

the Palms and Grasses, which have no real bark, and in which the woody fibres do actually produce the cambium. Dr. Hopp's experiment will scarcely invalidate this opinion, because it may be said, that the cambium had already in that case formed the liber.

The Medulla or Pith.—The medulla or pith is situated in the centre or heart of vegetable bodies; it is a tolerable firm and juicy substance, in parts most endued with life, as roots and young growing stems and branches; it is of a uniform texture, and commonly of a pale green or yellowish colour. Such is its appearance in the young shoots of elder in the spring, but in the same branches fully grown the pith becomes dry, snow-white, highly cellular, extremely light, and capable of being greatly compressed. In many annual stems the pith, which is abundant and very juicy while they are growing, becomes little more than a web lining the hollow of the complete stem, as in some thistles. Many grasses and umbelliferous plants have always hollow stems, lined only with a thin, smooth coating of pith, exquisitely delicate and brilliant in its appearance. There have been various opinions concerning the nature and functions of the pith. Du Hamel did not think that it performed any remarkable office in the vegetable economy, Linnæus on the contrary thought it was the seat of life and source of vegetation, giving growth to the branches and formation to the seed, an opinion which does not appear to be well-founded; for the pith is soon obliterated in the trunks of many trees, which continue to increase for a number of years, by layers of wood, added annually from the bark, even after the heart of the tree has become hollow from decay.

NEW MANURE CALLED GUANO.

This substance is obtained from islands in the South Seas, where it forms a stratum many feet thick, it

being the accumulation for ages of the excrement of innumerable sea-fowl. It is used as manure with great advantage on the coast of Peru, where the soil is otherwise extremely sterile. Its composition is said to be

Earthy insoluble salts, principally phosphate of lime,	29 2
Soluble salts, fixed alkaline sulphate, and chloride,	2 5
Organic matter,	63 3
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	100
The organic matter consists of	
Lithic acid,	16 1
Ammonia,	8 7
Other organic matter,	43 5
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	63 3

We extract the following account from the *New Farmer's Journal* :—

“The Guano is of a brown chocolate colour, and forms a fine powder resembling snuff. Its extraordinary effects in fertilising the soil far exceeds all manures hitherto known, and though used in comparatively small quantities, was most satisfactorily shown. Equal patches of perennial grass, and of Italian rye grass, also of Swedish turnips, all sown at the time, some without manure, some with farm yard manure at the rate of 20 tons to the acre, some with Guano at the rate of 3 cwt. per acre, afforded undeniable proof of the great superiority of the latter as a manure, in the superabundance of the crop produced, amounting to probably a percentage of 25 in its favor. In point of economy this new manure also promises to become invaluable, as it can be imported at 20s to 25s. a cwt. A similar difference is also obvious from the same manure used in a grass field belonging to the same gentleman, on the west side of Walton-road. Many of the members of the Agricultural Association who have seen its effects, have expressed an opinion that it is the finest thing they have ever seen, and that the import of the Guano will become of the utmost value to the agriculture of the country generally.”