WOOD GAS.

The city of Wilmington, North Carolina, is now, for its size, the cheapest lighted city in the United States. The whole apparatus, including mains, gasometer, &c., cost but $18,900. This includes their transportation from Philadelphia, with, also, the pay and passage of workmen. By reference to Ure's Chemical Dictionary, a standard work, it will be found a ton of coal or thereabouts yields about 10,000 cubic feet of gas. This is after eight hours' distillation from the best selected coal. By actual experiments it has been found that a cord of wood will produce 92,000 cubical feet of gas. It will be perceived at once this renders wood gas much cheaper. Besides, it is a well ascertained fact, that wood-oils in the production of light are as 7 to 3 in favor of ligneous oils over coal. One reason that they have been so little used is, that they require to be distilled from wood previous to use; but this difficulty, it is said, has been obviated by a simple and cheap apparatus, invented and patented by Dr. McConnell. This invention places the use of gas within the reach of all rural villages, and will render every one, who chooses to be so, *independent of the gas companies*, for by its means they can manufacture their own gas, at a much cheaper rate than it can now be supplied by any company chartered within the United States. This gas has not the offensive smell of that produced by coal, and can be passed directly from the retort through the washer or condenser to the gasometer without further purification.

This discovery promises to open a new field of commerce; the vast amount of pine wood in Lower Virginia and North Carolina, now considered of no value, will be brought into market for the purpose of manufacturing gas, and the charcoal left after destructive distillation will pay the whole expense for manufacturing. Wood can be purchased in North Carolina, and delivered at Wilmington, or in Pimlico Sound, for one dollar per cord; the transportation, &c., would not bring the cost up beyond four dollars. Wood, at five dollars per cord, yields 92,000 cubic feet of gas; coal, at six dollars per ton, only 10,000 cubic feet. An apparatus for manufacturing wood gas could be put up for one-seventh the cost of that for manufacturing coal gas. It is estimated that the city of New York might be lighted for one dollar a thousand feet, and yield a handsome profit to the manufacturers; whereas the city now pays three dollars per thousand feet. We understand that a company has been projected in this city, by W. D. Porter, Esq., a son of Commodore Porter, for profitable employment of the patent.—Persons desirous of acquiring information upon the subject, may procure it by applying to him at his residence, No. 264 Tenth street, or at the office of Edmund J. Porter, No. 6, City Hall place. *New York Evening Post.*

HOW DO PLANTS MIX?

Some remarks which appeared under the above head, in this paper of February 26th, gave rise to a communication on "Mixing at the Root," in the number for March 19th. A question in reference to the subject having been submitted to Professor Gray, of the Cambridge Botanic Garden, he has kindly furnished the following note:

No principle of vegetable physiology known would justify the conclusion that plants can "mix" or cross-breed from the root or tubers, by being planted together. It would be the same as if a graft of one variety of apple set in a tree affected the *ungrafted* or natural branches.

The fact adduced by your New Jersey correspondent is doubtless capable of explanation on other grounds. In herbaceous plants, particular sorts or varieties produced by long-continued cultivation, frequently show a tendency to revert to their original form: some individuals will show this more than others, and hence the difference in different potatoes of the same field. These differences of color, &c., are not permanent and stable, but are liable to vary from year to year, more or less, from inherent causes; but such variation gives us no reason to infer that one individual is affected at all by another growing near it.

—*Boston Cultivator.* ASA GRAY.

A GREAT BORER.—The shipworm, or teredo, is a bivalve shell-fish, which, as if in revenge for the unceasing war waged by mankind against its near relative, the oyster, seems to have registered a vow to extinguish the vitality of as many human beings as lies within its power. That power, though exercised by an insignificant fish, is a prodigious one; for, ever since mankind turned attention to nautical affairs, and went to sea in ships, the teredo has unceasingly endeavored—unfortunately with too much success—to sink those marine conveyances. Nor have vessels alone been the object of attack; for many a goodly landing pier has it riddled into shreds, not to speak of bolder attempts, such as the endeavor to swamp Holland, by destroying the piles of her embankments. The shipworm is the only mollusk that has ever succeeded in frightening politicians; and more than once it has alarmed them effectively. A century and a quarter ago, indeed, all Europe believed that the United Provinces were doomed to destruction, and that the teredo was sent by the Deity to pull down the growing arrogance of the Hollanders. In our own country, although we undergo no danger of being suddenly submerged, as our Dutch neighbors might be, we have suffered seriously in our dockyards and harbors by the operations of the shipworm, to which the soundest and hardest oak offers no impediment. As a defence against it, the underwater portion of the woodwork in dockyards has been studded with broad-headed iron nails.—*Westminster and Foreign Quarterly Review.*

DEPTH OF DRAINS.—A writer in the *Agricultural Gazette*, who represents that he has had great experience in drainage, concludes that the proper depth of drains must depend on the texture of the soil—that the depth should be the point where saturation is arrested. Experienced persons, he says, can readily tell where this point is; and those inexperienced may easily ascertain it by having three short drains made early in autumn—one 2½, one of 3, and one of 4 feet deep. The drains that first discharge the water after a rain will be at the right depth for that soil.