

ments of the legions in the provinces had always proved to be foci of civilization. The industry and order exhibited in them presented an example not lost on the surrounding barbarians of Britain, Gaul, and Germany. And, though it was no part of their duty to occupy themselves actively in the betterment of the conquered tribes, but rather to keep them in a depressed condition, that aided in maintaining subjection, a steady improvement both in the individual and social condition took place.

Under the ecclesiastical domination of Rome similar effects occurred. In the open country the monastery replaced the legionary encampment; in the village or town, the church was a centre of light. A powerful effect was produced by the elegant luxury of the former, and by the sacred and solemn monitions of the latter.

In extolling the papal system for what it did in the organization of the family, the definition of civil policy, the construction of the states of Europe, our praise must be limited by the recollection that the chief object of ecclesiastical policy was the aggrandizement of the Church, not the promotion of civilization. The benefit obtained by the laity was not through any special intention, but incidental or collateral.

There was no far-reaching, no persistent plan to ameliorate the physical condition of the nations. Nothing was done to favor their intellectual development; indeed, on the contrary, it was the settled policy to keep them not merely illiterate, but ignorant. Century after century passed away, and left the peasantry but little better than the cattle in the fields. Intercommunication and locomotion, which tend so powerfully to expand the ideas, received no encouragement; the majority of the men died without ever having ventured out of the

neighborhood in which they were born. For them there was no hope of personal improvement, none of the bettering of their lot; there were no comprehensive schemes for the avoidance of individual want, none for the resistance of famines. Pestilences were permitted to stalk forth unchecked, or at best opposed only by mummeries. Bad food, wretched clothing, inadequate shelter, were suffered to produce their result, and at the end of a thousand years the population of Europe had not doubled.

If policy may be held accountable as much for the births it prevents as for the deaths it occasions, what a great responsibility there is here!

In this investigation of the influence of Catholicism, we must carefully keep separate what it did for the people and what it did for itself. When we think of the stately monastery, an embodiment of luxury, with its closely-mown lawns, its gardens and bowers, its fountains and many murmuring streams, we must connect it not with the ague-stricken peasant dying without help in the fens, but with the abbot, his ambling palfrey, his hawk and hounds, his well-stocked cellar and larder. He is part of a system that has its centre of authority in Italy. To that his allegiance is due. For its behoof are all his acts. When we survey, as still we may, the magnificent churches and cathedrals of those times, miracles of architectural skill—the only real miracles of Catholicism—when in imagination we restore the transcendently imposing, the noble services of which they were once the scene, the dim, religious light streaming in through the many-colored windows, the sounds of voices not inferior in their melody to those of heaven, the priests in their sacred vestments, and above all the prostrate worshippers listening to litanies and prayers in

a foreign and unknown tongue, shall we not ask ourselves, Was all this for the sake of those worshipers, or for the glory of the great, the overshadowing authority at Rome?

But perhaps some one may say, Are there not limits to human exertion—things which no political system, no human power, no matter how excellent its intention, can accomplish? Men cannot be raised from barbarism, a continent cannot be civilized, in a day!

The Catholic power is not, however, to be tried by any such standard. It scornfully rejected and still rejects a human origin. It claims to be accredited supernaturally. The sovereign pontiff is the Vicar of God upon earth. Infallible in judgment, it is given to him to accomplish all things by miracle if need be. He had exercised an autocratic tyranny over the intellect of Europe for more than a thousand years; and, though on some occasions he had encountered the resistances of disobedient princes, these, in the aggregate, were of so little moment, that the physical, the political power of the continent may be affirmed to have been at his disposal.

Such facts as have been presented in this chapter were, doubtless, well weighed by the Protestant Reformers of the sixteenth century, and brought them to the conclusion that Catholicism had altogether failed in its mission; that it had become a vast system of delusion and imposture, and that a restoration of true Christianity could only be accomplished by returning to the faith and practices of the primitive times. This was no decision suddenly arrived at; it had long been the opinion of many religious and learned men. The pious Fratricelli in the middle ages had loudly expressed their belief that the fatal gift of a Roman emperor had been the doom

of true religion. It wanted nothing more than the voice of Luther to bring men throughout the north of Europe to the determination that the worship of the Virgin Mary, the invocation of saints, the working of miracles, supernatural cures of the sick, the purchase of indulgences for the perpetration of sin, and all other evil practices, lucrative to their abettors, which had been fastened on Christianity, but which were no part of it, should come to an end. Catholicism, as a system for promoting the well-being of man, had plainly failed in justifying its alleged origin; its performance had not corresponded to its great pretensions; and, after an opportunity of more than a thousand years' duration, it had left the masses of men submitted to its influences, both as regards physical well-being and intellectual culture, in a condition far lower than what it ought to have been.

CHAPTER XI.

SCIENCE IN RELATION TO MODERN CIVILIZATION.

Illustration of the general influences of Science from the history of America.

THE INTRODUCTION OF SCIENCE INTO EUROPE.—*It passed from Moorish Spain to Upper Italy, and was favored by the absence of the popes at Avignon.—The effects of printing, of maritime adventure, and of the Reformation.—Establishment of the Italian scientific societies.*

THE INTELLECTUAL INFLUENCE OF SCIENCE.—*It changed the mode and the direction of thought in Europe.—The transactions of the Royal Society of London, and other scientific societies, furnish an illustration of this.*

THE ECONOMICAL INFLUENCE OF SCIENCE is illustrated by the numerous mechanical and physical inventions, made since the fourteenth century.—*Their influence on health and domestic life, on the arts of peace and of war.*

Answer to the question, What has Science done for humanity?

EUROPE, at the epoch of the Reformation, furnishes us with the result of the influences of Roman Christianity in the promotion of civilization. America, examined in like manner at the present time, furnishes us with an illustration of the influences of science.

In the course of the seventeenth century a sparse European population had settled along the western Atlantic coast. Attracted by the cod-fishery of Newfoundland, the French had a little colony north of the St. Lawrence; the English, Dutch, and Swedes, occupied the shore of New England and the Middle States; some

Huguenots were living in the Carolinas. Rumors of a spring that could confer perpetual youth—a fountain of life—had brought a few Spaniards into Florida. Behind the fringe of villages which these adventurers had built, lay a vast and unknown country, inhabited by wandering Indians, whose numbers from the Gulf of Mexico to the St. Lawrence did not exceed one hundred and eighty thousand. From them the European strangers had learned that in those solitary regions there were fresh-water seas, and a great river which they called the Mississippi. Some said that it flowed through Virginia into the Atlantic, some that it passed through Florida, some that it emptied into the Pacific, and some that it reached the Gulf of Mexico. Parted from their native countries by the stormy Atlantic, to cross which implied a voyage of many months, these refugees seemed lost to the world.

But before the close of the nineteenth century the descendants of this feeble people had become one of the great powers of the earth. They had established a republic whose sway extended from the Atlantic to the Pacific. With an army of more than a million men, not on paper, but actually in the field, they had overthrown a domestic assailant. They had maintained at sea a war-fleet of nearly seven hundred ships, carrying five thousand guns, some of them the heaviest in the world. The tonnage of this navy amounted to half a million. In the defense of their national life they had expended in less than five years more than four thousand million dollars. Their census, periodically taken, showed that the population was doubling itself every twenty-five years; it justified the expectation that at the close of that century it would number nearly one hundred million souls.

A silent continent had been changed into a scene of industry; it was full of the din of machinery and the restless moving of men. Where there had been an unbroken forest, there were hundreds of cities and towns. To commerce were furnished in profusion some of the most important staples, as cotton, tobacco, breadstuffs. The mines yielded incredible quantities of gold, iron, coal. Countless churches, colleges, and public schools, testified that a moral influence vivified this material activity. Locomotion was effectually provided for. The railways exceeded in aggregate length those of all Europe combined. In 1873 the aggregate length of the European railways was sixty-three thousand three hundred and sixty miles, that of the American was seventy thousand six hundred and fifty miles. One of them, built across the continent, connected the Atlantic and Pacific Oceans.

But not alone are these material results worthy of notice. Others of a moral and social kind force themselves on our attention. Four million negro slaves had been set free. Legislation, if it inclined to the advantage of any class, inclined to that of the poor. Its intention was to raise them from poverty, and better their lot. A career was open to talent, and that without any restraint. Every thing was possible to intelligence and industry. Many of the most important public offices were filled by men who had risen from the humblest walks of life. If there was not social equality, as there never can be in rich and prosperous communities, there was civil equality, rigorously maintained.

It may perhaps be said that much of this material prosperity arose from special conditions, such as had never occurred in the case of any people before. There

was a vast, an open theatre of action, a whole continent ready for any who chose to take possession of it. Nothing more than courage and industry was needed to overcome Nature, and to seize the abounding advantages she offered.

But must not men be animated by a great principle who successfully transform the primeval solitudes into an abode of civilization, who are not dismayed by gloomy forests, or rivers, mountains, or frightful deserts, who push their conquering way in the course of a century across a continent, and hold it in subjection? Let us contrast with this the results of the invasion of Mexico and Peru by the Spaniards, who in those countries overthrew a wonderful civilization, in many respects superior to their own—a civilization that had been accomplished without iron and gunpowder—a civilization resting on an agriculture that had neither horse, nor ox, nor plough. The Spaniards had a clear base to start from, and no obstruction whatever in their advance. They ruined all that the aboriginal children of America had accomplished. Millions of those unfortunates were destroyed by their cruelty. Nations that for many centuries had been living in contentment and prosperity, under institutions shown by their history to be suitable to them, were plunged into anarchy; the people fell into a baneful superstition, and a greater part of their landed and other property found its way into the possession of the Roman Church.

I have selected the foregoing illustration, drawn from American history, in preference to many others that might have been taken from European, because it furnishes an instance of the operation of the acting principle least interfered with by extraneous conditions. European political progress is less simple than American.