

matter, or highly manured with decomposing animal or vegetable substances, afford a grain which is richer in gluten than that produced by lighter and more sparingly manured soils, and those of the slate formation. The above statement respecting the value of the wheat grown in some districts of the north of Ireland, seems to confirm the statement.

POLYTECHNIC INSTITUTION.—Dr. Ryan has been engaged during the past week in delivering a series of most interesting and important lectures, at the Royal Polytechnic Institution, on agricultural chemistry, suited to the farmers who at this season annually visit our metropolis. Dr. Ryan's reputation as an agricultural chemist has long been established: and it will be recollected that three years ago he was chosen by the council of the Royal Agricultural Society of England to deliver the annual lectures to the members. His lectures during the past week have been confined principally to "the food of plants, and the sources from which that food is derived." In the first part of the course, Dr. Ryan directed the attention of his audience to the organic and inorganic constituents of vegetables, giving a number of apt experiments for the purpose of explaining fully the nature and character of these constituents. He then passed on to the consideration of the food of plants, and the supply of that food. The food which formed the organic portion of the plant—namely, carbon, hydrogen, oxygen, and nitrogen—he proved was derived from the atmosphere; while such inorganic constituents as silica, potash, soda, iron, lime, phosphoric and sulphuric acids, were derived either from the soil, or from some substance added artificially to the soil. The lecturer entered at great length into the sources of the organic food, showing first the changes which produce carbonic acid during respiration, combustion, and decay and then pointing out practically the separation by plants of the carbon, and its assimilation to form the future wood. The decomposition of atmospheric water by the plant, to supply its hydrogen and oxygen, was also shown; and the learned doctor gave it as his opinion that the vital action of the plant, enabling it to decompose these various compounds, was dependent on electrical force. The separation of nitrogen, also, from the carbonate and ni-

trate of ammonia in the air, was proved very satisfactorily. In the second part of the course, Dr. Ryan explained the process of the disintegration of rocks—the comminution of their particles, and their decomposition by the action of air and moisture, to form soils; and to these changes he proved we were to trace the supply of the inorganic constituents of plants. The experiments by which he showed the conversion of such insoluble matters as silica, chalk, &c., into food, were most interesting and characteristic. In the concluding portion of the series Dr. Ryan congratulated the farmers upon the removal of much of that prejudice against chemical agriculture, which formerly existed, and regretted that it should still exist in some minds. He also laboured to prove that by the aid of chemistry alone could farming become a perfect science; and that it was only by an analytical examination of the soils, and a comparison of their constituents with the requirements of the future crop, that the system of manuring could be successfully carried out. We need scarcely say that these lectures throughout were most numerously attended by the class of persons for whom they were principally intended.

SALE OF SHORT-HORNED CATTLE BY LYNE AND COTHER.—On Thursday a part of Mr. Timms' stock of improved Durhams took place in a field close to Banbury, when about 40 head of cattle, including nine bulls of different ages from three weeks to four years and a half old, were brought to the hammer, beginning with the cows, 24 of which were sold and one withdrawn. The highest price was 46 guineas, and the lowest 18, averaging upwards of 23 guineas. Six heifers, from 5½ months old to 12, averaged nearly 13 guineas; two cow calves, two or three days old, made 10 guineas; the nine bulls averaged 27, wanting one guinea; the bull Prince, 30 months old, was knocked down at 60 guineas; two of the bull calves, three weeks old (by Robin Hood), were sold at 20 guineas each. The produce of the sale was little short of 900 guineas. Being market day, there was a very numerous assemblage. The arrangements for sale were very complete, and the stock did credit to Mr. Timms as a breeder; and, considering the fall in stock, doubtless proved satisfactory to him.—*Devizes Gazette.*