultural grounds, (b) economic grounds. Agricultural research would lead to greater production and lead to further economies in production. Society as a whole gradually benefited, because it obtained the commodities it needed with less expenditure of effort. Thus agricultural research and education would be justified if it yielded knowledge leading to any greater control of the environment which enabled society as a whole to obtain its food and raw material for manufactures with greater certainty and less effort. The farmers of Australia were in competition with those of other countries. If they wished to retain their production in any branch of agriculture against international competition, they must maintain their knowledge of production methods at a standard at least equal with others.

In Other Countries.

Dealing with other countries, Dr. Richardson first instanced England. To Sir John Lawes, the founder of Rothamsted, was due the credit of establishing in 1840 the most famous agricultural research station in the world. At that centre, many of the original field experiments devised by Lawes had been maintained for over 80 years. Those experiments had proved to be a storehouse of information on soil and crop problems, the effects of fertilizers, and systems of crop rotation on the fertility of the soil. The Rothamsted station had made great contributions to agricultural chemistry, plant and animal nutrition, and soil bacteriology. Sir John Lawes left £100,000 and the farm area to maintain the research station in perpetuity. At the present time a staff of some 50 highly-trained investigators were at work on fundamental researches on soil and crop problems. Prior to the war, the British Government did very little to stimulate the progress of agricultural science. Since the war, however, it had voted large sums of money and had appointed an agricultural development board to subsidize research work at the universities and experiment stations of Britain.

In Germany, agricultural science had always received strong financial support from the Government and from private individuals. During the 25 years prior to the war, Germany increased her total cereal yield from 433 million bushels to 1,008 million bushels (130 per cent.); potato yields from 24 million to over 50 million tons (over 100 per cent.); beet sugar from 1,000,000 tons to 2,100,000 tons; cattle by 131 per cent., from 8,740,000 to 20,180,000; and pigs from 5,800,000 to 22,100,000 (279 per cent.) That remarkable increase was brought about mainly by increasing the yield per acre, due to improved technical methods and the systematic organization of the agricultural forces of the country. Von Rumker, of Berlin, in 1913, in referring to the remarkable agricultural progress made in Germany from 1888 to 1913, said—"The great progress that agriculture has achieved during the last quarter of a century is the result of a union and practice with science, and proves that money spent on research and education brings in a high rate of interest, and is compensated for by the increases in land tax and revenue from the State railways." There had hitherto been a marked difference in the attitude of the two countries towards agriculture. Britain, prior to the war, regarded agriculture as a sort of industrial stepchild, with its needs subordinated to those of commerce and industry. Germany, on the other hand, realized the danger of becoming over-industrial, and set to work to devise an organization for the purpose of leading, teaching, and financing her farmers, and encouraging in every possible way the application of science to agriculture. Britain was now adopting a deliberate policy of encouragement of agricultural science and agricultural education by an appropriation of over a million pounds to agricultural development board.

Continued

It was in the United States, however, that the most interesting developments in agricultural education had taken place during the past generation. The Land Grant Colleges Act, of 1862, approved by Abraham Lincoln, at a time when the country was in the throes of a civil war inaugurated the greatest educational project the world has ever known. It established on a firm basis the principle of Federal aid to agricultural education and research. Contemporaneous with that event was the establishment of the United States Department of Agriculture, and for the past 70 years those two agencies had been exerting with ever increasing efficiency an immense influence on the agriculture of the country. The Federal Government now maintained at Washington a department of agriculture with 12 well-equipped scientific bureaus and a personnel consisting of over 8,000 scientific workers. It had built up an organization for the prosecution of investigational work and the collection and dissemination of agricultural information which was without a parallel in any other country. In each of the 48 States of the Union, an agricultural college of university standing, and an agricultural experiment station, usually an organic part of the college, had been established.

What America Has Done.

The agricultural experiment stations established in 1888 had been conducting systematic tests on the management of soils, growing of crops, feeding of animals. They demonstrated the practicability of largely increasing the existing crop yields by measures within the reach of men of average intelligence at a cost which would be recovered with large dividends in the form of one increased production. Babcock, of Wisconsin, had shown how the simple test for butter fat could be used to control losses in butter making; how the factory could pay for milk on the basis of quality, and how the test could be used to improve the dairy herds of the country. Henry, of Wisconsin, had shown the nutritive values of all types of animal foodstuffs, and the necessity for feeding stock with balanced rations of protein to carbohydrates to maintain herds at high production. Armsby had worked out the net energy values of foodstuffs; Saunders had created for the prairie farmers of Canada and America the remarkably prolific Marquis wheat; Spillman had demonstrated to the farmers of the semi-arid west and Pacific slopes the value of fallowing and the changes which took place in the soil as a result of fallowing. The bureau of plant introduction had demonstrated the merits of durum wheat for the dry areas, the value of grain sorghums and cold resistant lucernes. The introduction of those three types of crops added millions to the farmers' incomes. The scientists of the Bureau of Animal Industry enormously reduced the losses of animals due to pleuro pneumonia, hog cholera, and anthrax, and cattle tick. In regard to hog cholera alone, the animal losses prior to 1906 were £14,000,000 per annum. Dr. Dorset, of the Bureau of Animal Industry, found that the disease was caused by a filtrable virus and was able to devise a satisfactory method of treatment. It was estimated that discovery alone reduced the losses in pig by £10,000,000 per annum. The members of the bureau also discovered the cause of tick fever in cattle. By demonstrating that certain species of parasites were conveyors of tick fever—that infection could be carried from one animal to another through an intermediate host—made a great contribution to medical science. That discovery opened up a new field of medical research which had an important bearing on malaria. Dr. Burrill, of the Bureau of Plant Industry, was the first to discover the bacterial disease in plants when he showed that fire-blight in apples and pears was due to a bacterium (Bacillusamy-lovorus). That led to the discovery of a host of bacterial diseases in vegetables, garden fruits, and cereals, and to practicable methods of control. It was not to be wondered, therefore, that with those examples in mind, the American Government became very sympathetic in its attitude towards applied science in agriculture, and Congress was ready to vote large sums for agricultural education and research.

The American nation had the reputation of being a business-like and practical people requiring a dollar's worth of result for every dollar of expenditure. But in no form of education or research had public money been so freely spent as on agricultural education. The annual appropriation for agricultural education and research exceeded £12 million per annum. For the 15 years prior to the war, primary production in the United States had increased by £90,000,000 sterling annually. £90,000,000 per annum extra production was a fine dividend to realize on the amount spent for agricultural education and research.

NEWS, 25.7.25 p.9

REPUTATIONS

(By Dr. H. Heaton.)

What a frail bubble a reputation is, especially a good one. It is easily created, but almost certainly doomed later on, in nine cases out of ten, to be shattered.

This truism is prompted by two items in the press this week. If there is one thing of which we were sure it was that the idea underlying the Real Property Act came from the brain of Torrens. In every part of the world people talk about the "Torrens title," and Torrens himself was rewarded for his services by being given the K.C.M.G. Yet now we are told by someone who seems to know, that he was not the creator of the Real Property system, but that the original Act of 1857 was substantially a translation of the land law of the Republic of Hamburg, and was made by the late Dr. Hubbe. So one of the most commonly accepted facts of Australian land and legal history apparently goes overboard.

In the same newspaper another reputation, this time a bad one, is shattered. We all recall how during the war King Constantine of Greece was held up for our condemnation as a wicked, stiff-necked pro-German, who used his position to thrust a spear into the Allied flank at every opportunity. Now we are told, by a man who knows his facts, that it is "demonstrably untrue" to assert that Tino was ever pro-German, but rather that he even strained his benevolent neutrality toward the Allies by handing over to us a voluminous report prepared by his general staff on the defences of the Dardanelles.

History Revises Verdicts

Thus Torrens and Tino suffer a sea-change into something new and strange, and as we watch their reputations changing color we may well ask ourselves what is truth, and wonder if we really understand any of the famous or notorious figures of our time. Probably we do not, for most of us have the habit of sizing up a man on fragmentary evidence, and our decision is perhaps determined by whether he seems to be for us or against us—or neither. Of course our own leaders must be heroes and supermen, just because they lead us; the leaders of the other side must, of necessity, be deep-dyed villains or unscrupulous rogues, just because they thwart our wishes. But history has a queer way of revising our verdicts, even if we do not upset them ourselves.

One recalls how "The Daily Mail" in 1913 described the Kaiser as a gallant gentleman whose word was worth more than many other men's bonds. But two of the most interesting historical revisions are those concerning the famous Black Hole of Calcutta and Magna Carta. I suppose that every scholar has thrilled and shuddered as he read of the Black Hole episode. That hideous old tale of how 146 British residents were packed for a whole summer's night in a small cell, out of which only 23 emerged alive next morning, has been one of the pet thrills of teachers for over a century.

"Magna Carta Myth"

Unfortunately, about 10 years ago a certain Mr. Little, who used to spend his spare time digging in Indian archives, declared that the whole story was untrue, and showed that there was not an atom of evidence to show that the atrocity ever happened. History professors in India at once shrieked for Little's scalp, and the papers devoted pages to the pros and cons of the case. Apparently Little won the day, and since then people have wondered what was to happen to the superb and costly monument which had been erected in Calcutta in memory of the victims. The moral of which is that it is unwise to stir up mud, especially around monuments.

Historical sacrilege reaches, perhaps, its highest impertinence when it lays its hands on Magna Carta. We have all grown up to regard the famous Charter as the foundation-stone of British liberty, as the fount whence flows Parliamentary Government, trial by jury, freedom of speech, no taxation without representation, and all the minor blessings of democratic life. The great historian Stubbs said that the rest of constitutional history was a commentary on the Charter, and