

must be similar we may at present confine ourselves to the latter substance. Carbonic acid is a gas, a little more than one half heavier than common air; it speedily suffocates animals, when obliged to inhale it, and it extinguishes flame. Like the other substances known to Chemists as *Acids*, it reddens vegetable blue colours, has a sour taste, and is capable of combining with earths such as lime, and with *alkalies* such as potash and soda.

Two of the modes in which carbonic acid is produced in nature, were mentioned under the head carbon; but it may be formed in many other ways. It exists in large quantity in limestone and other rocks, and is given out by volcanoes, and brought to the surface by springs; it is also sometimes disengaged from fissures &c. in mines, and accumulates in deep cellars, wells, &c., forming the "choke damp" which occasionally proves fatal to persons incautiously entering such places. When wool, straw or similar substances, are exposed to air and moisture, a kind of slow combustion, which we call decay, commences; part of their carbon and hydrogen combine with the oxygen of the air, and form carbonic acid, and water, until at length nothing remains but a coaly mass capable of little further change.

In consequence of these processes, it is evident that carbonic acid must be constantly produced and added to the atmosphere; and, if this proceeded unchecked, it would at length accumulate in so great quantity, that animal life would be destroyed. But it is found that the quantity of carbonic acid in the air, does not exceed the one thousandth part of its weight, and is not increasing. It is also known that water is capable of dissolving more than its own bulk of carbonic acid, and consequently that rain and surface water are always impregnated with it; and it is found, by experiment, that plants, supplied with the air and water containing this gas, apply its carbon to the production of wood and other vegetable products. It thus appears that the carbonic acid produced by burning, breathing, decay and other processes, and which would otherwise contaminate the atmosphere, is by the wise arrangement of a beneficent Providence, made a source of supplying the most valuable substances which the earth affords to man.

4. *Carbureted Hydrogen*,—as its name imports, is a combination of carbon and hydrogen (C H 2). It is a colourless gas, less than one half as heavy as common air; it is incapable of supporting respiration or combustion, but when flame is applied to it, burns with a yellowish light, or if mixed with air or oxygen, violently explodes. It is abundantly disengaged from beds of bituminous coal, and is the cause of the frequent destructive explosions in coal mines. It is given off from swamps and stagnant puddles, and generally from all places where vegetable matter is putrefying in fresh water. While organic matters become putrid in sea water, they decompose the sulphates of soda and magnesia (Glauber and Epsom salts), always present in such water, and *Sulphureted Hydrogen* is produced; this gas is the cause of the offensive smell of the mud of creeks and estuaries.

Both these substances may assist in nourishing the rank vegetation of swamps, but in the small quantity in which they exist in the air, or in the soil of cultivated fields, their influence on crops can be but trifling.

(To be continued.)

CURE FOR WARTS IN HORSES AND CATTLE.—A valued friend, of great experience in horses and cattle, and who has imported and bred many of the best in the United States, says that a strong wash made of pearlsh and water, applied thrice a day, will remove tumors and warts.—*Canada British American Cultivator.*

From the Farmer's Gazette.

COMPARATIVE ADVANTAGES BETWEEN CONNECTICUT AND WESTERN FARMING.

Mr. Editor.—We frequently hear men of intelligence and judgment express a wish for emigrating to the far West to better their condition, by purchasing a wide domain of cheap land to enable them to live at ease, and at their demise to leave a large, and they propose, a princely inheritance to their children, imagining from various exaggerated reports of interested individuals, and of travelled inexperience or ignorance, that such lands are like the promised inheritance of old, "flowing with milk and honey," having been a seven years' resident in the West, and seen a good portion of the country and people, you will pardon me the vanity of supposing that I am able to give a word of advice to those who are dissatisfied with the poor, thin and arid soils of these our Eastern states.

The first cause of dissatisfaction is the unproductive state of the worn out old lands, worn out by injudicious and improvident culture; then we hear of the great fertility of the western paradise where lands can be had for an old song, producing without labor or manure, incredible crops of Corn, Grain and Grass, on which to feed innumerable herds of Cattle, Sheep and Swine; also wild game, such as Deer, Turkeys, Grouse, Pheasants, Quails, &c. &c. without the trouble of catching; now this is in part true, but yet remains doubtful in my mind whether it would not be much wiser to try to improve, by all proper means, the limited pastures we possess, than fly to the lands of fertile promise in the wilderness. I will premise that our domicile is at or near the village of our birth, education and manhood, surrounded by our kindred and friends, with all the early associations and endearments of youth and christian communion; our next advantage is the proximity to markets; and last though not the least, of seminaries for the diffusion of intellectual, moral and religious instruction of rising generation. After coolly weighing these several advantages, and you still are determined to sell your patrimony, then go to the West, and be prepared to experience a change, not for the better but infinitely to the contrary; if you select wild lands in an unpeopled wilderness, far from the busy haunts of men, as business cheap, experience teaches that for years you must buffet with the roughs of the country, scanty and poor fare, loss of health, relatives and friends. And even when you have realized a residence to live in you may no longer require one, a premature grave being your only inheritance, and may even expect to see those very children for whom you have toiled with so much anxious care, swept off before you by the malaria of the country; but should you succeed in outliving those evils, and your home become healthy, with an increase of society and social enjoyment, then comes the calculation of advantages of this great change. You have cleared, at much labor, a few acres of your many hundreds, which prove productive even surpassing your most sanguine expectations, and you have a surplus of produce for sale, the next thing is where is your market? I answer, it is with the nearest store-keeper, who will pay you a price in cash, but in such articles as you do not want and even of doubtful character. To show you that this is not an imaginary go with me to Columbus, a city the seat of Government in Ohio, and there offer your surplus corn for sale, the price 12 to 15 cts. per bushel, store pay 1 that is, whiskey, (that bane of society) at 12½ cts. per gallon, or cotton goods of inferior quality, double their value,—no Tea, Coffee, Sugar, or articles of necessity,—then the articles of produce, such as Pork, at \$1 to \$1½ per hundred pounds; Wheat 37½ to 40 cts. per bushel, Clover \$3 per bushel, Fowls 6½ cts., Ducks the same, Turkeys, 15 to 20 cts., butter 6½ cts. per lb., and other produce in proportion. Now these are city prices, when the roads to market are good, but in a wild part of the country the roads are equally wild, and stores proportionably few, and bad markets.

Thus you will see that the best lands, yielding 70 to 80 bushels of Corn to the acre, are not so good, and will not yield equal produce with our poor worn out soils of Connecticut, producing 25 to 30 bushels. And were these poor lands improved by laying out upon them the cost of reclaiming the western wilds, I have no doubt they might be made to yield from 50 to 80 bushels to the acre with quadruple prices and ready market. Again should you require assistance to clear the lands, put in and harvest your crop, you will with great difficulty procure help at a higher rate of wages than paid in this State, as almost every man who is able and willing to work prefers doing so on his own account where he