

will be necessary briefly to do in order to show the part which has been played by physical science.

During the middle ages the church was in the van of human progress. She bound together distant lands by the tie of a common belief, a common religious language, a common priesthood, and common prayers. Under her influence all Latin Christians came more or less to feel that they were brethren. Before all the nations of the rude west was placed a lofty ideal of life ; and into all were introduced under her auspices some seeds of useful knowledge, of art, of learning, and of refinement. The monks improved agriculture in the north and west ; every pilgrim that went to Rome brought back new ideas ; and the clergy were the conservers and disseminators of the little knowledge of the time. But perhaps the most important work that the church did in those ages was that which she performed in aid of the abolition of serfdom. For lending her powerful assistance to the cause of personal liberty she deserves the everlasting gratitude of mankind.

With the abolition of villenage the church ceased to lead. Personal freedom led to increased industry, towns sprang up all over Europe, there was a great development of commerce, and wealth increased. Increase of wealth led to a greater diffusion and increase of knowledge ; this in its turn led to inventions and discoveries ; gunpowder revolutionized war ; the printing press multiplied books ; the Renaissance, or new birth of learning, art, and literature, follows ; then comes Luther, and personal freedom has led to a movement for spiritual emancipation.

The revolt of Luther was contemporary with a great outburst of imprisoned forces and a great onward movement of humanity. Before the middle of the seventeenth century four great national literatures had come into being, the English, the French, the Spanish, and the Italian. The northern part of Europe became religiously independent, and this religious independence was conjoined in two cases, England and Holland, with political freedom. The air was full of bold and original speculations, and nature began for the first time in the history of man to find herself interrogated with success. The first great event in the history of science is the establishment of the heliocentric theory by Copernicus. Copernicus was a contemporary of Luther, dying just three years before him, and, though he lived and died in the old faith, was, in his own way,