

the differences may be due to pressing, punching, or to wear and tear.

Therefore you are, dear old penny, from my point of view simply a token, without definite weight, definite dimensions, and with a variable expression.

The Spanish "penny" is marked ten grammes, and it also reads 100 pieces make one kilo. The "halfpenny" weighs 5 grammes, and, like the larger coin, is largely used for purposes of weighing. These coins also have useful dimensions.

If Britannia could be induced to sit a little more forward on her shield, with this and other slight adjustments, the penny would have a definite centre of gravity, and be of use as a plumb-bob, or as a pendulum in our board schools. With properly spaced milling on its edge, pennies could be used by Boy Scouts as angle measurers or rough protractors. When drawing plans, with one penny, and another to buy a compass, he could tell the time, or without a compass and with a watch he would know his bearings. With a piece of thread, a pebble for a weight, and a penny a clinometer could be made.

Whether any of these suggestions could possibly be carried out in practice remains for the consideration of the controllers of our coinage. A penny has had an up and down time of it. It has been altered often, and why not once again. The Romans possibly were too proud to accept small change, which, when handed to them, they flicked off the counter with the back of a finger, remarking "Romanus sum." At all events Roman coins seem to have been scattered over countries where Romans once resided, and now their coins are among the most common evidences of their former occupation. Six hundred years ago, when the penny was made of silver, it would pay a wage or buy a horse. Now it is only a little brown token. If the Chancellor of the Exchequer could see how to cut off "the little bit," make "the little hole" and use a less expensive metal the penny would be reincarnated, become the admiration of the world, taxation would be relieved, and Lloyd George worshipped. But do not forget to treat other tokens as you would the penny. Make them more cheaply and increase their usefulness.

JOHN MILNE.

THE BRITISH SCIENCE GUILD.

THE fifth annual meeting of the guild was held at the Mansion House on April 7, under the presidency of the Lord Mayor. There was a fairly good attendance, and the number of well-known leaders in the field of technical and scientific education was large. Sir William White presented the annual report, and referred to the progress made during the year in various directions. Of the special activities of the guild, he mentioned the work of the subcommittees upon agricultural education, the proposed museum at South Kensington for the physical and mechanical sciences, medical education, and the relation of the Imperial College of Science and Technology with the University of London. From the annual report itself we learn that committees have also been investigating the problems involved in the conservation of natural sources of energy and the coordination of charitable effort. The guild has further benefited science and the community by its successful action in regard to the site of the Solar Physics Observatory; the existence of the science section at the Japan-British Exhibition, and the inclusion of a similar section in the plans for the forthcoming Coronation Exhibition, are also in large measure due to the guild's influence.

The features of the year's progress which Sir William White emphasised were the improved attitude

of the Government towards agricultural research, and the greater readiness of Government departments generally to seek the advice of highly qualified men of science. In certain instances this readiness led to the appointment of consultative committees, which were acting in an advisory capacity to several departments. At the same time, Prof. R. A. Gregory's report showed how much more was being done in other countries to promote research. The organisation of the Canadian Committee has made good progress, and its first annual report has been issued. The spread of evening classes and the movement in favour of continued education are hopeful indications of the public recognition of the value of technical instruction.

Lord Haldane thought that the technical education which was at present being given in England was underrated. In higher education, in the application of science to industry, Germany had marked features which we did not possess; but evening schools and classes connected with the universities or great technical colleges were little known in Germany. Technical teaching had developed in a very striking way in London and throughout the United Kingdom. It was not without result. The quality of British goods commanded the respect of the world. Science was present in every corner of the Sheffield factories in which engines of war—offensive and defensive—were being constructed. Our Government was a very unscientific-looking machine, but it was being substantially and rapidly improved every year. There was far more intercommunication between various Government offices than was generally supposed. He hoped to see remarkable developments before long in the domain of public health.

We cannot refrain from expressing our regret that Lord Haldane should have dwelt so strongly on the merits of our evening-class system without qualifying his praise of this system by some mention of its inevitable shortcomings. The Technical Education Committee of the guild views the matter in a different light. This committee presented a very valuable report, and we quote from the last sentences preceding the recommendations which it contains:—

Most of the technical instruction carried on in Great Britain is evening-class work. The committee, however, are strongly of opinion that day work is of infinitely greater value than work done in the evenings, when neither instructor nor student can possibly be at their best; consequently, evening work cannot be compared for thoroughness and efficiency with such day-class work as is done in the German, and in some of our higher, technical institutes. *Until this is recognised, it is impossible for this country to expect to compete technically with other countries.* (The italics are our own.)

There are valuable contributions appended to this committee's report by Dr. H. T. Bovey, Prof. Meldola, Dr. Pohl, Prof. Gregory, and Prof. Perry. The last-named awards an overdue meed of praise to the too-blighted work of the Science and Art Department, and has a word of encouragement for workers in evening classes, but he adds a strong appeal to employers to allow apprentices to attend science classes "*during the regular working hours*" (the italics are Prof. Perry's). It is evident from these reports that the guild is doing more than interest public men and impress them with the importance of scientific method, for through its committees it is doing the spade-work essential to the conversion of aspiration into practice. It is to be regretted, however, that no mention is made of the Education (Choice of Employment) Act which was passed in November, 1910. Though this may appear to be a very modest piece of legislation, it may well prove to be the starting point of national and

local systems for fulfilling one of the great aims of the guild, viz., organising the training of the youth of the country for industries and citizenship.

We hope that Lord Haldane will add the influence of his personal prestige to the authority of the president of the British Science Guild, so that the need of developing a *higher quality* of technical education in this country may be impressed upon local administrators and the general public. No better text for a discourse upon this theme need be sought than the sentence quoted so appropriately in the annual report from one of the last public utterances of King Edward VII. :—

As time goes on, I feel more and more convinced that the prosperity, even the very safety and existence, of our country depend on the quality of the scientific and technical training of those who are to guide and control our industries.

G. F. D.

The following gentlemen were elected as vice-presidents of the Guild at the annual meeting:—the American Ambassador, Sir Thomas Barlow, K.C.V.O., F.R.S., Sir Lauder Brunton, Bart., F.R.S., Sir Ernest Shackleton, C.V.O., and Major O'Meara, R.E., C.M.G.

The membership of the Guild, including the Canadian Branch, has increased from 793 at the end of 1907 to 872 at the end of 1910; of these, 28 are life fellows, 58 fellows subscribing annually, and 425 life members. In addition to these, there are 7 members belonging to the Australian Branch, of whom 5 are life members.

The following were elected to form the executive committee for 1911-12; the names of new members are printed in italics:—*President*, Rt. Hon. Viscount Haldane, K.C., F.R.S.; *hon. treasurer*, Rt. Hon. Lord Avebury, P.C., F.R.S.; *hon. assist. treasurer*, Lady Lockyer; *vice-presidents*, Sir Thomas Barlow, K.C.V.O., F.R.S., Sir David Gill, K.C.B., F.R.S.; *chairman of committees*, Sir Norman Lockyer, K.C.B., F.R.S.; *vice-chairmen of committees*, Sir Hugh Bell, Bart., Hon. Sir John Cockburn, K.C.M.G., Prof. Meldola, F.R.S., Sir William Ramsay, K.C.B., F.R.S., Mr. F. Verney; *other members*, Mr. Wm. Phipson Beale, K.C., M.P., Dr. G. T. Beilby, F.R.S., Dr. Bovey, F.R.S., Sir Edward Brabrook, C.B., Mr. Harold Cox, Prof. Farmer, F.R.S., Sir Luke Fildes, R.A., Surgeon-General Sir A. Keogh, K.C.B., Prof. A. Liversidge, F.R.S., Mr. A. Mosely, C.M.G., Mr. C. Freeman Murray, Prof. J. Perry, F.R.S., Sir Boverton Redwood, Mrs. W. N. Shaw, Mr. Carmichael Thomas, Dr. A. D. Waller, F.R.S., Colonel Sir John Young, C.V.O.; *hon. secretaries*, Sir Alex. Pedler, C.I.E., F.R.S., Dr. F. Mollwo Perkin.

NOTES.

DR. L. A. BAUER, director of the Department Terrestrial Magnetism of the Carnegie Institution of Washington, sailed from Vancouver, B.C., on March 24 on a trip of inspection of the non-magnetic yacht *Carnegie* at Colombo, Ceylon, where she is due to arrive some time in June next. *En route* Dr. Bauer will call at the magnetic observatories at Melbourne and Christchurch.

WE regret to see the announcement, in *The Times*, of the death of Mr. Charles du Bois Larbalestier, a leading authority on lichens, to whom the last edition of Leighton's "Lichen Flora" was dedicated; and also of Mr. J. S. Slater, for many years principal of the Civil Engineering College, Sibpur, near Calcutta.

THE following have been elected by H.H. the Prince of Monaco the members of the first council of the new Institute of Human Palæontology in Paris:—MM. Salomon Reinach, Boule, Verneau, Cartailhac, Capitan, Villeneuve, for France; Sir Ray Lankester for the British Isles; Prof. von Luschan for Germany; Prof. Hoernes for Austria-Hungary; Prof. Issel for Italy, and Prof. G. Retzius for the Scandinavian countries.

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DR. S. F. EMMONS, an American geologist of distinction, died at Washington on March 28. He was born in Boston in 1841, and, after graduating at Harvard, studied at the Schools of Mines in Paris and Freiberg. He had been connected with the U.S. Geological Survey since 1867, and was a prolific author of geological publications, especially reports on explorations in the Rocky Mountains and Colorado.

DR. D. MAWSON, whose paper on the Australasian Antarctic Expedition, read before the Royal Geographical Society on Monday, appears elsewhere in this issue, announced to the society, towards the close of his address, that the Commonwealth Parliament will probably be asked by the Government to vote a sum of 20,000*l.* towards the expenses of the expedition. The council of the Royal Geographical Society has decided to contribute the sum of 500*l.* to the expedition.

DR. J. S. FLETT has been appointed to succeed Dr. J. Horne, F.R.S., as assistant in Scotland to the director of the Geological Survey. Dr. Flett is a graduate of Edinburgh University, where he was Baxter Scholar, Falconer Fellow in Geology, and a Heriot Research Fellow. He was for four years lecturer on petrology in the University, and in 1901 joined the Geological Survey. In 1903 he was appointed petrographer to the Survey. After the West Indian eruptions in 1901, he was sent out with Dr. Tempest Anderson by the Royal Society of London to report on the volcanic phenomena. He has published many scientific papers dealing principally with the volcanic and metamorphic rocks of the British Isles, and he has contributed largely to the memoirs of the Geological Survey, not only on Scotland, but also on Cornwall and Devon. For scientific research he was awarded the Neill medal by the Royal Society of Edinburgh (1902) and the Bigsby medal by the Geological Society of London (1909).

THE Walker prize of the Royal College of Surgeons, founded to encourage investigation into the pathology and therapeutics of cancer, has been awarded to Dr. E. F. Bashford, general superintendent and director of the laboratory of the Imperial Cancer Research Fund of London. The value of the prize is 100*l.* The Cartwright prize, consisting of the Cartwright medal and 70*l.*, has been awarded to Mr. H. P. Pickerill, professor of dentistry and director of the dental school at the University of Otago, New Zealand, for his essay on "The Prevention of Dental Caries." The Jacksonian prize has been awarded to Mr. K. Macfarlane Walker, of St. Bartholomew's Hospital, for his essay on "Tuberculous Disease of the Urinary Bladder and Male Genital Organs."

ALL the necessary arrangements have now been made by the General Post Office and the postal authorities abroad for a prolonged series of long-distance tests over the new submarine telephone cable which, as already stated in these columns, has been laid between Dover and Cap Grisnez. The tests will take place between various provincial towns in England and towns in Holland, Germany, and Switzerland, and it is expected that our foreign telephone service will be very greatly extended in consequence. No public service, however, will be offered until 90 per cent. of the test calls have proved successful. When this fact has been ascertained, there is no reason why, under ordinary conditions, speech over the line should not be quite distinct. There must, however, always be the chance that gales and blizzards may cause interruptions on the land lines, as these in most cases are still carried overhead.