error of the experiment was known. Thus we are informed that the most effective slags are those in which a high percentage of the phosphates present dissolves in citric acid. On looking at the figures, however, we find that the extreme difference in yield is little more than 10 per cent., which is probably well within the experimental error.

Percentage of phosphoric acid soluble
in 2% citric acid ... 93.1 ... 74.2 ... 66.1
Hay obtained, in cwt. ... 9½ ... 9½ ... 8

Again, one of the conclusions drawn from the rotation experiments is that sulphate of ammonia has had distinctly exhausting results except on the crop to which it was applied. The fall in yield, however, is only 7 per cent. In neither case is the conclusion justified by the evidence.

Among the West of Scotland reports is one in which the new nitrogen manures, cyanamide and basic calcium nitrate, are shown to have given valuable returns. Most of the reports deal with different varieties of oats and potatoes. General conclusions cannot be drawn since we are told "that the character of the seasons was found to affect the relative as well as the absolute productiveness of the oat varieties in an astonishing degree." A number of measurements of the straw and grain of these different varieties are recorded, and a good deal of other information has been collected. In the experiments on the manuring of potatoes it generally happened that the best and most profitable crops were obtained after applying ten tons of farmyard manure per acre along with a complete dressing of superphosphate, sulphate of potash, and sulphate of ammonia, a result agreeing with others obtained elsewhere.

The Cirencester experiments on pasture have been going on for eighteen years or more, and show some interesting results worth working up in greater detail, since they differ in several ways from those obtained at Rothamsted. Thus superphosphates alone gave better results than no manure and also encouraged clover; the plot receiving sodium nitrate alone was poor, tufted, and worse than the plot receiving ammonium sulphate alone; *Ustilago* was most prevalent on the plot receiving kainit alone.

The Irish experiments on winter milk production and winter rearing of calves were made to see if either of these schemes would pay. At present Ireland places but little butter on the market during winter, with the result that the summer trade suffers. It is considered that higher prices would be realised in summer if the winter trade could be developed. Satisfactory financial results were obtained. The reports derive considerable interest from the tables of costs, a welcome though rather unusual feature in experiments of this sort.

The Durham dairy investigations were intended to settle certain practical points such as the feeding of concentrated food on pasture and the relative value of moderate and heavy rations for milch cows. It was shown that an increase in food caused an increase, but not a proportionate increase, in milk yield, a result in accordance with Holtmark's very complete investigations in Norway. Brewers' grains were, as usual, found to increase milk production, but no attempts were made to ascertain whether, as is sometimes asserted, they have any physiological action. This is all the more unfortunate since in a second series of experiments the materials for this study seem to have been at hand, the increase in milk yield amounting in the two experiments only to 0.7 per cent. and 3.3 per cent. There is nothing to indicate the magnitude of the experimental error, but as only five cows were taken in each set it cannot have been less than the quantities recorded. The only legitimate

conclusion is that brewers' grains in this particular instance failed to produce their usual effect. Here is just the experiment that the trained investigator would have welcomed in order to follow up the subject. But the author of the bulletin not only misses the opportunity, but draws the wholly unwarrantable conclusion that a moderate allowance of 20 lb. of brewers' grains per day has the effect "of increasing, at all events for a certain period, the daily yield of milk"!

We have directed attention to these defects because they recur not infrequently in the work carried on in the counties. Unfortunately some of our agricultural experimenters have a habit of ignoring or explaining away an unexpected result. If only they would learn that to follow up an unexpected result is the beginning of wisdom in research work, we might make much greater progress in agricultural science than we are doing now. Of course, it may be urged that the object of the experiment is simply to arouse interest or to demonstrate some well-ascertained fact, so that scientific method is not necessary. Even if the experiments have served the purpose for which they were intended it is nevertheless much to be desired that the experimenters should realise their opportunities and make more than they are doing out of their work.

THE TOTAL SOLAR ECLIPSE, MAY 9, 1910.

UNFORTUNATELY, the news to hand regarding the observation of this eclipse, visible in Tasmania, tells us that all the observing parties experienced unfavourable weather conditions. According to the *Times* of May 10, a Reuter telegram from Hobart (Tasmania), dated the previous day, states, "The observation of the total eclipse of the sun from Bruni Island has failed, owing to dense clouds and rain. Mr. Baracchi, the Victorian Government astronomer, reports that the darkness during the period of totality might be compared with that of a starlit night."

A cablegram from Mr. McClean, dated May 10, shows that this party also met with no success, on account of bad weather. The message was as follows:—"Eclipse invisible, steady rain all day. Only two fine days last fortnight. Terrific gales and thunder frequent."

While it is most disappointing that no observations of this eclipse have been secured, yet it was rather anticipated that such would be the case, owing to the unfavourable time of the year for satisfactory weather conditions. Nevertheless, Mr. McClean deserves high praise for getting a party together, with a fine outfit of instruments, and going so far to make the attempt to secure observations. While he returns on the *Orvieto*, which leaves Melbourne on May 18, he has made arrangements to leave all his instruments out there so that he can pick them up for the total eclipse of next year. This eclipse will be best visible from some of the islands in the western Pacific, but it is not yet settled which particular one will form the basis of operations.

The last mail from Australia has brought some details as to the station which Mr. McClean is just leaving and the preparations he made, and it is hoped that these will be published in a subsequent number of NATURE.

W. J. S. LOCKYER.

PROF. E. F. W. PFLUGER.

THE name of Pflüger has been made known to many generations of students as belonging to some inhuman agency by which, to their confusion and vexation, an edict was enacted known as "Pflüger's law." To how many of those students has the human picture ever been presented of the untiring