

As my principal object in these researches had only been to get rid of the carbon spectrum (though in vain), I did not make any measurements of wave-length. Later on, as many laboratories were provided with powerful spectroscopic apparatus, I did not believe it to be any longer worth while to work on the subject with small instruments, hoping some other investigator would take care of it. I should be very glad if the present note would induce some spectroscopist to control and further pursue my observations. In addition, some researches with very strong sparks seem to me to be very desirable.

Berlin.

KARL V. WESENDONK.

The Dust of "Blood-Rain."

I HAVE handed to Prof. Judd the specimens of "blood-rain" dust collected by me in Sicily, as mentioned in your issue of March 28. It may be remembered that the dust was collected from three tables on the terrace of the hotel, and that I brought home that from the most favourably situated table in the wet state in which it was obtained. This has since been dried and weighed, with the result that, as I expected, the density of the fall was greatest on this table, being equivalent to $9\frac{1}{2}$ tons per square mile. The average given by the other two tables was $5\frac{1}{2}$ tons per square mile.

The largest value is probably the best, but if we take the mean we shall be within the mark in saying that the density of the fall near the theatre at Taormina was about 7 tons to the square mile.

ARTHUR W. RÜCKER.

A Convenient Primary Cell.

IN your "Notes" of April 18 (p. 594) you give an account of the new cell—the Cupron-element—brought out by the Accumulator Industries Company. Without intending any disparagement, will you allow me to point out that the cell, with the exception of the special form of copper oxide for which the company justly claim credit, was invented long ago by Lalande, but does not appear to be known so widely as its merits deserve. I have used the cell for a considerable time, the positive plate taking the form of a plate of copper faced on one side with granular copper oxide held in its place by a piece of copper gauze, and can corroborate the statements as to its very low resistance and great constancy. For elementary work, where resistances of a few hundredths of an ohm are to be compared and a galvanometer of negligible resistance used, I have found it most valuable. Another form of the cell, in which the copper plate is merely painted with a mixture of copper oxide powder and gum and then heated until the latter chars, is very readily set up, but has a rather greater internal resistance. Where this is desirable it may be regulated within considerable limits by making the cell a "sawdust Lalande," which has obvious advantages on other grounds.

A. E. MUNBY.

Felsted.

THROUGH the kindness of the Editor I am able to reply to Mr. Munby's interesting letter. I did not intend by my note to imply that the "Cupron-element" was an entirely new combination, and indeed suggested that its chief claim to novelty lay in the construction of the copper oxide plate. The Accumulator Industries, Ltd., it is only fair to say, fully acknowledge in their circular that the cell is developed from the copper oxide element of Lalande and Chaperon. It is interesting to have Mr. Munby's testimony to the convenience of the cell, which is, I believe, used to a considerable extent on the Continent, but, as your correspondent says, is not very widely known in England.

THE WRITER OF THE NOTE.

AGRICULTURAL SEEDS.

UNDER the auspices of the Board of Agriculture a committee was appointed last summer to take into consideration the conditions under which agricultural seeds are at present sold, and to report whether any further measures can, with advantage, be taken to secure the maintenance of adequate standards of purity and germinating power.

The committee met on ten occasions and examined upwards of thirty witnesses, seed-merchants, farmers and scientific witnesses, including Mr. Carruthers, Mr. Gilchrist, Mr. Hall, Profs. T. Johnson, McAlpine and

NO. 1645, VOL. 64]

Somerville. The evidence of these witnesses is now published as a Blue-book, whilst the report of the committee is issued separately.

Taking the report first, the committee find that there is [now] no wide-spread complaint of the quality of seeds sold throughout the country. The committee, further, think that every encouragement should be given to seed-merchants to give a guarantee with the seeds they sell, and that farmers should be advised to buy only subject to such guarantee and to test the seeds they have purchased. To facilitate this the committee recommend the establishment of one central seed-testing station under Government auspices, with the aid and counsel of a small committee of experts. The report is signed by all the members of the committee. Two of their number, Sir W. T. Thiselton-Dyer and Mr. Leonard G. Sutton, while agreeing generally with the findings of the committee, raise objections to the proposal to establish a Government seed-testing station.

It is satisfactory to hear that the general quality of the seeds sold has greatly improved of late years. This improvement is, no doubt, in great measure due to the passing of the Adulteration of Seeds Act, an Act, it may be pointed out, which was promoted by the seedsmen themselves, who desired to purify their business from seed-killing, seed-dyeing and other questionable practices which had been allowed to grow up to such an extent that it was difficult for a merchant to avoid conniving at, if not practising them.

At present, so far as the large firms are concerned, there is in general no question as to the excellence of the seeds they sell, and those who, like the writer of the present notice, have had the opportunity of witnessing the care taken in selecting the seed and in afterwards cleaning it and preparing it for market will corroborate this statement. With the smaller dealers, especially in some parts of Wales and Ireland, the case seems different. There the farmers often buy relatively small quantities of seeds of low quality and equally low price from local tradesmen, ironmongers, cornfactors and the like, who have no other knowledge of seeds than such as is necessary for securing the best means of disposing of them. It is especially for the protection of small, and often ignorant, farmers that the seed-testing station is intended.

All the large firms test their own seeds and the seeds they buy from the Continent or elsewhere. Moreover, they grow them in their own trial grounds. They do this on a very much larger scale than would be possible in a seed-testing station.

Some of the smaller firms, and perhaps some of the large houses also, occasionally make use of the seed-control stations at Zurich or Halle, and they find it a grievance that they have to send to Switzerland or Germany for information which obviously could as well be obtained here. Indeed, the botanists of the Royal Agricultural Society (Mr. Carruthers) and of the Highland and Agricultural Society of Scotland (Mr. McAlpine), and perhaps others, do undertake to test seeds for the members of their several societies, or, under certain conditions, for outsiders.

These tests, wherever they be made, have reference to the "purity" of the seed, its germinating power and its "genuineness." By purity is meant freedom from seeds of weeds or other admixtures. The germinating power is tested by the percentage of seeds in any given sample which, under favourable conditions, is found to produce healthy seedlings. Theoretically a hundred per cent. should grow. In practice the percentage may, without fault of the seedsman, be, in certain cases, much below this, but it is satisfactory indeed when one thinks of the many contingencies to which the clover plant is subjected to find it to be quite common for 98 per cent. of the seed to grow. When one thinks of the humble bees, and the