JAMES JOSEPH WALSH

THE THIRTEENTH, GREATEST OF CENTURIES

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The Thirteenth, Greatest of Centuries:

Содержание

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PROEM.
(EPIMETHEUS.)

WAKE again, Teutonic Father-ages,
Speak again, beloved primeval creeds;
Flash ancestral spirit from your pages,
Wake the greedy age to noble deeds.

……

Ye who built the churches where we worship,
Ye who framed the laws by which we move,
Fathers, long belied, and long forsaken,
Oh, forgive the children of your love!

(PEOMETHEUS.)

There will we find laws which shall interpret,
Through the simpler past, existing life;

Delving up from mines and fairy caverns
Charmed blades to cut the age's strife.

—Rev. Charles Kingsley.—The Saints' Tragedy.

PREFACE

"Why take the style of these heroic times? For nature brings not back the mastodon—Nor we those times; and why should any man Remodel models?"

What Tennyson thus said of his own first essay in the Idyls of the King, in the introduction to the Morte D'Arthur, occurs as probably the aptest expression of most men's immediate thought with regard to such a subject as The Thirteenth, Greatest of Centuries. Though Tennyson was confessedly only remodeling the thoughts of the Thirteenth Century, we would not be willing to concede—

> "That nothing new was said, or else.
> Something so said, 'twas nothing,"

for the loss of the Idyls would make a large lacuna in the literature of the Nineteenth Century, "if it is allowed to compare little things with great," a similar intent to that of the Laureate has seemed sufficient justification for the paradox the author has tried to set forth in this volume. It may prove "nothing worth, mere chaff and draff much better burnt," but many friends have insisted they found it interesting. Authors usually blame friends for their inflictions upon the public, and I fear that I can find no better excuse, though the book has been patiently labored at, with the idea that it should represent some of the serious work that is

being done by the Catholic Summer School on Lake Champlain, {viii} now completing nearly a decade and a half of its existence. This volume is, it is hoped, but the first of a series that will bring to a wider audience some of the thoughts that have been gathered for Summer School friends by many workers, and will put in more permanent form contributions that made summer leisure respond to the Greek term for school.

The object of the book is to interpret, in terms that will be readily intelligible to this generation, the life and concerns of the people of a century who, to the author's mind, have done more for human progress than those of any like period in human history. There are few whose eyes are now holden as they used to be, as to the surpassing place in the history of culture of the last three centuries of the Middle Ages. Personally the author is convinced, however, that only a beginning of proper appreciation has come as yet, and he feels that the solution of many problems that are vexing the modern world, especially in the social order, are to be found in these much misunderstood ages, and above all in that culmination of medieval progress—the period from 1200 to 1300.

The subject was originally taken up as a series of lectures in the extension course of the Catholic Summer School, as given each year in Lent and Advent at the Catholic Club, New York City. Portions of the material were subsequently used in lectures in many cities in this country from Portland, Me., to Portland, Ore., St. Paul, Minn., to New Orleans, La. The subject was treated ***in***

extenso for the Brooklyn Institute of Arts and Sciences in 1906, after which publication was suggested.

The author does not flatter himself that the book adequately represents the great period which it claims to present. The subject has been the central idea of studies in leisure moments for a dozen years, and during many wanderings in Europe but there will doubtless prove to be errors in detail, for which the author would crave the indulgence of more serious students {ix} of history. The original form in which the material was cast has influenced the style to some extent, and has made the book more wordy than it would otherwise have been, and has been the cause of certain repetitions that appear more striking in print than they seemed in manuscript. There were what seemed good reasons for not delaying publication, however, and leisure for further work at it, instead of growing, was becoming more scant. It is intrusted to the tender mercies of critics, then, and the benevolent reader, if he still may be appealed to, for the sake of the ideas it contains, in spite of their inadequate expression.

PREFACE. (GEORGETOWN UNIVERSITY EDITION)

This third edition is published under the patronage of Georgetown University as a slight token of appreciation for the degree of Doctor of Letters, conferred on the author for this work at the last Commencement. This issue has been enlarged by the addition of many illustrations selected to bring out the fact that all the various parts of Europe shared in the achievements of the time and by an appendix containing in compendium Twenty-Six Chapters that Might Have Been. Each of these brief sketches could easily have been extended to the average length of the original chapters. It was impossible to use all the material that was gathered. These hints of further sources are now appended so as to afford suggestions for study to those who may care to follow up the idea of the Thirteenth as The Greatest of Centuries, that is, of that period in human existence when man's thoughts on all the important human interests were profoundly valuable for future generations and their accomplishments models for all the after time.

PREFACE.
(FOURTH EDITION)

Many of the now rather numerous readers and hearers of this book, for it has been read in the refectories of over 200 religious communities, have said that the title seemed almost deterring at first because of the high claim that is set up for a medieval century. To mitigate the possible initial deterrent effect of the paradox of the Thirteenth as the Greatest of Centuries, it has seemed worth while in this edition then to premise a series of quotations from some of the most distinguished historical writers in English of our own time which amply justify the claim here set up. Frederic Harrison, Macaulay, Freeman, and Fiske are sufficiently different in themselves to make their agreement in supreme admiration for the Thirteenth Century very striking. In spite of their lack of sympathy with many things in the period, all of them emphatically declare that it is the source of most that is great and good since, and that while we have added details, we have failed to surpass its artistic and intellectual achievement in all the 700 years that have elapsed.

August 15, 1912.

PREFACE.
(FIFTH EDITION)

After the success of the Knights of Columbus edition of the Popes and Science of which 40,000 were issued it gives me great pleasure to accede to the request of the Supreme Officers of the Order to permit them to issue a correspondingly large edition of the present volume. The good work which the Knights of Columbus have thus done in diffusing a knowledge of the true relations of the Church to science,—generous patronage and encouragement, instead of supposed opposition,—will, I think, be greatly furthered by the wide distribution of the information contained in this volume with regard to the supremely helpful attitude of the Church towards art and architecture, literature, education and above all the important social problems, which is so well illustrated during the great period of the Thirteenth Century. I sincerely hope that brother Knights of Columbus will find in the book some of that renewal of devotion to Mother Church that came as the result of my own studies of this glorious period of her history, when her action was untrammelled by political considerations and when she was free to express herself in every great movement for the benefit of humanity.

Feast of the Immaculate Conception, 1912.

FREDERIC HARRISON, MACAULAY, FREEMAN, AND FISKE

ON THE PLACE OF THE THIRTEENTH CENTURY IN HISTORY

Of all the epochs of effort after a new life, that of the age of Aquinas, Roger Bacon, St. Francis, St. Louis, Giotto, and Dante is the most purely spiritual, the most really constructive, and indeed the most truly philosophic. … The whole thirteenth century is crowded with creative forces in philosophy, art, poetry, and statesmanship as rich as those of the humanist ***Renaissance***. And if we are accustomed to look on them as so much more limited and rude it is because we forget how very few and poor were their resources and their instruments. In creative genius Giotto is the peer, if not the superior of Raphael. Dante had all the qualities of his three chief successors and very much more besides. It is a tenable view that in inventive fertility and in imaginative range, those vast composite creations—the Cathedrals of the Thirteenth Century, in all

their wealth of architectural statuary, painted glass, enamels, embroideries, and inexhaustible decorative work may be set beside the entire painting of the sixteenth century. Albert and Aquinas, in philosophic range, had no peer until we come down to Descartes, nor was Roger Bacon surpassed in versatile audacity of genius and in true encyclopaedic grasp by any thinker between him and his namesake the Chancellor. In statesmanship and all the qualities of the born leader of men we can only match the great chiefs of the Thirteenth Century by comparing them with the greatest names three or even four centuries later.

Now this great century, the last of the true Middle Ages, which as it drew to its own end gave birth to Modern Society, has a special character of its own, a character that gives it an abiding and enchanting interest. We find in it a harmony of power, a universality of endowment, a glow, an aspiring ambition and confidence such as we never find in later centuries, at least so generally and so permanently diffused. …

The Thirteenth Century was an era of no special character. It was in nothing one-sided and in nothing discordant. It had great thinkers, great rulers, great teachers, great poets, {xii} great artists, great moralists, and great workmen. It could not be called the material age, the devotional age, the political age, or the poetic age in any special degree. It was equally poetic, political, industrial, artistic, practical, intellectual, and devotional. And these qualities acted in harmony on a uniform conception of life with a real symmetry of purpose.

There was one common creed, one ritual, one worship, one sacred language, one Church, a single code of manners, a uniform scheme of society, a common system of education, an accepted type of beauty, a universal art, something like a recognized standard of the Good, the Beautiful, and the True. One-half of the world was not occupied in ridiculing or combating what the other half was doing. Nor were men absorbed in ideals of their own, while treating the ideals of their neighbors as matters of indifference and waste of power. Men as utterly different from each other, as were Stephen Langton, St. Francis, Thomas Aquinas, Roger Bacon, Dante, Giotto, St. Louis, Edward I—all profoundly accepted one common order of ideas, equally applying to things of the intellect, of moral duty, of action, and of the soul—to public and private life at once—and they could all feel that they were all together working out the same task. It may be doubted if that has happened in Europe ever since.—Frederic Harrison, ***A Survey of the Thirteenth Century in the Meaning of History and Other Historical Pieces***. Macmillan, 1908.

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The sources of the noblest rivers which spread fertility over continents, and bear richly laden fleets to the sea, are to be sought in wild and barren mountain tracts, incorrectly laid down in maps, and rarely explored by travellers. To such a tract the

history of our country during the Thirteenth Century may not unaptly be compared. Sterile and obscure as is that portion of our annals, it is there that we must seek for the origin of our freedom, our prosperity, and our glory. Then it was that the great English people was formed, that the national character began to exhibit those peculiarities which it has ever since retained, and that our fathers became emphatically islanders, islanders not merely in geographical position, but in their politics, their feelings, and their manners. Then first appeared with distinctness that constitution which has ever since, through all changes, preserved its identity; that constitution of which all the other free constitutions in the world are copies, and which, in spite of some defects, deserves to be regarded as the best under which any great {xiii} society has ever yet existed during many ages. Then it was that the House of Commons, the archetype of all the representative assemblies which now meet, either in the old or in the new world, held its first sittings. Then it was that the common law rose to the dignity of a science, and rapidly became a not unworthy rival of the imperial jurisprudence. Then it was that the courage of those sailors who manned the rude barks of the Cinque Ports first made the flag of England terrible on the seas. Then it was that the most ancient colleges which still exist at both the great national seats of learning were founded. Then was formed that language, less musical indeed than the languages of the south, but in force, in richness, in aptitude for all the highest purposes of the poet, the philosopher, and the orator, inferior

to the tongue of Greece alone. Then too appeared the first faint dawn of that noble literature, the most splendid and the most durable of the many glories of England.—Macaulay.

* * *

This time of fusion during which all direct traces of foreign conquest were got rid of, was naturally the time during which the political and social institutions of the country gradually took on that form which distinguishes modern England, the England of the last 600 years from the older England of the first 600 years of English history. … By the time of Edward I, though the English tongue had not yet finally displaced French, it had assumed the main characters which distinguished its modern from its ancient form. In architecture a great change had taken place, by which the Romanesque style gave way to the so-called Gothic. The subordinate arts had taken prodigious strides. The sculpture of the thirteenth century is parted from that of the twelfth by a wider gap than any that parts these centuries, in law or language. ***And in the root of the matter in our law and constitution itself those changes have been made which wrought the body politic of England into a shape which has left future ages nothing to do but to improve in detail***. (Italics ours.)

In short the great destructive and creative age of Europe and civilized Asia passed over England as it passed over other lands. The age which saw the Eastern Empire fall beneath the arms

of the Frank and the Eastern Caliphate before the arms of the Mogul—the age which saw the true power and glory of the Western Empire buried in the grave of the Wonder of the World—the age which ruled that the warriors of the Cross should work their will in Spain and in Prussia {xiv} and should not work their Will in the Holy Land itself—the age which made Venice mistress of the Eastern seas, and bade Florence stand forth as the new type of democratic freedom—the age which changed the nominal kingship of the Lord of Paris and Orleans into the mighty realm of Philip Augustus and Philip the Fair—this age of wonders did its work of wonder in England also.—Freeman, ***The Norman Conquest***, Vol. V, page 606. Oxford, The Clarendon Press, 1876.

* * *

The moment when this interaction might have seemed on the point of reaching a complete and harmonious result was the glorious thirteenth century, the culminating moment of the Holy Roman Empire. Then, as in the times of Caesar or Trajan, there might have seemed to be a union among civilized men, in which the separate life of individuals and localities was not submerged. In that golden age, alike of feudal system of empire and of Church, there were to be seen the greatest monarchs, in fullest sympathy with their peoples, that Christendom has ever known—an Edward I, a St. Louis, a Frederick II. Then

when in the Pontificates of Innocent III and his successors the Roman Church reached its apogee, the religious yearning of men sought expressions in the sublimest architecture the world has seen. Then Aquinas summed up in his profound speculations the substance of Catholic theology, and while the morning twilight of modern science might be discerned in the treatises of Roger Bacon, while wandering minstrelsy revealed the treasures of modern speech, soon to be wrought under the hands of Dante and Chaucer into forms of exquisite beauty, the sacred fervor of the apostolic ages found itself renewed in the tender and mystic piety of St. Francis of Assisi. It was a wonderful time, but after all less memorable as the culmination of medieval empire and medieval church than as the dawning of the new era in which we live to-day.

* * *

While wave after wave of Germanic colonization poured over Romanized Europe, breaking down old boundary lines and working sudden and astonishing changes on the map, setting up in every quarter baronies, dukedoms, and kingdoms fermenting with vigorous political life; while for twenty generations this salutary but wild and dangerous work was going on, there was never a moment when the imperial sway of {xv} Rome was quite set aside and forgotten, there was never a time when union of some sort was not maintained through the dominion which

the Church had established over the European mind. When we duly consider this great fact in its relations to what went before and what came after, it is hard to find words fit to express the debt of gratitude which modern civilization owes to the Roman Catholic Church. When we think of all the work, big with promise of the future, that went on in those centuries which modern writers in their ignorance used once to set apart and stigmatize as the "Dark Ages"; when we consider how the seeds of what is noblest in modern life were then painfully sown upon the soil which Imperial Rome had prepared; when we think of the various work of a Gregory, a Benedict, a Boniface, an Alfred, a Charlemagne, we feel that there is a sense in which the most brilliant achievements of pagan antiquity are dwarfed in comparison with these. Until quite lately, indeed, the student of history has had his attention too narrowly confined to the ages that have been pre-eminent for literature and art—the so-called classical ages—and thus his sense of historical perspective has been impaired.—Fiske, ***The Beginnings of New England, or The Puritan Theocracy in its Relations to Civil and Religions Liberty***.

I
INTRODUCTION

THE THIRTEENTH, THE GREATEST OF CENTURIES

It cannot but seem a paradox to say that the Thirteenth was the greatest of centuries. To most people the idea will appear at once so preposterous that they may not even care to consider it. A certain number, of course, will have their curiosity piqued by the thought that anyone should evolve so curious a notion. Either of these attitudes of mind will yield at once to a more properly receptive mood if it is recalled that the Thirteenth is the century of the Gothic cathedrals, of the foundation of the university, of the signing of Magna Charta, and of the origin of representative government with something like constitutional guarantees throughout the west of Europe. The cathedrals represent a development in the arts that has probably never been equaled either before or since. The university was a definite creation of these generations that has lived and maintained its usefulness practically in the same form in which it was then cast for the seven centuries ever since. The foundation stones of modern liberties are to be found in the

documents which for the first time declared the rights of man during this precious period.

A little consideration of the men who, at this period, lived lives of undying influence on mankind, will still further attract the attention of those who have not usually grouped these great characters together. Just before the century opened, three great rulers died at the height of their influence. They are still and will always be the subject of men's thoughts and of literature. They were Frederick Barbarossa, Saladin, and Richard Coeur De Lion. They formed but a suggestive prelude of what was to come in the following century, when such great monarchs as St. Louis of France, St. Ferdinand of Spain, Alfonso the Wise of Castile, Frederick II of Germany, Edward I, the English Justinian, Rudolph of Hapsburg, whose descendants still rule in Austria, and Robert Bruce, occupied the thrones of Europe. Was it by chance or Providence that the same century saw the rise of and the beginning of the fall of that great Eastern monarchy which had been created by the genius for conquest of Jenghiz Khan, the Tartar warrior, who ruled over all the Eastern world from beyond what are now the western confines of Russia, Poland, and Hungary, into and including what we now call China.

But the thrones of Europe and of Asia did not monopolize the great men of the time. The Thirteenth Century claims such wonderful churchmen as St. Francis and St. Dominic, and while it has only the influence of St. Hugh of Lincoln, who died just as it began, it can be proud of St. Edmund of Canterbury,

Stephen Langton, and Robert Grosseteste, all men whose place in history is due to what they did for their people, and such magnificent women as Queen Blanche of Castile, St. Clare of Assisi, and St. Elizabeth of Hungary. The century opened with one of the greatest of the Popes on the throne, Innocent III, and it closed with the most misunderstood of Popes, who is in spite of this one of the worthiest successors of Peter, Boniface VIII. During the century there had been such men as Honorius IV, the Patron of Learning, Gregory IX, to whom Canon Law owes so much, and John XXI, who had been famous as a scientist before becoming Pope. There are such scholars as St. Thomas of Aquin, Albertus Magnus, Roger Bacon, St. Bonaventure, Duns Scotus, Raymond Lully, Vincent of Beauvais, and Alexander of Hales, and such patrons of learning as Robert of Sorbonne, and the founders of nearly twenty universities. There were such artists as Gaddi, Cimabue, and above all Giotto, and such literary men as the authors of the Arthur Legends and the Nibelungen, the Meistersingers, the Minnesingers, the Troubadours, and Trouvères, and above all Dante, who is universally considered now to be one of the greatest literary men of all times, but who was not, as is so often thought and said, a solitary phenomenon in the period, but only the culmination of a great literary movement that had to have some such supreme expression of itself as this in order to properly round out the cycle of its existence.

If in addition it be said that this century saw the birth of the democratic spirit in many different ways in the various countries

of Europe, but always in such form that it was never quite to die out again, the reasons for talking of it as possibly the greatest of centuries will be readily appreciated even by those whose reading has not given them any preliminary basis of information with regard to this period, which has unfortunately been shrouded from the eyes of most people by the fact, that its place in the midst of the Middle Ages would seem to preclude all possibility of the idea that it could represent a great phase of the development of the human intellect and its esthetic possibilities.

There would seem to be one more or less insuperable objection to the consideration of the Thirteenth as the greatest of centuries, and that arises from the fact that the idea of evolution has consciously and unconsciously tinged the thoughts of our generation to such a degree, that it seems almost impossible to think of a period so far in the distant past as having produced results comparable with those that naturally flow from the heightened development of a long subsequent epoch. Whatever of truth there may be in the great theory of evolution, however, it must not be forgotten that no added evidence for its acceptance can be obtained from the intellectual history of the human race. We may be "the heirs of all the ages in the foremost files of time," but one thing is certain, that we can scarcely hope to equal, and do not at all think of surpassing, some of the great literary achievements of long past ages.

In the things of the spirit apparently there is very little, if any, evolution. Homer wrote nearly three thousand years ago as

supreme an expression of human life in absolute literary values as the world has ever known, or, with all reverence for the future be it said, is ever likely to know. The great dramatic poem Job emanated from a Hebrew poet in those earlier times, and yet, if judged from the standpoint of mere literature, is as surpassing an expression of human intelligence in the presence of the mystery of evil as has ever come from the mind of man. We are no nearer the solution of the problem of evil in life, though thousands of years have passed and man has been much occupied with the thoughts that disturbed the mind of the ruler of Moab. The Code of Hammurabi, recently discovered, has shown very definitely, that men could make laws nearly five thousand years ago as well calculated to correct human abuses as those our legislators spend so much time over at present, and the olden time laws were probably quite as effective as ours can hope to be, for all our well intentioned purpose and praiseworthy efforts at reform.

It used to be a favorite expression of Virchow, the great German pathologist, who was, besides, however, the greatest of living anthropologists, that from the history of the human race the theory of evolution receives no confirmation of any kind. His favorite subject, the study of skulls, and their conformation in the five thousand years through which such remains could be traced, showed him absolutely no change. For him there had been also no development in the intellectual order in human life during the long period of human history. Of course this is comparatively brief if the long aeons of geological times

be considered, yet some development might be expected to manifest itself in the more than two hundred generations that have come and gone since the beginning of human memory. Perhaps, then, the prejudice with regard to evolution and its supposed effectiveness in making the men of more recent times superior to those of the past, may be considered to have very little weight as an ***a priori*** objection to the consideration of the Thirteenth Century as representing the highest stage in human accomplishment. So far as scientific anthropology goes there is utter indifference as to the period that may be selected as representing man at his best.

To most people the greater portion of surprise with regard to the assertion of the Thirteenth as the greatest of centuries will be the fact that the period thus picked out is almost in the heart of the Middle Ages. It would be not so amazing if the fifth century before Christ, which produced such marvelous accomplishments in letters and art and philosophy among the Greeks, was chosen as the greatest of human epochs. There might not even be so much of unpreparedness of mind if that supreme century of Roman History, from fifty years before Christ to fifty years after, were picked out for such signal notice.

VIRGIN WITH THE DIVINE CHILD (MOSAIC, ST. MARK'S, VENICE)

We have grown accustomed, however, to think of the Middle Ages as hopelessly backward in the opportunities they afforded men for the expression of their intellectual and artistic faculties, and above all for any development of that human liberty which means so much for the happiness of the race and must constitute the basis of any real advance worth while talking about in human affairs. It is this that would make the Thirteenth Century seem out of place in any comparative study for the purpose of determining proportionate epochal greatness. The spirit breathes where it will, however, and there was a mighty wind of the spirit of human progress abroad in that Thirteenth Century, whose

effects usually miss proper recognition in history, because people fail to group together in their minds all the influences in our modern life that come to us from that precious period. All this present volume pretends to do is to gather these scattered details of influence in order to make the age in which they all coincided so wonderfully, be properly appreciated.

If we accept the usual historical division which places the Middle Ages during the thousand years between the fall of the Roman Empire, in the Fifth Century and the fall of the Grecian Empire of Constantinople, about the middle of the Fifteenth, the Thirteenth Century must be considered the culmination of that middle age. It is three centuries before the Renaissance, and to most minds that magical word represents the beginning of all that is modern, and therefore all that is best, in the world. Most people forget entirely how much of progress had been made before the so-called Renaissance, and how many great writers and artists had been fostering the taste and developing the intelligence of the people of Italy long before the fall of Constantinople. The Renaissance, after all, means only the re-birth of Greek ideas and ideals, of Greek letters and arts, into the modern world. If this new birth of Greek esthetics had not found the soil thoroughly prepared by the fruitful labor of three centuries before, history would not have seen any such outburst of artistic and literary accomplishments as actually came at the end of the Fifteenth and during the Sixteenth centuries.

In taking up the thesis, The Thirteenth the Greatest of

Centuries, it seems absolutely necessary to define just what is meant by the term great, in its application to a period. An historical epoch, most people would concede at once, is really great just in proportion to the happiness which it provides for the largest possible number of humanity. That period is greatest that has done most to make men happy. Happiness consists in the opportunity to express whatever is best in us, and above all to find utterance for whatever is individual. An essential element in it is the opportunity to develop and apply the intellectual faculties, whether this be of purely artistic or of thoroughly practical character. For such happiness the opportunity to rise above one's original station is one of the necessary requisites. Out of these opportunities there comes such contentment as is possible to man in the imperfect existence that is his under present conditions.

Almost as important a quality in any epoch that is to be considered supremely great, is the difference between the condition of men at the beginning of it and at its conclusion. The period that represents most progress, even though at the end uplift should not have reached a degree equal to subsequent periods, must be considered as having best accomplished its duty to the race. For purposes of comparison it is the amount of ground actually covered in a definite time, rather than the comparative position at the end of it, that deserves to be taken into account. This would seem to be a sort of hedging, as if the terms of the comparison of the Thirteenth with other centuries were to be made more favorable by the establishment of different

standards. There is, however, no need of any such makeshift in order to establish the actual supremacy of the Thirteenth Century, since it can well afford to be estimated on its own merits alone, and without any allowances because of the stage of cultural development at which it occurred.

John Ruskin once said that a proper estimation of the accomplishments of a period in human history can only be obtained by careful study of three books—The Book of the Deeds, The Book of the Arts, and the Book of the Words, of the given epoch. The Thirteenth Century may be promptly ready for this judgment of what it accomplished for men, of what it wrote for subsequent generations, and of the artistic qualities to be found in its art remains. In the Book of the Deeds of the century what is especially important is what was accomplished for men, that is, what the period did for the education of the people, not alone the classes but the masses, and what a precious heritage of liberty and of social coordination it left behind. To most people it will appear at once that if the most important chapter of Thirteenth Century accomplishment is to be found in the Book of its Deeds and the deeds are to be judged according to the standard just given of education and liberty, then there will be no need to seek further, since these are words for which it is supposed that there is no actual equivalent in human life and history for at least several centuries after the close of the Thirteenth.

As a matter of fact, however, it is in this very chapter that

the Thirteenth Century will be found strongest in its claim to true greatness. The Thirteenth Century saw the foundation of the universities and their gradual development into the institutions of learning which we have at the present time. Those scholars of the Thirteenth Century recognized that, for its own development and for practical purposes, the human intellect can best be trained along certain lines. For its preliminary training, it seemed to them to need what has since come to be called the liberal arts, that is, a knowledge of certain languages and of logic, as well as a thorough consideration of the great problems of the relation of man to his Creator, to his fellow-men, and to the universe around him. Grammar, a much wider subject than we now include under the term, and philosophy constituted the undergraduate studies of the universities of the Thirteenth Century. For the practical purposes of life, a division of post-graduate study had to be made so as to suit the life design of each individual, and accordingly the faculties of theology, for the training of divines; of medicine, for the training of physicians; and of law, for the training of advocates, came into existence.

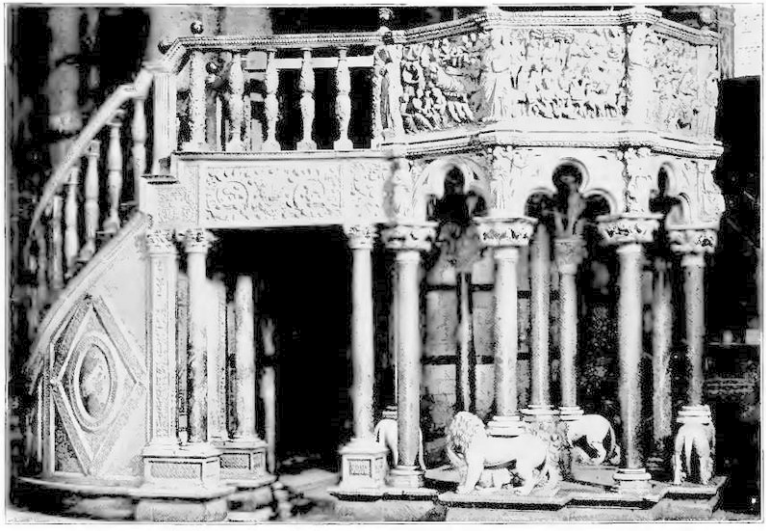
We shall consider this subject in more detail in a subsequent chapter, but it will be clear at once that the university, as organized by these wise generations of the Thirteenth Century, has come down unchanged to us in the modern time. We still have practically the same methods of preliminary training and the same division of post-graduate studies. We specialize to a greater degree than they did, but it must not be forgotten that

specialism was not unknown by any means in the Thirteenth Century, though there were fewer opportunities for its practical application to the things of life. If this century had done nothing else but create the instrument by which the human mind has ever since been trained, it must be considered as deserving a place of the very highest rank in the periods of human history.

It is, however, much more for what it accomplished for the education of the masses than for the institutions it succeeded in developing for the training of the classes, that the Thirteenth Century merits a place in the roll of fame. This declaration will doubtless seem utterly paradoxical to the ordinary reader of history. We are very prone to consider that it is only in our time that anything like popular education has come into existence. As a matter of fact, however, the education afforded to the people in the little towns of the Middle Ages, represents an ideal of educational uplift for the masses such as has never been even distantly approached in succeeding centuries. The Thirteenth Century developed the greatest set of technical schools that the world has ever known. The technical school is supposed to be a creation of the last half century at the outside. These medieval towns, however, during the course of the building of their cathedrals, of their public buildings and various magnificent edifices of royalty and for the nobility, succeeded in accomplishing such artistic results that the world has ever since held them in admiration, and that this admiration has increased rather than diminished with the development of taste in very

recent years.

Nearly every one of the most important towns of England during the Thirteenth Century was erecting a cathedral. Altogether some twenty cathedrals remain as the subject of loving veneration and of frequent visitation for the modern generation. There was intense rivalry between these various towns. Each tried to surpass the other in the grandeur of its cathedral and auxiliary buildings. Instead of lending workmen to one another there was a civic pride in accomplishing for one's native town whatever was best.



PULPIT (PISANO, SIENA)

Each of these towns, then, none of which had more than twenty thousand inhabitants except London, and even that scarcely more, had to develop its own artist-artisans for itself. That they succeeded in doing so demonstrates a great educational influence at work in arts and crafts in each of these towns. We scarcely succeed in obtaining such trained workmen in proportionately much fewer numbers even with the aid of our technical schools, and while these Thirteenth Century people did not think of such a term, it is evident that they had the reality and that they were able to develop artistic handicraftsmen—the best the world has ever known.

With all this of education abroad in the lands, it is not surprising that great results should have flowed from human efforts and that these should prove enduring even down to our own time. Accomplishments of the highest significance were necessarily bound up with opportunities for self-expression, so tempting and so complete, as those provided for the generations of the Thirteenth Century. The books of the Words as well as of the Arts of the Thirteenth Century will be found eminently interesting, and no period has ever furnished so many examples of wondrous initiative, followed almost immediately by just as marvelous progress and eventual approach to as near perfection as it is perhaps possible to come in things human. Ordinarily literary origins are not known with sufficient certainty as to dates for any but the professional scholar to realize the scope of the

century's literature. Only a very little consideration, however, is needed to demonstrate how thoroughly representative of what is most enduring in literary expression in modern times, are the works in every country that had origin in this century.

There was not a single country in civilized Europe which did not contribute its quota and that of great significance to the literary movement of the time. In Spain there came the Cid and certain accompanying products of ballad poetry which form the basis of the national literature and are still read not only by scholars and amateurs, but even by the people generally, because of the supreme human interest in them. In England, the beginning of the Thirteenth Century saw the putting into shape of the Arthur Legends in the form in which they were to appeal most nearly to subsequent generations. Walter Map's work in these was, as we shall see, one of the great literary accomplishments of all time. Subsequent treatments of the same subject are only slight modifications of the theme which he elaborated, and Mallory's and Spenser's and even our own Tennyson's work derive their interest from the humanly sympathetic story, written so close to the heart of nature in the Thirteenth Century that it will always prove attractive.

In Germany, just at the same time, the Nibelungen-Lied was receiving the form in which it was to live as the great National epic. The Meistersingers also were accomplishing their supreme work of Christianizing and modernizing the old German and Christian legends which were to prove such a precious heritage of

interest for posterity. In the South of Germany the Minnesingers sang their tuneful strains and showed how possible it was to take the cruder language of the North, and pour forth as melodious hymns of praise to nature and to their beloved ones as in the more fluent Southern tongues. Most of this was done in the old Suabian high German dialect, and the basis of the modern German language was thus laid. The low German was to prove the vehicle for the original form of the animal epic or stories with regard to Reynard, the Fox, which were to prove so popular throughout all of Europe for all time thereafter.

In North France the Trouvères were accomplishing a similar work to that of the Minnesingers in South Germany, but doing it with an original genius, a refinement of style characteristic of their nation, and a finish of form that was to impress itself upon French literature for all subsequent time. Here also Jean de Meun and Guillaume de Lorris wrote the Romance of the Rose, which was to remain the most popular book in Europe down to the age of printing and for some time thereafter. At the South of France the work of the Troubadours, similar to that of the Trouvères and yet with, a spirit and character all its own, was creating a type of love songs that the world recurs to with pleasure whenever the lyrical aspect of poetry becomes fashionable. The influence of the Troubadours was to be felt in Italy, and before the end of the Thirteenth Century there were many writers of short poems that deserve a place in what is best in literature. Men like Sordello, Guido Cavalcanti, Cino da Pistoia, and Dante da

Maiano, deserve mention in any historical review of literature, quite apart from the influence which they had on their great successor, the Prince of Italian poets and one of the immortal trio of the world's supreme creative singers—Dante Alighieri. With what must have seemed the limit of conceit he placed himself among the six greatest poets, but posterity breathes his name only with those of Homer and Shakespeare.

Dante, in spite of his giant personality and sublime poetic genius, is not an exception nor a solitary phenomenon in the course of the century, but only a worthy culmination of the literary movement which, beginning in the distant West in Spain and England, gradually worked eastward quite contrary to the usual trend of human development and inspired its greatest work in the musical Tuscan dialect after having helped in the foundation of all the other modern languages. Dante is the supreme type of the Thirteenth Century, the child of his age, but the great master whom medieval influences have made all that he is. That he belongs to the century there can be no doubt, and of himself alone he would be quite sufficient to lift any period out of obscurity and place it among the favorite epochs, in which the human mind found one of those opportune moments for the expression of what is sublimest in human thought.

It is, however, the bock of the Arts of the Thirteenth Century that deserves most to be thumbed by the modern reader intent on learning something of this marvelous period of human existence. There is not a single branch of art in which the

men of this generation did not accomplish excelling things that have been favorite subjects for study and loving imitation ever since. Perhaps the most marvelous quality of the grand old Gothic cathedrals, erected during the Thirteenth Century, is not their impressiveness as a whole so much as their wonderful finish in detail. It matters not what element of construction or decoration be taken into consideration, always there is an approach to perfection in accomplishment in some one of the cathedrals that shows with what thoroughness the men of the time comprehended what was best in art, and how finally their strivings after perfection were rewarded as bountifully as perhaps it has ever been given to men to realize.

Of the major arts—architecture itself, sculpture and painting—only a word will be said here since they will be treated more fully in subsequent chapters. No more perfect effort at worthy worship of the Most High has ever been accomplished than is to be seen in the Gothic cathedrals in every country in Europe as they exist to the present day. While the movement began in North France, and gradually spread to other countries, there was never any question of mere slavish imitation, but on the contrary in each country Gothic architecture took on a national character and developed into a charming expression of the special characteristics of the people for whom and by whom it was made. English Gothic is, of course, quite different to that of France; Spanish Gothic has a character all its own; the German Gothic cathedrals partake of the heavier characteristics

of the Northern people, while Italian Gothic adds certain airy decorative qualities to the French model that give renewed interest and inevitably indicate the origin of the structures.

In painting, Cimabue's work, so wonderfully appreciated by the people of Florence that spontaneously they flocked in procession to do honor to his great picture, was the beginning of modern art. How much was accomplished before the end of the century will be best appreciated when the name of Giotto is mentioned as the culmination of the art movement of the century. As we shall see, the work done by him, especially at Assisi, has been a source of inspiration for artists down even to our own time, and there are certain qualities of his art, especially his faculty for producing the feeling of solidity in his paintings, in which very probably he has never been surpassed. Gothic cathedrals in other countries did not lend themselves so well as subjects of inspiration for decorative art, but in every country the sacred books in use in the cathedral were adorned, at the command of the artistic impulse of the period, in a way that has made the illuminated missals and office books of the Thirteenth Century perhaps the most precious that there are in the history of book-making.



ARCHANGEL MICHAEL (GIOVANNI PISANO, PISA)
CHRIST (ANDREA PISANO, FLORENCE)
STA. REPARATA (ANDREA PISANO, FLORENCE)

It might be thought that in sculpture, at least, these Thirteenth-Century generations would prove to be below the level of that perfection and artistic expression which came so assuredly in other lines. It is true that most of the sculptures of the period have defects that make them unworthy of imitation, though it is in the matter of technique that they fail rather than in honest effort to express feelings appropriately within the domain of chiseled work. On the other hand there are some supreme examples of what is best in sculpture to be found among the adornments of the cathedrals of the period. No more simply dignified

rendition of the God Man has ever been made in stone than the statue of Christ, which with such charming appropriateness the people of Amiens have called ***le Beau Dieu***, their beautiful God, and that visitors to their great cathedral can never admire sufficiently, admirably set off, as it is, in its beautiful situation above the main door of the great cathedral. Other examples are not lacking, as for instance some of the Thirteenth-Century effigies of the French kings and queens at St. Denis, and some of the wonderful sculptures at Rheims. In its place as a subsidiary art to architecture for decorative purposes, sculpture was even more eminently successful. The best example of this is the famous Angel Choir of Lincoln, one of the most beautiful things that ever came from the hand of man and whose designation indicates the belief of the centuries that only the angels could have made it.

In the handicrafts most nearly allied to the arts, the Thirteenth Century reigns supreme with a splendor unapproached by what has been accomplished in any other century. The iron work of their gates and railings, even of their hinges and latches and locks, has been admired and imitated by many generations since. When a piece of it is no longer of use, or loosens from the crumbling woodwork to which it was attached, it is straightway transported to some museum, there to be displayed not alone for its antiquarian interest, but also as a model and a suggestion to the modern designer. This same thing is true of the precious metal work of the times also, at least as regards the utensils and ornaments employed in the sacred services. The chalices

and other sacred vessels were made on severely simple lines and according to models which have since become the types of such sacred utensils for all times.

The vestments used in the sacred ceremonials partook of this same character of eminently appropriate handiwork united to the chastest of designs, executed with supreme taste. The famous cope of Ascoli which the recent Pierpont Morgan incident brought into prominence a year or so ago, is a sample of the needlework of the times that illustrates its perfection. It is said by those who are authorities in the matter that Thirteenth-Century needlework represents what is best in this line. It is not the most elaborate, nor the most showy, but it is in accordance with the best taste, supremely suitable to the objects of which it formed a part. It is, after all, only an almost inevitable appendix to the beautiful work done in the illumination of the sacred books, that the sacred vestments should have been quite as supremely artistic and just as much triumphs of art.

As a matter of fact, every minutest detail of cathedral construction and ornamentation shared in this artistic triumph. Even the inscriptions, done in brass upon the gravestones that formed part of the cathedral pavements, are models of their kind, and rubbings from them are frequently taken because of their marvelous effectiveness as designs in Gothic tracery.

Their bells were made with such care and such perfection that, down to the present time, nothing better has been accomplished in this handicraft, and their marvelous retention of tone shows

how thorough was the work of these early bell-makers.

The triumph of artistic decoration in the cathedrals, however, and the most marvelous page in the book of the Arts of the century, remains to be spoken of in their magnificent stained-glass windows. Where they learned their secret of glass-making we know not. Artists of the modern time, who have spent years in trying to perfect their own work in this line, would give anything to have some of the secrets of the glass-makers of the Thirteenth Century. Such windows as the Five Sisters at York, or the wonderful Jesse window of Chartres with some of its companions, are the despair of the modern artists in stained glass. The fact that their glass-making was not done at one, or even a few, common centers, but was apparently executed in each of these small medieval towns that were the site of a cathedral, only adds to the marvel of how the workmen of the time succeeded so well in accomplishing their purpose of solving the difficult problems of stained glasswork.

PASCHAL CANDLESTICK (BAPTISTERY, FLORENCE)

RELIQUARY (CATHEDRAL ORVIETO, UGOLINO DI VIERI)

If, to crown all that has been said about the Thirteenth Century, we now add a brief account of what was accomplished for men in the matter of liberty and the establishment of legal rights, we shall have a reasonably adequate introduction to this great subject. Liberty is thought to be a word whose true significance is of much more recent origin than the end of the Middle Ages. The rights of men are usually supposed to have received serious acknowledgment only in comparatively recent centuries. The recalling of a few facts, however, will dispel this illusion and show how these men of the later middle age laid the foundation of most of the rights and privileges that we are so proud to consider our birthright in this modern time. The first great fact in the history of modern liberty is the signing of Magna Charta which took place only a little after the middle of the first quarter of the Thirteenth Century. The movement that led up to it had arisen amongst the guildsmen as well as the churchmen and the nobles of the preceding century. When the document was signed, however, these men did not consider that their work was finished. They kept themselves ready to take further advantage of the necessities of their rulers and it was not long before they had secured political as well as legal rights.

Shortly after the middle of the Thirteenth Century the first English parliament met, and in the latter part of that half century it became a formal institution with regularly appointed times of meeting and definite duties and privileges. Then began the era of law in its modern sense for the English people. The English common law took form and its great principles were enunciated practically in the terms in which they are stated down to the present day. Bracton made his famous digest of the English common law for the use of judges and lawyers and it became a standard work of reference. Such it has remained down to our own time. At the end of the century, during the reign of Edward I, the English Justinian, the laws of the land were formulated, lacunae in legislation filled up, rights and privileges fully determined, real-estate laws put on a modern basis, and the most important portions of English law became realities that were to be modified but not essentially changed in all the after time.

This history of liberty and of law-making, so familiar with regard to England, must be repeated almost literally with regard to the continental nations. In France, the foundation of the laws of the kingdom were laid during the reign of Louis IX, and French authorities in the history of law, point with pride, to how deeply and broadly the foundations of French jurisprudence were laid. Under Louis's cousin, Ferdinand III of Castile, who, like the French monarch, has received the title of Saint, because of the uprightness of his character and all that he did for his people,

forgetful of himself, the foundations of Spanish law were laid, and it is to that time that Spanish jurists trace the origin of nearly all the rights and privileges of their people. In Germany there is a corresponding story. In Saxony there was the issue of a famous book of laws, which represented all the grants of the sovereigns, and all the claims of subjects that had been admitted by monarchs up to that time. In a word, everywhere there was a codification of laws and a laying of foundations in jurisprudence, upon which the modern superstructure of law was to rise.

This is probably the most surprising part of the Thirteenth Century. When it began men below the rank of nobles were practically slaves. Whatever rights they had were uncertain, liable to frequent violation because of their indefinite character, and any generation might, under the tyranny of some consciousless monarch, have lost even the few privileges they had enjoyed before. At the close of the Thirteenth Century this was no longer possible. The laws had been written down and monarchs were bound by them as well as their subjects. Individual caprice might no longer deprive them arbitrarily of their rights and hard won privileges, though tyranny might still assert itself and a submissive generation might, for a time, allow themselves to be governed by measures beyond the domain of legal justification. Any subsequent generation might, however, begin anew its assertion of its rights from the old-time laws, rather than from the position to which their forbears had been reduced by a tyrant's whim.

Is it any wonder, then, that we should call the generations that gave us the cathedrals, the universities, the great technical schools that were organized by the trades guilds, the great national literatures that lie at the basis of all our modern literature, the beginnings of sculpture and of art carried to such heights that artistic principles were revealed for all time, and, finally, the great men and women of this century—for more than any other it glories in names that were born not to die—is it at all surprising that we should claim for the period which, in addition to all this, saw the foundation of modern law and liberty, the right to be hailed—the greatest of human history?

THE CHURCH [SYMBOLIZED] (PARIS)

II
UNIVERSITIES AND PREPARATORY SCHOOLS

To see, at once, how well the Thirteenth deserves the name of the greatest of centuries, it is necessary, only, to open the book of her deeds and read therein what was accomplished during this period for the education of the men of the time. It is, after all, what a generation accomplishes for intellectual development and social uplift that must be counted as its greatest triumph. If life is larger in its opportunities, if men appreciate its significance better, if the development of the human mind has been rendered easier, if that precious thing, whose name, education, has been so much abused, is made readier of attainment, then the generation stamps itself as having written down in its book of deeds, things worthy for all subsequent generations to read. Though anything like proper appreciation of it has come only in very recent times, there is absolutely no period of equal length in the history of mankind in which so much was not only attempted, but successfully accomplished for education, in every sense of the word, as during the Thirteenth Century. This included, not only the education of the classes but also the education of the masses.

For the moment, we shall concern ourselves only with the education offered to, and taken advantage of by so many, in

the universities of the time. It was just at the beginning of the Thirteenth Century that the great universities came into being as schools, in which all the ordinary forms of learning were taught. During the Twelfth Century, Bologna had had a famous school of law which attracted students from all over Europe. Under Irnerius, canon and civil law secured a popularity as subjects of study such as they never had before. The study of the old Roman Law brought back with it an interest in the Latin classics, and the beginning of the true new birth—the real renaissance—of modern education must be traced from here. At Paris there was a theological school attached to the cathedral which gradually became noted for its devotion to philosophy as the basis of theology, and, about the middle of the Twelfth Century, attracted students from every part of the civilized world. As was the case at Bologna, interest after a time was not limited to philosophy and theology; other branches of study were admitted to the curriculum and a university in the modern sense came into existence.

During the first quarter of the Thirteenth Century both of these schools developed faculties for the teaching of all the known branches of knowledge. At Bologna faculties of arts, of philosophy and theology, and finally of medicine, were gradually added, and students flocked in ever increasing numbers to take advantage of these additional opportunities. At Paris, the school of medicine was established early in the Thirteenth Century, and there were graduates in medicine before the year 1220.

Law came later, but was limited to Canon law to a great extent, Orleans having a monopoly of civil law for more than a century. These two universities, Bologna and Paris, were, in every sense of the word, early in the century, real universities, differing in no essential from our modern institutions that bear the same name.

If the Thirteenth Century had done nothing else but put into shape this great instrument for the training of the human mind, which has maintained its effectiveness during seven centuries, it must be accorded a place among the epoch-making periods of history. With all our advances in modern education we have not found it necessary, or even advisable, to change, in any essential way, this mold in which the human intellect has been cast for all these years. If a man wants knowledge for its own sake, or for some practical purpose in life, then here are the faculties which will enable him to make a good beginning on the road he wishes to travel. If he wants knowledge of the liberal arts, or the consideration of man's duties to himself, to his fellow-man and to his Creator, he will find in the faculties of arts and philosophy and theology the great sources of knowledge in these subjects. If, on the other hand, he wishes to apply his mind either to the disputes of men about property, or to their injustices toward one another and the correction of abuses, then the faculty of law will supply his wants, and finally the medical school enables him, if he wishes, to learn all that can be known at a given time with regard to man's ills and their healing. We have admitted the practical-work subjects into university life,

though not without protest, but architecture, engineering, bridge-building and the like, in which the men of the Thirteenth Century accomplished such wonders, were relegated to the guilds whose technical schools, though they did not call them by that name, were quite as effective practical educators as even the most vaunted of our modern university mechanical departments.

It is rather interesting to trace the course of the development of schools in our modern sense of the term, because their evolution recapitulates, to some degree at least, the history of the individual's interest in life. The first school which acquired a European reputation was that of Salernum, a little town not far from Naples, which possessed a famous medical school as early as the ninth century, perhaps earlier. This never became a university, though its reputation as a great medical school was maintained for several centuries. This first educational opportunity to attract a large body of students from all over the world concerned mainly the needs of the body. The next set of interests which man, in the course of evolution develops, has to do with the acquisition and retention of property and the maintenance of his rights as an individual. It is not surprising, then, to find that the next school of world-wide reputation was that of law at Bologna which became the nucleus of a great university. It is only after man has looked out for his bodily needs and his property rights, that he comes to think of his duties toward himself, his fellow-men, and his Creator, and so the third of these great medieval schools, in time, was that of philosophy

and theology, at Paris.

It is sometimes thought that the word university applied to these institutions after the aggregation of other faculties, was due to the fact that there was a universality of studies, that all branches of knowledge might be followed in them. The word university, however, was not originally applied to the school itself, which, if it had all the faculties of the modern university, was, in the Thirteenth Century, called a ***studium generale***. The Latin word universitas had quite a different usage at that time. Whenever letters were formally addressed to the combined faculties of a ***studium generale*** by reigning sovereigns, or by the Pope, or by other high ecclesiastical authorities, they always began with the designation, Universitas Vestra, implying that the greeting was to all of the faculty, universally and without exception. Gradually, because of this word constantly occurring at the beginning of letters to the faculty, the term universitas came to be applied to the institution.[1]

While the universities, as is typically exemplified by the histories of Bologna and Paris, and even to a noteworthy degree of Oxford, grew up around the cathedrals, they cannot be

[1] Certain other terms that occur in these letters of greeting to university officials have a more than passing interest. The rector of the university, for instance, was always formally addressed as Amplitudo Vestra, that is, Your Ampleness. Considering the fact that not a few of the rectors of the old time universities, all of whom were necessarily ecclesiastics, must have had the ampleness of girth so characteristic of their order under certain circumstances, there is an appropriateness about this formal designation which perhaps appeals more to the risibilities of the modern mind than to those of medieval time.

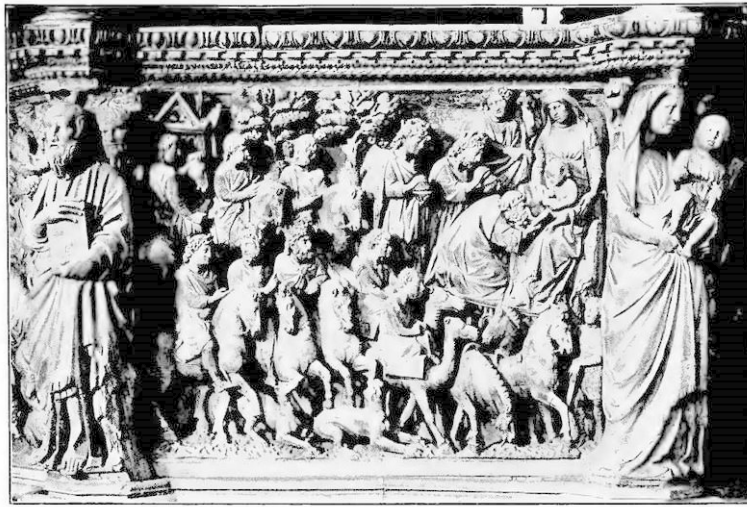
considered in any sense the deliberate creation, much less the formal invention, of any particular set of men. The idea of a university was not born into the world in full panoply as Minerva from the brain of Jove. No one set about consciously organizing for the establishment of complete institutions of learning. Like everything destined to mean much in the world the universities were a natural growth from the favoring soil in which living seeds were planted. They sprang from the wonderful inquiring spirit of the time and the marvelous desire for knowledge and for the higher intellectual life that came over the people of Europe during the Thirteenth Century. The school at Paris became famous, and attracted pupils during the Twelfth Century, because of the new-born interest in scholastic philosophy. After the pupils had gathered in large numbers their enthusiasm led to the establishment of further courses of study. The same thing was true at Bologna, where the study of Law first attracted a crowd of earnest students, and then the demand for broader education led to the establishment of other faculties.

Above all, there was no conscious attempt on the part of any supposed better class to stoop down and uplift those presumably below it. As we shall see, the students of the university came mainly from the middle class of the population. They became ardently devoted to their teachers. As in all really educational work, it was the man and not the institution that counted for much. In case of disagreement of one of these with the university authorities, not infrequently there was a sacrifice of personal

advantage for the moment on the part of the students in order to follow a favorite teacher. Paris had examples of this several times before the Thirteenth Century, and notably in the case of Abelard had seen thousands of students follow him into the distant desert where he had retired. Later on, when abuses on the part of the authorities of Paris limited the University's privileges, led to the withdrawal of students and the foundation of Oxford, there was a community of interest on the part of certain members of the faculty and thousands of students. This movement was, however, distinctly of a popular character, in the sense that it was not guided by political or other leaders. Nearly all of the features of university life during the Thirteenth Century, emphasize the democracy of feeling of the students, and make it clear that the blowing of the wind of the spirit of human liberty and intellectual enthusiasm influencing the minds of the generation, rather than any formal attempt on the part of any class of men deliberately to provide educational opportunities, is the underlying feature of university foundation and development.

While the great universities of Paris, Bologna, and Oxford were, by far, the most important, they must not be considered as the only educational institutions deserving the name of universities, even in our modern sense, that took definite form during the Thirteenth Century. In Italy, mainly under the fostering care of ecclesiastics, encouraged by such Popes as Innocent III, Gregory IX, and Honorius IV, nearly a dozen other towns and cities saw the rise of Studia Generalia eventually

destined, and that within a few decades after their foundation, to have the complete set of faculties, and such a number of teachers and of students as merited for them the name of University.



ADORATION OF MAGI (PULPIT, SIENA, NIC. PISANO).

Very early in the century Vicenza, Reggio, and Arezzo became university towns. Before the first quarter of the century was finished there were universities at Padua, at Naples, and at Vercelli. In spite of the troublous times and the great reduction in the population of Rome there was a university founded in connection with the Roman Curia, that is the Papal Court, before

the middle of the century, and Siena and Piacenza had founded rival university institutions. Perugia had a famous school which became a complete university early in the Fourteenth Century.

Nor were other countries much behind Italy in this enthusiastic movement. Montpelier had, for over a century before the beginning of the thirteenth, rejoiced in a medical school which was the most important rival of that at Salernum. At the beginning this reflected largely the Moorish element in educational affairs in Europe at this time. During the course of the Thirteenth Century Montpelier developed into a full-fledged university though the medical school still continued to be the most important faculty. Medical students from all over the world flocked to the salubrious town to which patients from all over were attracted, and its teachers and writers of medicine have been famous in medical history ever since. How thorough was the organization of clinical medical work at Montpelier may perhaps best be appreciated from the fact, noted in the chapter on City Hospitals—Organized Charity, that when Pope Innocent III. wished to establish a model hospital at Rome with the idea that it would form an exemplar for other European cities, he sent down to Montpelier and summoned Guy, the head of the Hospital of the Holy Ghost in that city, to the Papal Capital to establish the Roman Hospital of the Holy Ghost and, in connection with it, a large number of hospitals all over Europe.

A corresponding state of affairs to that of Montpelier is to be noted at Orleans, only here the central school, around which the

university gradually grouped itself, was the Faculty of Civil Law. Canon law was taught at Paris in connection with the theological course, but there had always been objection to the admission of civil law as a faculty on a basis of equality with the other faculties. There was indeed at this time some rivalry between the civil and the canon law and so the study of civil law was relegated to other universities. Even early in the Twelfth Century Orleans was famous for its school of civil law in which the exposition of the principles of the old Roman law constituted the basis of the university course. During the Thirteenth Century the remaining departments of the university gradually developed, so that by the close of the century, there seem to be conservative claims for over one thousand students. Besides these three, French universities were also established at Angers, at Toulouse, and the beginnings of institutions to become universities early in the next century are recorded at Avignon and Cahors.

Spain felt the impetus of the university movement early in the Thirteenth Century and a university was founded at Palencia about the end of the first decade. This was founded by Alfonso XII. and was greatly encouraged by him. It is sometimes said that this university was transferred to Salamanca about 1230, but this is denied by Denifle, whose authority in matters of university history is unquestionable. It seems not unlikely that Salamanca drew a number of students from Palencia but that the latter continued still to attract many students. About the middle of the Thirteenth Century the university of Valladolid was founded.

Before the end of the century a fourth university, that of Lerida, had been established in the Spanish peninsula. Spain was to see the greatest development of universities during the Fourteenth Century. It was not long after the end of the Thirteenth Century before Coimbra, in Portugal, began to assume importance as an educational institution, though it was not to have sufficient faculty and students to deserve the more ambitious title of university for half a century.

While most people who know anything about the history of education realize the important position occupied by the universities during the Thirteenth Century and appreciate the estimation in which they were held and the numbers that attended them, very few seem to know anything of the preparatory schools of the time, and are prone to think that all the educational effort of these generations was exhausted in connection with the university. It is often said, as we shall see, that one reason for the large number of students reported as in attendance at the universities during the Thirteenth Century is to be found in the fact that these institutions practically combined the preparatory school and the academy of our time with the university. The universities are supposed to have been the only centers of education worthy of mention. There is no doubt that a number of quite young students were in attendance at the universities, that is, boys from 12 to 15 who would in our time be only in the preparatory school. We shall explain, however, in the chapter on the Numbers in Attendance at the Universities that students went

to college much younger in the past and graduated much earlier than they do in our day, yet apparently, without any injury to the efficacy of their educational training.

In the universities of Southern Europe it is still the custom for boys to graduate with the degree of A. B. at the age of 15 to 16, which supposes attendance at the university, or its equivalent in under-graduate courses, at the age of 12 or even less. There is no need, however, to appeal to the precociousness of the southern nations in explanation of this, since there are some good examples of it in comparatively recent times here in America. Most of the colleges in this country, in the early part of the nineteenth century and the end of the eighteenth, graduated young men of 16 and 17 and thought that they were accomplishing a good purpose, in allowing them to get at their life work in early manhood. Many of the distinguished divines who made names in educational work are famous for their early graduations. Dr. Benjamin Rush, of Philadelphia, whom the medical profession of this country hails as the Father of American Medicine, graduated at Princeton at 15. He must have begun his college course, therefore, about the age of 12. This may be considered inadvisable in our generation, but, it must be remembered that there are many even in our day, who think that our college men are allowed to get at their life-work somewhat too late for their own good.

It must be emphasized, moreover, that in many of the university towns there were also preparatory schools. Courses

were not regularly organized until well on in the Thirteenth Century, but younger brothers and friends of students as well as of professors would not infrequently be placed under their care and thus be enabled to receive their preparation for university work. At Paris, Robert Sorbonne founded a preparatory school for that institution under the name of the College of Calvi. Other colleges of this kind also existed in Paris. This custom of having a preparatory school in association with the university has not been abandoned even in our own day, and it has some decided advantages from an educational standpoint, though perhaps these are not enough to balance certain ethical disadvantages almost sure to attach to such a system, disadvantages which ultimately led in the Middle Ages to the prohibition that young students should be taken at the universities under any pretext.

The presence of these young students in university towns probably did add considerably to the numbers reported as in attendance. It must not be thought, however, that there were no formal preparatory schools quite apart from university influence. This thought has been the root of more misunderstanding of the medieval system of education than almost any other. As a matter of fact there were preliminary and preparatory schools, what we would now call academies and colleges, in connection with all of the important monasteries and with every cathedral. Schools of less importance were required by a decree of a council held at the beginning of the Thirteenth Century to be maintained in connection with every bishop's church. During

the Thirteenth Century there were some twenty cathedrals in various parts of England; each one had its cathedral school. Besides these there were at least as many important abbeys, nearly a dozen of them immense institutions, in which there were fine libraries, large writing rooms, in which copies of books were being constantly made, many of the members of the communities of which were university men, and around which, therefore, there clung an atmosphere of bookishness and educational influence that made them preparatory schools of a high type. The buildings themselves were of the highest type of architecture; the community life was well calculated to bring out what was best in the intellectuality of members of the community, and, then, there was a rivalry between the various religious orders which made them prepare their men well in order that they might do honor to the order when they had the opportunity later, as most of those who had the ability and the taste actually did have, to go to one or other of the universities.

This system of preparatory schools need not be accepted on the mere assumption that the monasteries and churches must surely have set about such work, because there is abundant evidence of the actual establishment and maintenance of such schools. With regard to the monasteries there can be no doubt, because it was the members of the religious orders who particularly distinguished themselves at the universities, and the histories of Oxford, Cambridge, and Paris are full of their accomplishments. They succeeded in obtaining the right

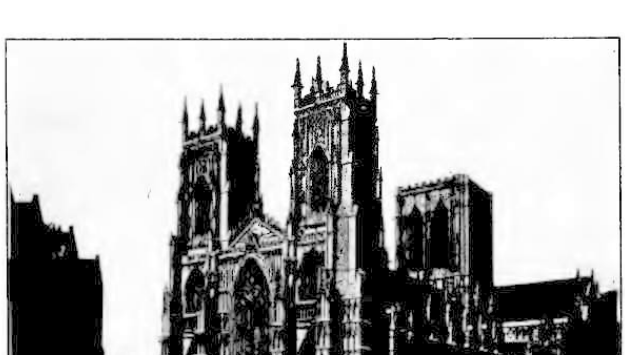
to have their own houses at the universities and to have their own examinations count in university work, in order that they might maintain their influence over the members of the orders during the precious formative period of their intellectual life. With regard to the church schools there is convincing evidence of another kind.

In the chapter on the foundation of City Hospitals we have detailed on the authority of Virchow all that Innocent III. accomplished for the hospital system of Europe. This chapter was published originally in the form of a lecture from the historical department of the Medical School of Fordham University and a reprint of it was sent to a distinguished American educator well known for his condemnation of supposed church intolerance in the matter of education and scientific development. He said that he was glad to have it because it confirmed and even broadened the idea that he had long cherished, that the Church had done more for Charity during the despised Middle Ages than national governments had ever been able to accomplish since, though it was all the more surprising to him that it should not have under the circumstances, done more for education, since this might have prevented some of the ills that charity had afterward to relieve. This expression very probably represents the state of mind of very many scholars with regard to this period. The Church is supposed to have interested herself in charity almost to the exclusion of educational influence. Charity is of course admitted

to be her special work, yet these scholars cannot help but regret that more was not done in social prophylaxis by the encouragement of education.

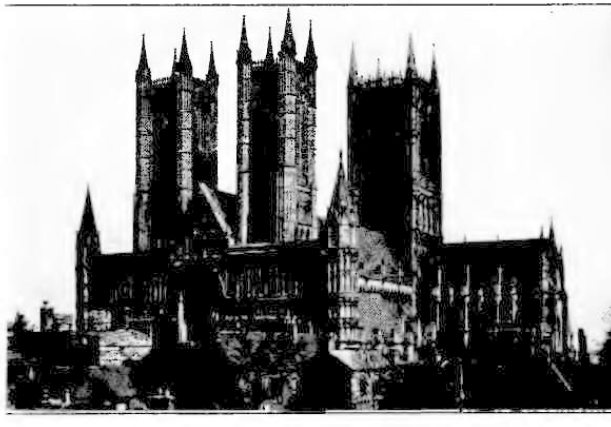
In the light of this almost universal expression it is all the more interesting to find that such opinions are founded entirely on a lack of knowledge of what was done in education, since the same Pope, in practically the same way and by the exertion of the same prestige and ecclesiastical authority, did for education just what he did for charity in the matter of the hospitals and the ailing poor. Virchow, as we shall see, declared that to Innocent III. is due the foundation of practically all the city hospitals in Europe. If the effect of certain of the decrees issued in his papacy be carefully followed, it will be found that practically as many schools as hospitals owe their origin to his beneficent wisdom and his paternal desire to spread the advantages of Christianity all over the civilized world. This policy with regard to the hospitals led to the foundation before the end of the century of at least one hospital in every diocese of all the countries which were more closely allied with the Holy See. There is extant a decree issued by the famous council of Lateran, in 1215, a council in which Innocent's authority was dominant, requiring the establishment of a Chair of Grammar in connection with every cathedral in the Christian world. This Chair of Grammar included at least three of the so-called liberal arts and provided for what would now be called, the education of a school preparatory to a university.

Before this, Innocent III,[2] who had himself received the benefit of the best education of the time, having spent some years at Rome and later at Paris and at Bologna, had encouraged the sending of students to these universities in every way.



CATHEDRAL (YORK)

[2] Most of the details of what was accomplished for education by Pope Innocent III, and all the references needed to supply further information, can be found in the ***Hestoire Litteratire de la France***, recent volumes of which were issued by the French Institute, though the magnificent work itself was begun by Benedictines of St. Maur, who completed some fifteen volumes. The sixteenth volume, most of which is written by Dauñou, is especially valuable for this period. Du Boulay, in his History of the University of Paris, will furnish additional information with regard to Pope Innocent's relations to education throughout Europe, especially, of course, in what regards the University of Paris.



CATHEDRAL (LINCOLN)

Bishops who came to Rome were sure to hear inculcated the advisability of a taste for letters in clergymen, hear it said often enough that such a taste would surely increase the usefulness of all churchmen. Schools had been encouraged before the issuance of the decree. This only came as a confirmatory document calculated to perpetuate the policy that had already been so prominently in vogue in the church for over fifteen years of the Pope's reign. It was meant, too, to make clear to hesitant and tardy bishops, who might have thought that the papal interest in education was merely personal, that the policy of the church was concerned in it and recalled them to a sense of duty in the matter, since the ordinary enthusiasm for letters, even with the added encouragement of the Pope, did not suffice to make them realize

the necessity for educational establishments.

The institution of the schools of grammar in connection with cathedrals was well adapted to bring about a definite increase in the opportunities for book learning for those who desired it. In connection with the cathedrals there was always a band of canons whose duty it was to take part in the singing of the daily office. Their ceremonial and ritual duties did not, however, occupy them more than a few hours each day. During the rest of the time they were free to devote themselves to any subject in which they might be interested and had ample time for teaching. The requirement that there should be at least a school of grammar in connection with every cathedral afforded definite opportunity to such of these ecclesiastics as had intellectual tastes to devote themselves to the spread of knowledge and of culture, and this reacted, as can be readily understood, to make the whole band of canons more interested in the things of the mind, and to make the cathedral even more the intellectual center of the district than might otherwise have been the case.

For the metropolitan churches a more far-reaching regulation was made by this same council of Lateran under the inspiration of the Pope himself. These important Archiepiscopal cathedrals were required to maintain professors of three chairs. One of these was to teach grammar, a second philosophy, and a third canon law. Under these designations there was practically included much of what is now studied not only in preparatory schools but also at the beginning of University courses. The

regulation was evidently intended to lead eventually to the formation of many more universities than were then in existence, because already it had become clear that the traveling of students to long distances and their gathering in such large numbers in towns away from home influences, led to many abuses that might be obviated if they could stay in their native cities, or at least did not have to leave their native provinces. This was a far-seeing regulation that, like so many other decrees of the century, manifests the very practical policy of the Pope in matters of education as well as charity. As a matter of fact this decree did lead to the gradual development of about twenty universities during the Thirteenth Century, and to the establishment of a number of other schools so important in scope and attendance that their evolution into universities during the Fourteenth Century became comparatively easy. This formal church law, moreover, imposed upon ecclesiastical authorities the necessity for providing for even higher education in their dioceses and made them realize that it was entirely in sympathy with the church's spirit and in accord with the wish of the Father of Christendom, that they should make as ample provision for education as they did for charity, though this last was supposed to be their special task as pastors of the Christian flock.

All this important work for the foundation of preparatory schools in every diocese and of the preliminary organization of teaching institutions that might easily develop into universities, as they actually did in a score of cases in metropolitan cities, was

accomplished under the first Pope of the Thirteenth Century, Innocent III. His successors kept up this good work. Pope Honorius III., his immediate successor, went so far in this matter as to depose a bishop who had not read Donatus, the popular grammarian of the time. The bishop evidently was considered unfit, as far as his mental training went, to occupy the important post of head of a diocese. Pope Gregory IX., the nephew of Innocent III., was one of the most important patrons of the study of law in this period (see Legal Origins in Other Countries), and encouraged the collection of the decrees of former Popes so as to make them available for purposes of study as well as for court use. He is famous for having protected the University of Paris during some of the serious trouble with the municipal authorities, when the large increase of the number of students in attendance at the University had unfortunately brought about strained relations between town and gown.

Pope Innocent IV. by several decrees encouraged the development of the University of Paris, increased its rights and conferred new privileges. He also did much to develop the University of Toulouse, and especially to raise its standard and make it equal to that of Paris as far as possible. The patronage of Toulouse on the part of the Pope is all the more striking because the study of civil law was here a special feature and the ecclesiastical authorities were often said to have looked askance at the rising prominence of civil law, since it threatened to diminish the importance of canon law; and the cultivation of

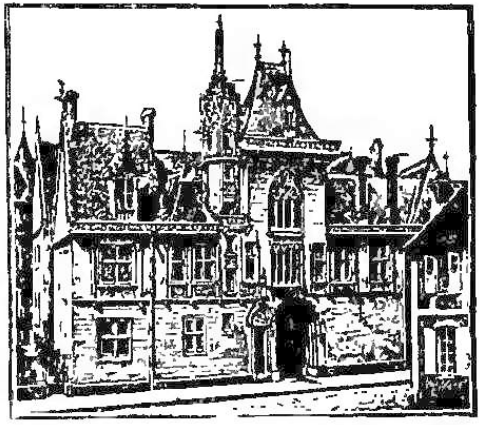
it, only too frequently, seemed to give rise to friction between civil and ecclesiastical authorities. While the pontifical court of Innocent IV. was maintained at Lyons it seemed, according to the Literary History of France,[3] more like an academy of theology and of canon law than the court of a great monarch whose power was acknowledged throughout the world, or a great ecclesiastic who might be expected to be occupied with details of Church government.

Succeeding Popes of the century were not less prominent in their patronage of education. Pope Alexander IV. supported the cause of the Mendicant Friars against the University of Paris, but this was evidently with the best of intentions. The mendicants came to claim the privilege of having houses in association with the university in which they might have lectures for the members of their orders, and asked for due allowance in the matter of degrees for courses thus taken. The faculty of the University did not want to grant this privilege, though it was acknowledged that some of the best professors in the University were members of the Mendicant orders, and we need only mention such names as Albertus Magnus and St. Thomas Aquinas from the Dominicans, and St. Bonaventure, Roger Bacon and Duns Scotus from the Franciscans, to show the truth of this assertion. To give such a privilege seemed a derogation of the faculty rights and the University refused. Then the Holy See interfered to insist that the University must give degrees for work done, rather than

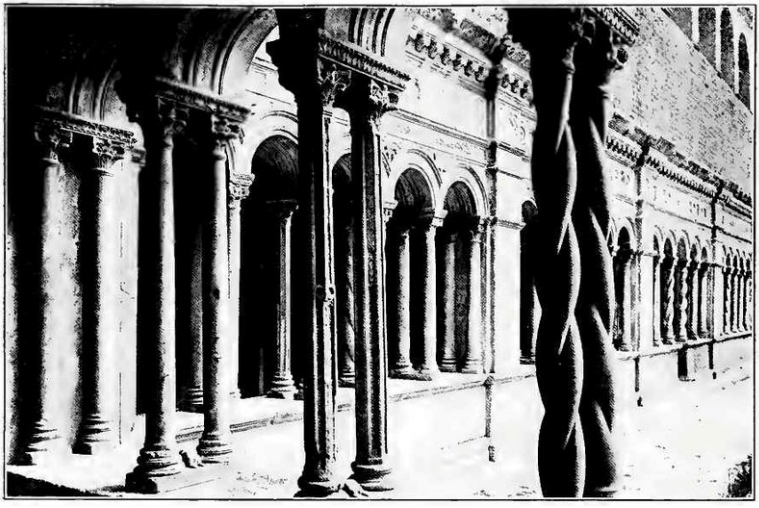
[3] Histoire Litteratire de la France, Vol. XVI, Introductory Discourse.

merely for regulation attendance. The best possible proof that Pope Alexander cannot be considered as wishing to injure or even diminish the prestige of the University in any way, is to be found in the fact that he afterwards sent two of his nephews to Paris to attend at the University.

All these Popes, so far mentioned, were not Frenchmen and therefore could have no national feeling in the matter of the University of Paris or of the French universities in general. It is not surprising to find that Pope Urban IV., who was a Frenchman and an alumnus of the University of Paris, elevated many French scholars, and especially his fellow alumni of Paris, to Church dignitaries of various kinds. After Urban IV., Nicholas IV. who succeeded him, though once more an Italian, founded chairs in the University of Montpelier, and also a professorship in a school that it was hoped would develop into a university at Gray in Franche Comte. In a word, looked at from every point of view, it must be admitted that the Church and ecclesiastical authorities were quite as much interested in education as in charity during this century, and it is to them that must be traced the foundation of the preparatory schools, as well as the universities, and the origin and development of the great educational movement that stamps this century as the greatest in human history.



JACQUES COEUR'S HOUSE (BOURGES)



CLOISTER OF ST. JOHN LATERAN (ROME)

III
WHAT AND HOW THEY STUDIED AT THE UNIVERSITIES

It is usually the custom for text books of education to dismiss the teaching at the universities of the Middle Ages with some such expression as: "The teachers were mainly engaged in metaphysical speculations and the students were occupied with exercises in logic and in dialectics, learning in long drawn out disputations how to use the intellectual instruments they possessed but never actually applying them. All knowledge was supposed to be amenable to increase through dialectical discussion and all truth was supposed, to be obtainable as the conclusion of a regular syllogism." Great fun especially is made of the long-winded disputations, the time-taking public exercises in dialectics, the fine hair-drawn distinctions presumably with but the scantiest basis of truth behind them and in general the placing of words for realities in the investigation of truth and the conveyance of information. The sublime ignorance of educators who talk thus about the century that saw the rise of the universities in connection with the erection of the great Cathedrals, is only equaled by their assumption of knowledge.

It is very easy to make fun of a past generation and often rather difficult to enter into and appreciate its spirit. Ridicule comes

natural to human nature, alas! but sympathy requires serious mental application for understanding's sake. Fortunately there has come in recent years a very different feeling in the minds of many mature and faithful students of this period, as regards the Middle Ages and its education. Dialectics may seem to be a waste of time to those who consider the training of the human mind as of little value in comparison with the stocking of it with information. Dialectical training will probably not often enable men to earn more money than might have otherwise been the case. This will be eminently true if the dialectician is to devote himself to commercial enterprises in his future life. If he is to take up one of the professions, however, there may be some doubt as to whether even his practical effectiveness will not be increased by a good course of logic. There is, however, another point of view from which this matter of the study of dialectics may be viewed, and which has been taken very well by Prof. Saintsbury of the University of Edinburgh in a recent volume on the Thirteenth Century.

He insists in a passage which we quote at length in the chapter on the Prose of the Century, that if this training in logic had not been obtained at this time in European development, the results might have been serious for our modern languages and modern education. He says: "If at the outset of the career of the modern languages, men had thought with the looseness of modern thought, had indulged in the haphazard slovenliness of modern logic, had popularized theology and vulgarized rhetoric,

as we have seen both popularized and vulgarized since, we should indeed have been in evil case." He maintains that "the far-reaching educative influence in mere language, in mere system of arrangement and expression, must be considered as one of the great benefits of Scholasticism." This is, after all, only a similar opinion to that evidently entertained by Mr. John Stuart Mill, who, as Prof. Saintsbury says, was not often a scholastically-minded philosopher, for he quotes in the preface of his logic two very striking opinions from very different sources, the Scotch philosopher, Hamilton, and the French philosophical writer, Condorcet. Hamilton said, "It is to the schoolmen that the vulgar languages are indebted for what precision and analytical subtlety they possess." Condorcet went even further than this, and used expressions that doubless will be a great source of surprise to those who do not realize how much of admiration is always engendered in those who really study the schoolmen seriously and do not take opinions of them from the chance reading of a few scattered passages, or depend for the data of their judgment on some second-hand authority, who thought it clever to abuse these old-time thinkers. Condorcet thought them far in advance of the old Greek philosophers for, he said, "Logic, ethics, and metaphysics itself, owe to scholasticism a precision unknown to the ancients themselves."

With regard to the methods and contents of the teaching in the undergraduate department of the university, that is, in what we would now call the arts department, there is naturally no little

interest at the present time. Besides the standards set up and the tests required can scarcely fail to attract attention. Professor Turner, in his History of Philosophy, has summed up much of what we know in this matter in a paragraph so full of information that we quote it in order to give our readers the best possible idea in a compendious form of these details of the old-time education.

> "By statutes issued at various times during the Thirteenth Century it was provided that the professor should read, that is expound, the text of certain standard authors in philosophy and theology. In a document published by Denifle, (the distinguished authority on medieval universities) and by him referred to the year 1232, we find the following works among those prescribed for the Faculty of Arts: Logica Vetus (the old Boethian text of a portion of the Organon, probably accompanied by Porphyry's Isagoge); Logica Nova (the new translation of the Organon); Gilbert's Liber Sex Principorium; and Donatus's Barbarismus. A few years later (1255), the following works are prescribed: Aristotle's Physics, Metaphysics, De Anima, De Animalibus, De Caelo et Mundo, Meteorica, the minor psychological treatises and some Arabian or Jewish works, such as the Liber de Causis and De Differentia Spirititus et Animae."
>
> "The first degree for which the student of arts presented himself was that of bachelor. The candidate for this degree, after a preliminary test called responsiones (this regulation went into effect not later than 1275), presented himself for the determination which was a public defense

of a certain number of theses against opponents chosen from the audience. At the end of the disputation, the defender summed up, or determined, his conclusions. After determining, the bachelor resumed his studies for the licentiate, assuming also the task of cursorily explaining to junior students some portion of the Organon. The test for the degree of licentiate consisted in a ***collatio***, or exposition of several texts, after the manner of the masters. The student was now a licensed teacher; he did not, however, become magister, or master of arts, until he had delivered what was called the ***inceptio***, or inaugural lecture, and was actually installed (***birrettatio***). If he continued to teach he was called ***magisier actu regens***; if he departed from the university or took up other work, he was called ***magister non regens***. It may be said that, as a general rule, the course of reading was: (1) for the bachelor's degree, grammar, logic, and psychology; (2) for the licentiate, natural philosophy; (3) for the master's degree, ethics, and the completion of the course of natural philosophy."

Quite apart from the value of its methods, however, scholasticism in certain of its features had a value in the material which it discussed and developed that modern generations only too frequently fail to realize. With regard to this the same distinguished authority whom we quoted with regard to dialectics, Prof. Saintsbury, does not hesitate to use expressions which will seem little short of rankly heretical to those who swear by modern science, and yet may serve to inject some eminently suggestive ideas into a sadly misunderstood subject.

> "Yet there has always in generous souls who have some tincture of philosophy, subsisted a curious kind of sympathy and yearning over the work of these generations of mainly disinterested scholars, who, whatever they were, were thorough, and whatever they could not do, could think. ***And there, have even, in these latter days, been some graceless ones who have asked whether the Science of the nineteenth century, after an equal interval, will be of any more positive value—whether it will not have even less comparative interest than that which appertains to the Scholasticism of the Thirteenth."***

In the light of this it has seemed well to try to show in terms of present-day science some of the important reflections with regard to such problems of natural history, as magnetism, the composition of matter, and the relation of things physical to one another, which we now include under the name science, some of the thoughts that these scholars of the Thirteenth Century were thinking and were developing for the benefit of the enthusiastic students who flocked to the universities. We will find in such a review though it must necessarily be brief many more anticipations of modern science than would be thought possible.

To take the example for the moment of magnetism which is usually considered to be a subject entirely of modern attention, a good idea of the intense interest of this century in things scientific, can be obtained from the following short paragraph in which Brother Potamian in his sketch of Petrus Peregrinus, condenses the references to magnetic phenomena that are found

in the literature of the time. Most of the writers he mentions were not scientists in the ordinary sense of the word but were literary men, and the fact that these references occur shows very clearly that there must have been wide-spread interest in such scientific phenomena, since they had attracted the attention of literary writers, who would not have spoken of them doubtless, but that they knew that in this they would be satisfying as well as exciting public interest.

> "Abbot Neckam, the Augustinian (1157-1217), distinguished between the properties of the two ends of the lodestone, and gives in his De Utensilibus, what is perhaps the earliest reference to the mariner's compass that we have. Albertus Magnus, the Dominican (1193-1280), in his treatise De Mineralibus, enumerates different kinds of natural magnets and states some of the properties commonly attributed to them; the minstrel, Guyot de Provins, in a famous satirical poem, written about 1208, refers to the directive quality of the lodestone and its use in navigation, as do also Cardinal de Vitry in his Historia Orientialis (1215-1220), Brunetto Latini, poet, orator and philosopher (the teacher of Dante), in his Tresor des Sciences, a veritable library, written in Paris in 1260; Raymond Lully, the enlightened Doctor, in his treatise, De Contemplatione, begun in 1272, and Guido Guinicelli, the poet-priest of Bologna, who died in 1276."[4]

[4] The letter of Petrus Peregrinus on the Magnet, A. D. 1269, translated by Bro. Arnold, M. Sc., with an Introductory Note by Bro. Potamian, N. Y., 1904.

The metaphysics of the medieval universities have come in for quite as much animadversion, not to say ridicule, as the dialectics. None of its departments is spared in the condemnation, though most fun is made of the gropings of the medieval mind after truth in the physical sciences. The cosmology, the science of matter as it appealed to the medieval mind, is usually considered to have been so entirely speculative as to deserve no further attention. We have presumably, learned so much by experimental demonstration and original observation in the physical sciences, that any thinking of the medieval mind along these lines may, in the opinion of those who know nothing of what they speak, be set aside as preposterous, or at best nugatory. It will surely be a source of surprise, then, to find that in the consideration of the composition of matter and of the problem of the forces connected with it, the minds of the medieval schoolmen were occupied with just the same questions that have been most interesting to the Nineteenth Century and that curiously enough the conclusions they reached, though by very different methods of investigation, were almost exactly the same as those to which modern physical scientists have attained by their refined methods of investigation.

One or two examples will suffice, I think, to show very clearly that the students of the Thirteenth Century had presented to them practically the same problems with regard to matter, its origin and composition, as occupy the students of the present generation. For instance Thomas Aquinas usually known as St.

Thomas, in a series of lectures given at the University of Paris toward the end of the third quarter of the Thirteenth Century, stated as the most important conclusion with regard to matter, that ***"Nihil omnino in nihilum redigetur***,"' "Nothing at all will ever be reduced to nothingness." By this it was very evident from the context that he meant that matter would never be annihilated and could never be destroyed. It might be changed in various ways but it could never go back into the nothingness from which it had been taken by the creative act. Annihilation was pronounced as not being a part of the scheme of things as far as the human mind could hope to fathom its meaning.

In this sentence, then, Thomas of Aquin was proclaiming the doctrine of the indestructibility of matter. It was not until well on in the nineteenth century that the chemists and physicists of modern times realized the truth of this great principle. The chemists had seen matter change its form in many ways, had seen it disappear apparently in the smoke of fire or evaporate under the influence of heat, but investigation proved that if care were taken in the collection of the gases that came off under these circumstances, of the ashes of combustion and of the residue of evaporation, all the original material that had been contained in the supposedly disappearing substance could be recovered or at least completely accounted for. The physicists on their part had realized this same truth and finally there came the definite enunciation of the absolute indestructibility of matter. St. Thomas' conclusion "Nothing at all will ever be

reduced to nothingness" had anticipated this doctrine by nearly seven centuries. What happened in the Nineteenth Century was that there came an experimental demonstration of the truth of the principle. The principle itself, however, had been reached long before by the human mind by speculative processes quite as inerrable in their way as the more modern method of investigation.

When St. Thomas used the aphorism "Nothing at all will ever be reduced to nothingness" there was another signification that he attached to the words quite as clearly as that by which they expressed the indestructibility of matter. For him ***Nihil*** or nothing meant neither ***matter*** nor ***form***, that is, neither the material substance nor the energy which is contained in it. He meant then, that no energy would ever be destroyed as well as no matter would ever be annihilated. He was teaching the conservation of energy as well as the indestructibility of matter. Here once more the experimental demonstration of the doctrine was delayed for over six centuries and a half. The truth itself, however, had been reached by this medieval master-mind and was the subject of his teaching to the university students in Paris in the Thirteenth Century. These examples should, I think, serve to illustrate that the minds of medieval students were occupied with practically the same questions as those which are now taught to the university students of our day. There are, however, some even more striking anticipations of modern teaching that will serve to demonstrate this community of educational interests in

spite of seven centuries of time separation.

In recent years we have come to realize that matter is not the manifold material we were accustomed to think it when we accepted the hypothesis that there were some seventy odd different kinds of atoms, each one absolutely independent of any other and representing an ultimate term in science. The atomic theory from this standpoint has proved to be only a working hypothesis that was useful for a time, but that our physicists are now agreed must not be considered as something absolute. Radium has been observed changing into helium and the relations of atoms to one another as they are now known, make it almost certain that all of them have an underlying sub-stratum the same in all, but differentiated by the dynamic energies with which matter in its different forms is gifted. Sir Oliver Lodge has stated this theory of the constitution of matter very clearly in recent years, and in doing so has only been voicing the practically universal sentiment of those who have been following the latest developments in the physical sciences. Strange as it may appear, this was exactly the teaching of Aquinas and the schoolmen with regard to the constitution of matter. They said that the two constituting principles of matter were prime matter and form. By prime matter they meant the material sub-stratum the same in all material things. By form they meant the special dynamic energy which, entering into prime matter, causes it to act differently from other kinds and gives it all the particular qualities by which we recognize it. This theory was

not original with them, having been adopted from Aristotle, but it was very clearly set forth, profoundly discussed, and amply illustrated by the schoolmen. In its development this theory was made to be of the greatest help in the explanation of many other difficulties with regard to living as well as non-living things in their hands. The theory has its difficulties, but they are less than those of any other theory of the constitution of matter, and it has been accepted by more philosophic thinkers since the Thirteenth Century than any other doctrine of similar nature. It may be said that it was reached only by deduction and not by experimental observation. Such an expression, however, instead of being really an objection is rather a demonstration of the fact that great truths may be reached by deduction yet only demonstrated by inductive methods many centuries later.

Of course it may well be said even after all these communities of interest between the medieval and the modern teaching of the general principles of science has been pointed out, that the universities of the Middle Ages did not present the subjects under discussion in a practical way, and their teaching was not likely to lead to directly beneficial results in applied science. It might well he responded to this, that it is not the function of a university to teach applications of science but only the great principles, the broad generalizations that underlie scientific thinking, leaving details to be filled in in whatever form of practical work the man may take up. Very few of those, however, who talk about the purely speculative character of medieval teaching

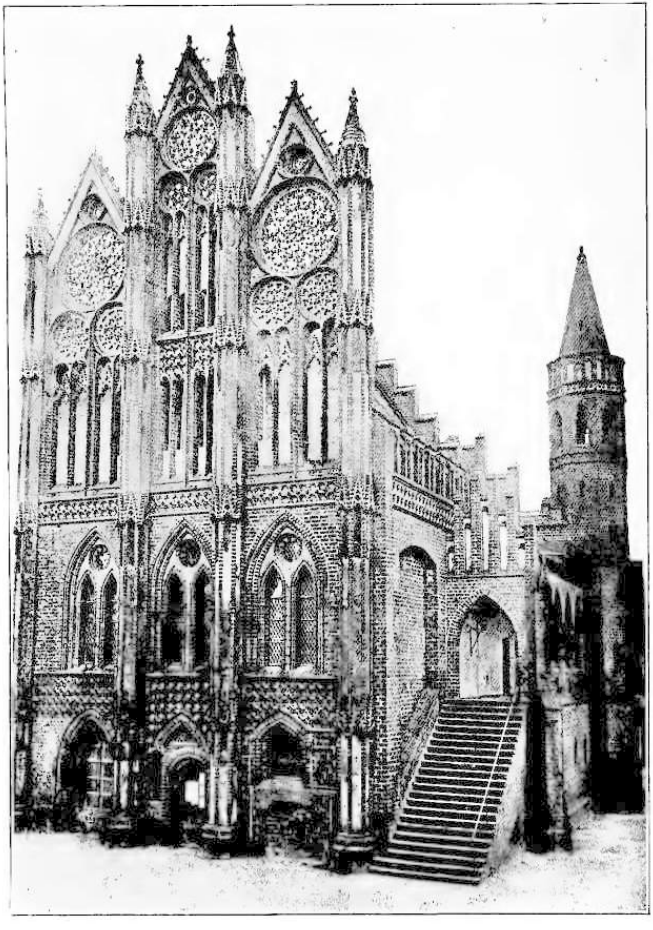
have manifestly ever made it their business to know anything about the actual facts of old-time university teaching by definite knowledge, but have rather allowed themselves to be guided by speculation and by inadequate second-hand authorities, whose dicta they have never taken the trouble to substantiate by a glance at contemporary authorities on medieval matters.

It will be interesting to quote for the information of such men, the opinion of the greatest of medieval scientists with regard to the reason why men do not obtain real knowledge more rapidly than would seem ought to be the case, from the amount of work which they have devoted to obtaining it. Roger Bacon, summing up for Pope Clement the body of doctrine that he was teaching at the University of Oxford in the Thirteenth Century, starts out with the principle that there are four grounds of human ignorance. "These are first, trust in inadequate authority; second, the force of custom which leads men to accept too unquestioningly what has been accepted before their time; third, the placing of confidence in the opinion of the inexperienced; and fourth, the hiding of one's own ignorance with the parade of a superficial wisdom." Surely no one will ever be able to improve on these four grounds for human ignorance, and they continue to be as important in the twentieth century as they were in the Thirteenth. They could only have emanated from an eminently practical mind, accustomed to test by observation and by careful searching of authorities, every proposition that came to him. Professor Henry Morley, Professor of English

Literature at University College, London, says of these grounds for ignorance of Roger Bacon, in his English Writers, Volume III, page 321: "No part of that ground has yet been cut away from beneath the feet of students, although six centuries ago the Oxford friar clearly pointed out its character. We still make sheep walks of second, third, and fourth and fiftieth-hand references to authority; still we are the slaves of habit; still we are found following too frequently the untaught crowd; still we flinch from the righteous and wholesome phrase, 'I do not know'; and acquiesce actively in the opinion of others that we know what we appear to know. Substitute honest research, original and independent thought, strict truth in the comparison of only what we really know with what is really known by others, and the strong redoubt of ignorance has fallen."

The number of things which Roger Bacon succeeded in discovering by the application of the principle of testing everything by personal observation, is almost incredible to a modern student of science and of education who has known nothing before of the progress in science made by this wonderful man. He has been sometimes declared to be the discoverer of gunpowder, but this is a mistake since it was known many years before by the Arabs and by them introduced into Europe. He did study explosives very deeply, however, and besides learning many things about them realized how much might be accomplished by their use in the after-time. He declares in his Opus Magnum: "That one may cause to burst forth from

bronze, thunderbolts more formidable than those produced by nature. A small quantity of prepared matter occasions a terrible explosion accompanied by a brilliant light. One may multiply this phenomenon so far as to destroy a city or an army." Considering how little was known about gunpowder at this time, this was of itself a marvelous anticipation of what might be accomplished by it.



RATHHAUS (TANGERMÜNDE)

Bacon prophesied, however, much more than merely

destructive effects from the use of high explosives, and indeed it is almost amusing to see how closely he anticipated some of the most modern usages of high explosives for motor purposes. He seems to have concluded that some time the apparently uncontrollable forces of explosion would come under the control of man and be harnessed by him for his own purposes. He realized that one of the great applications of such a force would be for transportation. Accordingly he said: "Art can construct instruments of navigation such that the largest vessels governed by a single man will traverse rivers and seas more rapidly than if they were filled with oarsmen. One may also make carriages which without the aid of any animal will run with remarkable swiftness."[5] When we recall that the very latest thing in transportation are motor-boats and automobiles driven by gasoline, a high explosive, Roger Bacon's prophesy becomes one of these weird anticipations of human progress which seem almost more than human.

It was not with regard to explosives alone, however, that Roger Bacon was to make great advances and still more marvelous anticipations in physical science. He was not, as is sometimes claimed for him, either the inventor of the telescope or of the theory of lenses. He did more, however, than perhaps anyone else to make the principles of lenses clear and to establish them on a mathematical basis. His traditional connection with the

[5] These quotations are taken from Ozanam's Dante and Catholic Philosophy, published by the Cathedral Library Association, New York, 1897.

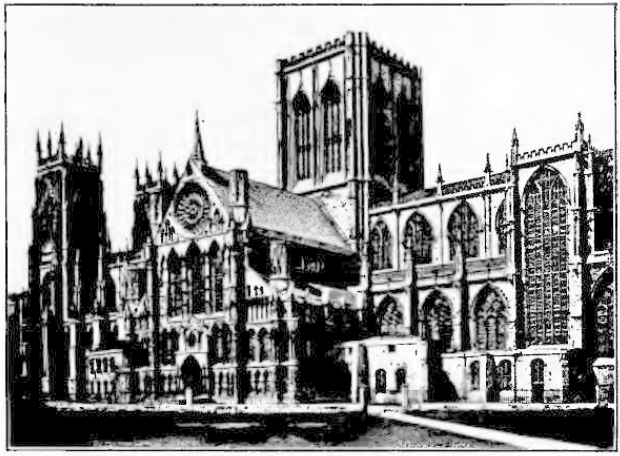
telescope can probably be traced to the fact that he was very much interested in astronomy and the relations of the heavens to the earth. He pointed out very clearly the errors which had crept into the Julian calendar, calculated exactly how much of a correction was needed in order to restore the year to its proper place, and suggested the method by which future errors of this kind could be avoided. His ideas were too far beyond his century to be applied in a practical way, but they were not to be without their effect and it is said that they formed the basis of the subsequent correction of the calendar in the time of Pope Gregory XIII three centuries later.

It is rather surprising to find how much besides the theory of lenses Friar Bacon had succeeded in finding out in the department of optics. He taught, for instance, the principle of the aberration of light, and, still more marvelous to consider, taught that light did not travel instantaneously but had a definite rate of motion, though this was extremely rapid. It is rather difficult to understand how he reached this conclusion since light travels so fast that as far as regards any observation that can be made upon earth, the diffusion is practically instantaneous. It was not for over three centuries later that Römer, the German astronomer, demonstrated the motion of light and its rate, by his observations upon the moons of Jupiter at different phases of the earth's orbit, which showed that the light of these moons took a definite and quite appreciable time to reach the earth after their eclipse by the planet was over.

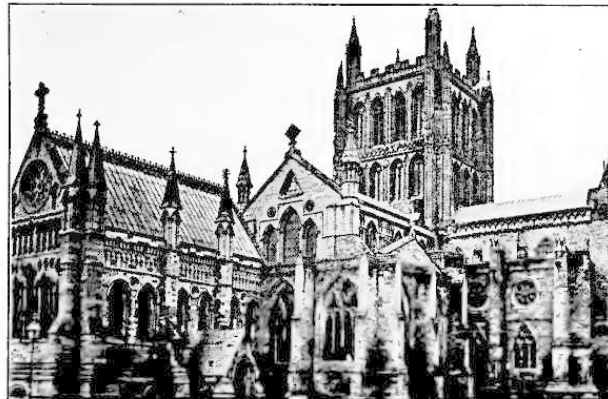
We are not surprised to find that Bacon should praise those of his contemporaries who devoted themselves to mathematics and to experimental observations in science. Of one of his correspondents who even from distant Italy sent him his observations in order that he might have the great Franciscan's precious comments on them. Bacon has given quite a panegyric. The reasons for his praise, however, are so different from those which are ordinarily proclaimed to have been the sources of laudation in distant medieval scientific circles, that we prefer to quote Bacon's own words from the Opus Tertium. Bacon is talking of Petrus Peregrinus and says: "I know of only one person who deserves praise for his work in experimental philosophy, for he does not care for the discourses of men and their wordy warfare, but quietly and diligently pursues the works of wisdom. Therefore, what others grope after blindly, as bats in the evening twilight, this man contemplates in all their brilliancy because he is a master of experiment. Hence, he knows all natural science whether pertaining to medicine and alchemy, or to matters celestial and terrestrial.

> "He has worked diligently in the smelting of ores as also in the working of minerals; he is thoroughly acquainted with all sorts of arms and implements used in military service and in hunting, besides which he is skilled in agriculture and in the measurement of lands. It is impossible to write a useful or correct treatise in experimental philosophy without mentioning this man's name. Moreover, he pursues knowledge for its own sake; for if he wished to obtain royal

favor, he could easily find sovereigns who would honor and enrich him."



CATHEDRAL (YORK)



CATHEDRAL (HEREFORD)

Lest it should be thought that these expressions of laudatory appreciation of the great Thirteenth Century scientist are dictated more by the desire to magnify his work and to bring out the influence in science of the Churchmen of the period, it seems well to quote an expression of opinion from the modern historian of the inductive sciences, whose praise is scarcely if any less outspoken than that of others whom we have quoted and who might be supposed to be somewhat partial in their judgment. This opinion will fortify the doubters who must have authority and at the same time sums up very excellently the position which Roger Bacon occupies in the History of Science.

Dr. Whewell says that Roger Bacon's Opus Majus is "the encyclopedia and Novam Organon of the Thirteenth Century, a work equally wonderful with regard to its general scheme and to the special treatises with which the outlines of the plans are filled up. The professed object of the work is to urge the necessity of a reform in the mode of philosophizing, to set forth the reasons why knowledge had not made a greater progress, to draw back attention to the sources of knowledge which had been unwisely neglected, to discover other sources which were yet almost untouched, and to animate men in the undertaking by a prospect of the vast advantages which it offered. In the development of this plan all the leading portions of science are expanded in the most complete shape which they had at that time assumed; and improvements of a very wide and striking kind are proposed in some of the principal branches of study. Even if the work had no leading purposes it would have been highly valuable as a treasure of the most solid knowledge and soundest speculations of the time; even if it had contained no such details it would have been a work most remarkable for its general views and scope."

It is only what might have been expected, however, from Roger Bacon's training that he should have made great progress in the physical sciences. At the University of Paris his favorite teacher was Albertus Magnus, who was himself deeply interested in all the physical sciences, though he was more concerned with the study of chemical problems than of the practical questions

which were to occupy his greatest pupil. There is no doubt at all that Albertus Magnus accomplished a great amount of experimental work in chemistry and had made a large series of actual observations. He was a theologian as well as a philosopher and a scientist. Some idea of the immense industry of the man can be obtained from the fact that his complete works as published consist of some twenty large folio volumes, each one of which contains on the average at least 500,000 words.

Among these works are many treatises relating to chemistry. The titles of some of them will serve to show how explicit was Albert in his consideration of various chemical subjects. He has treatises concerning Metals and Minerals; concerning Alchemy; A Treatise on the Secret of Chemistry; A Concordance, that is a Collection of observations from many sources with regard to the Philosopher's Stone; A Brief Compend on the Origin of the Metals; A Treatise on Compounds; most of these are to be found in his works under the general heading "Theatrum Chemicum."

It is not surprising for those who know of Albert's work, to find that his pupil Roger Bacon defined the limits of chemistry very accurately and showed that he understood exactly what the subject and methods of investigation must be, in order that advance should be made in it. Of chemistry he speaks in his "Opus Tertium" in the following words: "There is a science which treats of the generation of things from their elements and of all inanimate things, as of the elements and liquids, simple and compound, common stones, gems and marble, gold and other

metals, sulphur, salts, pigments, lapis lazuli, minium and other colors, oils, bitumen, and infinite more of which we find nothing in the books of Aristotle; nor are the natural philosophers nor any of the Latins acquainted with these things."

In physics Albertus Magnus was, if possible, more advanced and progressive even than in chemistry. His knowledge in the physical sciences was not merely speculative, but partook to a great degree of the nature of what we now call applied science. Humboldt, the distinguished German natural philosopher of the beginning of the Nineteenth Century, who was undoubtedly the most important leader in scientific thought in his time and whose own work was great enough to have an enduring influence in spite of the immense progress of the Nineteenth Century, has summed up Albert's work and given the headings under which his scientific research must be considered. He says:

> "Albertus Magnus was equally active and influential in promoting the study of natural science and of the Aristotelian philosophy. His works contain some exceedingly acute remarks on the organic structure and physiology of plants. One of his works bearing the title of 'Liber Cosmographicus de Natura Locorum,' is a species of physical geography. I have found in it considerations on the dependence of temperature concurrently on latitude and elevation, and on the effect of different angles of incidence of the sun's rays in heating the ground, ***which have excited my surprise***."

To take up some of Humboldt's headings in their order and

illustrate them by quotations from Albert himself and from condensed accounts as they appear in his biographer Sighart and in Christian Schools and Scholars[6], will serve to show at once the extent of Albert's knowledge and the presumptuous ignorance of those who make little of the science of the medieval period. When we have catalogued, for instance, the many facts with regard to astronomy and the physics of light that are supposed to have come to human ken much later, yet may be seen to have been clearly within the range of Albert's knowledge, and evidently formed the subject of his teaching at various times at both Paris and Cologne, for they are found in his authentic works, we can scarcely help but be amused at the pretentious misconception that has relegated their author to a place in education so trivial as is that which is represented in many minds by the term scholastic.

> "He decides that the Milky Way is nothing but a vast assemblage of stars, but supposes naturally enough that they occupy the orbit which receives the light of the sun. The figures visible on the moon's disc are not, he says, as hitherto has been supposed, reflections of the seas and mountains of the earth, but configurations of her own surface. He notices, in order to correct it, the assertion of Aristotle that lunar rainbows appear only twice in fifty years; 'I myself,' he says have observed two in a single year.' He has something to say on the refraction of a solar ray, notices certain crystals which have a power of refraction,

[6] Christian Schools and Scholars. Drane.

and remarks that none of the ancients and few moderns were acquainted with the properties of mirrors."

Albert's great pupil Roger Bacon is rightly looked upon as the true father of inductive science, an honor that history has unfortunately taken from him to confer it undeservedly on his namesake of four centuries later, but the teaching out of which Roger Bacon was to develop the principles of experimental science can be found in many places in his master's writings. In Albert's tenth book, wherein he catalogues and describes all the trees, plants, and herbs known in his time, he observes: "All that is here set down is the result of our own experience, or has been borrowed from authors whom we know to have written what their personal experience has confirmed: for in these matters experience alone can give certainty" (***experimentum solum certificat in talibus***). "Such an expression," says his biographer, "which might have proceeded from the pen of (Francis) Bacon, argues in itself a prodigious scientific progress, and shows that the medieval friar was on the track so successfully pursued by modern natural philosophy. He had fairly shaken off the shackles which had hitherto tied up discovery, and was the slave neither of Pliny nor of Aristotle."

Botany is supposed to be a very modern science and to most people Humboldt's expression that he found in Albertus Magnus's writings some "exceedingly acute remarks on the organic structure and physiology of plants" will come as a supreme surprise. A few details with regard to Albert's botanical

knowledge, however, will serve to heighten that surprise and to show, that the foolish tirades of modern sciolists, who have often expressed their wonder that with all the beauties of nature around them, these scholars of the Middle Ages did not devote themselves to nature study, are absurd, because if the critics but knew it there was profound interest in nature and all her manifestations and a series of discoveries that anticipated not a little of what we consider most important in our modern science. The story of Albert's botanical knowledge has been told in a single very full paragraph by his biographer. Sighart also quotes an appreciative opinion from a modern German botanist which will serve to dispel any doubts with regard to Albert's position in botany that modern students might perhaps continue to harbor, unless they had good authority to support their opinion, though of course it will be remembered that the main difference between the medieval and the modern mind is only too often said to be, that the medieval required an authority while the modern makes its opinion for itself. Even the most skeptical of modern minds however, will probably be satisfied by the following paragraph.

> "He was acquainted with the sleep of plants, with the periodical opening and closing of blossoms, with the diminution of sap through evaporation from the cuticle of the leaves, and with the influence of the distribution of the bundles of vessels on the folial indentations. His minute observations on the forms and variety of plants intimate an exquisite sense of floral beauty. He distinguished the star from the bell-floral, tells us that a red rose will turn white

> when submitted to the vapor of sulphur and makes some very sagacious observations on the subject of germination. … The extraordinary erudition and originality of this treatise (his tenth book) has drawn from M. Meyer the following comment: 'No Botanist who lived before Albert can be compared to him, unless Theophrastus, with whom he was not acquainted; and after him none has painted nature in such living colors or studied it so profoundly until the time of Conrad Gesner and Cesalpino.' All honor, then, to the man who made such astonishing progress in the science of nature as to find no one, I will not say to surpass, but even to equal him for the space of three centuries."

We point out in the chapter on Geography and Exploration how much this wonderful Thirteenth Century added to the knowledge of geographical science. Even before the great explorers of this time, however, had accomplished their work, this particular branch of science had made such great progress as would bring it quite within the domain of what we call the science of geography at the present time. When we remember how much has been said about the ignorance of the men of the later Middle Ages as regards the shape of the earth and its inhabitants, and how many foolish notions they are supposed to have accepted with regard to the limitation of possible residents of the world and the queer ideas as to the antipodes, the following passages taken from Albert's biographer will serve better than anything else to show how absurdly the traditional notions with regard to this time and its knowledge, have been permitted by educators

to tinge what are supposed to be serious opinions with regard to the subject matters of education in that early university period:

> "He treats as fabulous the commonly-received idea, in which Bede had acquiesced, that the region of the earth south of the equator was uninhabitable, and considers, that from the equator to the South Pole, the earth was not only habitable, but in all probability actually inhabited, except directly at the poles, where he imagines the cold to be excessive. If there be any animals there, he says, they must have very thick skins to defend them from the rigor of the climate, and they are probably of a white color. The intensity of cold, is however, tempered by the action of the sea. He describes the antipodes and the countries they comprise, and divides the climate of the earth into seven zones. He smiles with a scholar's freedom at the simplicity of those who suppose that persons living at the opposite region of the earth must fall off, an opinion that can only rise out of the grossest ignorance, 'for when we speak of the lower hemisphere, this must be understood merely as relatively to ourselves.' It is as a geographer that Albert's superiority to the writers of his own time chiefly appears. Bearing in mind the astonishing ignorance which then prevailed on this subject, it is truly admirable to find him correctly tracing the chief mountain chains of Europe, with the rivers which take their source in each; remarking on portions of coast which have in later times been submerged by the ocean, and islands which have been raised by volcanic action above the level of the sea; noticing the modification

of climate caused by mountains, seas and forests, and the division of the human race whose differences he ascribes to the effect upon them of the countries they inhabit! In speaking of the British Isles he alludes to the commonly-received idea that another distant island called Tile or Thule, existed far in the Western Ocean, uninhabitable by reason of its frightful climate, but which, he says, has perhaps not yet been visited by man."

Nothing will so seriously disturb the complacency of modern minds as to the wonderful advances that have been made in the last century in all branches of physical science as to read Albertus Magnus' writings. Nothing can be more wholesomely chastening of present day conceit than to get a proper appreciation of the extent of the knowledge of the Schoolmen.

Albertus Magnus' other great pupil besides Roger Bacon was St. Thomas Aquinas. If any suspicion were still left that Thomas did not appreciate just what the significance of his teachings in physics was, when he announced that neither matter nor force could ever be reduced to nothingness, it would surely be removed by the consideration that he had been for many years in intimate relations with Albert and that he had probably also been close to Roger Bacon. After association with such men as these, any knowledge he displays with regard to physical science can scarcely be presumed to have been stumbled upon unawares. St. Thomas himself has left three treatises on chemical subjects and it is said that the first occurrence of the word amalgam can be traced to one of these treatises. Everybody was

as much interested then, as we are at the present time, in the transformation of metals and mercury with its silvery sheen, its facility to enter into metallic combinations of all kinds, and its elusive ways, naturally made it the center of scientific interest quite as radium is at the present moment. Further material with regard to St. Thomas and also to the subject of education will be found in the chapter, Aquinas the Scholar.

After this brief review of only a few of the things that they taught in science at the Thirteenth Century universities, most people will scarcely fail to wonder how such peculiar erroneous impressions with regard to the uselessness of university teaching and training have come to be so generally accepted. The fault lies, of course, with those who thought they knew something about university teaching, and who, because they found a few things that now look ridiculous, as certain supposed facts of one generation always will to succeeding generations who know more about them, thought they could conclude from these as to the character of the whole content of medieval education. It is only another example of what Artemus Ward pointed out so effectively when he said that "there is nothing that makes men so ridiculous as the knowing so many things that aint so." We have been accepting without question ever so many things that simply are not so with regard to these wonderful generations, who not only organized the universities but organized the teaching in them on lines not very different from those which occupy people seven centuries later.

What would be the most amusing feature, if it were not unfortunately so serious an arraignment of the literature that has grown up around these peculiar baseless notions with regard to scholastic philosophy, is the number of men of science who have permitted themselves to make fun of certain supposed lucubrations of the great medieval philosophers. It is not so very long ago that, as pointed out by Harper in the Metaphysics of the School, Professor Tate in a lecture on Some Recent Advances in Physical Science repeated the old slander that even Aquinas occupied the attention of his students with such inane questions as: "How many angels could dance on the point of a needle?" Modern science very proudly insists that it occupies itself with observations and concerns itself little with authority. Prof. Tate in this unhappy quotation, shows not only that he has made no personal studies in medieval philosophy but that he has accepted a very inadequate authority for the statements which he makes with as much confidence as if they had been the result of prolonged research in this field. Many other modern scientists (?) have fallen into like blunders. (For Huxley's opinion see. Appendix)

The modern student, as well as the teacher, is prone to wonder what were the methods of study and the habits of life of the students of the Thirteenth Century, and fortunately we have a short sketch, written by Robert of Sorbonne, the famous founder of the Sorbonne, in which he gives advice to attendants at that institution as to how they should spend their time, so that at least

we are able to get a hint of the ideals that were set before the student. Robert, whose long experience of university life made him thoroughly competent to advise, said:

> "The student who wishes to make progress ought to observe six essential rules.
>
> "First: He ought to consecrate a certain hour every day to the study of a determined subject, as St. Bernard counselled his monks in his letter to the Brothers of the Mont Dieu.
>
> "Second: He ought to concentrate his attention upon what he reads and ought not to let it pass lightly. There is between reading and study, as St. Bernard says, the same difference as between a host and a guest, between a passing salutation exchanged in the street and an embrace prompted by an unalterable affection.
>
> "Third: He ought to extract from the daily study one thought, some truth or other, and engrave it deeply upon his memory with special care. Seneca said ***'Cum multa percurreris in die, unum tibi elige quod illa die excoquas'***—When you have run over many things in a day select one for yourself which you should digest well on that day.
>
> "Fourth: Write a resume of it, for words which are not confided to writing fly as does the dust before the wind.
>
> "Fifth: Talk the matter over with your fellow-students, either in the regular recitation or in your familiar conversation. This exercise is even more profitable than study for it has as its result the clarifying of all doubts and the removing of all the obscurity that study may have left.

Nothing is perfectly known unless it has been tried by the tooth of disputation.

"Sixth: Pray, for this is indeed one of the best ways of learning. St. Bernard teaches that study ought to touch the heart and that one should profit by it always by elevating the heart to God, ***without, however, interrupting the study***."

Sorbonne proceeds in a tone that vividly recalls the modern university professor who has seen generation after generation of students and has learned to realize how many of them waste their time.

"Certain students act like fools; they display great subtility over nonsensical subjects and exhibit themselves devoid of intelligence with regard to their most important studies. So as not to seem to have lost their time they gather together many sheets of parchment, make thick volumes of note books out of them, with many a blank interval, and cover them with elegant binding in red letters. Then they return to the paternal domicile with their little sack filled up with knowledge which can be stolen from them by any thief that comes along, or may be eaten by rats or by worms or destroyed by fire or water.

"In order to acquire instruction the student must abstain from pleasure and not allow himself to be hampered by material cares. There was at Paris not long since two teachers who were great friends. One of them had seen much, had read much and used to remain night and day bent over his books. He scarcely took the time to say an 'Our Father.' Nevertheless he had but four students. His

colleague possessed a much less complete library, was less devoted to study and heard mass every morning before delivering his lecture. In spite of this, his classroom was full. 'How do you do it?' asked his friend. 'It is very simple,' said his friend smiling. 'God studies for me. I go to mass and when I come back I know by heart all that I have to teach.'"

"Meditation," so Sorbonne continues, "is suitable not only for the master, but the good student ought also to go and take his promenade along the banks of the Seine, not to play there, but in order to repeat his lesson and meditate upon it."

These instructions for students are not very different from those that would be issued by an interested head of a university department to the freshmen of the present day. His insistence, especially on the difference between reading and study, might very well be taken to heart at the present time, when there seems to be some idea that reading of itself is sufficient to enable one to obtain an education. The lesson of learning one thing a day and learning that well, might have been selected as a motto for students for all succeeding generations with manifest advantage to the success of college study.

In other things Sorbonne departs further from our modern ideas in the matter of education, but still there are many even at the present time who will read with profound sympathy his emphatic advice to the University students that they must educate their hearts as well as their intellects, and make their education subserve the purpose of bringing them closer to God.

A word about certain customs that prevailed more or less generally in the universities at this time, and that after having been much misunderstood will now be looked at more sympathetically in the light of recent educational developments will not be out of place here.

One of the advantages of modern German university education has often been acclaimed to be the fact that students are tempted to make portions of their studies in various cities, since all the courses are equalized in certain ways, so that the time spent at any one of them will be counted properly for their degrees. It has long been recognized that travel makes the best possible complement to a university course, and even when the English universities in the Eighteenth Century sank to be little more than pleasant abiding places where young men of the upper classes "ate their terms," the fact that it was the custom "to make the grand tour" of continental travel, supplied for much that was lacking in the serious side of their education. Little as this might be anticipated as a feature of the ruder times of the Thirteenth Century, when travel was so difficult, it must be counted as one of the great advantages for the inquiring spirits of the time. Dante, besides attending the universities in Italy, and he certainly was at several of them, was also at Paris at one time and probably also at Oxford. Professor Monroe in his text book in the History of Education has stated this custom very distinctly.

> "With the founding of the universities and the establishment of the nations in practically every university,

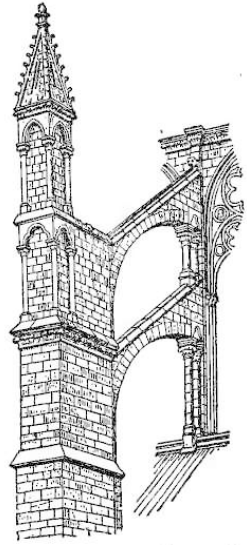
> it became quite customary for students to travel from university to university, finding in each a home in their appropriate nation. Many, however, willing to accept the privileges of the clergy and the students without undertaking their obligations, adopted this wandering life as a permanent one. Being a privileged order, they readily found a living, or made it by begging. A monk of the early university period writes: 'The scholars are accustomed to wander throughout the whole world and visit all the cities, and their many studies bring them understanding. For in Paris they seek a knowledge of the liberal arts; of the ancient writers at Orleans; of medicine at Salernum; of the black art at Toledo; and in no place decent manners.'"

With regard to the old monk's criticism it must be remembered that old age is always rather depreciative in criticism of the present and over-appreciative of what happened in the past ***se pueris***. Abuses always seem to be creeping in that are going to ruin the force of education, yet somehow the next generation succeeds in obtaining its intellectual development in rather good shape. Besides as we must always remember in educational questions, evils are ever exaggerated and the memory of them is prone to live longer and to loom up larger than that of the good with which they were associated and to which indeed, as anyone of reasonable experience in educational circles knows, they may constitute by comparison only a very small amount. Undoubtedly the wanderings of students brought with it many abuses, and if we were to listen to some of the stories of foreign

student life in Paris in our own time, we might think that much of evil and nothing of good was accomplished by such wandering, but inasmuch as we do so we invite serious error of judgment.

Another striking feature of university life which constituted a distinct anticipation of something very modern in our educational system, was the lending of professors of different nationalities among the universities. It is only at the beginning of the Twentieth Century that we have reestablished this custom. In the Thirteenth Century, however, Albertus Magnus taught for a time at Cologne and then later at Paris and apparently also at Rome. St. Thomas of Aquin, after having taught for a time at Paris, lectured in various Italian universities and then finally at the University of Rome to which he was tempted by the Popes. Duns Scotus, besides teaching in Oxford, taught also at Paris. Alexander of Hales before him seems to have done the same thing. Roger Bacon, after studying at the University of Paris, seems to have commenced teaching there, though most of his professional work was accomplished at the University of Oxford. Raymond Lully probably had professional experiences at several Spanish Universities besides at Paris. In a word, if a man were a distinguished genius he was almost sure to be given the opportunity to influence his generation at a number of centers of educational life, and not be confined as has been the case in the centuries since to but one or at most, and that more by accident than intent, to perhaps two. In a word there is not a distinctive feature of modern university life that was not anticipated in the

Thirteenth Century.



FLYING BUTTRESS (AMIENS)

IV
THE NUMBER OF STUDENTS AND DISCIPLINE

For most people the surprise of finding that the subjects with which the students were occupied at the universities of the Thirteenth Century were very much the same as those which claim the attention of modern students, will probably be somewhat mitigated by the thought that after all there were only few in attendance at the universities, and as a consequence only a small proportion of the population shared in that illumination, which has become so universal in the spread of opportunities for the higher education in these later times. While such an impression is cherished by many even of those who think that they know the history of education, and unfortunately are considered ***by others*** to be authorities on the subject, it is the falsest possible idea that could be conceived of this medieval time with which we are concerned. We may say at once that it is a matter of comparatively easy collation of statistics to show, that in proportion to the population of the various countries, there were actually more students taking advantage of the opportunity to acquire university education in the Thirteenth Century, than there were at any time in the Nineteenth Century, or even in the midst of this era of widespread educational opportunities in the

Twentieth Century.

Most people know the traditions which declare that there were between twenty and thirty thousand students at the University of Paris toward the end of the Thirteenth Century. At the same time there were said to have been between fifteen and twenty thousand students at the University of Bologna. Correspondingly large numbers have been reported for the University of Oxford and many thousands were supposed to be in attendance at the University of Cambridge. It is usually considered, however, that these figures are gross exaggerations. It is easy to assert this but rather difficult to prove. As a matter of fact the nearer one comes to the actual times in the history of education, the more definitely do writers speak of these large numbers of students in attendance. For instance Gascoigne, who says that there were thirty thousand students at the University of Oxford at the end of the Thirteenth Century, lived himself within a hundred years of the events of which he talks, and he even goes so far as to declare that he saw the rolls of the University containing this many names. There is no doubt at all about his evidence in the matter and there is no mistake possible with regard to his figures. They were written out in Latin, not expressed in Arabic or Roman numerals, the copying of which might so easily give opportunities for error to creep in.

In spite of such evidence it is generally conceded that to accept these large numbers would be almost surely a mistake. There were without any doubt many thousands of students at

the Thirteenth Century universities. There were certainly more students at the University of Paris in the last quarter of the Thirteenth Century than there were at any time during the Nineteenth Century. This of itself is enough to startle modern complacency out of most of its ridiculous self-sufficiency. There can be scarcely a doubt that the University of Bologna at the time of its largest attendance had more students than any university of modern times, proud as we may be (and deservedly) of our immense institutions of learning. With regard to the English universities the presence of very large numbers is much more doubtful. Making every allowance, however, there can be no hesitation in saying that Oxford had during the last quarter of the Thirteenth Century a larger number than ever afterwards within her walls and that Cambridge, though never so numerous as her rival, had a like good fortune. Professor Laurie of Edinburgh, a very conservative authority and one not likely to concede too much to the Middle Ages in anything, would allow, as we shall see, some ten thousand students to Oxford. Others have claimed more than half that number for Cambridge as the lowest possible estimate. Even if it be conceded, as has sometimes been urged, that all those in service in the universities were also counted as students, these numbers would not be reduced very materially and it must not be forgotten that, in those days of enthusiastic striving after education, young men were perfectly willing to take up even the onerous duties of personal services to others, in order to have the opportunity to be closely in touch with

a great educational institution and to receive even a moderate amount of benefit from its educational system. In our own time there are many students who are working their way through the universities, and in the Thirteenth Century when the spirit of independence was much less developed, and when any stigma that attached to personal service was much less felt than it is at the present time, there were many more examples of this earnest striving for intellectual development.

If we discuss the situation in English-speaking countries as regards the comparative attendance at the universities in the Thirteenth Century and in our own time, we shall be able to get a reasonably good idea of what must be thought in this matter. The authorities are neither difficult of consultation nor distant, and comparatively much more is known about the population of England at this time than about most of the continental countries. England was under a single ruler, while the geographical divisions that we now know by the name of France, Spain, Italy and Germany were the seats of several rulers at least and sometimes of many, a circumstance which does not favor our obtaining an adequate idea of the populations.

That but two universities provided all the opportunities for whatever higher education there was in England at this time, would of itself seem to stamp the era as backward in educational matters. A little consideration of the comparative number of students with reference to the population of the country who were thus given the opportunity for higher education—and took

advantage of it—at that time and the present, will show the unreasonableness of such an opinion. It is not so easy as might be imagined to determine just what was the population even of England in the Thirteenth Century. During Elizabeth's reign there were, according to the census, an estimate made about the time of the great Armada, altogether some four millions of people. Froude, accepts this estimate as representing very well the actual number of the population. Certainly there were not more than five millions at the end of the Sixteenth Century. Lingard, who for this purpose must be considered as a thoroughly conservative authority, estimates that there were not much more than two millions of people in England at the end of the Twelfth Century. This is probably not an underestimate. At the end of the Thirteenth Century there were not many more than two millions and a half of people in the country. At the very outside there were, let us say, three millions. Out of this meagre population, ten thousand students were, on the most conservative estimate, taking advantage of the opportunities for the higher education that were provided for them at the universities.

At the present moment, though we pride ourselves on the numbers in attendance at our universities, and though the world's population is so much more numerous and the means of transportation so much more easy, we have very few universities as large as these of the Thirteenth Century. No American university at the present moment has as large a number of students as had Oxford at the end of the Thirteenth Century, and

of course none of them compares at all with Paris or Bologna in this respect. Even the European universities, as we have suggested, fall behind their former glory from this standpoint. In the attendance to the number of population the comparison is even more startling for those who have not thought at all of the Middle Ages as a time of wonderful educational facilities and opportunities. In the greater City of New York as we begin the Twentieth Century there are perhaps fifteen thousand students in attendance at educational institutions which have university privileges. I may say that this is a very liberal allowance. At universities in the ordinary sense of the word there are not more than ten thousand students and the remainder is added in order surely to include all those who may be considered as doing undergraduate work in colleges and schools of various kinds. Of these fifteen thousand at least one-fourth come from outside of the greater city, and there are some who think that even one-third would not be too large a number to calculate as not being drawn directly from our own population. Connecticut and New Jersey furnish large numbers of students and then, besides, the post-graduate schools of the universities have very large numbers in attendance even from distant states and foreign countries.

It will be within the bounds of truth, then, to say, that there are between ten and twelve thousand students, out of our population of more than four millions in Greater New York taking advantage of the opportunities for the higher education provided by our universities and colleges. At the end of the

Thirteenth Century in England there were at least ten thousand students out of a population of not more and very probably less than three millions, who were glad to avail themselves of similar opportunities. This seems to be perfectly fair comparison and we have tried to be as conservative as possible in every way in order to bring out the truth in the matter.

It can scarcely fail to be a matter of supreme surprise to find that a century so distant as the Thirteenth, should thus equal our own vaunted Twentieth Century in the matter of opportunities for the higher education afforded and taken advantage of. It has always been presumed that the Middle Ages, while a little better than the Dark Ages, were typical periods in which there was little, if any desire for higher education and even fewer opportunities. It was thought that there was constant repression of the desire for knowledge which springs so eternally in the human heart and that the Church, or at least the ecclesiastical authorities of the time, set themselves firmly against widespread education, because it would set people to thinking for themselves. As a matter of fact, however, every Cathedral and every monastery became a center of educational influence, and even the poorest, who showed special signs of talent, obtained the opportunity to secure knowledge to the degree that they wished. It is beyond doubt or cavil, that at no time in the world's history have so many opportunities for the higher education been open to all classes as during the Thirteenth Century.

In order to show how thoroughly conservative are the numbers

in attendance at the universities that I have taken, I shall quote two good recent authorities, one of them Professor Laurie, the Professor of the Institutes and History of Education in the University of Edinburgh, and the other Thomas Davidson, a well-known American authority on educational subjects. Each of their works from which I shall quote has been published or revised within the last few years. Professor Laurie in "The Rise and Early Constitution of the University with a Survey of the Medieval Education," which formed one of the International Educational Series, edited by Commissioner Harris and published by Appleton, said:

> "When one hears of the large number of students who attended the earliest universities—ten thousand and even twenty thousand at Bologna, an equal, and at one time a greater, number at Paris, and thirty thousand at Oxford—one cannot help thinking that the numbers have been exaggerated. There is certainly evidence that the Oxford attendance was never so great as has been alleged (see Anstey's 'Mon Acad.'); but when we consider that attendants, servitors, college cooks, etc., were regarded as members of the university community, and that the universities provided for a time the sole recognized training grounds for those wishing to enter the ecclesiastical or legal or teaching professions, I see no reason to doubt the substantial accuracy of the tradition as to attendance—especially when we remember that at Paris and Oxford a large number were mere boys of from twelve to fifteen years

of age."

As to the inclusion of servitors, we have already said that many, probably, indeed, most of them, were actual students working their way through the university in these enthusiastic days. Professor Laurie's authority for the assertion that a large number of the students at Paris and Oxford were mere boys, is a regulation known to have existed at one of these universities requiring that students should not be less than twelve years of age. Anyone who has studied medieval university life, however, will have been impressed with the idea, that the students were on the average older at the medieval universities rather than younger than they are at the present time. The rough hazing methods employed, almost equal to those of our own day! would seem to indicate this. Besides, as Professor Laurie confesses in the next paragraph, many of the students were actually much older than at present. Our university courses are arranged for young men between 17 and 22, but that is, to fall back on Herbert Spencer, presumably because the period of infancy is lengthening with the evolution of the race. There are many who consider that at the present time students are too long delayed in the opportunity to get at the professional studies, and that it is partly the consequence of this that the practical branches are so much more taken up under the elective system. As we said in the chapter on Universities and Preparatory Schools, in Italy and in other southern countries, it is not a surprising thing to have a young man graduate at the age of 16 or 17 with his degree of

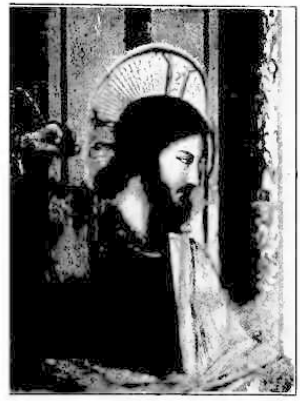
A. B., after a thoroughly creditable scholastic career. This means that he began his university work proper under 13 years of age; so that we must judge the medieval universities to some extent at least with this thought in mind.

Mr. Thomas Davidson in his "History of Education,"[7] in the chapter on The Medieval University has a paragraph in which he discusses the attendance, especially during the Thirteenth Century, and admits that the numbers, while perhaps not so large as have been reported, were very large in comparison to modern institutions of the same kind, and frankly concedes that education rose during these centuries which are often supposed to have been so unfavorable to educational development, to an amazing height scarcely ever surpassed. He says:

> "The number of students reported as having attended some of the universities in those early days almost passes belief; ***e. g.*** Oxford is said to have had thirty thousand about the year 1300, and half that number even as early as 1224. The numbers attending the University of Paris were still greater. These numbers become less surprising when we remember with what poor accommodations—a bare room and an armful of straw—the students of those days were content, and what numbers of them even a single teacher like Abelard could, long before draw into lonely retreats. That in the Twelfth and following centuries there was no lack of enthusiasm for study, notwithstanding the troubled

[7] A History of Education, by Thomas Davidson, author of Aristotle and Ancient Educational Ideas. New York: Scribners, 1900.

condition of the times, is very clear. The instruction given at the universities, moreover, reacted upon the lower schools, raising their standard and supplying them with competent teachers. Thus, in the Thirteenth and Fourteenth centuries, education rose in many European states to a height which it had not attained since the days of Seneca and Quintilian."



CHRIST DRIVING OUT MONEY CHANGERS (GIOTTO)

HEAD FROM ANNUNCIATION (GIOTTO)

BRIDE MARRIAGE AT CANA (GIOTTO)

SAINT'S HEAD (MOSAIC, ST. MARK'S VENICE)

A very serious objection that would seem to have so much weight as to preclude all possibility of accepting as true the large numbers mentioned, is the fact that it is very hard to understand how such an immense number of students could have been supported in any town of the Middle Ages. This objection has carried so much weight to some minds as to make them give up the thought of large numbers at the medieval universities. Professor Laurie has answered it very effectively, however, and in his plausible explanation gives a number of points which emphasize the intense ardor of these students of the Middle Ages in their search for knowledge, and shows how ready they were to bear serious trials and inconveniences, not to say absolute sufferings and hardships, in order that they

might have opportunities for the higher education. The objection then redounds rather to the glory of the medieval universities than lessens their prestige, either as regards numbers or the enthusiasm of their students.

> "The chief objection to accepting the tradition (of large numbers at the universities) lies in the difficulty of seeing how in those days, so large a number of the young men of Europe could afford the expense of residence away from their homes. This difficulty, however, is partly removed when we know that many of the students were well to do, that a considerable number were matured men, already monks and canons, and that the endowments of Cathedral schools also were frequently used to enable promising scholars to attend foreign universities. Monasteries also regularly sent boys of thirteen and fourteen to university seats. A papal instruction of 1335 required every Benedictine and Augustinian community to send boys to the universities in the proportion of one in twenty of their residents. Then, state authorities ordered free passages for all who were wending their way through the country to and from the seat of learning. In the houses of country priests—not to speak of the monastery hospitals—traveling scholars were always accommodated gratuitously, and even local subscriptions were frequently made to help them on their way. Poor traveling scholars were, in fact, a medieval institution, and it was considered no disgrace for a student to beg and receive alms for his support."

After reading these authoritative opinions, it would be rather

difficult to understand the false impressions which have obtained so commonly for the last three centuries with regard to education in the Middle Ages, if we did not realize that history, especially for English-speaking people, has for several centuries been written from a very narrow standpoint and with a very definite purpose. About a century ago the Comte de Maistre said in his Soirées de St. Petersburg, that history for the three hundred years before his time "had been a conspiracy against the truth." Curiously enough the editors of the Cambridge Modern History in their first volume on the Renaissance, re-echoed this sentiment of the French historical writer and philosopher. They even use the very words "history has been a conspiracy against the truth" and proclaim that if we are to get at truth in this generation, we must go behind all the classical historians, and look up contemporary documents and evidence and authorities once more for ourselves. It is the maintenance of a tradition that nothing good could possibly have come out of the Nazareth of the times before the Reformation, that has led to this serious misapprehension of the true position of those extremely important centuries in modern education—the Thirteenth and the Fourteenth.

To those who know even a little of what was accomplished in these centuries, it is supremely amusing to read the childish treatment accorded them and the trivial remarks that even accredited historians of education make with regard to them. Occasionally, however, the feeling of the reader who knows

something of the subject is not one of amusement, but far from it. There are times when one cannot help but feel that it is not ignorance, but a deliberate purpose to minimize the importance of these times in culture and education, that is at the basis of some of the utterly mistaken remarks that are made. We shall take occasion only to give one example of this, but that will afford ample evidence of the intolerant spirit that characterizes the work of some even of the supposedly most enlightened historians of education. The quotation will be from Compayré's "History of Pedagogy" which is, I understand, in use in nearly every Normal School in this country and is among the books required in many Normal School examinations.

M. Compayré in an infamous paragraph which bears the title "The Intellectual Feebleness of the Middle Age," furnishes an excellent example of how utterly misunderstood, if not deliberately misrepresented, has been the whole spirit and content and the real progressiveness of education in this wonderful period. After some belittling expressions as to the influence of Christianity on education—expressions utterly unjustified by the facts—he has this to say with regard to the Thirteenth Century, which is all the more surprising because it is the only place where he calls any attention to it. He says:

> "In 1291, of all the monks in the convent of St. Gall, there was not one who could read and write. It was so difficult to find notaries public, that acts had to be passed verbally. The barons took pride in their ignorance.

> Even after the efforts of the Twelfth Century, instruction remained a luxury for the common people; it was the privilege of the ecclesiastics and even they did not carry it very far. The Benedictines confess that the mathematics were studied only for the purpose of calculating the date of Easter."

This whole paragraph of M. Compayré (the rest must be read to be appreciated), whose history of education was considered to be of such value that it was deemed worthy of translation by the President of a State Normal School and that it has been adopted as a work of reference, in some cases of required study, in many of the Normal Schools throughout the country, is a most wonderful concoction of ingredients, all of which are meant to dissolve every possible idea that people might have of the existence of any tincture of education during the Middle Ages. There is only one fact which deeply concerns us because it refers to the Thirteenth Century. M. Compayré says that in 1291 of all the monks of the Convent of Saint Gall there was not one who could read and write. This single fact is meant to sum up the education of the century for the reader. Especially it is meant to show the student of pedagogy how deeply sunk in ignorance were the monks and all the ecclesiastics of this period.

Before attempting to say anything further it may be as well to call attention to the fact that in the original French edition the writer did not say that there was not a single monk. He said, "There was but one monk, who could read and write." Possibly

it seemed to the translator to make the story more complete to leave out this one poor monk and perhaps one monk more or less, especially a medieval monk, may not count for very much to modern students of education. There are those of us, however, who consider it too bad to obliterate even a single monk in this crude way and we ask that he shall be put back. There ***was one*** who could read and write and carry on the affairs of the monastery. Let us have him at least, by all means.

In the year 1291 when M. Compayré says that there was but a single monk at the monastery of St. Gall who could read and write, he, a professor himself at a French Normal School, must have known very well that there were over twenty thousand students at the University of Paris, almost as many at the University of Bologna, and over five thousand, some authorities say many more than this (Professor Laurie would admit more than ten thousand), at the University of Oxford, though all Christian Europe at this time did not have a population of more than 15,000,000 people. He must have known, too, or be hopelessly ignorant in educational matters, that many of the students at these universities belonged to the Franciscans and Dominicans, and that indeed many of the greatest teachers at the universities were members of these monastic orders. Of this he says nothing, however. All that he says is "Education was the privilege of the ecclesiastics and they did not carry it very far." This is one way of writing a history of education. It is a very effective way of poisoning the wells of information and securing

the persistence of the tradition that there was no education until after the beginning of the Sixteenth Century.

Meantime one can scarcely help but admire the ingenuity of deliberate purpose that uses the condition of the monastery of St. Gall to confirm his statement. St. Gall had been founded by Irish monks probably about the beginning of the Eighth Century. It had been for at least three centuries a center of education, civilization and culture, as well as of religion, for the barbarians who had settled in the Swiss country after the trans-migration of nations. The Irish had originally obtained their culture from Christian Missionaries, and now as Christian Missionaries they brought it back to Europe and accomplished their work with wonderful effectiveness. St. Gall was for centuries a lasting monument to their efforts. After the Tenth Century, however, the monastery began to degenerate. It was almost directly in the path of armies which so frequently went down to Italy because of the German interest in the Italian peninsula and the claims of the German emperor. After a time according to tradition, the emperor insisted that certain of the veterans of his army should be received and cared for in their old age at St. Gall. Gradually this feature of the institution became more and more prominent until in the Thirteenth Century it had become little more than a home for old soldiers. In order to live on the benefices of the monastery these men had to submit to ecclesiastical regulations and wear the habit. They were, it is true, a sort of monk, that is, they were willing, for the sake of the peace and ease which

it brought, to accept the living thus provided for them and obey to some degree at least the rules of the monastery. It is not surprising that among these there should have been only one who could read and write. The soldiers of the time despised the men of letters and prided themselves on not being able to write. That a historian of pedagogy, however, should take this one fact in order to give students an idea of the depth of ignorance of the Middle Ages, is an exhibition of some qualities in our modern educated men, that one does not like to think of as compatible with the capacity to read and write. It would indeed be better not to be able to read and write than thus to read and write one's own prejudices into history, and above all the history of education.

Compayré's discussion of the "Causes of the Ignorance" of the Middle Ages in the next paragraph, is one of the most curious bits of special pleading by a man who holds a brief for one side of the question, that I think has ever been seen in what was to be considered serious history. He first makes it clear how much opposed the Christian Church was to education, then he admits that she did some things which cannot be denied, but minimizes their significance. Then he concludes that it was not the fault of the Church, but in this there is a precious bit of damning by faint praise. It would be impossible for any ordinary person who had only Compayré for authority to feel anything after reading the paragraph, but that Christianity was a serious detriment and surely not a help to the cause of progress in education. I quote part of the paragraph:

"What were the permanent causes of that situation which lasted for ten centuries? The Catholic Church has sometimes been held responsible for this. Doubtless the Christian doctors did not always profess a very warm sympathy for intellectual culture. Saint Augustine has said: It is the ignorant who gain possession of heaven (indocti coelum rapiunt.) Saint Gregory the Great, a Pope of the Sixth Century, declared that he would blush to have the holy word conform to the rules of grammar. Too many Christians, in a word, confounded ignorance with holiness. Doubtless, towards the Seventh Century, the darkness still hung thick over the Christian Church. Barbarians invaded the Episcopate, and carried with them their rude manners. Doubtless, also, during the feudal period the priest often became a soldier, and remained ignorant. It would, however, be unjust to bring a constructive charge against the Church of the Middle Age, and to represent it as systematically hostile to instruction. Directly to the contrary, it is the clergy who, in the midst of the general barbarism, preserved some vestiges of the ancient culture. The only schools of that period are the Episcopal and claustral schools, the first annexed to the Bishops' palaces, the second to the monasteries. The religious orders voluntarily associated manual labor with mental labor. As far back as 530, St. Benedict founded the Convent of Monte Cassino, and drew up statutes which made reading and intellectual labor a part of the daily life of the monks." When this damning by faint praise is taken in connection with the paragraph in which only

a single monk at the Monastery of St. Gall is declared to have been able to read and write, the utterly false impression that is sure to result, can be readily understood even by those who are not sympathetic students of the Middle Ages. This is how our histories of education have been written as a rule, and as a consequence the most precious period in modern education, its great origin, has been ignored even by professional scholars, to the great detriment not only of historical knowledge but also of any proper appreciation of the evolution of education.

Portraits

Bennozo Gozzoli

PETRARCA OMNIUM VIRTUTUM
MONARCA

GIOTTO, PICTOR EXIMIUS

DANTE THEOLOGUS NULLIUS
DOGMATIS EXPERS

It will be said by those who do not appreciate the conditions that existed in the Middle Ages, that these numbers at the universities seeking the higher education, mean very little for the culture of the people, since practically all of those in attendance

at the universities belonged to the clerical order. There is no doubt that most students were clerics in the Thirteenth Century. This did not mean, however, that they had taken major orders or had in any way bound themselves irrevocably to continue in the clerical vocation. The most surprising thing about the spread of culture and the desire for the higher education during the Thirteenth Century, is that they developed in spite of the fact that the rulers of the time were all during the century, embroiled in war either with their neighbors or with the nobility. Anyone who wanted to live a quiet, intellectual life turned naturally to the clerical state, which enabled him to escape military duties and gave him opportunities for study, as well as protection from many exactions that might otherwise be levied upon him. The church not only encouraged education, but supplied the peaceful asylums in which it might be cultivated to the heart's content of the student.

While this clerical state was a necessity during the whole time of residence at the university, it was not necessarily maintained afterward. Many of the clerics did not even have minor orders—orders which it is well understood carry with them no absolute obligation of continuing in the clerical state. Sextons and their assistants were clerics. When the word canon originally came into use it meant nothing more than that the man was entered on the rolls of a church and received some form of wages therefrom. Students at the universities were by ecclesiastical courtesy then, clerics (from which comes the word clerk, one who can read and

write) though not in orders, and it was because of this that the university was able to maintain the rights of students. It was well understood that after graduation men might take up the secular life and indeed most of them did. In succeeding chapters we shall see examples of this and discuss the question further. Professors at the universities had to maintain their clerical condition so that even professors of law and of medicine were not allowed to marry. This law continued long beyond the Thirteenth Century, however. Professors of medicine were the first to be freed from the obligation of celibacy, but not until the middle of the Fifteenth Century at Paris, while other professors were bound thus for a full century later. Certain minor teaching positions at Oxford are still under this law, which evidently has seemed to have some advantage or it would not have been maintained.

It might perhaps be thought that only the wealthier class, the sons of the nobility and of the wealthy merchants of the cities had opportunities at the universities. As a matter of fact, however, the vast majority of the students was drawn from the great middle class. The nobility were nearly always too occupied with their pleasures and their martial duties to have time for the higher education. The tradition that a nobleman should be an educated gentleman had not yet come in. Indeed many of the nobility during the Thirteenth Century rather prided themselves on the fact that they not only had no higher education, but that they did not know even how to read and write. When we reflect, then, on the large numbers who went to the universities, it adds to our

surprise to realize that they were drawn from the burgher class. It is evident that many of the sons even of the poor were afforded opportunities in different ways at the universities of the time.

Tradition shows that from the earliest time there were foundations on which poor students could live, and various arrangements were made by which, aside from these, they might make their living while continuing their studies. Working one's way through the university was more common in the Thirteenth Century than it is at the present day, though we are proud of the large numbers who now succeed in the double task of supporting and educating themselves, with excellent success in both enterprises. There are many stories of poor students who found themselves about to be obliged to give up their studies, encountering patrons of various kinds who enabled them to go on with their education.

There is a very pretty set of legends with regard to St. Edmund of Canterbury in this matter. He bears this name because he was afterward the sainted primate of England. For many years he taught at the University of Oxford. The story is told of a clerical friend sending him up a student to Oxford and asking that his bills be sent to him. St. Edmund's answer was that he would not be robbed of an opportunity of doing good like this, and he took upon himself the burden of caring for the student. At the time there were many others dependent on his bounty and his reputation was such that he was enabled to help a great many through the benefactions of friends, who found no higher

pleasure in life than being able to come generously to Edmund's assistance in his charities.

Those who know the difficulty of managing very large bodies of students will wonder inevitably, how the medieval universities, with their less formal and less complete organizations, succeeded in maintaining discipline for all these thousands of students. Most people will remember at once all the stories of roughness, of horse play, of drinking and gaming or worse that they have heard of the medieval students and will be apt to conclude that they are not to be wondered at after all, since it must have been practically impossible for the faculties of universities to keep order among such vast numbers. As a matter of fact, however, the story of the origin and maintenance of discipline in these universities is one of the most interesting features of university life. The process of discipline became in itself a very precious part of education, as it should be of course in any well regulated institution of learning. The very fact, moreover, that in spite of these large numbers and other factors that we shall call attention to in a moment, comparatively so few disgraceful stories of university life have come down to us, and the other and still more important fact that the universities could be kept so constantly at the attainment of their great purpose for such numbers, is itself a magnificent tribute to those who succeeded in doing it, and to the system which was gradually evolved, not by the faculty alone but by teachers and students for university government.

With regard to the discipline of the medieval universities not

much is known and considerable of what has been written on this obscure subject wears an unfavorable tinge, because it is unfortunately true that "the good men do is oft interred with their bones" while the evil has an immortality all its own. The student escapades of the universities, the quarrels between town and gown, the stories of the evils apparently inevitable, where many young men are congregated—the hazing, the rough horse play, the carousing, the immoralities—have all come down to us, while it is easy to miss the supreme significance of the enthusiasm for learning that in these difficult times gathered so many students together from distant parts of the world, when traveling was so difficult and dangerous, and kept them at the universities for long years in spite of the hardships and inconveniences of the life. With regard to our modern universities the same thing is true, and the outside world knows much more of the escapades of the few, the little scandals of college life, that scarcely make a ripple but are so easily exaggerated, and so frequently repeated and lose nothing by repetition, the waste of time in athletics, in gambling, in social things, than of the earnest work and the successful intellectual progress and interests of the many. This should be quite enough to make the modern university man very slow to accept the supposed pictures of medieval student life, which are founded mainly on the worse side of it. Goodness is proverbially uninteresting, a happy people has no history and the ordinary life of the university student needs a patient sympathetic chronicler; and such the medieval universities have not found as

yet. But they do not need many allowances, if it will only be remembered under what discouragements they labored and how much they accomplished.

The reputation of the medieval universities has suffered from this very human tendency to be interested in what is evil and to neglect the good. Even as it is, however, a good deal with regard to the discipline of the universities in the early times is known and does not lose in interest from the fact, that the main factor in it was a committee of the students themselves working in conjunction with the faculty, and thus anticipating what is most modern in the development of the disciplinary regime of our up-to-date universities. At first apparently, in the schools from which the universities originated there was no thought of the necessity for discipline. The desire for education was considered to be sufficient to keep men occupied in such a way that further discipline would not be necessary. It can readily be understood that the crowds that flocked to hear Abelard in Paris, and who were sufficiently interested to follow him out to the Desert of the Paraclete when he was no longer allowed to continue his lectures in connection with the school at Paris, would have quite enough of ruling from the internal forum of their supreme interest, not to need any discipline in the external forum.

In the course of time, however, with the coming of even greater numbers to the University of Paris, and especially when the attendance ran up into many thousands, some form of school discipline became an absolute necessity. This developed of itself

and in a very practical way. The masters seem to have had very little to do with it at the beginning since they occupied themselves entirely with their teaching and preparation for lectures. What was to become later one of the principal instruments of discipline was at first scarcely more than a social organization among the students. Those who came from different countries were naturally attracted to one another, and were more ready to help each other. When students first came they were welcomed by their compatriots who took care to keep them from being imposed upon, enabled them to secure suitable quarters and introduced them to university customs generally, so that they might be able to take advantage, as soon as possible, of the educational opportunities.

The friendships thus fostered gradually grew into formal organizations, the so-called "nations." These began to take form just before the beginning of the Thirteenth Century. They made it their duty to find lodgings for their student compatriots, and evidently also to supply food on some cooperative plan for at least the poorer students. Whenever students of a particular nationality were injured in any way, their "nation" as a formal organization took up their cause and maintained their rights, even to the extent of an appeal to formal process of law before the magistrates, if necessary. The nations were organized before the faculties in the universities were formally recognized as independent divisions of the institution, and they acted as intermediaries between the university head and the students, making themselves

responsible for discipline to no slight degree. At the beginning of the Thirteenth Century in Paris all the students belonged to one or other of four nations, the Picard, the Norman, the French, which embraced Italians, Spaniards, Greeks and Orientals, and the English which embraced the English, Irish, Germans, Poles (heterogeneous collection we would consider it in these modern days) and in addition all other students from the North of Europe.

Professor Laurie, of the University of Edinburgh, in his Rise and Early Constitution of Universities in the International Educational Series[8] says:

> "The subdivisions of the nations were determined by the localities from which the students and masters came. Each subdivision elected its own dean and kept its own matriculation-book and money-chest. The whole "nation" was represented, it is true, by the elected procurators; but the deans of the subdivisions were regarded as important officials, and were frequently, if not always, assessors of the procurators. The procurators, four in number, were elected, not by the students as in Bologna and Padua, but by the students and masters. Each nation with its procurator and deans was an independent body, passing its own statutes and rules, and exercising supervision over the lodging-houses of the students. They had each a seal as distinguished from the university seal, and each procurator stood to his "nation" in

[8] The Rise and Early Constitution of Universities, with a survey of Medieval Education, by S. S. Laurie, LL.D., Professor of the Institutes and History of Education in the University of Edinburgh. New York, D. Appleton & Company, 1901.

the same relation as the Rector did to the whole university. The Rector, again, was elected by the procurators, who sat as his assessors, and together they constituted the governing body; but this for purposes of discipline, protection and defense of privileges chiefly, the ***consortium magistrorum*** regulating the schools. But so independent were the nations that the question whether each had power to make statutes that overrode those of the ***universitas***, was still a question so late as the beginning of the Seventeenth Century."

It is typical of the times that the governing system should thus have grown up of itself and from amongst the students, rather than that it should have been organized by the teachers and imposed upon the university. The nations represented the rise of that democratic spirit, which was to make itself felt in the claims for the recognition of rights for all the people in most of the countries during the Thirteenth Century, and undoubtedly the character of the government of the student body at the universities fostered this spirit and is therefore to a noteworthy degree, responsible for the advances in the direction of liberty which are chronicled during this great century. This was a form of unconscious education but none the less significant for that, and eminently practical in its results. At this time in Europe there was no place where the members of the community who flocked in largest numbers to the universities, the sons of the middle classes, could have any opportunities to share in government or learn the precious lessons of such participation, except at the universities. There gradually came an effort on the part of

the faculties to lessen many of the rights of the nations of the universities, but the very struggle to maintain these on the part of the student body, was of itself a precious training against the usurpation of privileges that was to be of great service later in the larger arena of national politics, and the effects of which can be noted in every country in Europe, nowhere more than in England, where the development of law and liberty was to give rise to a supreme heritage of democratic jurisprudence for the English speaking peoples of all succeeding generations.

V
POST-GRADUATE WORK AT THE UNIVERSITIES

In modern times it has often been said that no university can be considered to be doing its proper work unless, besides teaching, it is also adding to the existing body of knowledge by original research. Because of unfortunate educational traditions, probably the last thing in the world that would enter into the minds of most people to conceive as likely to be found in the history of the universities of the Thirteenth Century, would be original research in any form. In spite of this almost universal false impression, original work of the most valuable kind, for much of which workers would be considered as amply deserving of their doctorates in the various faculties of the post-graduate departments of the most up-to-date of modern universities, was constantly being accomplished during this wonderful century. It is, as a matter of fact, with this phase of university activity that the modern educator is sure to have more sympathy than with any other, once the significant details of the work become clear.

All surprise that surpassing original work was accomplished will cease when it is recalled that, besides creating the universities themselves, this century gave us the great Cathedrals—a well-spring of originality, and a literature in every civilized country

of Europe that has been an inspiration to many subsequent generations. At last men had the time to devote to the things of the mind. During what are called the Dark Ages, a term that must ever be used with the realization that there are many bright points of light in them, men had been occupied with wars and civic and political dissensions of all kinds, and had been gradually climbing back to the heights of interest in intellectual matters which had been theirs before the invasion of the barbarians and the migration of nations. With the rebirth of intellectual interests there came an intense curiosity to know everything and to investigate every manifestation. Everything that men touched was novel, and the wonderful advances they made can only be realized from actual consultation of their works, while the reader puts himself as far as possible at the same mental point of view from which they surveyed the world and their relations to it.

The modern university prides itself on the number of volumes written by its professors and makes it a special feature of its announcements to call attention to its at least supposed additions to knowledge in this mode. It must have been immensely more difficult to preserve the writings of the professors of the medieval universities for they had to be copied out laboriously by hand, yet we have an enormous number of large volumes of their works, on nearly every intellectual topic, that have been carefully preserved. There are some twenty closely printed large folio volumes of the writings of Albertus Magnus that have come down to us. For two centuries, until the time of printing, ardent students must have

been satisfied to spend much time in preserving these. While mainly devoted to theology, they treat of nearly everything else, and at least one of the folio volumes is taken up almost exclusively with physical science. St. Thomas Aquinas has as many volumes to his credit and his work is even of more importance. Duns Scotus died at a very early age, scarcely more than forty, yet his writings are voluminously extensive and have been carefully preserved, for few men had as enthusiastic students as he. Alas! that his name should be preserved for most people only in the familiar satiric appellation 'dunce.' The modern educator will most rejoice at the fact that the students of the time must have indeed been devoted to their masters to set themselves to the task of copying out their work so faithfully for, as Cardinal Newman has pointed out, it is the personal influence of the master, rather than the greatness of the institution, that makes education effective.

First with regard to philosophy, the mistress of all studies, whose throne has been shaken but not shattered in these ultimate times. After all it must not be forgotten that this was the great century of the development of scholastic philosophy. While this scholastic philosophy is supposed by many students of modern philosophy to be a thing of the past, it still continues to be the basis of the philosophical teaching in the Catholic seminaries and universities throughout the world. Catholic philosophers are well known as conservative thinkers and writers, and yet are perfectly free to confess that they consider themselves the nearer

to truth the nearer they are to the great scholastic thinkers of the Thirteenth Century. Even in the circle of students of philosophy who are outside the influence of scholasticism, there is no doubt that in recent years an opinion much more favorable to the Schoolmen has gradually arisen. This has been due to a study of scholastic sources. Only those despise and talk slightingly of scholasticism who either do not know it at all or know it only at second hand. With regard to the system of thought, as such, ever is it true, that the more close the acquaintanceship the more respect there is for it.

With regard to theology the case is even stronger than with regard to philosophy. Practically all of the great authorities in theology belong to the Thirteenth Century. It is true that men like Saint Anselm lived before this time and were leaders in the great movement that culminated in our century. Saint Anselm's book, ***Cur Deus Homo***, is indeed one of the best examples of the combination of scholastic philosophy and theology that could well be cited. It is a triumph of logical reasoning, applied to religious belief. Besides, it is a great classic and any one who can read it unmoved by admiration for the thinker who, so many centuries ago, could so trenchantly lay down his thesis and develop it, must be lacking in some of the qualities of human admiration. The writers of the Thirteenth Century in theology are beyond even Anselm in their marvelous powers of systematizing thought. One need only mention such names as Albertus Magnus, Thomas Aquinas, Bonaventure. Duns Scotus,

and Raymond Lully to make those who are at all acquainted with the history of the time realize, that this is not an idle expression of the enthusiasm of a special votary of the Thirteenth Century.

As we shall see in discussing the career of Saint Thomas Aquinas, the Catholic Church still continues to teach scholastic theology on exactly the same lines as were laid down by this great doctor of the church in his teaching at the University of Paris. Amid the crumbling of many Christian systems of thought, as upheld by the various protestant sects, there has been a very general realization that the Catholic Church has built up the only edifice of Christian apologetics, which will stand the storms of time and the development of human knowledge. Confessedly this edifice is founded on Thirteenth Century scholasticism. Pope Leo XIII., than whom, even in the estimation of those who are least sympathetic toward his high office, there was no man of more supremely practical intelligence in our generation, insisted that St. Thomas Aquinas must in general principle at least, be the groundwork of the teaching of philosophy and theology as they are to form the minds of future Catholic apologists.

The scholastic theology and philosophy of the Thirteenth Century have come to us in absolute purity. The huge tomes which represent the indefatigable labors of these ardent scholars were well preserved by the subsequent generation which thought so much of them, and in spite of the absence of printing have come down to us in perfectly clear texts. It is easy to neglect them and to say that a study of them is not worth while. They

represent, however, the post-graduate work and the research in the department of philosophy and theology of these days, and any university of modern time would consider itself honored by having their authors among its professors and alumni. Any one who does not think so need only turn to the volumes themselves and read them with understanding and sympathy, and there will be another convert to the ranks of that growing multitude of scholars, who have learned to appreciate the marvelous works of our university colleagues of the Thirteenth Century.

With regard to law, not much need be said here, since it is well understood that the foundations of our modern jurisprudence (see chapters on Legal Origins), as well as the methods of teaching law, were laid in the Thirteenth Century and the universities were the most active factors, direct and indirect, in this work. The University of Bologna developed from a law school. Toward the end of the Twelfth Century Irnerius revived the study of the old Roman law and put the curriculum of modern Civil Law on a firm basis. A little later Gratian made his famous collection of decretals, which are the basis of Canon Law. Great popes, during the Thirteenth Century, beginning with Innocent III., and continuing through such worthy emulators as Gregory IX. and Boniface VIII., made it the special glory of their pontificates to collect the decrees of their predecessors and arrange and publish them, so that they might be readily available for consultation.

French law assumed its modern form, and the basis of French

jurisprudence was laid, under Louis IX., who called to his assistance, in this matter, the Professors of Law at the University of Paris, with many of whom he was on the most intimate terms. His cousin, Ferdinand of Castile, laid the foundation of the Spanish law about the same time under almost similar circumstances, and with corresponding help. The study of law in the English universities helped to the formulation of the principles of the English Common Law in such simple connected form as made them readily accessible for consultation. Just before the beginning of the last quarter of the Thirteenth Century, Bracton, of whose work much more will be said in a subsequent chapter, drew up the digest of the English Common Law, which has been the basis of English jurisprudence ever since. It took just about a century for these countries, previously without proper codification of the principles of their laws, to complete the fundamental work to such a degree, that it is still the firm substructure on which rests all our modern laws. Legal origins, in our modern sense, came not long before the Thirteenth Century; at its end the work was finished, to all intents and purposes. Of the influence of the universities and of the university law departments, in all this there can be no doubt. The incentive, undoubtedly, came from their teachings. The men who did so much for legal origins of such far-reaching importance, were mainly students of the universities of the time, whose enthusiasm for work had not subsided with the obtaining of their degrees.

It is in medicine, however, much more than in law or theology, that the eminently practical character of university teaching during the Thirteenth Century can be seen, at least in the form in which it will appeal to a scientific generation. We are so accustomed to think that anything like real progress in medicine, and especially in surgery, has only come in very recent years, that it is a source of great surprise to find how much these earnest students of a long distant century anticipated the answers to problems, the solutions of which are usually supposed to be among the most modern advances. Professor Allbutt, the Regius professor of Physic in the University of Cambridge, a position, the occupant of which is always a leader in English medical thought, the present professor being one of the world's best authorities in the history of medicine, recently pointed out some of these marvels of old-time medicine and surgery. In an address On the Historical Relations of Medicine and Surgery to the end of the Sixteenth Century, delivered at the Congress of Arts and Sciences at the St. Louis Exposition in 1904, he (Prof. Allbutt) spoke with regard to one of the great university medical teachers of the Thirteenth Century as follows:

> "Both for his own great merits, as an original and independent observer, and as the master of Lanfranc, William Salicet (Guglielmo Salicetti of Piacenza, in Latin G. Placentinus de Saliceto—now Cadeo), was eminent among the great Italian physicians of the latter half of the Thirteenth Century. Now these great Italians were as

distinguished in surgery as in medicine, and William was one of the protestants of the period against the division of surgery from inner medicine; a division which he regarded as a separation of medicine from intimate touch with nature. Like Lanfranc and the other great surgeons of the Italian tradition, and unlike Franco and Ambroise Paré, he had the advantage of the liberal university education of Italy; but, like Paré and Wurtz, he had large practical experience in hospital and on the battlefield. He practised first at Bologna, afterward in Verona. William fully recognised that surgery cannot be learned from books only. His Surgery contains many case histories, for he rightly opined that good notes of cases are the soundest foundation of good practice; and in this opinion and method Lanfranc followed him. William discovered that dropsy may be due to a '***durities renum***'; he substituted the knife for the Arabist abuse of the cautery; he investigated the causes of the failure of healing by first intention; he described the danger of wounds of the neck; he sutured divided nerves; he forwarded the diagnosis of suppurative disease of the hip, and he referred chancre and phagedaena to their real causes."

This paragraph sets forth some almost incredible anticipations of what are usually considered among the most modern phases of medicine and surgery. Perhaps the most surprising thing is the simple statement that Salicet recognized that surgery cannot be learned from books alone. His case histories are instructive even to the modern surgeon who reads them. His insistence on his students making careful notes of their cases as the soundest

foundation of progress in surgery, is a direct contradiction of nearly everything that has been said in recent years about medieval medicine and especially the teaching of medicine. (See Appendix.)

William's great pupil, Lanfranc, followed him in this, and Lanfranc encouraged the practise at the University of Paris. There is a note-book of a student at the University of Paris, made toward the end of the Thirteenth Century, carefully preserved in the Museum of the University of Berlin. This notebook was kept during Lanfranc's teaching and contains some sketches of dissections, as well as some illustrations of operative procedures, as studied with that celebrated surgeon. The tradition of case histories continued at the University of Paris down to the beginning of modern surgery.

Some of the doctrines in medicine that William of Salicet stated so clearly, sound surprisingly modern. The connection, for instance, between dropsy and ***durities renum*** (hardening of the kidneys) shows how wonderfully observant the old master was. At the present time we know very little more about the dropsical condition associated with chronic Bright's disease than the fact that it constantly occurs where there is a sclerosis or contraction of the kidney. Bright in his study of albuminuria and contracted kidney practically taught us no more than this, except that he added the further symptom of the presence of albumin in the urine. It must have been only as the result of many carefully studied cases, followed by autopsies, that any such doctrine could

have come into existence. There is a dropsy that occurs with heart disease; there is also a dropsy in connection with certain affections of the liver, and yet the most frequent cause is just this hardening of the kidneys spoken of by this middle-of-the-Thirteenth Century Italian professor of medicine, who, if we would believe so many of the historians of medicine, was not supposed to occupy himself at all with ante and post-mortem studies of patients, but with the old-time medical authorities.

Almost more surprising than the question of dropsy is the investigation as to the causes of the failure of healing by first intention. The modern surgeon is very apt to think that he is the only one who ever occupied himself with the thought, that wounds might be made to heal by first intention and without the occurrence of suppuration or granulation. Certainly no one would suspect any interest in the matter as far back as the Thirteenth Century. William of Salicet, however, and Lanfranc, both of them occupied themselves much with this question and evidently looked at it from a very practical standpoint. Many careful observations must have been made and many sources of observational error eliminated to enable these men to realize the possibilities of primary union, especially, knowing as they did, nothing at all about the external causes of suppuration and considering, as did surgeons for nearly seven centuries afterward, that it was because of something within the patient's tissues that the cases of suppuration had their rise.

Unfortunately, the pioneer work done by William and

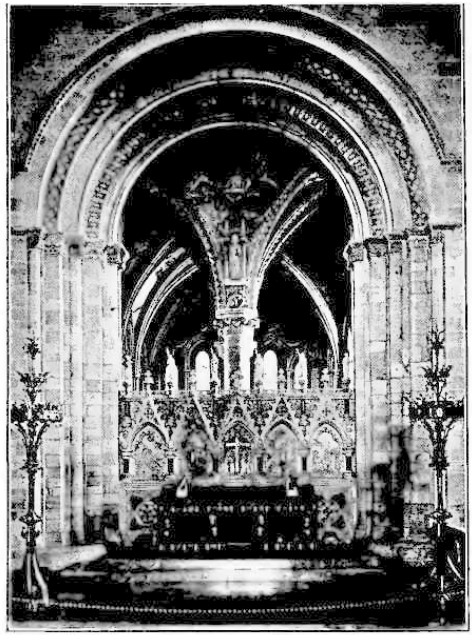
his great disciple did not have that effect upon succeeding generations which it should have had. There was a question in men's minds as to whether nature worked better by primary union or by means of the suppurative process. In the next century surgeons took the wrong horn of the dilemma and even so distinguished a surgeon as Guy de Chauliac, who has been called, not without good cause, the father of surgery, came to the conclusion that suppuration was practically a necessary process in the healing of large wounds at least, and that it must be encouraged rather than discouraged. This doctrine did not have its first set-back until the famous incident in Ambroise Paré's career, when one morning after a battle, coming to his patients expecting to find many of them very severely ill, he found them on the contrary in better condition than the others for whom he had no forebodings. In accord with old custom he poured boiling oil into the wounds of all patients, but the great surgeon's supply of oil had failed the day before and he used plain water to cleanse the wounds of a number, fearing the worst for them, however, because of the poison that must necessarily stay in their wounds and then had the agreeable disappointment of finding these patients in much better condition than those whom he had treated with all the rules of his art, as they then were. Even this incident, however, did not serve to correct entirely the old idea as to the value of suppuration and down to Lister's time, that is almost the last quarter of the Nineteenth Century, there is still question of the value of suppuration in expediting the

healing of wounds, and we hear of laudable pus and of the proper inflammatory reaction that is expected to bring about wound repair.

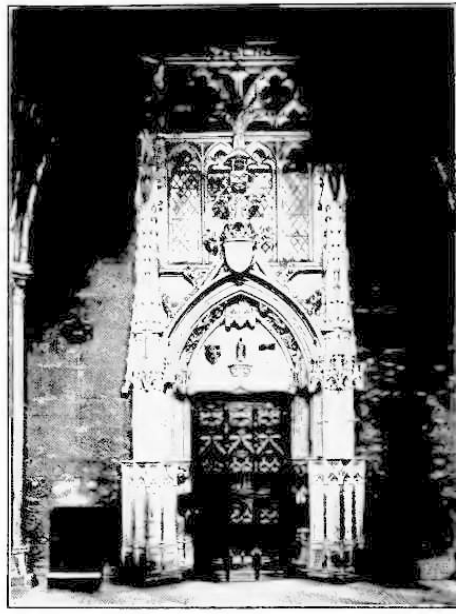
The danger of wounds of the neck is, of course, not a modern doctrine, and yet very few people would think for a moment that it could be traced back to the middle of the Thirteenth Century and to a practical teacher of surgery in a medieval Italian university. Here once more there is evidence of the work of a careful observer who has seen patients expire in a few minutes as the result of some serious incident during the course of operations upon the neck. He did not realize that the danger was due, in many cases, to the sucking in of air into the large veins, but even at the present time this question is not wholly settled and the problem as to the danger of the presence of air is still the subject of investigation.

As to the suture of divided nerves, it would ordinarily and as a matter of course be claimed by most modern historians of surgery and by practically all surgeons, as an affair entirely of the last half century. William of Salicet, however, neglected none of the ordinary surgical procedures that could be undertaken under the discouraging surgical circumstances in which he lived. The limitations of anesthesia, though there was much more of this aid than there has commonly been any idea of, and the frequent occurrence of suppuration must have been constant sources of disheartenment. His insistence on the use of the knife rather than on the cautery shows how much he appreciated the value

of proper healing. It is from such a man that we might expect the advance by careful investigation as to just what tissues had been injured, with the idea of bringing them together in such juxtaposition as would prevent loss of function and encourage rapid and perfect union.



SCREEN (HEREFORD)



DOORWAY OF SACRISTY (BOURGES)

Perhaps to the ordinary individual William's reference of certain known venereal affections to their proper cause, will be the most astonishing in this marvelous list of anticipations of what is supposed to be very modern. The whole subject of venereal disease in anything like a scientific treatment of it is supposed to date from the early part of the Sixteenth Century. There is even question in certain minds as to whether the venereal diseases did not come into existence, or at least

were not introduced from America or from some other distant country that the Europeans had been exploring about this time. William's studies in this subject, however, serve to show that nothing escaped his watchful eye and that he was in the best sense of the word a careful observer and must have been an eminently suggestive and helpful teacher.

What has thus been learned about him will serve of itself and without more ado, to stamp all that has been said about the unpractical character of the medical teaching of the medieval universities as utterly unfounded. Because men have not taken the trouble to look up the teaching of these times, and because their works were until recent years buried in old folios, difficult to obtain and still more difficult to read when obtained, it has been easy to ignore their merit and even to impugn the value of their teaching completely. William of Salicet was destined, moreover, to be surpassed in some ways by his most distinguished pupil, Lanfranc, who taught at the University of Paris at the end of the Thirteenth Century. Of Lanfranc, in the address already quoted from, Professor Allbutt has one very striking paragraph that shows how progressive was the work of this great French surgeon, and how fruitful had been the suggestive teaching of his great master. He says:

> "Lanfranc's 'Chirurgia Magna' was a great work, written by a reverent but independent follower of Salicet. He distinguished between venous and arterial hemorrhage, and used styptics (rabbit's fur, aloes, and white of egg was a

popular styptic in elder surgery), digital compression for an hour, or in severe cases ligature. His chapter on injuries of the head is one of the classics of medieval surgery. Clerk (cleric) as he was, Lanfranc nevertheless saw but the more clearly the danger of separating surgery from medicine."

Certain assertions in this paragraph deserve, as in the case of Lanfranc's master, to be discussed, because of their anticipations of what is sometimes thought to be very modern in surgery. The older surgeons are supposed to have feared hemorrhage very much. It is often asserted that they knew little or nothing about the ligature and that their control of hemorrhage was very inadequate. As a matter of fact, however, it was not primary hemorrhage that the old surgeons feared, but secondary hemorrhage. Suppuration often led to the opening of an important artery, and this accident, as can well be understood, was very much dreaded. Surgeons would lose their patients before they could come to their relief. How thoroughly Lanfranc knew how to control primary hemorrhage can be appreciated from the quotation just made from Dr. Allbutt's address. The ligature is sometimes said to have been an invention of Ambroise Paré, but, as a matter of fact, it had been in use for at least three centuries before his time, and perhaps even longer.

Usually it is considered that the difficult chapter of head injuries, with all the problems that it involves in diagnosis and treatment, is a product of the Nineteenth Century. Hence do we read, with all the more interest, Allbutt's declaration

that Lanfranc wrote what is practically a classical monograph, on the subject. It is not so surprising, then, to find that the great French surgeon was far ahead of his generation in other matters, or that he should even have realized the danger of separating surgery from medicine. Both the Regius professors of medicine at the two great English universities, Cambridge and Oxford, have, since the beginning of the Twentieth Century, made public expression of their opinion that the physician should see more of the work of the surgeon, and should not depend on the autopsy room for his knowledge of the results of internal disease. Professor Osler, particularly, has emphasized his colleague, Professor Allbutt's opinion in this matter. That a surgical professor at the University of Paris, in the Thirteenth Century, should have anticipated these two leaders of medical thought in the Twentieth Century, would not be so surprising, only that unfortunately the history of medieval teaching has, because of prejudice and a lamentable tradition, not been read aright.

Occasionally one finds a startling bit of anticipation of what is most modern, in medicine as well as in surgery. For instance, toward the end of the Thirteenth Century, a distinguished English professor of medicine, known as Gilbert, the Englishman, was teaching at Montpelier, and among other things, was insisting that the rooms of patients suffering from smallpox should be hung entirely with red curtains, and that the doors and the windows should be covered with heavy

red hangings. He claimed that this made the disease run a lighter course, with lessened mortality, and with very much less disfigurement. Smallpox was an extremely common disease in the Thirteenth Century, and he probably had many chances for observation. It is interesting to realize that one of the most important observations made at the end of the Nineteenth Century by Dr. Finsen, the Danish investigator whose studies in light and its employment in therapeutics, drew to him the attention of the world, and eventually the Nobel prize of $40,000 for the greatest advance in medicine was, that the admission of only red light to the room of smallpox patients modified the disease very materially, shortened its course, often prevented the secondary fever, and almost did away completely with the subsequent disfigurement.

It is evident that these men were searching and investigating for themselves, and not following blindly in the footsteps of any master. It has often been said that during the Middle Ages it was a heresy to depart, ever so little, from the teaching of Galen. Usually it is customary to add that the first writer to break away from Galen, effectually, was Vesalius, in his De Fabrica Corporis Humani, published toward the end of the second quarter of the Sixteenth Century. It may be said, in passing, that, as a matter of fact, Vesalius, though he accomplished much by original investigation, did not break so effectually with Galen as would have been for the best in his own work, and, especially, for its influence on his successors. He certainly did not set an example

of independent research and personal observation, any more fully, than did the medical teachers of the Thirteenth Century already mentioned, and some others, like Mondaville and Arnold of Villanova, whose names well deserve to be associated with them.

One reason why it is such a surprise to find how thoroughly practical was the teaching of the Thirteenth Century university medical schools, is because it has somehow come to be a very general impression that medicine was taught mainly by disputations, and by the consultation of authorities, and that it was always more important to have a passage of Galen to support a medical notion, than, to have an original observation. This false impression is due to the fact that the writers of the history of medical education have, until recent years, drawn largely on their imaginations, and have not consulted the old-time medical books. In spite of the fact that printing was not discovered for more than two centuries later, there are many treatises on medicine that have come down to us from this early time, and the historians of medicine now have the opportunity, and are taking the trouble, to read them with a consequent alteration of old-time views, as to the lack of encouragement for original observation, in the later Middle Ages. These old tomes are not easy reading, but nothing daunts a German investigator bound to get to the bottom of his subject, and such men as Pagel and Puschmann have done much to rediscover for us medieval medicine. The French medical historians have not

been behind their German colleagues and magnificent work has been accomplished, especially by the republication of old texts. William of Salicet's surgery was republished by Pifteau at Toulouse in 1898. Mondaville's Surgery was republished under the auspices of the Society for the Publication of old French Texts in 1897 and 1898. These republications have made the works of the old-time surgeons readily available for study by all interested in our great predecessors in medicine, all over the world. Before this, it has always been necessary to get to some of the libraries in which the old texts were preserved, and this, of course, made it extremely difficult for the ordinary teacher of the history of medicine to know anything about them. Besides, old texts are such difficult reading that few, except the most earnest of students, have patience for them, and they are so time-taking as to be practically impossible for modern, hurried students.

Unfortunately, writers of the history of medicine filled up this gap in their knowledge, only too frequently, either out of their imaginations, or out of their inadequate authorities, with the consequence of inveterating the old-time false impression with regard to the absence of anything of medical or surgical interest, even in the later Middle Ages.

Another and much more serious reason for the false impression with regard to the supposed blankness of the middle age in medical progress, was the notion, quite generally accepted, and even yet not entirely rejected, by many, that the Church was opposed to scientific advance in the centuries before the

reformation so-called, and that even the sciences allied to medicine, fell under her ban. For instance, there is not a history of medicine, so far as I know, published in the English language, which does not assert that Pope Boniface VIII., by a Bull promulgated at the end of the Thirteenth Century, forbade the practise of dissection. To most people, it will, at once, seem a natural conclusion, that if the feeling against the study of the human body by dissection had reached such a pass as to call forth a papal decree in the matter, at the end of the century, all during the previous hundred years, there must have been enough ecclesiastical hampering of anatomical work to prevent anything like true progress, and to preclude the idea of any genuinely progressive teaching of anatomy.

There is not the slightest basis for this bit of false history except an unfortunate, it is to be hoped not intentional, misapprehension on the part of historical writers as to the meaning of a papal decree issued by Boniface VIII. in the year 1300. He forbade, under pain of excommunication, the boiling of bodies and their dismemberment in order that thus piecemeal they might be transported to long distances for burial purposes. It is now well known that the Bull was aimed at certain practises which had crept in, especially among the Crusaders in the East. When a member of the nobility fell a victim to wounds or to disease, his companions not infrequently dismembered the body, boiled it so as to prevent putrefaction, or at least delay decay, and then transported it long distances to his home, in order that

he might have Christian burial in some favorite graveyard, and that his friends might have the consolation of knowing where his remains rested. The body of the Emperor Frederick Barbarosa, who died in the East, is said to have been thus treated. Boniface was one of the most broadly educated men of his time, who had been a great professor of canon and civil law at Paris when younger, and realized the dangers involved in such a proceeding from a sanitary standpoint, and he forbade it, requiring that the bodies should be buried where the persons had died. He evidently considered that the ancient custom of consecrating a portion of earth for the purpose of burial in order that the full Christian rites might be performed, was quite sufficient for noble as for common soldier.

For this very commendable sanitary regulation Boniface has been set down by historians of medicine as striking a death blow at the development of anatomy for the next two centuries. As a matter of fact, however, anatomy continued to be studied in the universities after this Bull as it had been before, and it is evident that never by any misapprehension as to its meaning was the practise of dissection lessened. Curiously enough the history of human dissection can only be traced with absolute certainty from the time immediately after this Bull. It is during the next twenty-five years at the University of Bologna, which was always closely in touch with the ecclesiastical authorities in Italy and especially with the Pope, that the foundations of dissection, as the most important practical department of medical teaching,

were laid by Mondino, whose book on dissection continued to be the text book used in most of the medical schools for the next two centuries. Guy de Chauliac who studied there during the first half of the Fourteenth Century says he saw many dissections made there. It was at Montpellier, about the middle of the century, when the Popes were at Avignon not far away, that Guy de Chauliac himself made attendance at dissections obligatory for every student, and obtained permission to use the bodies of criminals for dissection purposes. At the time Chauliac occupied the post of chamberlain to the Popes. All during the Fourteenth and Fifteenth centuries constant progress was making in anatomy, especially in Italy, and some of it was accomplished at Rome by distinguished teachers of anatomy who had been summoned by the popes to their capital in order to add distinction to the teaching staff at the famous Papal School of Science, the Sapienza, to which were attached during the next two centuries many of the distinguished scientific professors of the time.

This story with regard to the papal prohibition of dissection has no foundation in the history of the times. It has had not a little to do, however, with making these times very much misunderstood and one still continues to see printed references to the misfortune, which is more usually called a crime, that prevented the development of a great humanitarian science because of ecclesiastical prejudice. This story with regard to anatomy, however, is not a whit worse than that which is told of chemistry in almost the same terms. At the beginning of

the Fourteenth Century Pope John XXII. is said to have issued a Bull forbidding chemistry under pain of excommunication, which according to some writers in the matter is said to have included the death penalty. It has been felt in the same way as with regard to anatomy, that this was only the culmination of a feeling in ecclesiastical circles against chemistry which must have hampered its progress all during the Thirteenth Century.

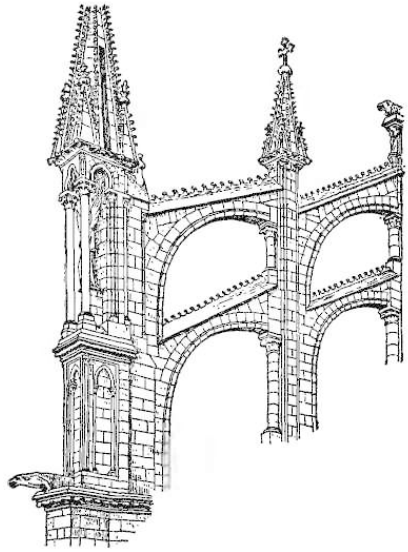
An examination of the so-called Bull with regard to chemistry, it is really only a decree, shows even less reason for the slander of Pope John XXII. than of Boniface VIII. John had been scarcely a year on the papal throne when he issued this decree forbidding "alchemies" and inflicting a punishment upon those who practised them. The first sentence of the title of the document is: "Alchemies are here prohibited and those who practise them or procure their being done are punished." This is evidently all of the decree that those who quoted it as a prohibition of chemistry seem ever to have read. Under the name "alchemies," Pope John, as is clear from the rest of the document, meant a particular kind of much-advertised chemical manipulations. He forbade the supposed manufacture of gold and silver. The first sentence of his decree shows how thoroughly he recognized the falsity of the pretensions of the alchemists in this matter. "Poor themselves," he says, "the alchemists promise riches which are not forthcoming." He then forbids them further to impose upon the poor people whose confidence they abuse and whose good money they take to return them only base-metal

or none at all.

The only punishment inflicted for the doing of these "alchemies" on those who might transgress the decree was not death or imprisonment, but that the pretended makers of gold and silver should be required to turn into the public treasury as much gold and silver as had been paid them for their alchemies, the money thus paid in to go to the poor. As in the case of the Bull with regard to anatomy, it is very clear that by no possible misunderstanding at the time was the development of the science of chemistry hindered by this papal document. Chemistry had to a certain extent been cultivated at the University of Paris, mainly by ecclesiastics. Both Aquinas and his master Albertus wrote treatises on chemical subjects. Roger Bacon devoted much time to it as is well known, and for the next three centuries the history of chemistry has a number of names of men who were not only unhampered by the ecclesiastical authorities, but who were themselves usually either ecclesiastics, or high in favor with the churchmen of their time and place. This is true of Hollandus, of Arnold of Villanova, of Basil Valentine, and finally of the many abbots and bishops to whom Paracelsus in his time acknowledged his obligations for aid in his chemical studies.

Almost needless to say it has been impossible, in a brief sketch of this kind limited to a single chapter, to give anything like an adequate idea of what the enthusiastic graduate students and professors of the Thirteenth Century succeeded in accomplishing. It is probably this department of University life,

however, that has been least understood, or rather we should say most persistently misunderstood. The education of the time is usually supposed to be eminently unpractical, and great advances in the departments of knowledge that had important bearings on human life and its relations were not therefore thought possible. It is just here, however, that sympathetic interpretation and the pointing out of the coordination of intellectual work often considered to be quite distinct from university influences were needed. It is hoped then that this short sketch will prove sufficient to call the attention of modern educators to a field that has been neglected, or at least has received very little cultivation compared to its importance, but which must be sedulously worked, if our generation is to understand with any degree of thoroughness the spirit manifested and the results attained by the medieval universities.



DOUBLE FLYING BUTTRESS (RHEIMS)

VI
THE BOOK OF THE ARTS AND POPULAR EDUCATION

The most important portion of the history of the Thirteenth Century and beyond all doubt the most significant chapter in the book of its arts, is to be found in the great Gothic Cathedrals, so many of which were erected at this time and whose greatest perfection of finish in design and in detail came just at the beginning of this wonderful period. We are not concerned here with the gradual development of Gothic out of the older Romanesque architectural forms, nor with the Oriental elements that may have helped this great evolution. All that especially concerns us is the fact that the generations of the Thirteenth Century took the Gothic ideas in architecture and applied them so marvelously, that thereafter it could be felt that no problem of structural work had been left unsolved and no feature of ornament or decoration left untried or at least unsuggested. The great center of Gothic influence was the North of France, but it spread from here to every country in Europe, and owing to the intimate relations existing between England and France because of the presence of the Normans in both countries, developed almost as rapidly and with as much beauty, and effectiveness as in the mother country.

It is in fact in England just before the Thirteenth Century, that the spirit which gave rise to the Cathedrals can be best observed at work and its purposes most thoroughly appreciated. The great Cathedral at Lincoln had some of its most important features before the beginning of the Thirteenth Century and this was doubtless due to the famous St. Hugh of Lincoln, who was a Frenchman by birth and whose experience in Normandy in early life enabled him successfully to set about the creation of a Gothic Cathedral in the country that had become his by adoption.

ANGEL CHOIR (LINCOLN)

Hugh himself was so great of soul, so deeply interested in his

people and their welfare, so ready to make every sacrifice for them even to the extent of incurring the enmity of his King (even Froude usually so unsympathetic to medieval men and things has included him among his Short Studies of Great Subjects), that one cannot help but think that when he devoted himself to the erection of the magnificent Cathedral, he realized very well that it would become a center of influence, not only religious but eminently educational, in its effects upon the people of his diocese. The work was begun then with a consciousness of the results to be attained and the influence of the Cathedral must not be looked upon as accidental. He must have appreciated that the creating of a work of beauty in which the people themselves shared, which they looked on as their own property, to which they came nearly every second day during the year for religious services, would be a telling book out of which they would receive more education than could come to them in any other way.

Of course we cannot hope in a short chapter or two to convey any adequate impression of the work that was done in and for the Cathedrals, nor the even more important reactionary influence they had in educating the people. Ferguson says:[9]

> "The subject of the cathedrals, their architecture and decoration is, in fact, practicably inexhaustible. . . . Priests and laymen worked with masons, painters, and sculptors, and all were bent on producing the best possible building, and improving every part and every detail, till the amount of

[9] Ferguson—History of Architecture. N. Y., Dodd, Mead & Co.

> thought and contrivance accumulated in any single structure is almost incomprehensible. If any one man were to devote a lifetime to the study of one of our great cathedrals—assuming it to be complete in all its medieval arrangements—it is questionable whether he would master all its details, and fathom all the reasonings and experiments which led to the glorious result before him. And when we consider that not in the great cities alone, but in every convent and in every parish, thoughtful professional men were trying to excel what had been done and was doing, by their predecessors and their fellows, we shall understand what an amount of thought is built into the walls of our churches, castles, colleges, and dwelling houses. If any one thinks he can master and reproduce all this, he can hardly fail to be mistaken. My own impression is that not one tenth part of it has been reproduced in all the works written on the subject up to this day, and much of it is probably lost and never again to be recovered for the instruction and delight of future ages."

This profound significance and charming quality of the cathedrals is usually unrecognized by those who see them only once or twice, and who, though they are very much interested in them for the moment, have no idea of the wealth of artistic suggestion and of thoughtful design so solicitously yet happily put into them by their builders. People who have seen them many times, however, who have lived in close touch with them, who have been away from them for a time and have come back to them, find the wondrous charm that is in these buildings.

Architects and workmen put their very souls into them and they will always be of interest. It is for this reason, that the casual visitor at all times and in all moods finds them ever a source of constantly renewed pleasure, no matter how many times they may be seen.

Elizabeth Robbins Pennell has expressed this power of Cathedrals to please at all times, even after they have been often seen and are very well known, in a recent number of the ***Century***, in describing the great Cathedral of Notre Dame, "Often as I have seen Notre Dame," she says, "the marvel of it never grows less. I go to Paris with no thought of time for it, busy about many other things and then on my way over one of the bridges across the river perhaps, I see it again on its island, the beautiful towers high above the houses and palaces and the view now so familiar strikes me afresh with all the wonder of my first impression."

This is we think the experience of everyone who has the opportunity to see much of Notre Dame. The present writer during the course of his medical studies spent many months in daily view of the Cathedral and did a good deal of work at the old Morgue, situated behind the Cathedral. Even at the end of his stay he was constantly finding new beauties in the grand old structure and learning to appreciate it more and more as the changing seasons of a Paris fall and winter and spring, threw varying lights and shadows over it. It was like a work of nature, never growing old, but constantly displaying some new phase of beauty to the passers-by. Mrs. Pennell resents only the

restorations that have been made. Generations down even to our time have considered that they could rebuild as beautifully as the Thirteenth Century constructors; some of them even have thought that they could do better, doubtless, yet their work has in the opinion of good critics served only to spoil or at least to detract from the finer beauty of the original plan. No wonder that R. M. Stevenson, who knew and loved the old Cathedral so well, said: "Notre Dame is the only un-Greek thing that unites majesty, elegance, and awfulness." Inasmuch as it does so it is a typical product of this wonderful Thirteenth Century, the only serious rival the Greeks have ever had. But of course it does not stand alone. There are other Cathedrals built at the same time at least as handsome and as full of suggestions. Indeed in the opinion of many critics it is inferior in certain respects to some three or four of the greatest Gothic Cathedrals.

It cannot be possible that these generations builded so much better than they knew, that it is only by a sort of happy accident that their edifices still continue to be the subject of such profound admiration, and such endless sources of pleasure after seven centuries of experience. If so we would certainly be glad to have some such happy accident occur in our generation, for we are building nothing at the present time with regard to which we have any such high hopes. Of course the generations of Cathedral builders knew and appreciated their own work. The triumph of the Thirteenth Century is therefore all the more marked and must be considered as directly due to the environment

and the education of its people. We have then in the study of their Cathedrals the keynote for the modern appreciation of the character and the development of their builders.

It will be readily understood, how inevitably fragmentary must be our consideration of the Cathedrals, yet there is the consolation that they are the best known feature of Thirteenth Century achievement and that consequently all that will be necessary will be to point out the significance of their construction as the basis of the great movement of education and uplift in the century. Perhaps first a word is needed with regard to the varieties of Gothic in the different countries of Europe and what they meant in the period.

Probably, the most interesting feature of the history of Gothic architecture, at this period, is to be found in the circumstance that, while all of the countries erected Gothic structures along the general lines which had been laid down by its great inventors in the North and Center of France, none of the architects and builders of the century, in other countries, slavishly followed the French models. English Gothic is quite distinct from its French ancestor, and while it has defects it has beauties, that are all its own, and a simplicity and grandeur, well suited to the more rugged character of the people among whom it developed. Italian Gothic has less merits, perhaps, than any of the other forms of the art that developed in the different nations. In Italy, with its bright sunlight, there was less crying need for the window space, for the provision of which, in the darker northern countries,

Gothic was invented, but, even here the possibilities of decorated architecture along certain lines were exhausted more fully than anywhere else, as might have been expected from the esthetic spirit of the Italians. German Gothic has less refinement than any of the other national forms, yet it is not lacking in a certain straightforward strength and simplicity of appearance, which recommends it. The Germans often violated the French canons of architecture, yet did not spoil the ultimate effect. St. Stephen's in Vienna has many defects, yet as a good architectural authority has declared it is the work of a poet, and looks it.

A recent paragraph with regard to Spanish Gothic in an article on Spain, by Havelock Ellis, illustrates the national qualities of this style very well. As much less is generally known about the special development of Gothic architecture in the Spanish peninsula, it has seemed worth while to quote it at some length:

> "Moreover, there is no type of architecture which so admirably embodies the romantic spirit as Spanish Gothic. Such a statement implies no heresy against the supremacy of French Gothic. But the very qualities of harmony and balance of finely tempered reason, which make French Gothic so exquisitely satisfying, softened the combination of mysteriously grandiose splendor with detailed realism, in which lies the essence of Gothic as the manifestation of the romantic spirit. Spanish Gothic at once by its massiveness and extravagance and by its realistic naturalness, far more potently embodies the spirit of medieval life. It is less esthetically beautiful but it is more romantic. In Leon

> Cathedral, Spain possesses one of the very noblest and purest examples of French Gothic—a church which may almost be said to be the supreme type of the Gothic ideal, of a delicate house of glass finely poised between buttresses; but there is nothing Spanish about it. For the typical Gothic of Spain we must go to Toledo and Burgos, to Tarragona and Barcelona. Here we find the elements of stupendous size, of mysterious gloom, of grotesque and yet realistic energy, which are the dominant characters, alike of Spanish architecture and of medieval romance."

Those who think that the Gothic architecture came to a perfection all its own by a sort of wonderful manifestation of genius in a single generation, and then stayed there, are sadly mistaken. There was a constant development to be noted all during the Thirteenth Century. This development was always in the line of true improvement, while just after the century closed degeneration began, decoration became too important a consideration, parts were over-loaded with ornament, and the decadence of taste in Gothic architecture cannot escape the eye even of the most untutored. All during the Thirteenth Century the tendency was always to greater lightness and elegance. One is apt to think of these immense structures as manifestations of the power of man to overcome great engineering difficulties and to solve immense structural problems, rather than as representing opportunities for the expression of what was most beautiful and poetic in the intellectual aspirations of the generations. But this is what they were, and their architects were poets, for in the best

sense of the etymology of the word they were creators. That their raw material was stone and mortar rather than words was only an accident of their environment. Each of the architects succeeded in expressing himself with wonderful individuality in his own work in each Cathedral.

The improvements introduced by the Thirteenth Century people into the architecture that came to them, were all of a very practical kind, and were never suggested for the sake of merely adding to opportunities for ornamentation. In this matter, skillful combinations of line and form were thought out and executed with wonderful success. At the beginning of the century, delicate shafts of marble, highly polished, were employed rather freely, but as these seldom carried weight, and were mainly ornamental in character, they were gradually eliminated, yet, without sacrificing any of the beauty of structure since combinations of light and shade were secured by the composition of various forms, and the use of delicately rounded mouldings alternated with hollows, so as to produce forcible effects in high light and deep shadow. In a word, these architects and builders, of the Thirteenth Century, set themselves the problem of building effectively, making every portion count in the building itself, and yet, securing ornamental effects out of actual structure such as no other set of architects have ever been able to surpass, and, probably, only the Greek architects of the Periclean period ever equaled. Needless to say, this is the very acme of success in architectural work, and it is for this reason that

the generations of the after time have all gone back so lovingly to study the work of this period.

It might be thought, that while Gothic architecture was a great invention in its time and extremely suitable for ecclesiastical or even educational edifices of various kinds, its time of usefulness has passed and that men's widening experience in structural work, ever since, has carried him far away from it. As a matter of fact, most of our ecclesiastical buildings are still built on purely Gothic lines, and a definite effort is made, as a rule, to have the completed religious edifice combine a number of the best features of Thirteenth Century Gothic. With what success this has been accomplished can best be appreciated from the fact, that none of the modern structures attract anything like the attention of the old, and the Cathedrals of this early time still continue to be the best asset of the towns in which they are situated, because of the number of visitors they attract. Far from considering Gothic architecture outlived, architects still apply themselves to it with devotion because of the practical suggestions which it contains, and there are those of wide experience, who still continue to think it the most wonderful example of architectural development that has ever come, and even do not hesitate to foretell a great future for it.

Reinach, in his Story of Art Throughout the Ages,[10] has been so enthusiastic in this matter that a paragraph of his opinion must find a place here. Reinach, it may be said, is an excellent

[10] Scribners, New York, 1905.

authority, a member of the Institute of France, who has made special studies in comparative architecture, and has written works that carry more weight than almost any others of our generation:

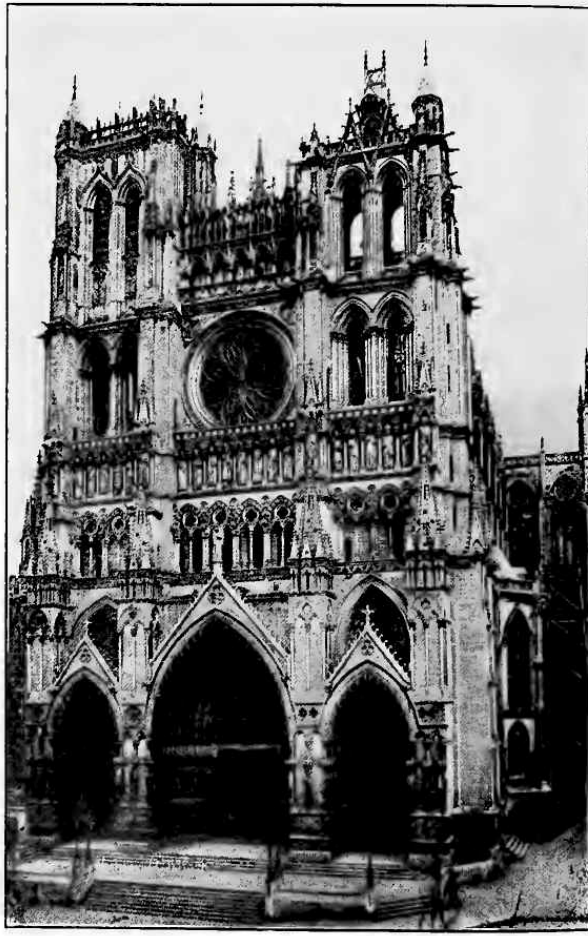
> "If the aim of architecture, considered as an art, should be to free itself as much as possible from subjection to its materials, it may be said that no buildings have more successfully realized this ideal than the Gothic churches. And there is more to be said in this connection. Its light and airy system of construction, the freedom and slenderness of its supporting skeleton, afford, as it were, a presage of an art that began to develop in the Nineteenth Century, that of metallic architecture. With the help of metal, and of cement reinforced by metal bars, the moderns might equal the most daring feats of the Gothic architects. It would even be easy for them to surpass them, without endangering the solidity of the structure, as did the audacities of Gothic art. In the conflicts that obtain between the two elements of construction, solidity and open space, everything seems to show that the principle of free spaces will prevail, that the palaces and houses of the future will be flooded with air and light, that the formula popularized by Gothic architecture has a great future before it, and that following the revival of the Graeco-Roman style from the Sixteenth Century, to our own day, we shall see a yet more enduring renaissance of the Gothic style applied to novel materials."

It would be a mistake, however, to think that the Gothic Cathedrals were impressive only because of their grandeur and

immense size. It would be still more a mistake to consider them only as examples of a great development in architecture. They are much more than this; they are the compendious expression of the art impulses of a glorious century. Every single detail of the Gothic Cathedrals is not only worthy of study but deserving of admiration, if not for itself, then always for the inadequate means by which it was secured, and most of these details have been found worthy of imitation by subsequent generations. It is only by considering the separate details of the art work of these Cathedrals that the full lesson of what these wonderful people accomplished can be learned. There have been many centuries since, in which they would be entirely unappreciated. Fortunately, our own time has come back to a recognition of the greatness of the art impulse that was at work, perfecting even what might be considered trivial portions of the cathedrals, and the brightest hope for the future of our own accomplishment is founded on this belated appreciation of old-time work.

It has been said that the medieval workman was a lively symbol of the Creator Himself, in the way in which he did his work. It mattered not how obscure the portion of the cathedral at which he was set, he decorated it as beautifully as he knew how, without a thought that his work would be appreciated only by the very few that might see it. Trivial details were finished with the perfection of important parts. Microscopic studies in recent years have revealed beautiful designs on pollen grains and diatoms which are far beneath the possibilities of human vision,

and have only been discovered by lens combinations of very high powers of the compound microscope. Always these beauties have been there though hidden away from any eye. It was as if the Creator's hand could not touch anything without leaving it beautiful as well as useful.



CATHEDRAL (AMIENS)

To as great extent as it is possible perhaps for man to secure such a desideratum, the Thirteenth Century workman succeeded in this same purpose. It is for this reason more than even for the magnificent grandeur of the design and the skilful execution with inadequate means, that makes the Gothic Cathedral such a source of admiration and wonder.

To take first the example of sculpture. It is usually considered that the Thirteenth Century represented a time entirely too early in the history of plastic art for there to have been any fine examples of the sculptor's chisel left us from it. Any such impression, however, will soon be corrected if one but examines carefully the specimens of this form of art in certain Cathedrals. As we have said, probably no more charmingly dignified presentation of the human form divine in stone has ever been made than the figure of Christ above the main door of the cathedral of Amiens, which the Amiennois so lovingly call their "beautiful God." There are some other examples of statuary in the same cathedral that are wonderful specimens of the sculptor's art, lending itself for decorative purposes to architecture. This is true for a number of the Cathedrals. The statues in themselves are not so beautiful, but as portions of a definite piece of structural work such as a doorway or a facade, they are wonderful models of how all the different arts became subservient to the general effect to be produced. It was at Rheims, however, that sculpture reached its acme of accomplishment, and architects have been always unstinted in their praise of this feature of what may be

called the Capitol church of France.

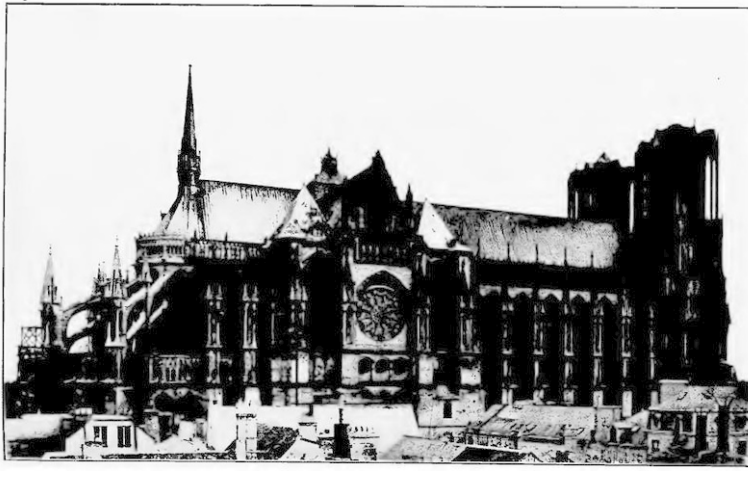
Those who have any doubts as to the place of Gothic art itself in art history and who need an authority always to bolster up the opinion that they may hold, will find ample support in the enthusiastic opinion of an authority whom we have quoted already. The most interesting and significant feature of his ardent expression of enthusiasm is his comparison of Romanesque with Gothic art in this respect. The amount of ground covered from one artistic mode to the other is greater than any other advance in art that has ever been made. After all, the real value of the work of the period must be judged, rather by the amount of progress that has been made than by the stage of advance actually reached, since it is development rather than accomplishment that counts in the evolution of the race. On the other hand it will be found that Reinach's opinion of the actual attainments of Gothic art are far beyond anything that used to be thought on the subject a half century ago, and much higher than any but a few of the modern art critics hold in the matter. He says:

> "In contrast to this Romanesque art, as yet in bondage to convention, ignorant or disdainful of nature, the mature Gothic art of the Thirteenth Century appeared as a brilliant revival or realism. The great sculptors who adorned the Cathedrals of Paris, Amiens, Rheims, and Chartres with their works, were realists in the highest sense of the word. They sought in Nature not only their knowledge of human forms, and of the draperies that cover them, but also that of the principles of decoration. Save in the gargoyles of

> cathedrals and in certain minor sculptures, we no longer find in the Thirteenth Century those unreal figures of animals, nor those ornaments, complicated as nightmares, which load the capitals of Romanesque churches; the flora of the country, studied with loving attention, is the sole, or almost the sole source from which decorators take their motives. It is in this charming profusion of flowers and foliage that the genius of Gothic architecture is most freely displayed. One of the most admirable of its creations is the famous Capital of the Vintage in Notre Dame at Rheims, carved about the year 1250. Since the first century of the Roman Empire art had never imitated Nature so perfectly, nor has it ever since done so with a like grace and sentiment."

Reinach defends Gothic Art from another and more serious objection which is constantly urged against it by those who know only certain examples of it, but have not had the advantage of the wide study of the whole field of artistic endeavor in the Thirteenth Century, which this distinguished member of the Institute of France has succeeded in obtaining. It is curious what unfounded opinions have come to be prevalent in art circles because, only too often, writers with regard to the Cathedrals have spent their time mainly in the large cities, or along the principal arteries of travel, and have not realized that some of the smaller towns contained work better fitted to illustrate Gothic Art principles than those on which they depended for their information. If only particular phases of the art of any one time, no matter how important, were to be considered in

forming a judgment of it, that judgment would almost surely be unfavorable in many ways because of the lack of completeness of view. This is what has happened unfortunately with regard to Gothic art, but a better spirit is coming in this matter, with the more careful study of periods of art and the return of reverence for the grand old Middle Ages.



CATHEDRAL (RHEIMS)

Reinach says: "There are certain prejudices against this admirable, though incomplete, art which it is difficult to combat. It is often said, for instance, that all Gothic figures are stiff and emaciated. To convince ourselves of the contrary we need only study the marvelous sculpture of the meeting between Abraham

and Melchisedech, in Rheims Cathedral; or again in the same Cathedral, the Visitation, the seated Prophet, and the standing Angel, or the exquisite Magdalen of Bordeaux Cathedral. What can we see in these that is stiff, sickly, and puny? The art that has most affinity with perfect Gothic is neither Romanesque nor Byzantine, but the Greek art of from 500 to 450 B. C. By a strange coincidence, the Gothic artists even reproduce the somewhat stereotyped smile of their forerunners." Usually it is said that the Renaissance brought the supreme qualities of Greek plastic art back to life, but here is a thoroughly competent critic who finds them exhibited long before the Fifteenth Century, as a manifestation of what the self-sufficient generations of the Renaissance would have called Gothic, meaning thereby, barbarous art.

What has been said of sculpture, however, can be repeated with even more force perhaps with regard to every detail of construction and decoration. Builders and architects did make mistakes at times, but, even their mistakes always reveal an artist's soul struggling for expression through inadequate media. Many things had to be done experimentally, most things were being done for the first time. Everything had an originality of its own that made its execution something more than merely a secure accomplishment after previous careful tests. In spite of this state of affairs, which might be expected sadly to interfere with artistic execution, the Cathedrals, in the main, are full of admirable details not only worthy of imitation, but that our

designers are actually imitating or at least finding eminently suggestive at the present time.

To begin with a well known example of decorative effect which is found in the earliest of the English Cathedrals, that of Lincoln. The nave and choir of this was finished just at the beginning of the Thirteenth Century. The choir is so beautiful in its conception, so wonderful in its construction, so charming in its finish, so satisfactory in all its detail, though there is very little of what would be called striving after effect in it, that it is still called the Angel Choir.

The name was originally given it because it was considered to be so beautiful even during the Thirteenth Century, that visitors could scarcely believe that it was constructed by human hands and so the legend became current that it was the work of angels. If the critics of the Thirteenth Century, who had the opportunity to see work of nearly the same kind being constructed in many parts of England, judged thus highly of it, it is not surprising that modern visitors should be unstinted in their praise. It is interesting to note as representative of the feeling of a cultured modern scientific mind that Dr. Osler said not long ago, in one of his medical addresses, that probably nothing more beautiful had ever come from the hands of man than this Angel Choir at Lincoln. As to who were the designers, who conceived it, or the workmen who executed it, we have no records. It is not unlikely that the famous Hugh of Lincoln, the great Bishop to whom the Cathedral owes its foundation and much of its splendor,

was responsible to no little extent for this beautiful feature of his Cathedral church. The workmen who made it were artist-artisans in the best sense of the word and it is not surprising that other beautiful architectural features should have flourished in a country where such workmen could be found.

Almost as impressive as the Angel Choir was the stained glass work at Lincoln. The rose windows are among the most beautiful ever made and one of them is indeed considered a gem of its kind. The beautiful colors and wonderful effectiveness of the stained glass of these old time Cathedrals cannot be appreciated unless the windows themselves are actually seen. At Lincoln there is a very impressive contrast that one can scarcely help calling to attention and that has been very frequently the subject of comment by visitors. During the Parliamentary time, unfortunately, the stained glass at Lincoln fell under the ban of the Puritans. The lower windows were almost completely destroyed by the soldiers of Cromwell's army. Only the rose windows owing to their height were preserved from the destroyer. There was an old sexton at the Cathedral, however, for whom the stained glass had become as the apple of his eye. As boy and man he had lived in its beautiful colors as they broke the light of the rising and the setting sun and they were too precious to be neglected even when lying upon the pavement of the Cathedral in fragments. He gathered the shattered pieces into bags and hid them away in a dark corner of the crypt, saving them at least from the desecration of being trampled to dust.

Long afterwards, indeed almost in our own time, they were found here and were seen to be so beautiful that regardless of the fact that they could not be fitted together in anything like their former places, they were pieced into windows and made to serve their original purpose once more. It so happened that new stained glass windows for the Cathedral of Lincoln were ordered during the Nineteenth Century. These were made at an unfortunate time in stained glass making and are as nearly absolutely unattractive, to say nothing worse, as it is possible to make stained glass. The contrast with the antique windows, fragmentary as they are, made up of the broken pieces of Thirteenth Century glass is most striking. The old time colors are so rich that when the sun shines directly on them they look like jewels. No one pays the slightest attention, unless perhaps the doubtful compliment of a smile be given, to the modern windows which were, however, very costly and the best that could be obtained at that time.

More of the stained glass of the Thirteenth Century is preserved at York where, because of the friendship of General Ireton, the town and the Cathedral were spared the worst ravages of the Parliamentarians. As a consequence York still possesses some of the best of its old time windows. It is probable that there is nothing more beautiful or wonderful in its effectiveness than the glass in the Five Sisters window at York. This is only an ordinary lancet window of five compartments—hence the name—in the west front of the Cathedral. There are no figures on the window, it is only a mass of beautiful greyish green tints

which marvelously subdues the western setting sun at the vesper hour and produces the most beautiful effects in the interior of the Cathedral. Here if anywhere one can realize the meaning of the expression dim religious light. In recent years, however, it has become the custom for so many people to rave over the Five Sisters that we are spared the necessity of more than mentioning it. Its tints far from being injured by time have probably been enriched. There can be no doubt at all, however, of the artistic tastes and esthetic genius of the man who designed it. The other windows of the Cathedral were not unworthy of this triumph of art. How truly the Cathedral was a Technical School can be appreciated from the fact that it was able to inspire such workmen to produce these wondrous effects.

Experts in stained glass work have often called attention to the fact that the windows constructed in the Thirteenth Century were not only of greater artistic value but were also more solidly put together. Many of the windows made in the century still maintain their places, in spite of the passage of time, though later windows are sometimes dropping to pieces. It might be thought that this was due to the fact that later stained glass workers were more delicate in the construction of their windows in order not to injure the effect of the stained glass. To some extent this is true, but the stained glass workers of the Thirteenth Century preserve the effectiveness of their artistic pictures in glass, though making the frame work very substantial. This is only another example of their ability to combine the useful with the beautiful so

characteristic of the century, stamping practically every phase of its accomplishment and making their work more admirable because its usefulness does not suffer on account of any strained efforts after supposed beauties.

Though it is somewhat out of place here we cannot refrain from pointing out the educational value of this stained glass work.

Some of the stories on these windows gave details of many passages from the Bible, that must have impressed them upon the people much more than any sermon or reading of the text could possibly have accomplished. They were literally sermons in glass that he who walked by had to read whether he would or not. When we remember that the common people in the Middle Ages had no papers to distract them, and no books to turn to for information, such illustrations as were provided by the stained glass windows, by the painting and the statuary decorations of the Cathedrals, must have been studied with fondest devotion even apart from religious sentiment and out of mere inquisitiveness. The famous "prodigal" window at Chartres is a good example of this. Every detail of the story is here pictorially displayed in colors, from the time when the young man demands his patrimony through all the various temptations he met with in being helped to spend it, there being a naive richness of detail in the matter of the temptations that is quite medieval, from the boon companions who first led him astray to the depths of degradation which he finally reached before he returned to his

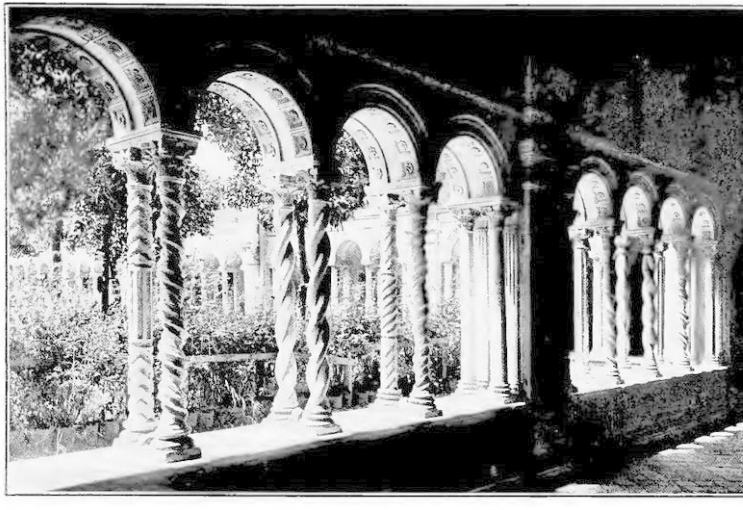
father,—even the picture of the fatted calf is not lacking.

On others of these windows there are the stories of the Patron Saints of certain crafts. The life of St. Crispin the shoemaker is given in rather full detail. The same is true of St. Romain the hunter who was the patron of the furriers. The most ordinary experiences of life are pictured and the methods by which these were turned to account in making the craftsman a saint, must have been in many ways an ideally uplifting example for fellow craftsmen whenever they viewed the window. This sort of teaching could not be without its effect upon the poor. It taught them that there was something else in life besides money getting and that happiness and contentment might be theirs in a chosen occupation and the reward of Heaven at the end of it all, for at the top of these windows the hand of the Almighty is introduced reaching down from Heaven to reward his faithful servants. It is just by such presentation of ideals even to the poor, that the Thirteenth Century differs from the modern time in which even the teaching in the schools seems only to emphasize the fact that men must get money, honestly if they can, but must get money, if they would have what is called success in life.

Another very interesting feature of these windows is the fact that they were usually the gifts of the various Guilds and so represented much more of interest, for the members. It is true that in France, particularly, the monarchs frequently presented stained glass windows and in St. Louis time this was so common that scarcely a French Cathedral was without one

or more testimonials of this kind to his generosity; but most of the windows were given by various societies among the people themselves. How much the construction of such a window when it was well done, would make for the education in taste of those who contributed to the expense of its erection, can scarcely be over-estimated. There was besides a friendly rivalry in this matter in the Thirteenth Century, which served to bring out the talents of local artists and by the inevitably suggested comparisons eventually served to educate the taste of the people.

It must not be thought, however, that it was only in stained glass and painting and sculpture—the major arts—that these workmen attained their triumphs. Practically every detail of Cathedral construction is a monument to the artistic genius of the century, to the wonderful inspiration afforded the workmen and to the education provided by the Guilds which really maintained, as we shall see, a kind of Technical School with the approbation and the fostering care of the ecclesiastics connected with the Cathedrals. An excellent example of a very different class of work may be noted in the hinges of the Cloister door of the Cathedral at York. Personally I have seen three art designers sketching these at the same time only one of whom was an Englishman, another coming from the continent and the third from America. The hinge still swings the heavy oak door of the Thirteenth Century. The arborization of the metal as it spreads out from the main shaft of the hinge is beautifully decorative in effect.



CLOISTER OF ST. PAUL'S (WITHOUT THE WALLS, ROME)

A little study of the hinge seems to show that these branching portions were so arranged as to make the mechanical moment of the swinging door less of a dead weight than it would have been if the hinge were a solid bar of iron. Besides the spreading of the branches over a wide surface serves to hold the woodwork of the door thoroughly in place. While the hinge was beautiful, then it was eminently useful from a good many standpoints, and trivial though it might be considered to be, it was in reality a type of all the work accomplished in connection with these Thirteenth

Century Cathedrals. According to the old Latin proverb "***omne tulit punctum qui miscuit utile dulci***," he scores every point who mingles the useful with the beautiful, and certainly the Thirteenth Century workman succeeded in accomplishing the desideratum to an eminent degree. This mingling of the useful and the beautiful is of itself a supreme difference between the Thirteenth Century generations and our own. Mr. Yeats, the well known Irish poet, in bidding farewell to America some years ago said to a party of friends, that no country could consider itself to be making real progress in culture until the very utensils in the kitchen were beautiful as well as useful. Anything that is merely useful is hideous, and anyone who can handle such things with impunity has not true culture. In the Thirteenth Century they never by any chance made anything that was merely useful, especially not if it was to be associated with their beloved Cathedral.

Конец ознакомительного фрагмента.