

together, from 25 to 30,000 gallons a year : Tennessee as much, perhaps, as she consumes. The castor oil bean flourishes well in Mexico and the West Indies, but the importation of oil is greatly diminished from what it once was ; at the same time the price is much reduced, and the quality greatly improved.—*Boston Medical and Surgical Journal*.

ACTION OF LIGHT ON VEGETABLES.

From a paper by Dr. D. P. Gardner, of New York, on this interesting subject, to which Dr. Draper has given much attention lately, we copy the following conclusions to which he has arrived. The paper referred to was first published in the *American Journal of Science and Arts*, and has also been printed or discussed in the *London Philosophical Magazine*, the new *Edinburgh Philosophical Magazine*, and the *Bibliothèque Universel de Genève*, and was reported favorably upon in the *French Academy of Sciences*.

“In conclusion, it appears that the following facts have been established.

“1st. That chlorophyl (the green matter of leaves) is produced by the more luminous rays, the maximum being in the yellow.

“2d. This formation is due to pure LIGHT, an imponderable distinct from all others.

“3d. That the ray towards which plants bend occupies the indigo space of Fraunhofer.

“4th. This movement is due to pure LIGHT as distinguished from heat and tithonicity.

“5th. That pure LIGHT is capable of producing changes which result in the development of palpable motion.

“6th. The bleaching of chlorophyl is most active in those parts of the spectrum which possess no influence in its production, and are complimentary to the yellow rays.

“7th. This action is also due to pure LIGHT.

“We have, therefore, an analysis of the action of every ray in the luminous spectrum upon vegetation. The several effects produced are not abruptly terminated within the limits of any of the spaces, but overlap to a certain extent, a fact which coincides with our experience of the properties of the rays. Whilst heat and tithonicity are capable of causing the union of mineral particles, light appears to be the only radiant body which rules pre-eminent in the organic world. To the animating beams of the sun we owe whatever products are necessary to our very existence.”—*Ibid*.