Thomas and Mack[5] in the United States, which has been designated 'foliar diagnosis'. The method compares the nutrient status of test plants with that of healthy, heavy-cropping plants, regard being paid to seasonal cycles of nutrients and to quantitative and qualitative aspects. The method is, of necessity, somewhat slow for general advisory purposes.

Chemical methods, however, are not infallible and if used alone may fail to provide the correct solution to certain problems. This is particularly so in instances of iron deficiency, where the element apparently becomes immobilized within the plant tissues from a variety of causes, as in lime-induced chlorosis, some instances of potassium deficiency and in the presence of toxic concentrations of other elements.

### Soil Analysis and Field Trials

During the course of long usage, these methods have undergone considerable elaboration, soil analysis chiefly by the development of methods of determining 'available' nutrients[6] and by the introduction of rapid methods[7], and field trials by the development of designs allowing of statistical analysis[8].

The data provided by soil analyses can be of great value when used by an expert and supported by previous field experience, but they must be regarded only as pointers to probable mineral deficiencies since the intake of minerals by plants is not determined solely by chemical supplies in the soil. The method is chiefly of use for phosphorus and potassium deficiencies, and in providing data relating to acidity and organic matter.

As the response of the crop to a nutrient element, however the response may be obtained, must always be regarded as a final test of a deficiency of a particular element, field trials must always be of importance in diagnosis. But even here erroneous conclusions may be drawn, particularly so where trace element deficiencies may be remedied by changes in the *p*H of the soil. Thus, applications of sulphur to the soil may remedy a deficiency of manganese and alleviate deficiencies of iron and boron by lowering the *p*H, and conversely the application of lime may cure a deficiency of molybdenum. Moreover, soil dressings of manganese and iron salts are ineffective in many soils against these deficiencies, which nevertheless may be quickly and completely remedied by spraying or injection treatments.

The usual field trial methods may also be too slow in producing results for advisory purposes, as for example, for deficiencies of potassium and magnesium of fruit trees.

Experience with mineral deficiencies of crops in the field has shown that the problems may be very complicated and that no one method can be relied upon to provide a general solution. The most effective procedure is to use all available methods of attack in a complementary way, and in doing so, full use should be made of all the data which the plants themselves provide.

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# OBITUARIES

## Sir Hanns Vischer, C.M.G., C.B.E.

THE death on February 19 of Hanns Vischer has removed a notable and commanding figure from the sphere of African interests. Even his entry, more than forty years ago, into the political service of Northern Nigeria was in itself a notable event, for by birth he was a foreigner and his previous contact with Africa had been in the mission field; neither of which circumstances could in those early days be regarded as an 'open sesame' to the British Colonial Service. But there was that in Vischer's make-up before which all prejudice, British or African, melted like snow in the midday sun; and the reason was not far to seek. The Hausa people, quick at all times to detect the idiosyncrasies of their alien overlords, proclaimed the secret of his influence in two words. Throughout the country he was known as Dan Hausa ("Son of Hausa")—perhaps the most significant nickname ever conferred on a European in West Africa. It meant that in him the Hausas recognized, not only a man who possessed an extraordinary command of their delightful and expressive language, but also one whose affection for them was equalled by his insight into the innermost recesses of the African soul. It meant that they had, as it were, adopted him. One had only to watch him in his daily avocations in those early days to realize how completely at home he was with every class of society—whether he was engaged in grave deliberations with emirs, viziers and other high personages of the ruling hierarchy, or whether he was chaffing the hucksters at the market stalls as he rode through Kano city. No less revealing was it to see him in his own home pick up a native drum and, squatting on the floor, croon local Hausa songs to his own accompaniment. So inimitably did he do it that, if he had been hidden behind a screen, one would have said that an African musician had been engaged to entertain his guests.

No one who knew Kano in the years before the War of 1914–18 will ever forget the spirit of the motley community over which Hanns and Isabelle Vischer presided at the headquarters of the Education Department at Nassarawa. Isabelle's influence was second only to her husband's. If Hanns had it all his own way with the men, it was to Isabelle that the women laid bare their joys, their absurdities and their sorrows. She was the true *uwargida*, the mother, as Hanns was the father, of the great family.

It need scarcely be said how firmly Hanns and his wife were established in the affections of their British colleagues. Those—and they are now a much diminished band—who enjoyed their hospitality at Nassarawa before the War of 1914–18 will long remember the charm and gaiety of evenings spent in their company. Indeed, as one looks back, they, more than any two other people, seemed to embody the spirit that pervaded the Northern Nigeria Service in those early days—the light-heartedness, the good fellowship, the sport and, above all, the eager and adventurous interest in the problems of a fascinating and newly opened country.

Lack of space forbids me to speak of Hanns Vischer's later career, of his military service in the War of 1914–18 and of the widespread influence which he exercised as secretary of the Advisory Committee on Education at the Colonial Office and as secretary-general of the International Institute of African Languages and Cultures. In these larger spheres his

great achievements have been widely known and acclaimed. If I have dwelt on the remote and less well-known period of his life in Northern Nigeria, it is because at that time the foundations of his future influence were laid—an influence which sprang from his passionate devotion to the people of Africa and the reciprocal devotion to him of the Africans whom he served so well. G. J. F. TOMLINSON.

## Mr. Thomas Sheppard

WITH the passing of Mr. Thomas Sheppard at his home in Hull on February 18, the city has lost a notable character. Though officially the director of the Hull Museums for forty years (until his retirement in 1941), his activities ranged over a wide field, from organizing exhibitions directing attention to Hull's trade and commerce, and lecturing up and down the country on a variety of subjects, to contributing numerous articles to the Press.

As showing his diversity of interests, Sheppard was a past president of the Museums Association; the Yorkshire Geological Society; Hull Scientific and Field Naturalists' Club; Hull Geological Society; Hull Literary Club; Yorkshire Numismatic Society; Hull Publicity Club; Hull Luncheon Club, and the Hull Playgoers' Society; and a past chairman of the Conference of Delegates of Corresponding Societies of the British Association. He was also a member of the Hull University College Historical Committee, Hull Development Committee, and the Yorkshire Roman Antiquities Committee, and was local secretary when the British Association visited Hull in 1922. He issued two hundred Publications of the Hull Museums, edited the *Naturalist* for thirty years and was also responsible for the bibliographies of Yorkshire geology, and Mortimer's "Forty Years Researches".

Perhaps Sheppard's most important work was in connexion with geology, and he received the Lyell Award of the Geological Society of London for his contributions to this subject. In recognition of his scientific work, he received the honorary degree of master of science from the University of Leeds and he was made an associate of the Linnean Society.

During his long service as director of the museums of Hull, the Albion Street Museum, Wilberforce House, the Natural History Museum, Museum of Fisheries and Shipping, the Museum of Commerce and Transport, Mortimer Museum of Prehistoric Archæology, and the Railway Museum at Paragon Station were opened. In fact, he gained a well-known reputation of having very few scruples when it came to obtaining exhibits for his beloved museums.

A man of genial personality and a great sense of humour, he had been in failing health for some years, and the fact that his work was done, and the results of so many years of interest destroyed during the air raids on the city of Hull, contributed greatly to his death at the age of sixty-eight. J. B. FAY.

## Dr. E. C. Wiersma

ACCORDING to a brief announcement in *Die Chemie* of October 28, 1944, Dr. E. C. Wiersma died at Delft at the age of forty-two. He was known for his work at the Kamerlingh Onnes Low Temperature Research Laboratories at Leyden. Both independently and in collaboration with Dr. W. J. de Haas, Wiersma had published a number of papers on the influence of low temperatures on the paramagnetism of certain metals and salts. He studied the adiabatic cooling of magnetic bodies and the production of low temperatures by adiabatic demagnetization. In 1931 he published a classification of para-magnetic atoms, molecules and ions based upon their fields at low temperatures. He also deduced a thermodynamic scale for temperatures below 1° Abs.

WE regret to announce the following deaths:

Sir James Barrett, K.B.E., C.M.G., sometime vice-chancellor and later chancellor of the University of Melbourne, and a founder and original fellow of the Royal Australian College of Surgeons, aged eighty-three.

Engineer Vice-Admiral Sir George Goodwin, K.C.B., formerly engineer-in-chief of the Fleet and a past-president of the Institute of Metals and of the Institute of Marine Engineers, on April 2, aged eighty-two.

Dr. G. L. Taylor, of the Galton Laboratory Serum Unit, recently seconded to the Medical Research Council, aged forty-seven.

# NEWS and VIEWS

## Bessemer Gold Medal: Award to Mr. Harold Wright

MR. HAROLD WRIGHT, chief metallurgist to Dorman Long and Co., Ltd., Middlesbrough, has been awarded the Bessemer Gold Medal by the Iron and Steel Institute in recognition of his "valuable contributions made over many years to improve the technique of iron and steel manufacture". The Medal, which is the highest award conferred by the Institute, will be presented to Mr. Wright by the president, Mr. Arthur Dorman, at the annual meeting of the Iron and Steel Institute in London on May 9. Mr. Harold Wright has been a member of the Institute since 1902 and has served on its Council; he is a past president of the Cleveland Scientific and Technical Institution and of the Cleveland Institution of Engineers. He started work at the North Eastern Steel Works. While with Sir Bernard Samuelson, Mr. Wright took an active part in the supply of molten basic iron to Dorman Long's Britannia Works when the latter firm introduced the hot metal process forty years ago. While in charge of the Newport coke ovens, Mr. Wright promoted the use of coke oven gas for town purposes. He first made the suggestion in 1902, but it was 1913 when the supply was first established. Mr. Harold Wright also possesses considerable geological knowledge, and has done a great deal of exploration work in connexion with the Cleveland ironstone deposits. He was also responsible for the introduction into local blast furnace practice of the use of rich foreign ores in the Cleveland burden. Mr. Harold Wright was appointed chief metallurgist to Dorman Long and Co., Ltd., in 1918. Last December the Company inaugurated a triennial Harold Wright Lecture to be given before the Cleveland Scientific and Technical Institution in recognition of his long and valuable service.