and he has demonstrated, by a most ingenious convincing train of argument, that the carbon of plants is derived from the carbonic acid of the atmosphere. In the economy of nature, the supply of carbon to plants is beautifully associated with the restoration to the atmosphere of the oxygen removed from it by the respiration of animals and other processes, and thus preserves the air constantly in the same state of fitness for the life of animals.—*Quarterly Review.*

CANADA TRADE—IMPORTANT FACTS.—The Montreal Courier has a letter showing that the rates of toll by the Rideau Canal, are this year raised from about one cent, to more than four cents a mile, on the average! The Trade between Montreal and the Upper Lakes will be greatly injured by this heavy addition to the expense of transit.

Last year, Port Stanley, on Lake Erie, and two other shipping places a few miles from it, exported 86,000 bushels of wheat, 2000 bbls. of flour, and 1400 barrels of pork, and imported 51000 barrels of salt, and 3000 tons of merchandise. Twenty years ago there were scarcely 500 bushels exported at these places.

Last year there were transported through the Welland Canal, from the United States to United States ports, 946,142 bushels of wheat, and 11,2200 barrels of flour, and from the United States to Canadian ports, 80,954 bbls. of flour, 22,304 barrels of pork, and 367,261 bushels of wheat—also from Canadian ports on Lake Ontario, 120,893 bbls. of flour, 514 barrels of pork, and 260,934 bushels of wheat. These facts respecting the Welland Canal, are new to most people, and they will be interesting to most readers.—*Rochester Eve. Post.*

[ENGLISH AGRICULTURE; *a glance at its progress and prospects—by John Hannam, North Daighton, Wetherby, Yorkshire, England.*]

We have before alluded to this treatise contained in the "Transactions of the New York State Agricultural Society for the year 1841," and shall commence its publication in our columns next week. We have read it several times, and always with increased interest, and commend it to the reader as being a paper of great power and research. The writer handles every subject which he touches, with the hand of a master, and evinces a degree of knowledge seldom to be met with, not only of the history of British husbandry, in its rise and progress, but of the science of agriculture itself. He unfolds, in his opening paragraphs, the importance of agriculture to the support of man in his social and civilized relation, as well in regard to his individual as to his natural condition. And follows up his reasoning by a historical account of the husbandry of Britain, from the period of the invasion by the Romans, to the date of his essay, in December last. Though this view, as given in a paper of the kind, is necessarily cursory and hurried, it is, nevertheless sufficiently ample to impress the reader with a just conception of its condition throughout the various epochs which he so strikingly illustrates; and we think it will be found to be impossible for any reader to arise from its perusal, without being deeply impressed with the superior powers of condensation and analysis possessed by the writer.

He shows with clearness, that at the period of the Roman invasion, the use of the same animal vegetable and mineral manures as are now, were then employed in the melioration of the soil, and that the value of composts, carbonaceous matter, top-dressings, and the turning in of green crops, were properly esteemed; that the advantages of good ploughing and tilage, and of *draining*, was understood; that the care of live stock received attention, and that all these interesting matters were endeavoured to be enforced by the precepts and examples of the invaders. But that, notwithstanding these efforts to promote the interests of the invaded, English husbandry remained almost stationary for a thousand years after the peirod of the invasion, and that it was not until after the commencement of the sixteenth century, that improvement began sensibly to be developed. As a singular instance of the intracticability of the ancient Britons, it may be mentioned, that although the Romans at the period of their invasion cultivated the artificial grasses, it was not until the seventeenth century that their culture was adopted in England. The consequence of this contumacy was, that, as there was no fodder to be had but such as grew on the natural meadows, the cattle literally starved upon the hungry common during winter, and the enclosed land, owing to no manure being made, grew less and less productive, so that the cattle were with great difficulty kept alive, and were in numerous instances *killed* to keep them from dying of starvation. This is a frightful picture of British husbandry in the seventeenth century, but frightful as it is it should not be without its use, in teaching those who rely upon the marsh and cornfield in our own country, to sustain their stock through winter, the necessity of resorting to the cultivation of artificial grasses, as the only means of effecting that object in comfort to their beasts and credit to themselves.

Up to the seventeenth century, it appears from Mr. Hannam's statement, that the variety of crops in England were very limited, chiefly consisting of oats, barley, rye and peas—wheat being very little grown, and that the latter, as late as the period named was a *luxury* confined almost exclusively to the tables of the nobility.

From the cause before assigned—the scarcity of provender—cattle were consequently very scarce, and the evil of neglecting the raising of cattle became at last so manifest, that in 1533, it was provided by statute, that no man should keep more than 2400 head of sheep; and in 1555, such had become the rage for raising sheep, and consequently the neglect of cattle, that another act was passed, ordaining that whoever kept 60 sheep should keep a cow, and whenever the number amounted to 120, that a calf should be bred.

The condition of the British farmer, up to, and throughout the sixteenth century, was that of an humble plodding labourer, while that of his wife was still worse, as among her other vocations was that of helping her husband to fill the dung cart.

This condition of degradation continued until about the middle of the seventeenth century when a perceptible change began to *creep* over the spirit of British husbandry.

Mr. Hannam next traces the probable causes which operated to repress the spirit of improvement, and then points out the era at which improvement commenced; he dates it from the middle of the seventeenth century—the Elizabethan age. At that period, he says, the mind of man appears to have received a general stimulus, the effect of which is manifest in every branch of human knowledge. But although agriculture soon after this appears to have shown marks of improvement, it was not until a much later period, in the eighteenth century, when modern science, having thrown off the shackles of ancient prejudices, lent to agriculture its vivifying influence.

After noticing the appearance of the first British writers upon husbandry—*Fitzherbert, Tusser, and Platt*, in 1652, he shows that the triumph of the modern spirit of melioration did not become fully developed till the bold views of *Tull*, in 1740, gave the *finish* to the new system of cropping, which arose from the growth of *clover* and *turnips*—this proved a lasting impulse to the onward march of the principle that had produced the change. In the practical labors of *Bakewell* and *Cully*, assisted by the enlightened endeavors of such men as Lord *Kames, to improve agriculture by subjecting it to the test of rational principles*, he maintains that we see the continued improvement of the new-born spirit of progress; and in the present position of English agriculture, the results of that operation. The nature of this position is to be found in its present elevated standing and high estimation as a science, which have secured to it, within the last fifteen years, the labors of such men as *Davy, Sinclair, Daubeny, Henslow, Johnston, Loudon, Low, Stephens, Johnson, and Madden*, the aid of professors of the British Universities, and the united efforts of more than 300 societies, composed of the first men in the kingdom.

The chief end of melioration is to be found in the change from the old in-field and out-field system, the alternate crop and fallow, or two crops and a fallow, to the enlightened drill husbandry and rotation of crops.

The eminent utility and marked advantage of *root crops, drainage* and *sub-soil* ploughing, are dwelt upon with peculiar propriety; while the meliorating effects of the *turnip* and *clover* culture upon light soils, are pointed out with great force. In illustration of the justness of his views, he shows that lands which 50 years ago only brought 5 shillings an acre, by means of the present system of culture, and the feeding of sheep, now produce 25 shillings per acre, being an advance of 400 per cent, and he affirms, that the produce has increased in a still greater ratio than the rent. Besides this, other instances of similar improvement in value are given, going to prove beyond all cavil or doubt, that the interest of the husbandman, whether landlord or tenant, is uniformly promoted by outlays in judicious improvements of the soil.

The remarks of Mr. Hannam on the various manures used, the modes and economy practised in their accumulation and preservation; those on the improvement in agricultural implements and stock, and the superior attention now paid to the latter, are all highly judicious and will command consideration.

As among the most prominent means used in effecting those permanent improvements in British husbandry, of which Mr. H. speaks, are *draining, irrigation, warping*, and *sub-soil ploughing*. He shows that by the free resort to these means, and the proper application of mineral, animal, vegetable, and other manures, millions of acres of land, which, fifty years ago were stagnant marshes, wholly unproductive, are now luxuriant pastures; that *Chatmoss*, which, only 22 years ago, was a frightful yawning morass, has, by such means, been converted into golden corn-fields (wheat-fields) studded and beautified by delightful villas.

Indeed, the whole scope and length and breadth of the admirable paper of Mr. Hannam, teems with facts and deductions, as instructive as they are interesting, and will not, we sincerely hope, fail to infuse into the mind of the American reader, a wholesome spirit of improvement; for, while they will show him that within less than a quarter of a century, the amount and value of agricultural products in England have been