ESSAYS
ON THE
PROGRESS OF NATIONS,
IN CIVILIZATION, PRODUCTIVE INDUSTRY, WEALTH AND POPULATION.
ILLUSTRATED BY
STATISTICS OF MINING, AGRICULTURE, MANUFACTURES, COMMERCE, COIN, BANKING, INTERNAL IMPROVEMENTS, EMIGRATION AND POPULATION.

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TO THE REV. GEORGE DUFFIELD, D.D.

SIR,—

This kind interest taken by you in the prosecution of my inquiries, and in the first publication of a portion of these Essays—the profound attention you have given to many of the subjects treated in them, and the deep interest you have taken in the diffusion of useful knowledge, have induced me to inscribe this volume of Essays to you, as a token of the high respect which is entertained for your character and services, as a great moral and religious teacher, by the

AUTHOR.
CHAPTER III.

ON CIVILIZATION—DEFINITION AND SUBSEQUENT STEPS IN THE
PROGRESS OF CIVILIZATION—BUILDING, MINING, MECHANICS,
AGRICULTURE AND COMMERCE—DEPENDENCE OF AGRICUL-
TURE—INVENTIONS AND IMPROVEMENTS.

Sec. 2. Civilization is progressive.

It is not a new doctrine, that the constitution, including not
only the physical, but as much of the mental faculties and capaci-
ties of man, as depend on the formation of the brain and other
physical organs, may be in a state of development and progress-
ively improvement from generation to generation, and from age to
age. It is partly from this source, and partly from the fact that
knowledge is rapidly increasing in the civilized world, that some
politicians of our country have borrowed the idea of progressive
democracy. That civilization in the aggregate is progressive in
this and many other countries, is beyond a doubt; but in as
much as it embraces an immense number and variety of faculties,
powers, principles, and elements variously combined, it may im-
prove in some respects, and be at the same time declining in
others. That the principles of the political parties of our country
are undergoing great changes from time to time, is beyond a doubt;
but whether they are improving, or tending towards corruption and
tyranny, admits of different opinions; the developments of the
future can alone determine this question to the satisfaction of all.
My object is to analyze the elements and principles of civilization,
together with the elements and principles of our social system,
bills, customs, institutions, government, and national policy,
both foreign and domestic; and to ascertain, as far as practicable,
what parts of our system, institutions, customs and policy tend to
advance, and what tend to retard us in the progress of civilization.

Sec. 2. Civilization defined.

Civilization consists in the development and utilization of the
intellectual, physical, and moral faculties, constitution and con-
dition of man; and in the improvement of the social system and
government of the society in which he lives. The highest degree
of civilization for which man was designed by his Creator, con-
stitutes in such a development and improvement of his faculties,
condition and conduct, such an organization and improvement
of the social system, and system of government under which he
lives, as to secure his rights, and promote his health, activity and
general welfare and happiness, to the greatest extent in the
aggregate, of which his nature is susceptible. The insti-
tutions of religion are included under the term social system; and
the development of the resources of the country, together with
the accumulation of capital and of the comforts of life, are in-
cluded under the term physical condition. This definition is a
condensation of the statement and definition of civilization given
by M. Guizot, the learned French scholar and statesman, in his
lectures on the general history of the civilization of Europe;
except that less importance is attached by him to the physical
condition of man.

Sec. 3. Industry, property and education, lie at the foundation
of civilization.

Wandering tribes of shepherds are always either savages or
barbarians, ignorant and degraded; with the exception of the
chiefs, they are very poor and destitute; and the condition of
wandering hunter is still worse. The latter are generally poorer,
more destitute, and enjoy less of the comforts of life, than the
former. Degradation of morals usually goes hand in hand with
destitution, misery and ignorance. Though it is not universal,
yet in most cases, long-continued physical suffering, arising from
destitution, hardens the feelings and produces moral degradation.
There is no reason to doubt, that physical comfort tends to pro-
mote good morals; though luxury usually produces more or less
social vice. No people can become civilized without fixed habi-
tations and regular industry, to provide themselves with the com-
forts of life. Fixed habitations constitute property; and nearly
all the property in the world, as well as the necessaries and com-
forts of life, are produced by the labor and attention of men.
Though the greatest amount of wealth is not necessary to a high
degree of civilization, yet civilization and wealth generally ad-
vance together. Industry and property therefore lie at the very
foundation of civilization; without which it cannot exist; and in
progresses in proportion to the advances a people make in produc-
tive industry, in cultivation of mind, and in the application of the
natural sciences to the production of whatever is necessary to
supply the wants of man.

The Spartans, Romans, and all the warlike nations of antiqui-
ty, despised labor, and looked upon it as degrading, and fit
only for slaves. Christianity has in a measure excuted industry,
and made it respectable. As the Christian religion is a spiritual
matter, it cannot be understood and realized by a people who have not made considerable advancement in the cultivation of their minds. It cannot be propagated among savages, and can exist in its purity only among a highly civilized people. This is verified by the history of the various attempts to Christianize the North American Indians, as well as by the whole history of Europe during the dark ages. It is impossible to elevate man in the scale of existence, and raise him in the grade of civilization, in any mode, or by any means, except by improving at the same time, both his mental and physical condition. To improve his morals, and give him a knowledge of the spiritual religion of Christianity, without first raising both his mental and physical condition above that of a savage or barbarian, is impracticable. Industry and business not only afford the principal means of exercising the mind but they supply the sole means of supporting schools, scholars and students devoted to the acquisition of learning and science, and of supporting a Christian ministry. Regular industry may therefore be regarded, as one of the chief corner-stones of both civilization and Christianity; and industry and education lie at the foundation of all improvement and progress in the world. Industry cannot be rendered very effective without education, and the application of the natural sciences. Whatever course of policy tends to promote the cause of education and science, to diffuse useful knowledge, and increase productive industry, must therefore promote improvement, and the great cause of civilization. Hence monasteries, nunneries, and all the institutions of the mendicant orders, are contrary to the spirit of civilization and Christianity, and tend to impede their progress.

Sec. 4. Successive steps in the progress of civilization.
The primary wants of man consist of food, drink, clothing, fuel, lodging, and a house, but, or tent to shelter him from the ele-
ments. The two first, and the last, are absolutely necessary, with-
out which he cannot long exist in any climate; clothing and food are equally necessary in cold climates, though not so much so in warm countries, and in the torrid zones. The first end to be attained by man in his progress towards civilization, consists in such a development and exercise of his intellectual and physical faculties, as will enable him to provide himself with whatever is necessary to sustain life, and promote health, strength, activity and longevity; to provide himself with food, clothing of some kind, lodging, fuel, and a house, but, or tent to shelter and protect him from rains, sleet, snows, boisterous storms, cold, heat and dampness, and the changes of the weather; frequent exposure to any of which affect his health, and shorten his life.
Sec. 5. On the Metals—they provide both Agriculture, and a Division of Employments.

A division of employments cannot take place, until man has made some progress in making tools and instruments to work with, and in the mechanic arts; for up to this period, he clothed himself in furs and skins, subsisted upon the products of his flocks, and the spontaneous productions of the earth, fish, and game. It is impossible for him to cultivate grain or vegetables in any extent, until he has learned to make iron or copper, and to work it into something like ploughs, spades, scythes, hoes, and pitch-axes, to dig up, and cultivate the earth, and fit it for the reception of seed, and the production of crops. After he has learned to make iron, or copper, and work it into tools and instruments of industry; some turn their attention to mining and making iron; others forge it, and make it into diverse instruments and edge tools; others use the tools to work in wood, and make utensils and instruments of industry; some engage in house-building, of stone, clay or brick, with a very little wood for doors; some build entirely of wood; and others make wheels and horns, with which the female part of the community spins and weaves cloth. It is my intention to distinguish agriculture from growing, and to confine the term agriculture to its strict sense and meaning, of cultivation of the ground in fields, raising grain, vegetables, &c. As agriculture cannot by any possible means be carried on, except to a very trifling extent, without various tools and instruments, made partly of iron and copper, and partly of wood, the work part of which cannot be made without edge tools made of iron, or hardened copper, it follows as a necessary consequence, that not only the art of making iron or copper, but the mechanism required to make the tools and implements of agriculture, must precede the practice itself of agriculture. Some portion of the mechanic arts, therefore, necessarily precede agriculture, which is entirely dependent upon them, and cannot exist without them.

Subsequent to the division of employments, which follows, and cannot precede the mechanic arts, the art of cultivating the ground, or agriculture in its strict sense, is enacted by man, to provide himself and his family with a more regular and certain supply of vegetable food than he could procure from the spontaneous productions of the earth. The primitives we read of in Scripture were at a very early period, when the cultivation of the earth in Palestine was very rare and trifling, though much more common and extensive in Egypt, Assyria, and some other countries. Attention is not given to agriculture by any people, until they settle down and establish themselves in fixed habitations; while they remain in tents, and remove from place to place to find pasture and water for their flocks and cattle, they do not usually acquire or claim any permanent or vested interest in any particular portion of soil, and do not remain stationary long enough to cultivate crops and harvest them. Not only Abraham and Lot, but all the Hebrews, before they went to Egypt, as well as while in the wilderness(492,203),(971,249), and until after their return to the land of Canaan, dwelt in tents, and lived a pastoral, not an agricultural life; they must have understood the art of spinning and weaving, even at that early period, and made cloth for clothing, as well as for their tents. See on this subject, Gen. ix. 23. 24. 25. 10 and 22. 23. 31. 11. 39. 40. xxvii. 4. 23. 31. 34. 35. xxxi. 16. 30. xxxvii. 3. and 19. 20. xxxvi. 5. It is evident from those and many other passages in the book of Genesis, that the Hebrews had a knowledge of metals, and kept sheep in number of their wool, and made cloth of various kinds, while they dwelt in tents, and did not cultivate the ground, but lived on the flesh of their flocks, and the spontaneous productions of the earth.

All grains, vegetables, and plants, as well as fruits, grow at first spontaneously in some climates and countries, and have been transplanted by man from one climate to country to another, and improved by cultivation. The cotton plant appears to have been a native, and to have grown spontaneously in India, China, Egypt, Madagascar, Mexico, and many other countries, and Sax. in Egypt, Palestine, and all the countries of southern and central Europe. Men must have learned the use of cotton and flax, and to spin and weave them into cloth, before they thought it could have been suggested to him of cultivating them; for they are not fit for food, of either man or beast, and are valuable only for clothing and the oil obtained from their seed. The use and manufacture of cotton and flax must therefore have preceded the cultivation of these plants; so necessary to the comforts and to the very existence of civilized men. Previous to their cultivation also, man must have had the use of iron, and learned to make some rough species of plough, spade, or hoe, with which to dig up and subdue the earth.

A similar course of reasoning applies to every species of grain, vegetable, and plant cultivated by man. He must have found them, in the first instance, growing spontaneously, appropriated them to his own use, and thus learned their utility and value; and after he acquired a knowledge of iron, and the art of making it, together with a sufficient knowledge of mechanism to forge and work the iron, and make edge tools, and work in wood, and had also invented and learned to make some rough species of agricultural instruments, he first began to raise by cultivation the several
species of grain, vegetables, and plants which had been found useful to him. As he increased in knowledge of the mechanic arts, a division of employments took place; his employments became more and more diversified, and barter, or an exchange between man and man of the products of their respective employ- ments, was introduced. As he acquired more knowledge of the mechanic arts, and learned to make more instruments and tools necessary to cultivate the earth, and to convert its products into food, clothing, and utensils of use, conveniences, and comfort; he acquired the means of extending the cultivation, and improving in the mode of cultivating it. As population increased, the demand for agricultural, as well as mechanical products, increased, which acted as a stimulus to agriculture, and also to the mechanic arts and commerce. One improvement and discov- ery has led to another; and every useful and valuable invention in the mechanic arts, has not only increased the comforts of man, but contributed to promote his health; increase his longevity, and multiply population, and contributed, directly or indirectly, to an improved mode of cultivating the earth, an extension of agriculture, and an increase of its products, in quantity, quality, and value.

Agriculture is therefore directly dependent upon the mechanic arts, not only for its origin, but also for every step of its progress to the march of improvement. It follows the mechanic arts, and cannot proceed them, and may be said to be the fourth step in the progress of civilization.

Sec. 5. Origin, basis, and advantages of Commerce.

While man resides in a state of native simplicity and ignorance, the whole of a tribe being engaged in the same employments and mode of life, there is little or no occasion for exchange, barter, or commerce of any kind; but as soon as the mechanic arts and the cultivation of the earth are introduced, there comes a division of employments, which is immediately followed by a mutual interchange of the products of labor, or barter, and this is the beginning of regular commerce. Commerce is thus completely dependent upon the mechanic arts, and the division of employments, and cannot exist without them, except to a very limited extent. Agricultural products alone cannot furnish the materials of an active commerce; and two nations almost exclusively agricultur- al, have seldom much intercourse with each other. Commerce in gener- ally carried on between two nations, of one of the three following characters: first between the farmer, or grower of the raw produce on one side, who exchanges a portion of his surplus produce with a mechanic or manufacturer in his vicinity, for the products and fabric of mechanism, which he needs for the use of himself or his family; secondly, between two mechanicks in the vicinity who mutually exchange the surplus products of each other's labor, and part with what they do not need, in exchange for what they do need for their own use and consumption; and thirdly, between parties, one or both of whom is a merchant, who buys to sell again, and make gain, or sells what he has previously purchased, for the purpose of making a profit by its sale. The two first species of commerce, or barter, are much the most profitable to the consumer, and to all the laboring classes, as they thereby acquire what they need for their own use and comfort, without paying any- thing for transportation, or anything for expense of profits of merchants, factors, agents, &c.; on the contrary, the last species of commerce loads down its products with the costs of transporta- tion, and generally with two or three, and often with four or five per cent, on the original cost of the articles. The wisdom of Mr. Jefferson's remark, in his letter to Mr. Austin, is most manifest, that the manufacturer should be placed by the side of the farmer.

There is very little occasion for commerce or barter between agriculturists, or between two agricultural nations; the most natural and profitable foreign commerce, is between two nations of different climates, and in different states of improvement and condition, where one party exchanges the produce of the earth with the other for the products of manufactured and manufacturing industry, whereby each party acquires what he wants directly, and in exchange for the products of his own industry. Tyre, Carthage, and Athens, in ancient, and Venice, Florence, Genoa, and the Netherlands, in more modern times, were the greatest of commercial nations at their respective eras, as Great Britain is now; because they were also in advance of all other nations in the mechanic arts and manufactures; and their commerce was based on their mechanic and manufacturing industry, which furnished the principal subject matter and materials for making exchanges, and carrying on commerce with foreign nations.

Sec. 7. Successive steps in the progress of civilization recapitulated.

Of the five great divisions and departments of human employ- ment and industry, all of which and many others seem necessary to man, before he can attain a very high state of civilization, the most simple, and the first attained in his progress towards civil- ization, is the pastoral or nomade state; in which he lives as a
shepherd, raising and tending his flocks and herds, subsisting upon their milk and flesh, and the spontaneous productions of the earth, and clothing himself in their skins and wool. His second step in the progress of civilization, is to learn the business of mining, smelting ores, forging and making iron, and working it into edge tools, and other tools and instruments, to work in wood, stone, &c. His third step is to learn a rude system of house-building, and to invent spinning-wheels, and looms, and to learn the art of spinning, weaving, and making cloth; and of making ploughs, and other tools, and implements of agriculture. Thus he occupies nearly the whole circle of the mechanic arts, and of manufactures. His fourth step consists in learning to plough, or dig up and cultivate the earth, as an agriculturist. Lastly comes commerce, the connecting link in the chain, between all the other employments. Though commerce is entirely dependent upon the mechanic arts, and upon agriculture, to supply its materials, yet it is the very life-blood of civilized society, and some means are necessary to stimulate andrender active all the arts and employments of civilized life; and civilization to any great extent cannot exist without it. All these several employments, together with the necessary instruction in the knowledge and science required for pursuing them advantageously, mutually act and react upon each other; and each contributes to promote, sustain, and increase the productive energy of the others; to multiply the comforts, and promote the welfare of mankind.

Sec. 8. Effects of science, the mechanic arts, inventions and discoveries, on the progress of civilization.

Progressive improvement and advancement in civilization, depend on industry, on productive industry, and the application of the natural sciences to labor; productive industry depends mostly on the saving of time and labor, by the inventions of machines; and the activity of commerce, which act as stimulants to the mind of man; and these again are based and depend upon the mechanic arts, and machinery. It may therefore be truly said, that a division of employments, agriculture, commerce, and the whole fabric of civilization, all depend upon the mechanic arts, and cannot exist without them; and that as a general rule, no nation or people can advance in civilization any faster than they make progress in the mechanic arts, and the sciences on which they are based.

The history of civilization is the history of the triumphs of man over the natural world, and over the physical laws of nature. He has not only subdued a large portion of the earth; but all the metals, all kinds of wood and timber, nearly every species and product of vegetation, all the earth and green, coal, stone, and coal, as well as a large portion of the animal creation, and the winds and waters upon the surface of the earth, have all been subjected to the use and control of man, and made subservient to his comforts, enjoyments, and general welfare. By these means, he has overcome the wants and evils of hunger, thirst, cold, heat, storms, and wind; and not only rendered himself comfortable, but resisted the causes of disease, and has actually increased his ordinary period of life, in every highly civilized country on the earth.

The arts of smelting ores, and of hammering and forging iron, and other metals, and converting them into utensils, edge tools, and other instruments, were discovered at a very early period of history, and were in a measure the immediate steps of civilization among the Pagan nations. Man soon arrived at a point of civilization, at or near which he seemed to pause for many centuries, as if it were a barrier which he could not pass. At length clocks were invented, the art of making glass windows was invented, chimney's were invented, and the art of making cotton and linen rags into paper was invented; all these inventions came into use in Europe in the 11th, 12th, and 13th centuries. Then came the invention of gunpowder, and its application to mechanical purposes for blasting rocks and ores, and working in mines, as well as for warlike purposes, and also the invention of the mariner's compass, the great handmaid of navigation, in the 14th century. The 15th century produced and introduced the great inventions of printing, and the compass, for saving labour, and near his close, the discovery of America. During the first part of the 16th century, the use and culture of maize or Indian corn, and potatoes, were introduced into Europe from the New World. Many other inventions and discoveries of less importance were made and introduced between the 16th and the middle of the 17th century; and during that period, the art of spinning, weaving, and working silk, cotton, hemp, and flax, as well as wool, into cloth, was introduced into many countries, partly by means of the Crusades to the Holy Land; and in all the countries of Europe, the manufacture of those articles into cloth was greatly increased. When compared with his condition in the 11th and 12th centuries, the comfort of man was greatly increased, the ratio of mortality diminished, and his condition much improved by all those causes, which were in full operation from the middle of the 16th century to the time of the invention of the spinning Jenny in 1767, and yet the paralyzing influence of the religious persecutions, and the civil wars growing out of the reformation of the 16th century, together with the use of ardent spirits, greatly retarded the progress of improvement; and the ratio of mortality, as well as of the increase of population, was nearly the same in almost every country of Europe and America, during the last ten years of that period, as it was during the first
ten. The revocation of the Edict of Nantes, by Louis XIV., in
1685, had such an effect upon France, by driving out of the king-
dom half a million or more of her most skilful mechanics and
artisans, that the kingdom was less flourishing, and the condition
of the people not much better in 1789, than in 1680; and this
cause, which depressed France, is one of the principal causes of
the progress and improvement of Great Britain during that
period.

The thermometer, barometer, and telescope, were all invented
the forepart of the seventeenth century. They have been of
great advantage to the progress of the useful arts, as well as to
the prosecution of inquiries and discoveries in the natural
sciences.

Paper money was invented in England the latter part of the
17th century, and soon afterwards introduced into France, where
it produced the famous Mississippi scheme in 1719; but the great
facility it gives to grinding speculations, enormities, deception,
and fraud, of every kind and character, seems to render it probable
that it has been rather a curse than a blessing to the human
family.

Though the Moors introduced the art of distillation and use of
distilled spirits into Europe in the 12th or 13th century, yet their
use was comparatively trifling, until after the discovery of Ame-
rica, the introduction of African slaves into the West India
Islands, and the extensive cultivation of the sugar cane; which led
to the increased distillation and supply of rum, and its more gen-
eral use among all classes of people. This evil of itself, was suffi-
cient to balance nearly all the benefits derived from improvements
made during the two centuries previous to the invention of the
Spinning Jenny. The discovery of the benefits of inoculation for
the small pox, the forepart of the 18th century, and of the
efficacy of vaccination for the small pox as a preventative and check
to the spread of the small pox about the year 1796, have probably
had more effect in diminishing the rate of mortality, than all
other discoveries in medicine from the commencement of the
16th, to the close of the 18th century. During the religious wars
and persecutions of the 16th and 17th centuries, a large portion
of the Protestant mechanism and artisans, who could originate
with more facility than agriculturists, fled to Great Britain and
Holland for an asylum; which is the principal cause of the rapid
improvement of those nations from the commencement of those
persecutions and wars, to the invention of the Spinning Jenny;
while the search of improvement, and the progress of civilization
seemed to have been arrested, and nearly stationary, in all the
remaining part of the world, except the Anglo-American colonies,