Dr. J. A. Voelcker, C.I.E.—An Appreciation.

THERE are two much valued volumes in the present writer's book-case, one modestly bound in maroon cloth, the other in heavy green leather, tooled in gold. Both are inscribed by the author, the first dated December 1916, the last May 1926, nearly ten years later. The title and contents of each volume are the same—"Report on the Improvement of Indian Agriculture" by John Augustus Voelcker, Consulting Chemist to the Royal Agricultural Society of England.

The inscription in the second volume bears witness to the author's continued friendship. Ten years' sojourn in India had also enabled the recipient more fully to recognise the value of the work and proposals recorded in the Report.

That this recognition was well justified was evident from the action of His Excellency the present Viceroy, who, after his experience as Chairman of the Royal Commission on Agriculture in 1928, recommended Dr. Voelcker for the distinction of C.I.E. This honour was given to a man personally unknown to Lord Linlithgow, and after the lapse of thirty years from the time when the work was done, simply on account of the remarkable value of the observations recorded and the recommendations made.

There are probably few of the present generation of agricultural workers in India who have a clear conception of the condition of things before Dr. Voelcker's Report and of what they owe to his wise criticism and foresight.

Before his time there was little or no scientific control of any kind over such attempts as were made at agricultural investigation. Few, if any, chemical analyses were available even, *e.g.*, to distinguish between the comparative values for irrigation of canal water and well water. The problem of *usar* or alkali soils was approached quite empirically without any chemical knowledge of the quantity and character of the salts present.

The great agricultural industries of Tea, Coffee, Sugar and Indigo were without scientific guidance. The last named in particular with its complicated problems in biochemistry was often at the mercy of charlatans with patent specifics.

The subsequent action of Government in appointing a special scientific officer was unfortunately too late to save the industry from the competition of the synthetic product.

In the sugar industry even such a universal implement as a centrifuge finds its original recommendation in Dr. Voelcker's Report.

In a letter to the present writer dated 22nd September 1936, acknowledging the Annual Report issued by the Society of Biological Chemists, India, on Biochemical and Allied Research in India, Dr. Voelcker expresses his amazement at the enormous strides which the pursuit of agricultural science has made in a country like India that used to be associated with stereotyped methods and where he confesses he had hardly thought such developments possible. He speaks indeed of the dawn of a new era, such things as colloids, vitamins, etc., being comparatively new acquaintances to the older generation.

Unfortunately, some of the problems to which he drew attention still remain. The manure supply is still deficient and waste of valuable sources of wealth is still too frequent.

Sir John Russell has drawn attention to the continued difficulty in bridging the gap between the research farm and the cultivators' farm.

The load of debt still bears heavily on the countryside.

Still the new era of which Dr. Voelcker speaks is surely here and the present-day workers may well spare a thought for the wise pioneer to whom they owe so much.

Although the present writer only once had the pleasure actually of meeting Dr. Voelcker personally he has enjoyed the privilege of an uninterrupted correspondence with him since his own arrival in Bangalore in 1916. It has often happened that the old gentleman's fairly lengthy communications written in his distinguished, if at times rather difficultly legible script, remained for long unanswered. There is one in the "for disposal" basket to which alas a written reply is no longer possible. It is something to be grateful for to have retained the confidence and friendship of such a

sterling character as Dr. Voelcker over so many years. In no one of his letters was ever a harsh or bitter judgment. He would always find something good to say even of one whose actions he might in some respect criticise. He reminded one of the dear old lady who when the opinion was expressed that she would find something good to say of the devil, exclained, "well at any rate he is very busy".

Dr. Voelcker was always eager to see justice done to good work. He was glad when the name of Munro was mentioned as the discoverer of the principle of "activation" in connection particularly with intensive nitrification. He remembered Munro as a modest worker who never sought the lime-light and was better at laboratory research than at its technical application.

Of Dr. Harold Mann's loyalty and hard work as his second in command at Woburn he could not speak too highly although he had little real sympathy with his "leftist" politics, describing him in this connection as a "caution".

He admired the fighting qualities of his friend and contemporary, Professor H. E. Armstrong, but was quite equal to standing up to him in argument if the occasion seemed to require it. He found a bond of agreement with him in a distrust of overmuch theory and a respect for honest craftsmanship. This attitude of mind made him doubtful of the value placed upon some modern developments in agricultural research, particularly the application of statistical methods to small plots. He complained that it was impossible to *show* the farmer the result, *e.g.*, of manurial trials.

Throughout, however, he was, as has been shown, appreciative of all that was good and eagerly maintained his many interests and activities to the end.

Of him it might well be said in the splendid elegiac line of Kipling,

> "He did his work and held his peace
> And had no fear to die."

GILBERT J. FOWLER.

Madras,
February 14, 1938.

Metrogon.

A NEW photographic lens, called the Metrogon, which enables a single photograph taken straight down from an airplane to show three times as much area as has previously been possible from the same altitude, is the latest achievement of the BAUSCH & LOMB OPTICAL CO.

The importance of the lens in aerial photography and mapping work cannot be overemphasized. It had previously been necessary to fly higher in order to cover more ground but the haze and other factors introduced by high altitude reduced sharpness and accuracy in aerial mapping. With the new Metrogon fitted to the camera, a plane can photograph three times as much ground without flying any higher or farther than has been necessary with the average lens previously used.

While lenses covering wide angles are not new, the combination of very wide angle with sharpness and freedom from distortion at the relatively high speed of f : 6·3 is regarded as an optical achievement. The Metrogon covers 90° of field and has a focal length of five and a quarter inches.

So clear is the definition it gives that a photograph made from a height of one mile can show separate railroad ties anywhere within a two-mile circle beneath the plane. The fineness of detail which the new lens can record at the center of the picture is limited only by the graininess of plates and films. Distortion, present in all photo lenses, has been almost completely eliminated in the Metrogon. Since such distortion ordinarily becomes pronounced with increasing angle covered by the lens, its correction was the major obstacle to be *overcome in the design of the lens.*
