soluble ingredients from the air, brings down with it this salt in variable quantity, the proportion being larger in dry than it wet weather, and in summer than in winter. The rain of thunder-storms is always the richest in ammonia, and not unfrequently contains nitric acid, which is produced by the action of the lightning on the constituents of air. The quantity of ammonia in air has not been ascertained with precision, but there are grounds for supposing that one-eighth grain of ammonia is present in 21 cubic feet of air, or from one-eighth to one-fourth grain in a pound of rain-water. The ammonia found in rain water has always the characteristic smell of perspiration and animal excrements, from the decay of which it has been sent into the atmosphere. Carbonic acid, ammonia and water, are the substances from which vegetables mould their organised forms: and, hence, they are of great importance to the farmer, but not more so than the physical properties of the air itself, the medium in which all land animal sand vegetables exist. These, therefore, must be studied in their relations to agricultural practice."

A deep sandy subsoil allows the roots of plants to penetrate in search of food and moisture, when they cannot get the necessary supply from the surface. A carrot has been known to go down eight feet after nourishment; hence a sand is best for all tap-rooted plants. A good depth of loose earth will enable the roots to get a supply of moisture by capillary attraction; the superabundant moisture, in rainy seasons, passes down into the loose soil, and comes up again when wanted by the action of the sun's rays and the attractive power of the roots. Tap-rooted plants, like worms, bring up from the depths below fertilising materials for the surface; there they combine with the carbon of the atmosphere on the surface in the shape of leaves, were they decay, and form the vegetable mould, or humus, which gives colour to the surface soil.

The capabilities of a grain of corn are most wonderfull: it may be set in a well-prepared light soil in the early autumn, the root may be parted in a month into two or three roots; these again parted before the winter, and again parted in the early spring, eight roots thus produced from one, was by me made to yield straw six feet high with 190 ears of corn, which, at 70 grains to each ear, would be a produce of more than 13,000 grains from one.

These specimens were, for many years, exhibited by me at the Gallery of Practical Science, Charing Cross, London. I have also exhibited lately, at the Politechnic Institution, Regent-street, a root of wheat which has 90 straws.

Such is the capability of a single grain of corn in a light sandy soil, when the necessary food is supplied.

POTATO DISEASE.

The Earl of Malmesbury, H. M. Principal Secretary of State for the Foreign Department, transmitted to the Council, through Mr. Addington, the M. Consul-General at Warsaw—

Warsaw, "May 13th, 1852.

"Although the kingdom of Poland has suffered comparatively very little from the blight of the potato plant, which has of late years been so general in the more western countries of Europe, everything relating to that still unexplained phenomenon has nevertheless received much attention here from private individuals as well as from the public authorities. With the exception of Ireland, there is, perhaps, not another country in which the culture of the potato forms so important a feature of the rural economy of the nation as it does in Poland, although its introduction into this country is of comparatively recent date; and much public attention has lately been excited here by an article extracted from a foreign provincial newspaper, ascribing the so-called 'potato disease' to the presence of too much *free* ammonia in the lands on which the *plants are cultivated; and pointing out the very* simple means of counteracting this evil by the employment of fixed alkalies. This theory appears so strongly to bear out the view which was taken here of the subject at the very beginning of the epidemic appearance of the evil in question (as reported in my letter consular, No. 28, of the 16th October, 1846), that I am induced to bring the statement to your Lordship's notice, for the information of such persons as may be specially interested in ascertaining the correctness of the observation. I have not seen the original statement; but the article above alluded to mentions that it is copied from the 'Kolnische Zeitung,' to which it had been communicated by a Dr. Voget, of Heinsberg, in the Governmental District of Aix-la-Chapelle. Dr. Voget recommends as the most simple mode of decomposing the free ammonia, wherever by chemical tests it may be proved to exist, and whether arising from artificial manures or from natural causes inherent in the quality of the soil, to use crude gypsum as a top-dressing, or to irrigate the ground with very strongly diluted muriatic or sulphuric acid, in the same manner as liquid manures are applied, or before carrying out the manure to mix it with gypsum, ashes, or acids, &c.

"(Signed) GUST. DU PLAT,
"H. M. Con.-Gen. in Poland."

A WEEKLY COUNCIL was held in the Society's House in Hanover Square, on Wednesday the 19th of May, Colonel Challoner, Trustee, in the Chair. Professor Way, the Consulting Chemist to the Society, delivered before the Members the first of his proposed lectures on the light thrown by the agricultural principles of the celebrated Jethro Tull on facts connected with modern cultivation.