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AGRICULTURAL.

AN ADDRESS.

Delivered before the Agricultural Society of North-Carolina in this city, on the 16th of December last, by Dr. R. H. HAYNE, of Washington County.

Mr. President and Gentlemen of the Society.

I willingly comply with your request in delivering to you an address on Agriculture, and only regret my inability to do that justice to the subject, which its importance demands.

If there ever was a time calculated for agricultural pursuits, or improvements in the art, it is the present. Peace pervades our borders, "the battle's clangor nor the cannon's roar" disturbs not our slumbers; our "swords are beat to ploughshares, and our spears to pruning hooks."

Man cannot live without labour; it is the source of all wealth. Agriculture is the mother and support of all the arts, and it is by the due application of labour to agriculture, that empires exist and kingdoms are supported.

By its influence upon the moral faculty, it has tamed our savage natures, and made man a civilized being. It is not only the mother of all the arts, but it is the grand pillar upon which all the sciences rest.

The Assyrians and the Egyptians, who gave birth to the rudiments of arts and sciences, owed their early civilization to the genial influence of their climate and that fertile soil which borders the Euphrates, the Tigris, and the Nile.

The Grecian and Roman writers thought it a subject worthy of their pens. Zenophon lent it the aid of his powerful genius;—Hesiod sang in imperishable verse, the beauty and the glory of the art.

But when that swarm of barbarians poured forth from the northern hive, as it has been aptly called, and became conquerors of conquerors in the mighty struggle which overturned the Roman empire, the arts and the knowledge of centuries were buried beneath its ruins.

and polished the licentious manners of the age, ejected little or nothing for Agriculture. That sombre shade which the religion of the times cast around the moral faculty, induced its votaries to believe, that the summum bonum of all earthly happiness was centered in their altars and their arms, and that to cultivate the arts, or to expand the human intellect, by lights drawn from science, was beneath the dignity of the mighty chieftain whose fame floated upon the blood he had spilt to acquire it.

Although in the modern march of civilization, the arts and the sciences generally have arrived at a height creditable to the human mind, yet it is a lamentable fact, that the art of agriculture lingers in the rear of all the rest. Look over Europe, where much has been done, and you will find much more left undone.

"The deliverer of Europe," the head and front of "the Holy Alliance," from his throne, crimsoned with the blood of a murdered father, looks with an eye of indifference over his vast empire, upon the misery, the brutal and worse than savage barbarity bestowed upon the laboring part of the subjects, the very bone and sinew of agriculture, by the nobility.

In England, although "the political distinction of Baron and vassal" is merged in the softer appellation of landlord and tenant, yet her laws of descent, giving to a few the whole real estate of the kingdom, operates as a bar to agricultural improvement, and a nursery for the growth of paupers.

But we need not travel from home for testimony to prove that agriculture is neglected and abused; the great majority of the farmers of North-Carolina bow to its truth.

In pointing out some of the causes which have retarded its progress here, and in all the Southern States, there is one which, like the dark spots upon the sun's disk, appears more dark from the light which surrounds it, and which will for a long time keep us behind our brethren of the north in agricultural improvement.

The extent of our farms is another cause of the loose and ruinous method of our husbandmen.

The low estimation in which agriculture has heretofore been held in this country, has militated much against its encouragement and improvement; it has been confined to those chiefly who were ignorant of its first principles, although some individuals of scientific acquirements are engaged in what they call farming, yet in nine cases in ten it is with them a secondary object.

The active powers of man with wise intent, the hand of nature of peculiar minds, imparts a different bias, and to each decrees its province in the common toil. To some she taught the laws of the sphere, the changeable moon, the circuit of the stars, the golden zones of heaven; to some she gave to weigh the moment of eternal things, of time of space, and fate's unbroken chain.

would think it a culpable neglect of his duty, a derogation of his fatherly discernment, and a blighting frost to the budding genius of his son, were he to make any thing less of him than a lawyer or a doctor; but of the many lawyers and doctors that are called, how few are chosen; little does the blind and fond parent think that in placing his son in a sphere nature never intended him to occupy, he is entailing upon him misery and disgrace; how many are there this day, of thirty, forty and fifty years of age, who repent in bitter agony this misapplication of talents; as farmers, as mechanics, they might have been respected and honored in their stations, but having spent their youth in the pursuit of an object beyond their capacity to reach, they are at this day unutilized for the one or the other, displeased with themselves, and envying those who outstrip them in their professions; they will go down to the grave "unwept, unhonored and unsung."

"For not alike to every mortal eye is this great scene unveiled. For since the dawn of social life, to different labors urge the active powers of man with wise intent. The hand of nature of peculiar minds, imparts a different bias, and to each decrees its province in the common toil."

To place agriculture upon that high and honorable ground, which it ought to sustain, and to make the knowledge of it worthy the ambition and the pride of the youths of our state, there ought to be established a Professorship of Agriculture in our University. If I am not misinformed, the pecuniary situation of that institution is amply sufficient for the purpose; and if it is not, I certainly believe that the present Legislature, emphatically styled the collected wisdom of the state, representing with others, the agricultural interest of the community, would give their undivided support to a measure, as I humbly conceive, wise in its project, and beneficial in its ends.

Were the funds of this Society sufficient, I would recommend the appointment of a skilful and scientific agriculturist, assisted by Professor Olmsted, of our University, as a geologist, to make an agricultural and geological tour of the state; it would tend much to the promotion of our art, and have a happy influence in harmonising the jarring interest which now divide its western and eastern sections. As connected with the advancement of agriculture, good roads and navigable streams are of primary importance; but to carry this object into effect depends upon those who hold the purse-strings of the state. Upon the internal improvement of the state much money has been expended, and little benefit derived; public excitement is aroused, and I am fearful public opinion is against it.

In agriculture, as in all other arts, he who wishes to be skilled in its mysteries, must first become acquainted with its rudiments. In the bold and rapid marches which human knowledge has made in the last century, it has travelled over the natural history of the earth, and left but few impressions of its footsteps. The science of geology is yet in its infancy; several have mounted the threshold, but none have entered the temple; it will require long, continued

severe, abstract and laborious research to investigate a scientific development a true doctrine of the earth. The astronomical system of the universe was not the work of a day; ages have rolled away from the glimmering of Copernicus to the illuminations of Newton.

Agreeably to the present opinion of Geologists, the planet which we inhabit was originally masses of rocks, to which they have given the names of silicious, aluminous, calcareous and magnesian; that in the revolutions of time, those rocks have been broken down by attrition and decay, and, mixing with dead animal and vegetable matter, have constituted the various soils which are spread upon the surface of our earth, as sandy, clayey, calcareous and magnesian. Silicious rock is the basis of sand, flint and gravel; aluminous of clay, calcareous of lime, stone and chalk, river and marine shells, alabaster marble and bones; and the fourth is that article known in the shops of the apothecary by the name of calcined magnesia. In their primitive or pure state, these earths afford little or no nourishment to plants; and they only become fertile when decomposed and mixed in due proportion one with another, and with dead animal and vegetable matter. It is highly necessary that the Agriculturist should be sufficiently acquainted with chemistry, to be able to analyze the different soils he intends to cultivate, and with botany, to know what plants delight in a sandy, clayey, or calcareous soil. Without due information upon these facts, he often attributes the failure of his crops to a cause diametrically opposite to the true one. The study of the natural history of plants, as connected with practical agriculture, is highly important to the scientific husbandman. Vegetables, in their organization, resemble, in a great many respects, the animal economy, and serve as a connecting link in the great chain of creation. Linnæus "compares" the roots of plants to the absorbing lacteal vessels in animals; they have excretory and secretory vessels, arteries, veins, glands & lymphatics; their leaves are said to be their pulmonary organs of respiration. Bacon, Hall, Duhamel, Van Helmont, Boyle, Hunter, and a host of others, have formed various and conflicting opinions upon what constitutes the food of plants; but it requires not the aid of speculative theorists to inform us that light, heat, air, earth and water are absolutely necessary to the growth of vegetables in a healthy state, and as an auxiliary of the utmost importance to those elements in their influence upon the vegetable creations, is manure. Manures are of various kinds, and no farmer can expect to pursue his art to an advantage, unless he applies them to the soil. To enter into detail of the different kinds of manure, would be tedious, and at this time injudicious; they embrace the animal, vegetable, and mineral kingdoms. Writers upon this subject are voluminous, and within the reach of us all. I would refer the philosophic agriculturist to Davy's Agricultural Chemistry, a work of deep scientific research, and of much theoretical and practical information. The modern discoveries in chemistry have shown its intimate connection with Agriculture; it points out "the changes in the arrangement of matter connected with the growth and nourishment of plants, the comparative value of their produce as food, the constitution of soils, the manner in which lands are enriched by manure, or rendered fertile by the different processes of cultivation;" and by it the barrenness or fertility of all soils is easily ascertained.

It becomes necessary for farmers, in their endeavors to improve the husbandry of the State, to relinquish the old method of shallow ploughing up and down hills, and taking from the land, for a succession of years, a crop of the same kind. To this injudicious method it is owing, that so many barren "old fields" lay waste. Few farms in the hilly part of our State are intrinsically worth, by fifty per cent. as much as they were twenty years ago. By shallow ploughing, the soil of hills has floated down our rivers, fertilizing their banks, choking their channels, and stopping their mouths; deep and horizontal ploughing, a judicious rotation of crops, and a liberal application of manure, will yet restore them to their former fertility. Our farming utensils are, in the general, ill calculated to answer the purposes for which they are intended; like the mechanic, the farmer cannot do good work without good tools.

There is no better evidence in any country of the state of its agriculture, than the appearance of domestic animals. To judge of North-Carolina husbandry by this criterion, the result would not be much in its favor. Maryland is retrieving fast her former spiciness, by her Agricultural Societies, her

Fairs and Cattle Shows, and the great attention she is now paying to the improvement of neat cattle, horses and mules. These societies are creating a new era in the agricultural history of this country.—Ours is the only one whose beneficial influence has not extended beyond the walls of the room in which we meet. Why so much apathy in a cause so important to ourselves and our country? We may meet her, once a year, salute, shake hands, and depart; but unless we do something more efficient than we have done, little good will agriculture derive from our labors. Why cannot we have a Fair and Cattle Show in the city of Raleigh? (I name this place as being near the centre of the State.) Once commenced, it will grow of itself; and the advantages to be derived from it to agriculture, will be incalculable.—If our funds are not sufficient to meet the premiums we may wish to award, petition the Legislature now in session for assistance, and I have no doubt that a body so wise and patriotic will not hesitate to grant it. Let us, however, recollect the fable of Hercules and the waggoner.

The geological knowledge that I possess of this state, is confined to a small portion. This city is the western boundary of my travels. I should feel great satisfaction in being able to communicate to you the different soils that variegates its surface.

From this to the Atlantic, the predominant constituent of the soil is silica, or sand. The margins of our rivers, which is the most productive lands I have seen in the State, afford, upon analyzing, sand, lime, clay, and that dark powder which is the effect of the decomposition of dead vegetable and animal matter, called by Davy an extractive matter, and by the French chemists, Terreau.

Probably there is no state in the Union which would afford a greater diversity of soil than ours, or which is better adapted to the purposes of agriculture. Almost every plant necessary to our immediate want or comfort, that will grow this side of the tropics, will flourish here. It was thought for a long time that the cotton plant required a warmer climate, and more congenial soil; experience, however, has proven the fallacy of this opinion. The cotton of North-Carolina sustains as fair a character in the European markets as any upland cotton in the Union.

This plant, known in Botany by the name of Gossypium Herbaceum, is a native of the East Indies, and by that great naturalist, Linnæus, is arranged in the sixteenth class of his sexual system, Monodelpha, (or one brotherhood,) which not only embraces vegetables of the smallest but of the most stupendous size.—The dimensions of the Bombax Pentandrum, a tree of Africa, is incredible to those who have not made Natural History their study. According to the account of William Bosman, who saw it in its native soil, it would afford shelter to an army of twenty thousand men, without incommencing each other under its branches.

"Nature's great parent whose unceasing hand rolls round the seasons of the changeable year, How mighty, how majestic are thy works!"

I have little doubt but that the sugar cane might be brought to assimilate to the climate of this State. It is a wise provision of Providence, and calculated to draw from us the warmest feelings of gratitude to the great Giver of all gifts, that vegetables necessary for our subsistence are made subservient to our industry and perseverance. Wheat, which has been aptly styled the king of grain, and which constitutes such a large proportion of the bread-stuff of the civilized world, flourishes beneath the soft and vivifying beams of an Italian sun, and lives in the icy fetters of a Canada winter.—It has followed civilized man, in his migrations from the fertile banks of Euphrates,

"To where dread winter spreads its latest glooms, And reigns tremendous o'er the conquered year."

Naturalists inform us that so influential is the power of climate and cultivation over the habit of vegetables, "that when transplanted into cold climates, many of the perennial plants become annual, and the species are perpetuated by seed. Thus in its native warm climate, the Ricinus Communis, or Castor Oil plant, has a shrubby stem, and is a perennial, but in cold climates both the root and the stem perish, and the vegetable is continued by its seed." Evergreens when carried from a cold to a warm climate, become perennials, and vice versa. The Quince tree is a perennial in cold climates, but becomes an evergreen when transplanted to Italy and the South of France; and Professor Barton has informed us, that "that truly beautiful vegetable, the Franklinia Altamaha, since its first introduction into Pennsylvania, has changed its time