

other countries in its treatment of the mentally defective class." He points out the great advantage of "the physiological education of the senses" (Séguin) of these children, and afterwards of their mental and moral education, both to the individual concerned and to the community. He shows how such children can find occupation and happiness as inmates of permanent working homes and contribute appreciably to the support of such homes, also how the "improved imbecile" is of far less risk to future generations, especially if carefully supervised.

Certain weak points in the Acts are dealt with, particularly the inadequate provision for "backward children," who tend to gravitate to the "special" schools, and the *inadequate after-care* of the children on leaving the institutions. This latter defect must necessarily damp the enthusiasm of the teachers, on whose devoted self-sacrifice the efficient working of the Acts is largely dependent. We strongly recommend the book to all interested in the subject, though mainly written for the medical profession. W. F. B.

The Microscopy of Vegetable Foods, with Special Reference to the Detection of Adulteration and the Diagnosis of Mixtures. By Drs. Andrew L. Winton, Josef Moeller, and Kate Barber Winton. Pp. xiv+701. Second edition. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1916.) Price 27s. 6d. net.

Just as the sophistication of foods and drugs has developed, so have the means of detecting them been devised. For this purpose microscopical examination is one of the most important procedures, and a knowledge of the microscopic characters of the products and of their chief adulterants is therefore essential. Not only the analyst, but the miller, the brewer, the oil-presser, the cattle-food manufacturer, the canner, and the coffee and spice grinder, should all be conversant not only with the naked-eye characters, but also with the microscopic structure of their raw materials.

The present book, now in its second edition, deals with the needs of most of these industries, and the authors have, we think, successfully accomplished their task.

First, equipment, methods, and general principles are dealt with, after which the microscopic characters of the various products and their chief adulterants and impurities are described. In this way grain, oil-seeds, legumes, nuts, fruit and fruit products, vegetables, alkaloidal products and their substitutes (coffee, tea, cocoa, etc.), spices and condiments and commercial starches, are all considered at length, and an enormous amount of valuable information is collected and collated.

The text is illustrated with no fewer than 635 figures, and concludes with a full bibliography, glossary, and index. The book is, of course, especially written for American practice, and many articles are described which are rarely met with in this country, but it will be found none the less useful by our analysts and laboratories.

R. T. H.

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LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

A Peculiar Thunderclap.

POSSIBLY some one of your readers may be able to throw light upon the peculiarity of a thunderclap which occurred here during a severe thunderstorm on July 27. This parish lies in a hollow of the hills, and almost always escapes close contact with thunderclouds. On the date mentioned a peal of extraordinary suddenness resembling the crashing burst of a big gun followed instantaneously a vivid flash at my point of observation. Two or three trees were afterwards observed to have been struck, and a paling rail near some wire was split into pieces and thrown some distance. Now the peculiarity is this: that very similar experiences were noted at places more than a mile distant and in various directions. The same crash following immediately on the lightning was noted by quite a number of independent witnesses. A mile to the east of this dwelling the lightning was seen to run down a wire fixed to the top of a flagstaff. About a mile to the north a farmer driving home was alarmed to see the lightning flash along the wire paling by the roadside and split one post at least and cast the fragments on the road.

On considering all the circumstances, I think the following may be an explanation. The thunderclouds which contributed mostly to the storm were floating at a pretty high elevation, possibly 2000 ft., as during the greater part of the day they were just grazing the tops of the hills. But about 3 p.m. a bank of cloud began to form in this hollow much nearer the ground, and half an hour later, when the thunderclap came, the light was much obscured. My opinion is that the lower cloud drew an overwhelming charge from the clouds above, and accordingly flashes sped to earth from several points at the same instant.

I have, of course, made certain that we are dealing here with one and the same thunderclap, as was not difficult to do, seeing that all the other peals of thunder were comparatively distant. JOHN DON.

Lumphanan, Aberdeen, July 30.

The Gun-firing on the Western Front.

THE firing of very heavy guns at a great distance was clearly audible at Harpenden throughout the days of August 7 and 8, as well as on previous occasions. The direction of the sound is evidently from the south-east, and that of each explosion lasts about two seconds. Our elevation is 440 ft., and the local wind has been from west to north-west. The distance between Harpenden and Bapaume would be about 185 miles. SPENCER PICKERING.

MR. PIPER's letter (NATURE, August 3) is interesting. My extended experience confirms his. When the great bombardment began I was staying at a farmhouse on high ground near Chilham, Kent. We heard the firing day and night during the two weeks, and I roughly calculated that three or four guns were fired *per second*. During almost all the time the wind was S.W., and often quite strong, yet this did not interfere with the sound if one was sheltered from the wind and away from rustling foliage.

The firing front would be S.E., and about 100 miles away. I. W. BOOTHROYD.

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