AN ENCYCLOPEDIST OF THE DARK AGES

ISIDORE OF SEVILLE

BY

ERNEST BREHAUT, A. M.

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Title: An encyclopedist of the dark ages: Isidore of Seville

Author: Ernest Brehaut

Release date: March 20, 2016 [eBook #51511]
Most recently updated: October 23, 2024

Language: English

Other information and formats: www.gutenberg.org/ebooks/51511

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AN ENCYCLOPEDIST OF THE DARK AGES

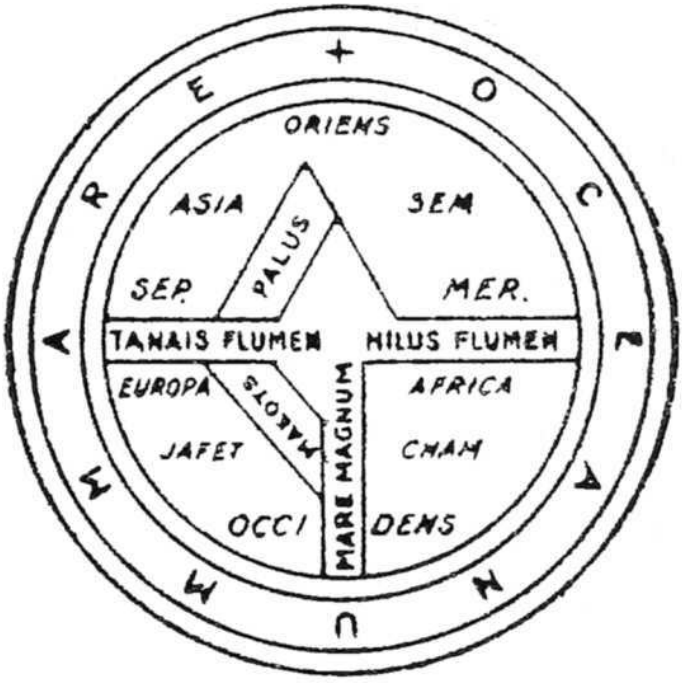
ISIDORE OF SEVILLE

In saeculorum fine doctissimus
(*Ex concilio Toletano viii, cap. 2*)

BY
ERNEST BREHAUT, A. M.

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN THE
FACULTY OF POLITICAL SCIENCE
IN COLUMBIA UNIVERSITY

NEW YORK
1912


ORIENS
ASIA
SEM
PALUS
SEP.
MER.
TANAIS FLUMEN
NILUS FLUMEN
EUROPA
MAEOTIS
AFRICA
JAFET
CHAM
MARE MAGNUM
OCCI
DENS
ORIENS
OCCIDENS
MERIDIES
SEPTENTRIO

PREFACE

THE writer of the following pages undertook, at the suggestion of Professor James Harvey Robinson, to translate passages from Isidore's *Etymologies* which should serve to illustrate the intellectual condition of the dark ages. It soon became evident that a brief introduction to the more important subjects treated by Isidore would be necessary, in order to give the reader an idea of the development of these subjects at the time at which he wrote. Finally it seemed worth while to sum up in a general introduction the results of this examination of the *Etymologies* and of the collateral study of Isidore's other writings which it involved.

For many reasons the task of translating from the *Etymologies* has been a difficult one. There is no modern critical edition of the work to afford a reasonable certainty as to the text; the Latin, while far superior to the degenerate language of Gregory of Tours, is nevertheless corrupt; the treatment is often brief to the point of obscurity; the terminology of ancient science employed by Isidore is often used without a due appreciation of its meaning. However, the greatest difficulty in translating has arisen from

the fact that the work is chiefly a long succession of word derivations which usually defy any attempt to render them into English.

In spite of these difficulties the study has been one of great interest. Isidore was, as Montalambert calls him, *le dernier savant du monde ancien*, as well as the first Christian encyclopaedist. His writings, therefore, while of no importance in themselves, become important as a phenomenon in the history of European thought. His resort to ancient science instead of to philosophy or to poetry is suggestive, as is also the wide variety of his 'sciences' and the attenuated condition in which they appear. Of especial interest is Isidore's state of mind, which in many ways is the reverse of that of the modern thinker.

It is perhaps worth while to remark that the writer has had in mind throughout the general aspects of the intellectual development of Isidore's time: he has not attempted to comment on the technical details—whether accurately given by Isidore or not—of the many 'sciences' that appear in the *Etymologies*. The student of the history of music, for example, or of medicine as a technical subject, will of course go to the sources.

The writer is under the greatest obligation to Professors James Harvey Robinson and James Thomson Shotwell for assistance and advice, as well as for the illuminating interpretation of the medieval period given in their lectures. He is also indebted to Mr. Henry O. Taylor and Professors William A. Dunning and Munroe Smith for reading portions of the manuscript.

E. B.

COLUMBIA UNIVERSITY, NEW YORK, FEBRUARY, 1912.

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PART I

INTRODUCTION

CHAPTER I

Isidore's Life and Writings

The development of European thought as we know it from the dawn of history down to the Dark Ages is marked by the successive secularization and de-secularization of knowledge.[1] From the beginning Greek secular science can be seen painfully disengaging itself from superstition. For some centuries it succeeded in maintaining its separate existence and made wonderful advances; then it was obliged to give way before a new and stronger set of superstitions which may be roughly called Oriental. In the following centuries all those branches of thought which had separated themselves from superstition again returned completely to its cover; knowledge was completely de-secularized, the final influence in this process being the victory of Neoplatonized Christianity.[2] The sciences

disappeared as living realities, their names and a few lifeless and scattered fragments being all that remained. They did not reappear as realities until the medieval period ended.

This process of de-secularization was marked by two leading characteristics; on the one hand, by the loss of that contact with physical reality through systematic observation which alone had given life to Greek natural science, and on the other, by a concentration of attention upon what were believed to be the superior realities of the spiritual world. The consideration of these latter became so intense, so detailed and systematic, that there was little energy left among thinking men for anything else.

At the point where this de-secularizing process was complete, at the opening of the seventh century, lived the Spanish bishop and scholar, Isidore of Seville. His many writings, and especially his great encyclopedia, the *Etymologies*, are among the most important sources for the history of intellectual culture in the early middle ages, since in them are gathered together and summed up all such dead remnants of secular learning as had not been absolutely rejected by the superstition of his own and earlier ages; they furnish, so to speak, a cross-section of the debris of scientific thought at the point where it is most artificial and unreal.

The résumé that Isidore offers is strikingly complete. In this respect he surpasses all the writers of his own and immediately preceding periods, his scope being much more general than that of his nearest contemporaries, Boethius and Cassiodorus. He goes back here to the tradition of the encyclopedists of the Roman world, Varro, Verrius Flaccus, Pliny, and Suetonius, by the last of whom he is believed to have been especially influenced. Few

writers of any period cover the intellectual interests of their time so completely. To understand Isidore's mental world is nearly to reach the limits of the knowledge of his time.[3]

The influence which he exerted upon the following centuries was very great. His organization of the field of secular science, although it amounted to no more than the laying out of a corpse, was that chiefly accepted throughout the early medieval period. The innumerable references to him by later writers,[4] the many remaining manuscripts,[5] and the successive editions of his works[6] after the invention of printing, indicate the great rôle he played.[7] From the modern point of view the real benefit he conferred upon succeeding centuries was that in his encyclopaedic writings he presented to the intelligent the fact that there had been and might be such a thing as secular science; while the blunders in which he was continually involved, and the shallowness of his thinking, offered a perpetual challenge to the critical power of all who read him. There was contained in his writings also, as we shall see, the embryo of something positive and progressive, namely, the organization of educational subjects that was to appear definitely in the medieval university and dominate education almost to the present day.

For a fuller understanding of Isidore's historical setting some attention must be given to the country in which he lived. Spanish culture in the early middle ages seems to have been relatively superior. It is well known that the country had been thoroughly Romanized. How complete the process had been may be judged from the list of men of Spanish birth who had won distinction in the wider

world of the empire; it includes the two Senecas, Lucan, Quintilian, Martial, Hyginus, Pomponius Mela, Columella, Orosius, and the two emperors, Trajan and Hadrian. In fact Spain had lost its individuality and had become an integral part of the Roman world, little inferior in its culture even to Italy itself; and the close of Roman rule found the people of Spain speaking the Latin language, reading the Latin literature, and habituated to Roman institutions and modes of thought.

Moreover the continuity of this ancient culture had been perhaps less rudely disturbed in Spain than elsewhere by the shock of the barbaric invasions. Here its geographical situation stood the country in good stead; the barbarian frontier was far away and the chances were that barbarians destined by fortune to enter Spain would first spend much time in aimless wandering within the empire, with consequent loss of numbers and some lessening of savagery. Such, at least, was the case with the Visigoths, who alone of the barbarians proved a permanent factor in the country's development. They were first admitted to the empire in 376, and must have passed largely into the second generation before they began to penetrate into Spain, while the real conquest by them did not begin until much later. "At the time of their appearance as a governing aristocracy in Spain" they "had become by long contact with the Romans to all intents and purposes a civilized people."[8] They were thus in a position to coalesce with the Romanized natives, and that this was largely brought to pass is shown by the conversion of the Arian Goths to orthodoxy, the removal of the ban of intermarriage between the two races, the use of Latin in all official documents, and finally by the establishment of a common law for

both peoples. The “sixty-one correct hexameters” of the Visigothic king Sisebutus (612–620),[9] compared, for instance, with the absolutely hopeless attempts of Charlemagne two centuries later to learn the art of tracing letters,[10] show plainly that Spanish culture had not sunk to the level of that of other parts of the western empire.[11]

In this cultural struggle which had taken place between the native population and their Visigothic rulers the contest between orthodox Christianity and Arianism had been of prime importance, and its settlement of the utmost significance. Since the Spaniards upheld the orthodox faith and the Visigoths were Arians, the victory of orthodoxy was a victory of the native element over the newcomers. By this victory, therefore, a position of predominance unusual for the time was given to the Spanish church organization, and the bishops, the leaders of the church in the struggle, became the most powerful men in the nation. Their power was further strengthened by the weakening of the secular power when the Visigothic royal line became extinct and it proved impossible to secure a successor to it from among the families of the turbulent nobility. From the conversion of the Visigoths in 587 to the invasion of the Saracens, Spain was a country dominated by bishops.[12]

Of Isidore’s life surprisingly little is known, considering the bulk and importance of his writings and his later fame.[13] All that can be ascertained of his family is that it belonged originally to Cartagena, that it was of the orthodox religion, and that the names of its members are Roman.[14] It is extremely probable that it belonged to the Hispano-Roman element of the population. That Isidore and his two

brothers were bishops may be taken to show that of whatever origin the family was, it was one of power and influence.

A word may be said of his elder brother, Leander, who was a man of perhaps greater force than Isidore himself. Born at Cartagena, he became a monk, and later, bishop of Seville. He was the chief leader of the orthodox party in its struggle against "the Arian insanity", and in the heat of the conflict was obliged to absent himself from Spain for a time. He visited Constantinople and there became the friend of Gregory the Great.[15] Returning to Spain, we find him, under king Reccared in 587, presiding over the council of Toledo, at which the Visigothic kingdom turned formally from Arianism. Leander was a man of action rather than a writer, but according to Isidore he engaged in controversy with the heretical party, "overwhelming the Arian impiety with a vehement pen and revealing its wickedness". He wrote also a little book, which we still have, "On the training of nuns and contempt for the world",[16] and contributed music and prayers to the church service. There seems to be no doubt that Leander was the foremost churchman of his time in Spain. The prestige of his name must have made it easier for his successor, Isidore, to devote himself to the intellectual rather than to the administrative leadership of the church.[17]

As to Isidore's early years our only authentic information is that his parents died while he was still young, and left him in the care of Leander. It is very probable, however, that he looked forward from the beginning to the clerical life which his brothers had chosen and that he therefore went through the educational routine as laid down for churchmen, which was practically the only formal education of

the time. The best proof of this lies in the fact that Isidore wrote text-books of the liberal arts—a task that would have been well-nigh impossible to one who had not been drilled in them in his youth.[18]

Isidore succeeded his brother Leander in the bishopric of Seville probably in the year 600.[19] His few remaining letters, written in the stilted religious phraseology of the day, give the impression that he was much consulted on ecclesiastical and political matters, and that he held a position of primacy among the Spanish bishops; but on the whole they contain remarkably little that is of personal interest. From the records of the councils we learn that he presided at the second council of Seville in 619, and probably also at the fourth of Toledo in 633.[20] According to a contemporary account written by a cleric named Redemptus, he died in April of 636. No other details of importance are known about his life. His career must have been a placid and uneventful one, and evidently much of his time was spent on his voluminous writings, which were the means by which he won his great ascendancy over the minds of his contemporaries.[21]

Perhaps the most reliable account of the impression which Isidore made on the men of his own time is given in the somewhat ponderous *Introduction* to his works furnished by his friend and correspondent, Braulio, bishop of Saragossa:[22]

> Isidore, a man of great distinction, bishop of the church of Seville, successor and brother of bishop Leander, flourished from the time of Emperor Maurice and King Reccared. In him antiquity reasserted itself—or rather, our time laid in him a picture of the wisdom of antiquity: a man practiced in every form of speech, he adapted himself in the quality of his

> words to the ignorant and the learned, and was distinguished for unequalled eloquence when there was fit opportunity.[23] Furthermore, the intelligent reader will be able to understand easily from his diversified studies and the works he has completed, how great was his wisdom.... God raised him up in recent times after the many reverses of Spain (I suppose to revive the works of the ancients that we might not always grow duller from boorish rusticity), and set him as a sort of support. And with good right do we apply to him the famous words of the philosopher:[24] "While we were strangers in our own city, and were, so to speak, sojourners who had lost our way, your books brought us home, as it were, so that we could at last recognize who and where we were. You have discussed the antiquity of our fatherland, the orderly arrangement of chronology, the laws of sacrifices and of priests, the discipline of the home and the state, the situation of regions and places, the names, kinds, functions and causes of all things human and divine."

From this characterization, as well as from the very brief life by another contemporary, Bishop Ildephonsus of Toledo, it is evident that Isidore impressed his own age chiefly as a writer and man of learning. Both Braulio and Ildephonsus give lists of his works. That of the former, who was Isidore's pupil and correspondent, is the fuller, and may be regarded as the more reliable. With its running comment on the content of each title, it is as follows:

> I have noted the following among those works [of Isidore] that have come to my knowledge. He wrote the *Differentiae*, in two books, in which he subtly distinguished in meaning what was confused in usage; the *Proœmia*, in one book, in which he stated briefly what each

book of the Holy Scriptures contains; the *De Ortu et Obitu Patrum*, in one book, in which he describes with sententious brevity the deeds of the Fathers, their worth as well, and their death and burial; the *Officia*, in two books, addressed to his brother Fulgentius, bishop of Astigi, in which he described in his own words, following the authority of the Fathers, why each and every thing is done in the church of God; the *Synonyma*, in two books, in which Reason appears and comforts the Soul, and arouses in it the hope of obtaining pardon; the *De Natura Rerum*, in one book, addressed to King Sisebut, in which he cleared up certain obscurities about the elements by studying the works of the church Fathers as well as those of the philosophers; the *De Numeris*, in one book, in which he touched on the science of arithmetic, on account of the numbers found in the Scriptures; the *De Nominibus Legis et Evangeliorum*, in one book, in which he revealed what the names of persons [in the Bible] signify mystically; the *De Haeresibus*, in one book, in which, following the example of the Fathers, he collected scattered items with what brevity he could; the *Sententiae*, in three books, which he adorned with passages from the *Moralia* of Pope Gregory; the *Chronica*, in one book, from the beginning of the world to his own time, put together with great brevity; the *Contra Judaeos*, in two books, written at the request of his sister Florentina, a nun, in which he proved by evidences from the Law and the Prophets all that the Catholic faith maintains; the *De Viris Illustribus*, in one book, to which we are appending this list; one book containing a rule for monks, which he tempered in a most seemly way to the usage of his country and the spirits of the weak; the *De Origine Gothorum et Regno Suevorum et etiam Vandalorum Historia*, in

> one book; the *Quaestiones*, in two books, in which the reader recognizes much material from the old treatments; and the *Etymologiae*, a vast work which he left unfinished, and which I have divided into twenty books, since he wrote it at my request. And whoever meditatively reads this work, which is in every way profitable for wisdom, will not be ignorant of human and divine matters. There is an exceeding elegance in his treatment of the different arts in this work in which he has gathered well-nigh everything that ought to be known. There are also many slight works, and inscriptions in the church of God, done by him with great grace.[25]

For the present purpose, which is to ascertain something of the intellectual outlook of the dark ages, the *Etymologiae* is, of course, of prime importance, since it contains in condensed form nearly everything that Isidore has written elsewhere. A passing attention, however, should be given to some of his other works, especially those of the more secular sort, in which his characteristic ideas are frequently developed with greater fullness than in the *Etymologies* itself. These include in particular the *Differentiae*, the *De Natura Rerum*, the *Liber Numerorum*, the *Allegoriae*, the *Sententiae*, and the *De Ordine Creaturarum*.

The *Differentiae* is in two books, the first of which treats of differences of words, and the second, of differences of things. The plan of the first book is alphabetical; words are ranged in pairs and distinguished from each other. Usually these words are synonyms, and directions are given for their proper use; as, *populus* and *plebs*, *recens* and *novus*, *religio* and *fides*; but frequently words of similar sound are distinguished; as, *vis* and *bis*, *hora* and *ora*,

hos and *os*, *marem* and *mare*. From these latter valuable hints on the Latin pronunciation of the time may be obtained.

The second book, *On Differences of Things*, treats in a brief way of such distinctions as those between *deus* and *dominus*; between the nativity of Christ and of man; between angels, demons, and men; angelic and human wickedness; *animus* and *anima*; the grace of God and the will of man; the life of action and that of contemplation.

The introductory remarks of the *Differentiae* are worth translating, since they reveal one of the most marked characteristics of Isidore's thinking, the stress that he laid on words. They are as follows:

> Many of the ancients sought to define the differences of words, making some subtle distinction between word and word. But the heathen poets disregarded the proper meanings of words under the compulsion of metre. And so, beginning with them, it became the custom for writers to use words without proper discrimination. But although words seem alike, still they are distinguished from one another by having each an origin of its own.[26] Cato was the first of the Latins to write on this subject,[27] after whose example I have in part written myself of a very few, and have in part taken them from the books of the writers.[28]

The *De Natura Rerum*[29] is a work of great importance for an understanding of Isidore's view of the physical universe. The preface is of especial interest as giving some hints of his methods of literary work and of his attitude toward pagan writers. It is addressed to Sisebutus, who was king of the Visigoths from 612 to 620.[30] It runs as follows:

> Although, as I know, you excel in talent and eloquence and in the varied accomplishments of literature (*vario flore literarum*), you are still anxious for greater attainment, and you ask me to explain to you something of the nature and causes of things. I, on my part, have run over the works of earlier writers, and am not slow to satisfy your interest and desire, describing in part the system of the days and months; the goals of the year, as well, and the changes of the seasons; the nature also of the elements; the courses of the sun and moon, and the significance of certain stars;[31] the signs of the weather, too, and of the winds; and besides, the situation of the earth, and the alternate tides of the sea. And setting forth all things as they are written by the ancients, and especially in the works of catholic writers, we have described them briefly. For to know the nature of these things is not the wisdom of superstition, if only they are considered with sound and sober learning. Nay, if they were in every way far removed from the search for the truth, that wise king would by no means have said: "Ipse mihi dedit horum quae sunt scientiam veram ut sciam dispositionem coeli et virtutes elementorum, conversionum mutationes, et divisiones temporum, annorum cursus et stellarum dispositiones."
>
> Wherefore, beginning with the day, whose creation appears first in the order of visible things, let us expound those remaining matters as to which we know that certain men of the heathen and of the church have opinions, setting down in some cases both their thoughts and words, in order that the authority of the very words may carry belief.

The general organization of the matter treated by Isidore in the *De Natura Rerum* is worth noticing. The

preface quoted above indicates that the order of treatment is to follow the order of creation. The first topic, therefore, suggested by the creation of light, we should expect to be the phenomenon of light. Instead of this it is the day, in the calendar sense, that is described, with the natural sequel of the week, month, and year as collections of days. This section really constitutes a brief account of the elements of chronology. Next created are the heavens; so we have next astronomy, presented in a condensed form, to which are appended a few chapters on meteorological matters, such as thunder, clouds, the rainbow, wind, and finally pestilence, which comes in appropriately here as being "a corruption of the air". The topic next in order, following the first chapter of Genesis, is the sea; and after that, the dry land. It should be noted that this view of the physical universe according to the order of its creation, corresponds roughly to the analysis of matter into the four elements, fire, air, water, earth. As will be shown later, such correspondences are an important factor in the intellectual outlook of the time. This was the kind of mental connection with which people were familiar.[32]

The *Liber Numerorum* contains nothing arithmetical in the modern sense of the word, in spite of Braulio's statement that in it Isidore "touched on the science of arithmetic".[33] Its fuller title is "The book of the numbers which occur in the Holy Scriptures", and the body of the book is taken up with the mystic significance of each number from one to twenty, omitting seventeen, and also of twenty-four, thirty, forty, forty-six, fifty, and sixty. The method of treatment indicates an advanced mysticism of numbers. The book is not so much an attempt to show the significance of numbers

occurring in particular connections, as it is a generalized guide to their mystical interpretation, laying down rules to govern the interpretation of each number, no matter where it occurs. It should be remarked that this was really "the science of number" of the dark ages, and that Braulio's use of the term "arithmetic" as applying to it was in accordance with the best usage of the time.[34]

The *Allegoriae* is of a character similar to the *Liber Numerorum*. It contains in brief form the principal allegories which were read into the books of the Old and the New Testaments, and is evidently meant to constitute a sort of reference book for Scriptural allegory. It possesses little interest.

One of the most important of the writings of Isidore is the *Sententiae*, in three books. It is a systematic treatise on Christian doctrine and morals, [35] and is culled chiefly from the *Moralia* of Gregory the Great. As might be guessed from its source, it is not a work of an enlightened character. However, while it is largely taken up with the technicalities of Christian thinking, it is frequently valuable as affording fuller and more specific statements on some matters of interest than are found elsewhere in Isidore's works. Isidore and Gregory were in substantial agreement in their attitude toward life, but there are indications that in some respects Isidore was not quite as thorough-going as his model. [36]

Among Christian scholars from the beginning there had been a desire to bring the traditional ideas of pagan cosmography into subordination to the Christian scheme. This impulse was strongly, though blindly, felt by Isidore, and it led to his several attempts at a comprehensive account of the universe. Perhaps the most interesting of these is the *De Ordine*

Creaturarum, which differs from the others by including the spiritual as well as the material universe. The difference did not make for rationality, and in this short work Isidore is seen at his scientific worst. As in the *De Natura Rerum*, the dominating factors in the description of the physical universe are the first chapter of Genesis and the theory of the four elements.

That one of Isidore's books which is of by far the greatest importance for an understanding of the secular thought of the day, is the *Etymologies*. This is a sort of dictionary or encyclopedia of all knowledge. [37] As Braulio puts it, it contained "about all that ought to be known", and it may be taken as representing the widest possible scope of secular knowledge that an orthodox Spaniard of the dark ages could allow himself. Indeed, so hospitable an attitude toward profane learning as Isidore displayed was unparalleled in his own period, and was never surpassed throughout the middle ages.

The encyclopedic character of the *Etymologies* may best be realized by a general view of its contents. The titles of the twenty books into which it is divided are as follows:

Etymologiarum Libri XX.

1. de grammatica.
2. de rhetorica et dialectica.
3. de quattuor disciplinis mathematicis.
4. de medicina.
5. de legibus et temporibus.
6. de libris et officiis ecclesiasticis.
7. de Deo, angelis, et fidelium ordinibus.
8. de ecclesia et sectis diversis.
9. de linguis, gentibus, regnis, militia, civibus, affinitatibus.
10. vocum certarum alphabetum.

11. de homine et portentis.
12. de animalibus.
13. de mundo et partibus.
14. de terra et partibus.
15. de aedificiis et agris.
16. de lapidibus et metallis.
17. de rebus rusticis.
18. de bello et ludis.
19. de navibus, aedificiis et vestibus.
20. de penu et instrumentis domesticis et rusticis.

To the modern reader, familiar with the names of only the modern sciences, this series of titles, which includes an almost complete list of the ancient sciences, may not be very illuminating. For this reason it is perhaps allowable to translate them, where it is possible to do so, into their modern equivalents. Thus we have grammar (Bk. 1), rhetoric and logic (Bk. 2), arithmetic, geometry, music, astronomy (Bk. 3), medicine (Bk. 4), law and chronology (Bk. 5), theology (Bks. 6–8), human anatomy and physiology (Bk. 11), zoölogy (Bk. 12), cosmography and physical geography (Bks. 13–14), architecture and surveying (Bk. 15 and part of Bk. 19), mineralogy (Bk. 16), agriculture (Bk. 17), military science (Bk. 18). This partial enumeration of the subjects treated in Isidore's *Etymologies* forms an imposing array, and serves to explain something of the importance of the work in the history of thought.

The secret of this inclusiveness lay, however, not in an expanded, but in a contracted interest. Although Isidore is not surpassed in comprehensiveness by any one of the line of Roman encyclopedists who preceded him, in the quality of his thought and the extent of his information he is inferior to them all. Secular knowledge had suffered

so much from attrition and decay that it could now be summarized in its entirety by one man.

In spite of this it is very clear that if Isidore had treated these topics with any degree of reference to the actual realities of his own time, he would have left us a work of inestimable value. But he did not do so; he drew, not upon life, but upon books for his ideas; there was no first-hand observation. Moreover, the books which he consulted were, as a rule, centuries old.[38] He tells us practically nothing concerning his own period, in which so many important changes were taking place. For example, there are repeated and detailed references to the founding and early history of Rome, but no direct allusion to the political and social changes brought about by the disintegration of the Roman Empire; trifles attributed to a period thirteen centuries earlier seemed to interest him more than the mighty developments of his own epoch. Again, although he writes upon law, he does not appear to have heard of the Justinian code issued a century before;[39] and in his chronology he fails to mention the proposal for a new era in chronology made also a century before his time by Dionysius the Less.[40]

Throughout the *Etymologies* there is a leading principle which guides Isidore in his handling of the different subjects, namely, his attitude toward words. His idea was that the road to knowledge was by way of words, and further, that they were to be elucidated by reference to their origin rather than to the things they stood for. This, in itself, gave an antiquarian cast to his work. His confidence in words really amounted to a belief, strong though perhaps somewhat inarticulate, that words were transcendental entities. All he had to do, he believed, was to clear away the misconceptions about their

meaning, and set it forth in its true original sense; then, of their own accord, they would attach themselves to the general scheme of truth. The task of first importance, therefore, in treating any subject, was to seize upon the leading terms and trace them back to the meanings which they had in the beginning, before they had been contaminated by the false usage of the poets and other heathen writers; thus the truth would be found. It was inevitable that, with such a preconception, Isidore's method in the *Etymologies* should be to treat each subject by the method of defining the terms belonging to it.

It is plain, then, that Isidore used the dictionary method in the *Etymologies* not as a matter of convenience, but on philosophic grounds. His unthinking confidence in words was, however, ill-rewarded. It merely furnished a plan of treatment which evaded consecutive thought, and made it possible for his work to be a mass of contradictions, as it really is in very many points. Indeed, the task of combining in one work the ill-digested ideas of the school of Christian thought of his day and conflicting ideas borrowed from the pagans would not have been possible except to a writer who did not reason on his material, but was satisfied, as was Isidore, to give the derivation and meaning of his terms in the blind trust that a harmonious whole was thus constituted.

We have some information in regard to the production of the *Etymologies*.[41] It was a work undertaken at the request of Braulio, bishop of Saragossa, and it occupied the last years of Isidore's life. Parts of it, however—presumably those that could be used as text-books—were in circulation before his death. Braulio is our authority for the statement that the work as a whole was left

unfinished, and that he himself divided it into twenty books, Isidore having made no division except that by subjects. As the brief preface, addressed to Braulio, informs us, the work was the product of long-continued reading, and contained verbatim extracts from previous writers, as well as Isidore's own comments.

CHAPTER II

Isidore's Relation to Previous Culture

It has been shown that by a combination of circumstances, geographical, political, and religious, Spain in Isidore's day was more fortunately situated than the remainder of western Europe. Conditions there were ripe for an expansion of intellectual interest beyond the narrow bounds to which the growth of religious prejudice and the uncertainties of life had reduced it. In this expansion, in which it was Isidore's part to lead, it was inevitable that the chief element should be an attempt to re-appropriate what had been lost in the preceding centuries, and to adapt it in some measure to the changed conditions of life and thought which had arisen.

Isidore's relation to previous culture must, therefore, be examined. It appears certain, although perhaps it cannot be proved, that he was completely cut off from that world of thought, both Christian and pagan, which was expressed in the Greek language. The tradition of wide linguistic learning which was attached to him after his death and has not been questioned until recent times, has really nothing to rest upon.[42] Isidore himself does not claim a knowledge of Greek, and he seems to have relied on translations for whatever his works contain that is of Greek origin.[43] He nowhere quotes a Greek sentence, and since the *Etymologies* and others

of his works are practically made up of quotations, it seems strange that he did not do so if he had resorted at all to Greek authors. The detached Greek words, and the Greek phrases that occur rarely in his works, are practically all given as derivations of Latin words; and when it is remembered that such detached words and phrases had been extremely common in Latin literature for centuries, it becomes plain that their use by Isidore does not necessarily indicate that he had a reading knowledge of Greek. His case is similar to that of many intelligent persons of the present day who are able to trace words to Latin and Greek roots without being able to read these languages.[44]

What aspects, then, of the Latin literary tradition, which alone has to be taken into account, are of importance as giving an understanding of Isidore and his works?

To him, no doubt, the literary past seemed to be filled chiefly with the succession of Christian writers from Tertullian to Gregory the Great. These, starting out with a religion to which a primitive cosmology was tenaciously attached, were really engaged in amalgamating with it the less hostile items of the Graeco-Roman intellectual inheritance. Men like Augustine were occupied in de-secularizing the knowledge of their times; that is, in reshaping it so that it should fill a subordinate place in the religious scheme and so support that scheme, or at least not be in opposition to it. Orosius' feat of reshaping history so that it was subservient to religion, is a good example of what was going on in every field. Such secular knowledge as was allowed to exist was brought into more or less close relation to the religious ideas that dominated thinkers, and whatever could not be thus reshaped tended to be

rejected and forgotten. The nearest approach to an exception to this is found in the subjects that had formed the educational curriculum of the Greeks and Romans. These offered robust opposition to de-secularization; and though they were attenuated to almost nothing, they succeeded in maintaining their separate existence. This process of de-secularization was about complete by the time of Cassiodorus; in him we have an intellectual outlook that recognizes, outside of the religious scheme, only the seven liberal arts.[45]

On the other hand, there was the pagan literary tradition, which owed all the value that it possessed to contact with Greek culture. Except in the field of legal social relations, the Romans made no original contribution to civilization. They had no proper curiosity concerning the universe, and so could do no thinking of vital importance concerning it. Anything approaching scientific thought in the modern sense was absolutely unknown to them. Therefore, while most of their writers were prosaic and secular in their habit of mind and free from mystical leanings, the intellectual possession of the Romans was not of the close-knit rational character which would have enabled them to resist successfully the avalanche of Oriental superstition which descended on the Western world in the centuries after the conquest of the East.[46] Secular thought in the Roman civilization was thus doomed to undergo a process of decay.

The branch of pagan Latin literature which throws most light on the character of Isidore's *Etymologies* is the succession of encyclopedias which constituted so conspicuous a feature of literary history under the Empire. The chief writers in this field, in order of time, were Varro, Verrius Flaccus,

the elder Pliny, Suetonius, Pompeius Festus, and Nonius Marcellus. While the motives and causes that impelled them to their task were doubtless many and intricate, consideration of a few paramount influences by which they were affected will explain much of the character of their work, and will indicate the origin of the main peculiarities of Isidore's encyclopaedia.

In the first place, it is in these encyclopaedias, which profess to cover the fields of literary scholarship and natural science, that the intellectual decline most clearly reveals itself. They may be regarded on the one hand as representing the successive stages in the decay of the intellectual inheritance, and in them we may trace the way in which the array of ordered knowledge was steadily losing in both content and quality. Viewed, on the other hand, as a totality, and considered with reference to the impulses that led to their production, they are again symptomatic of degeneration; they stand as the most thorough-going example of the epitomizing tendency which permeated Roman thought and which evidenced its decline. Written as they were by the intellectual leaders of their day, they represent a curious reversal of the modern situation, since where the leaders in the modern expansion of thought have devoted themselves to specialized inquiry, those of the Roman empire gave their attention to compiling and arranging the whole body of knowledge rather than to extending it at any point. The conditions of their time drove them to *generalize* rather than to specialize.

These encyclopedias are pervaded by a tone of literary scholarship. It was a peculiarity of Latin literature that philology was almost as old as poetry.

The Roman poetry was a mere reflection of the Greek, the poets invariably knowing Greek and either translating from it or following Greek models. Poetry so produced was inevitably artificial and in need of elucidation. These conditions favored the rapid growth of criticism; grammar, word derivation, philology, antiquarian history were favorite studies from early times, engaging the attention even of leading Romans. There was even a sort of literary science; for example, Varro's geography, which was meant to include the geographical allusions of the poets. A mass of scholarly lore was thus accumulated and this soon became unwieldy. It was the function of Varro and Verrius Flaccus especially to reduce this mass to order and to bring it into such shape that it could be referred to readily. To effect the latter object Verrius Flaccus introduced the method of alphabetical arrangement, using this for the first time in his great work *De Verborum Significatu*. These two writers gave, then, in their encyclopedic works a survey of the apparatus for literary criticism, including a sort of literary science, and the whole succession of encyclopedic writers was greatly influenced by the example which they set.

In the works of Pliny and Suetonius, who followed Varro and Verrius Flaccus, natural science is brought into the foreground. The change, however, was but slight. The natural science of the Romans was anything but scientific; neither experiment, systematic observation, nor research had ever been practiced among them. Their science was an affair of books and was of an authoritative character. Even the poets were looked upon as possessing scientific knowledge and were seriously quoted to maintain scientific theses. There was no real distinction between the natural and philological sciences of the

time, and therefore the encyclopedia of literary criticism was closely allied with that of natural science.

As illustrating the character of the encyclopedias it is worth while to notice more fully the method by which they were produced. As has been suggested, Roman scholars and scientists under the Empire were little more than note-takers. Pliny the Elder is the typical example of this tendency; a student of extraordinary diligence, his study consisted in reading, making extracts, and compiling them. Such was the origin of his *Natural History*. He left to his nephew, in addition, the legacy of "one hundred and sixty common-place books, written on both sides of the scroll and in very small hand-writing".[47] The full effect of the tendency thus illustrated cannot be perceived, however, if we think merely of the process as it was carried on by Pliny, for he consulted chiefly original works; when, later, extracts began to be made from works that were themselves compiled from extracts, when epitomes began to be epitomized, a state of confusion and feebleness of thought inevitably ensued. This is the condition which is exemplified in the two latest of the Roman encyclopedists, Pompeius Festus and Nonius Marcellus, and the tradition is continued in Isidore.

The body of knowledge gathered together under all these influences possessed little of a positive nature. It was informed by no general ideas of a striking character and it entirely lacked the element of reasoned proof. Since its science was a science of authority, it was easy for the Christian writers to modify it by substituting the authority of the Scriptures for that of pagan writers. In fact, the encyclopedias furnished to the church fathers secular knowledge in a particularly convenient and

unobjectionable form. Augustine, especially, made great use of Varro. It can be seen that this literary form was better adapted than any other to pass with unbroken continuity from ancient into medieval literature.

It is then to the succession of Roman encyclopedists that we must go to explain the method, spirit, and content of Isidore's *Etymologies*. A comparison of the organization of the material and of the sub-titles of Isidore's work with those of the Roman writers,[48] so far as they are known, shows the extent of his indebtedness. The literary and philological flavor, the stress on word history and derivation, the pseudo-science based on authority, the conspicuous tendency to confusion and feebleness of thought, the habit of heedless copying that we find in an aggravated form in the *Etymologies*, all these are inherited characteristics that betray the origin of the work.

But though the example which was furnished by the Roman encyclopedists was by far the strongest literary factor which influenced Isidore in the composition of the *Etymologies*, it was not the only one of importance. A minor type of encyclopedia, that of education, occurs in Latin literature. The first example of it is furnished by Varro in his *Disciplinarum Libri IX*;[49] this work had, however, disappeared before Isidore's time. Varro found no successor until the fourth century, when Martianus Capella wrote his account of the seven liberal arts, [50] giving thus a comprehensive treatment of the subject-matter of education. He was followed in the sixth century by Cassiodorus, whose *De Artibus et Disciplinis Liberalium Litterarum* Isidore certainly had before him when he wrote the account of the seven liberal arts which occupies the first three books of

the *Etymologies*. Isidore's work therefore appears to be a fusion of the minor encyclopedia of education and the major encyclopedia of all knowledge.

We are now in a position to form a clearer judgment of the personal element which Isidore contributed to the composition of the *Etymologies*. It is worth while in the first place to point out that the essentials of the work are derived from the pagan, not the Christian, side of the Latin tradition. This in itself showed a commendable initiative, considering that it was the age of Gregory the Great. It was Isidore's function to adjust the secular learning thus obtained to a new and lower level of thought and to the Christian philosophy of the time. The way in which this was accomplished constitutes the only original element in the treatment of the subject-matter. The adjustment was secured partly by an amalgamation of the pseudo-science of the church fathers with that found in the encyclopedic writings, and by the inclusion of the three books which deal with religious matters, but chiefly by the new spirit in which secular knowledge was conceived. The works of Pliny and Suetonius were surveys of what was known; that of Isidore was a survey of "what ought to be known". For his age secular knowledge was valuable, not for itself, but for edification. In theory, at least, it was Isidore's notion that such knowledge might "avail for life if applied to the better uses".

The question of the actual sources used by Isidore in the *Etymologies* and in his other works of a secular nature is a difficult one. The literary tradition of the period preceding his, which was mainly a time of compiling and epitomizing, is so complicated and confused that the student cannot be certain, when he

finds the exact wording of a writer in the work of another who preceded him, that the former has borrowed from the latter. Both may have borrowed from another source or even from two different sources identical as respects the passage in question. [51] In the task of ascertaining Isidore's sources the difficulties already enumerated are increased by the loss of important works upon which it is pretty certain that he drew,[52] and also by his habit of quoting the sources quoted by his authorities as if they were his own.[53]

However, although there has been no thorough-going investigation of this question, much has been accomplished by students interested in sections of the *Etymologies*, such, for example, as those on music and law. Classical scholars also have investigated his sources in a more general way, but their efforts have been not so much directed to the elucidation of Isidore himself as inspired by the hope of recovering some fragments of the classical authors. The varying conclusions reached show that no great certainty has been attained, but it is possible to give a tentative list of sources which will indicate roughly the nature of the influences which contributed to form Isidore's ideas.[54] It seems probable that his working library contained works of the following authors: Lactantius, Tertullian, Jerome, Ambrose, Augustine, Orosius, Cassiodorus, Suetonius, Pliny, Solinus, Hyginus, Sallust, Hegesippus, the abridger of Vitruvius, Servius, the scholia on Lucan, and Justinus.

CHAPTER III

Isidore's World View

Is it possible to ascertain from the writings of Isidore what was the general view of the universe and the attitude toward life held in the sixth and seventh centuries?

On first thought it seems doubtful. As has been indicated, his works, and especially the *Etymologies*, form a mosaic of borrowings, whose ultimate origin is to be traced to unnumbered writings in both Greek and Latin, and in both Christian and pagan literatures. We find side by side in Isidore the ideas of Aristotle, Nicomachus, Porphyry, Varro, Cicero, Suetonius, Moses, St. Paul, Origen, and Augustine, to mention only a few; and these ideas, although as a rule they have undergone degeneration, are sometimes in the original words or a close rendering of them. If viewed closely they are a mass of confusion and incoherence. This is natural; such eclectism as had existed for centuries in the Roman, pagan and Christian, systems of thought is not compatible with consistency. Incoherence in the intellectual possession was inevitable; equally inevitable was an increasing indifference to incoherence and even inability to perceive it. The words of a writer of such a period must therefore not be pressed too hard. Too close an investigation would land the inquirer in hopeless confusion.

Furthermore, even in writers far more consecutive in their thinking than Isidore, there are often fundamental preconceptions which are naively taken for granted, and which, although unstated, serve as points around which to mass ideas. If the reader does not happen to approach the subject with the same preconceptions, a misapprehension is likely to result. It is the business of the critic to grasp these preconceptions and place the reader on the same plane of understanding, as it were, so that he can follow the meaning as it lay in the mind of the writer. Sometimes this undertaking is possible, but in the case of a writer like Isidore, whose ideas are often hazy and whose work is a conglomerate of ten centuries, it may easily be impossible.[55]

However, it must be remembered that such an absence of an acute self-consciousness as is indicated in the condition just described, is exactly the thing that enables men to perform feats of an astonishing character in constructing a world-philosophy, if perchance they have a taste in that direction. Their minds, not being irritated or roused by any perception of inconsistency, rest happy in the conviction that all is explained, and remain oblivious of that sense of mystery which forms the background of modern scientific thought. As tested from this point of view the medieval period afforded the conditions for a complacent and authoritative world-philosophy, such as in fact it did possess.

The difficulties in ascertaining the world view held by Isidore are, then, considerable; but, since he was the leading representative of the intellect of the dark ages, and the only important writer on secular subjects in two centuries of western European history, the attempt to ascertain it seems worth while. In making this attempt, however, it is

necessary to keep these difficulties of interpretation in mind; the danger is that we shall lay too much stress on the minor inconsistencies which he probably was not aware of, and so fail to see that large general consistency which, because of his lack of critical sensitiveness, he was able to believe that he found.

Isidore's physical universe[56] in its form is geocentric, and is bounded by a revolving sphere which he believed to be made of fire, and in which the stars are fixed. The question of the number of spheres he treats in an inconsistent way, sometimes speaking of seven concentric inner spheres, and sometimes of only one.[57] The relative size of sun, earth, and moon is accurately given—though, it appears, not without misgiving[58]—and also the cause of eclipses of both the sun and the moon.

The subject of greatest interest in this connection is, of course, the question whether or not Isidore believed in the sphericity of the earth. It is maintained by some authorities that this notion was not lost at any time during the middle ages. Isidore certainly believed that the heavens constituted a sphere or spheres, and that the sun and moon revolved in circles around the earth. He states the theory of the zones correctly in two passages,[59] applying it, however, not to the spherical earth but to the sphere of the heavens. On the other hand, he frequently gives expression to notions belonging to a primitive cosmology.[60] The suspicion is aroused, therefore, that when he was stating astronomical ideas, he was usually simply copying what perhaps he did not understand. A passage that seems to settle the matter is found in *De Natura Rerum*. It shows that the fact that he could state such a theory as that of the zones correctly, is no proof that he understood its

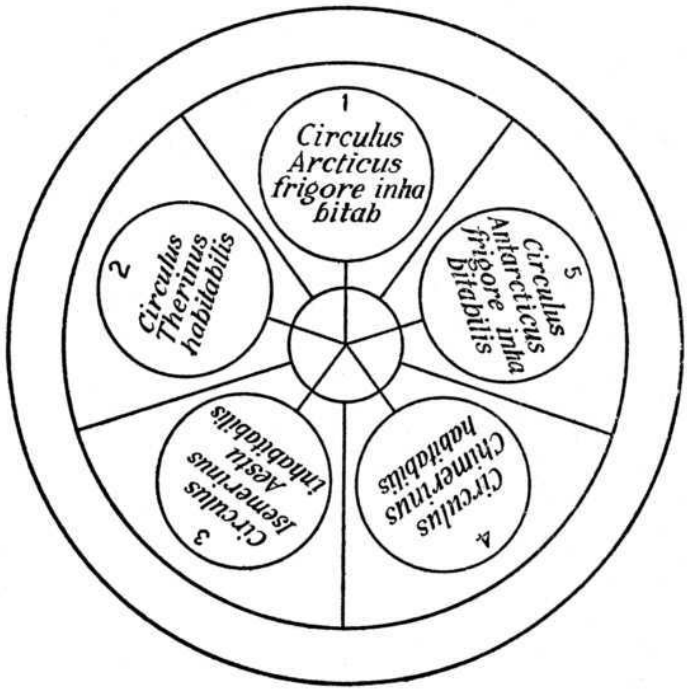
application to the earth. A translation of the passage follows:

> In describing the universe the philosophers mention five circles, which the Greeks call παράλληλοι that is, zones, into which the circle of lands is divided.... Now let us imagine them after the manner of our right hand, so that the thumb may be called the Arctic circle, uninhabitable because of cold; the second, the summer circle, temperate, inhabitable; the middle (finger), the equinoctial (*Isemerinus*) circle, torrid, uninhabitable; the fourth, the winter circle, temperate, inhabitable; the fifth, the Antarctic circle, frigid, uninhabitable. The first of these is the northern, the second, the solstitial, the third, the equinoctial, the fourth, the winter circle, the fifth, the southern.... The following figure shows the divisions of these circles. (Fig. 1.) Now, the equinoctial circle is uninhabitable because the sun, speeding through the midst of the heaven, creates an excessive heat in these places, so that, on account of the parched earth, crops do not grow there, nor are men permitted to dwell there, because of the great heat. But, on the other hand, the northern and southern circles, *being adjacent to each other*, are not inhabited, for the reason that they are situated far from the sun's course, and are rendered waste by the great rigor of the climate and the icy blasts of the winds. But the circle of the summer solstice which is situated *in the east, between the northern circle and the circle of heat*, and the circle which is placed *in the west, between the circle of the heat and the southern circle*, are temperate for the reason that they derive cold from one circle, heat from the other. Of which Virgil [says]:
>
> "Between these and the middle [zone] two

are granted to wretched mortals by the gift of the gods."

Now, they who are next to the torrid circle are the Ethiopians, who are burnt by excessive heat.[61]

Fig. 1.



The explanation of the passage and of the figure which illustrates it seems to be that Isidore accepted the terminology of the spherical earth from Hyginus[62] without taking the time to understand it —if indeed he had the ability to do so—and applied it without compunction to the flat earth. He evidently thought that *zona* and *circulus* were

interchangeable terms,[63] and his "circles" did not run around the circumference of a spherical earth, but lay flat on a flat earth, where they filled with sufficient completeness the *orbis terrae* or circle of the land.[64] The adjustment of the two conflicting theories was extremely crude, since it involved placing the arctic and antarctic circles side by side, and the two temperate circles one in the east and one in the west.

By such a blunder as this may be measured the stagnation of the secular thought of the time. Of Greek science only remnants were in existence, and these were regarded with indifference. Writers like Isidore might use them, but they did not hesitate to mangle and distort them. Moreover they were given only second place even in the science of the day; the first place was held by the notions of the natural world expressed in the Scriptures. Each one of these, no matter how primitive or how figurative, had to be taken seriously into account and given its proper weight in building up the general scheme. In this intellectual activity Isidore is more at home than when he is handling the ideas of the pagans, as may be perceived from his discussion of the shape of the firmament: "As to its shape, whether it covers the earth from above like a plate, or like an egg-shell shuts the whole creation in on every side, thinkers take opposite views. For the mention the Psalmist makes of this when he says: *Extendas coelum sicut pellem*,[65] does not conflict with either opinion, since when his own skin covers any animal, it envelopes equally every part all around, and when it is removed from the flesh and stretched out, there is no doubt that it can form a chamber either rectangular or curved."[66]

The vastness of the physical universe is an idea

not presented in Isidore's writings. It was for his mind really a small universe, and one limited sharply by definite boundaries both in time and space. It had begun at the creation, its matter being constituted at that time out of nothing, and it was to have an end as sharply marked. It extended from the earth to the sphere of the heavens which revolved about the earth, and what was beyond scarcely appears even as a question. It was a universe in which high winds might, and sometimes did, dislodge particles from the fiery heavens;[67] and in which the sun approached so close to some of the inhabitants of the earth as to scorch them.[68] In truth, Isidore's universe was reduced to rather stifling proportions.

A fundamental part of Isidore's world-philosophy was his view of the constitution of matter. This is closely bound up with his conception of the form of the universe, and it is also the most important of his ideas in the field of natural science.

He believed in the existence of the four elements, earth, air, fire, and water,[69] and that they were the visible manifestations of one underlying matter.[70] They were not mutually exclusive but "all elements existed in all", and it was possible for one element to be transmuted into another. Their properties were not invariable, but as a rule fire is spoken of as hot and dry; air, hot and wet; water, wet and cold; earth, cold and dry. It will be observed that each successive pair of elements had a common quality: thus fire and air shared the quality of 'hot'; air and water, that of 'wet'; water and earth, that of 'cold'; earth and fire, that of 'dry'. It was by the aid of these common qualities, which served as means, that the elements could be more easily thought of as passing into each other.[71]

It should be remarked that the general idea is the

same as that of modern chemistry in so far as it assumes that there are elements and attributes properties to them. The difference is that the modern chemist insists that the properties shall be fixed for each element, while Isidore has no consciousness of such a necessity. For instance, in a chapter of *De Natura Rerum* he attributes two separate sets of properties to the four elements, without realizing at all the confusion of such a procedure. Again, from the point of view of the best ancient conception of the four elements, Isidore is equally at fault. For Aristotle the names given to them had been merely labels. He perceived in the natural world two significant sets of opposing qualities, namely, hot and cold, wet and dry. These sets of opposing qualities interpenetrated one another: the result was four possible combinations, namely, hot and dry, hot and wet, cold and wet, cold and dry. His elements designated merely these combinations and were nothing more than conventional names for them. Isidore, however, took the names of the elements in a literal sense.[72] The label itself had become important, while what stood behind it and gave it its value was regarded as almost meaningless. What has happened here is typical of the whole development of ancient thought down to Isidore's time.

Of Aristotle's conception of a fifth element, the *quinta essentia*, or ether, superior to the others and permeating them, Isidore shows merely a trace. He says in one passage that "ether is the place where the stars are, and it signifies that fire which is separated on high from all the universe".[73] He offers also another definition in which he confuses three of the elements of Aristotle: "Ether is the upper, fiery air".[74]

The theory of the four elements, as has been

already indicated, has a cosmological bearing. In the universe at large the elements were thought of as tending to arrange themselves in strata according to weight. Isidore says it is proved "that earth is the heaviest of all things created; and therefore, they say, it holds the lowest place in the creation, because by nature nothing but itself can support it. And we perceive that water is heavier than air in proportion as it is lighter than earth.... Fire, too, is apprehended to be in its nature above air, which is easily proved even in the case of fire that burns in earthy substance, since as soon as it is kindled, it directs its flame toward the upper spaces which are above the air, where there is an abundance of it, and where it has its place."[75]

Thus the physical universe consists of the four kinds of matter, stratified according to the principle of weight. The notion was one in frequent use,[76] and it was brought into relation with animate existence by assigning to each of the four strata a peculiar population. Thus the fiery heavens were occupied by angels; the air, by birds and demons; the water, by fishes; the earth, by man and other animals.[77]

The theory of the four elements was fertile in every branch of the natural science of medieval times. Isidore uses it, for example, to explain the physical constitution of man:

> Man's body is divided among the four elements. For he has in him something of fire, of air, of water, and of earth. There is the quality of earth in the flesh, of moisture in the blood, of air in the breath, of fire in the vital heat. Moreover, the four-fold division of the human body indicates the four elements. For the head is related to the heavens, and in it are

> two eyes, as it were the luminaries of the sun and moon. The breast is akin to the air, because the breathings are emitted from it as the breath of the winds from the air. The belly is likened to the sea, because of the collection of all the humors, the gathering of the waters as it were. The feet, finally, are compared to the earth, because they are dry like the earth. Further, the mind is placed in the citadel of the head like God in the heavens, to look upon and govern all from a high place.[78]

In another passage Isidore tells us that fire has its seat in the liver, and that "it flies thence up to the head as if to the heavens of our body. From this fire the rays of the eyes flash, and from the middle of it, as from a center, narrow passages lead not only to the eyes but to the other senses".[79]

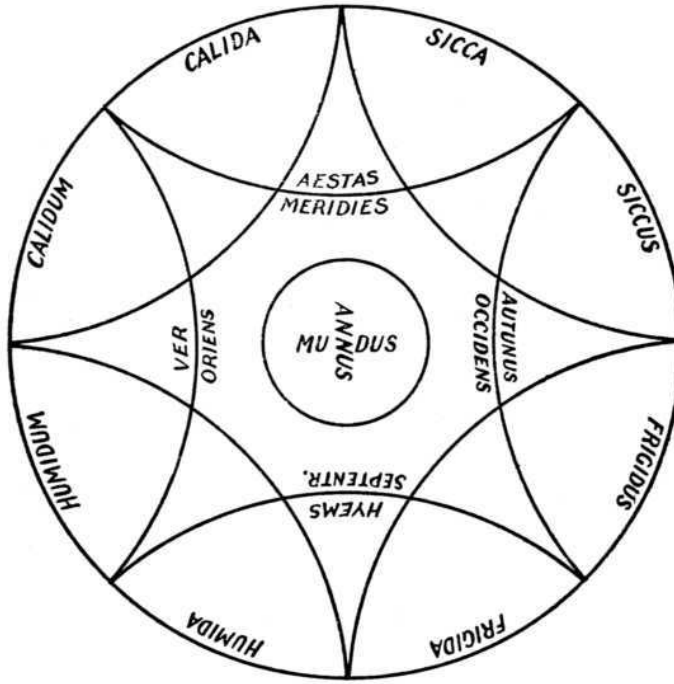
Naturally the four elements play a great part in medicine. They are related to the four humors, blood, yellow bile, black bile, and phlegm. "Each humor imitates its element; blood, air;[80] yellow bile, fire; black bile, earth; phlegm, water. Health depends on the proper blending of these humors."[81] It appears to have been the belief of the time that the humors possessed each the same qualities as the corresponding element. Medical reasoning might confine itself to the four humors or it might go back of them to the four elements, as in the explanation of vertigo, where the diagnosis indicates, apparently, the transmutation of one element into another. Isidore says: "The *arteriae* [air passages] and veins produce a windiness in man's head from a resolving of moisture, and make a whirling in his eyes whence it is called vertigo".[82]

That notions of such a loose, semi-philosophical nature should survive while the solid empirical content of medical science faded away, is

characteristic of the decline of thought which culminated in the dark ages. The science of medicine had cut itself loose from concrete things, and attached itself almost exclusively to the vague philosophical conceptions from which even the best Greek thinkers had not been able to free it.

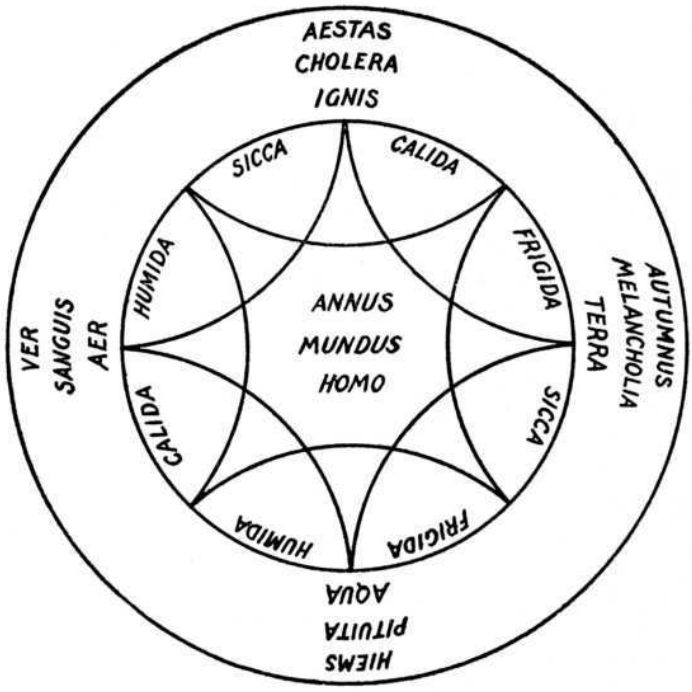
The phenomena of meteorology, also, were explained largely by the four elements. The upper air was believed to be akin to the fire above it, and was therefore calm and cloudless; while the lower air was supposed to be cloudy and disturbed by storms because of its proximity to water, the next element below it in the series.[83] Further, the belief in the possibility of the transmutation of elements was of use here. Air, for example, might be transmuted into water, or water into air.[84] As Isidore puts it: "[air] being contracted, makes clouds; being thickened, rain; when the clouds freeze, snow; when thick clouds freeze in a more disordered way, hail; being spread abroad, it causes fine weather, for it is well-known that thick air is a cloud, and a rarified and spread-out cloud is air."[85]

Fig. 2.



The most remote fields are invaded by the four elements. It is by reference to them that the seasons are explained. Here use is made rather of their properties than of the elements themselves. “The spring is composed of moisture and heat; the summer, of fire and dryness; the autumn, of dryness and cold; the winter, of cold and moisture.”[86] From this the transition is easy to another far-fetched application of the theory. The four quarters of the universe, East, West, North, and South, are connected with the four seasons, and thus with the four elements. This conception seemed to Isidore so important that he introduced a figure to illustrate it. (*Fig. II.*)

Fig. 3.



The old notion that man is a microcosm or parallel of the universe on a small scale, was familiar to Isidore. As has been shown, he believed that man was composed of the same four elements as the universe, and that they were distributed in him in much the same way as in it. It was going only a step further for him to declare that "all things are contained in man, and in him exists the nature of all things";[87] after which it was easy "to place man in communion with the fabric of the universe"[88] by means of a figure. (*Fig. III.*)

The idea of the parallelism of man and the universe, when thus literally conceived, was a fruitful one. Man could be explained by the universe.

And the process could be reversed and the universe also explained by man, since man may be observed in his entirety and his life history may be easily followed, while that of the universe may not. Isidore doubtless took this view, for he says: “The plan of the universe is to be inquired into according to man alone. For just as man passes to his end through definite ages, so too the universe is passing away during this prolonged time, since both man and the universe decay after they reach their growth.”[89] The division of the life of the universe, for example, into six definite ages, which he incorporated into his chronology, was given greater certainty and meaning from the similar division of man’s life into six ages.

The wide scope assigned by Isidore to the action of the four elements—which scope includes the immaterial as well as the material—is completely alien to the modern way of thinking; as is, also, the bringing of the universe, the year, and man, into so intimate and specific a connection. Still more difficult is it for us to grasp such an idea as that the ounce “is reckoned a lawful weight because the number of its scruples measures the hours of the day and night”;[90] or that “the Hebrews use twenty-two letters of the alphabet, following the [number of] books in the Old Testament”.[91] And the climax is reached when he expresses the notion that a man bursts into tears as soon as he casts himself down on his knees, because the knees and the eyes are close together in the womb.[92]

Although these examples of Isidore’s thinking afford excellent proof of his incoherence and lack of logical consecutiveness, their explanation goes deeper. Like all primitive thinkers, those of medieval times were firmly convinced of the solidarity of the universe; they felt its unity much more strongly than

they did its multiplicity; what we regard as separate kinds of phenomena and separate ways of viewing the universe they regarded as of necessity closely inter-related. There were no categories of thought that were for them mutually exclusive; they carried their ideas without hesitation from the material into the immaterial, and from the natural into the supernatural. No conception established in one sphere seemed impertinent in any other. It was this state of mind that enabled the medieval thinker to take such erratic leaps from one sphere of thought to another, without any feeling of uncertainty or any fear of getting lost.[93]

Perhaps nothing illustrates more clearly the erratic thinking to which this idea of the solidarity of the universe led, than the way in which Isidore reasons about number. To his mind the fact, for instance, that "God in the beginning made twenty-two works" explains why there are twenty-two sextarii in the bushel; and that "there were twenty-two generations from Adam to Jacob, and twenty-two books of the Old Testament as far as Esther, and twenty-two letters of the alphabet out of which the divine law is composed",[94] were additional explanations for the same thing. A like connection is found in his statement that "the pound is counted a kind of perfect weight because it is made up of as many ounces as the year has months".[95]

Isidore's conceptions in regard to number, indeed, deserve to be ranked closely after the theory of the four elements as affording to him "paths of intelligence" through the universe, material and immaterial. Both in the world at large and in the microcosm of man the harmony of "musical numbers" is an essential;[96] and number is also an essential factor in every part and aspect of the

universe. “Take number from all things,” he says, “and all things perish.”[97] However, his idea of the importance of number in the world is equaled only by the vagueness with which he conceived its operations as a working principle. Here he takes absolute leave of the logic which, in his account of the four elements, he had already so often left behind. The best he could do, in describing the actual operation of this principle, was to make lists of instances in which the same number occurred, and no matter how unrelated the spheres of thought thus connected, to assume their close interrelation and explanation of one another.

It is now clear that according to Isidore’s way of thinking, a fact belonging to one set of phenomena might be caused or explained by something totally different in another sphere. This being so, it was inevitable that there should be an effort to pass from the known to the unknown along the path thus suggested. When we reflect that, for the medieval thinker, there were three kinds of knowledge—namely, knowledge of the material, the moral, and the spiritual—and that they were in an ascending scale of value, it will appear equally inevitable that this effort to pass from the known to the unknown should be mainly an effort to pass from the material and obvious to the intangible and unseen, though more real, spiritual world. In this consideration we have the chief explanation of medieval allegory.[98]

In Isidore we find that allegorical interpretation is a thing of little spontaneity. The allegorizing of the Scriptures had long before his time settled down into a system. In his *Certain Allegories of the Holy Scriptures* a list is given of the most noted mystical interpretations of Scripture, a dry enumeration, with now and then an interesting side-light upon the

opinion of the time. The extent to which the Scripture was subject to allegorizing may be guessed from the fact that Isidore specifies that "the ten commandments must be taken literally".[99] Allegory is applied also to the phenomena of nature. In *De Natura Rerum* Isidore makes a regular practice of first giving the explanation of natural phenomena and following this with the "higher meaning". Thus the sun has Christ for its allegorical meaning; the stars, the saints; thunder is "the rebuke from on high of the divine voice", or it may be "the loud preaching of the saints, which dins with loud clamor in the ears of the faithful over all the circle of the lands".[100] In the *Etymologies* this "higher meaning" of natural objects is rarely given.

The view held in the dark ages of the natural and the supernatural and of their relative proportions in the outlook on life, was precisely the reverse of that held by intelligent men in modern times. For us the material universe has taken on the aspect of order; within its limits phenomena seem to follow definite modes of behavior, upon the evidence of which a body of scientific knowledge has been built up. Indeed at times in certain branches of science there has been danger of a dogmatism akin to, if the reverse of, that which prevailed in medieval times with reference to the supernatural. On the other hand, the certainty that once existed in regard to the supernatural world has faded away; no means of investigating it that commands confidence has been devised, and any idea held in regard to it is believed to be void of truth if inconsistent with the conclusions reached by science. In all these respects the attitude of Isidore and his time is exactly opposite to ours. To him the supernatural world was the demonstrable and ordered one. Its phenomena,

or what were supposed to be such, were accepted as valid, while no importance was attached to evidence offered by the senses as to the material. It may even be said that the supernatural universe bulked far larger in the mind of the medieval thinker than does the natural in that of the modern, and it was fortified by an immeasurably stronger and more uncritical dogmatism.

It is evident, therefore, that if we compare the dogmatic world-view of the medieval thinker with the more tentative one of the modern scientist, allowance must be made for the fact that they take hold of the universe at opposite ends. Their plans are so fundamentally different that it is hard to express the meaning of one in terms of the other.

Isidore's method of apprehending the supernatural world can hardly be called mysticism. With mysticism we associate intuition and exalted feeling, and the examples that have been given of Isidore's thinking in terms of allegory and number, show that he thought of the supernatural in the same prosaic and literal way as he did of the natural; there was no break for him between them, nor was there any change of intellectual atmosphere when he crossed the line. So the higher sense at least of the term 'mystic' must be denied him. His share in the mysticism of his age, which he accepted unquestioningly, was not a positive one; he exhibits rather the negative side of mysticism, the intellectual haziness, slothfulness and self-delusion by which it was so often accompanied in medieval times.

Isidore believed that in point of time the supernatural preceded the natural. He says that God "created all things out of nothing",[101] and, again, that "the matter from which the universe was formed preceded the things created out of it not in time, but

in origin, in the same sense as sound precedes music".[102] It is evident that he regarded the material as an emanation from the spiritual. With such an origin the material world was naturally subservient to spiritual control, and miracles caused little wonder. They "are not contrary to nature, because they are caused by the divine will, and the will of the Creator is the nature of each created thing.... A miracle, therefore, does not happen contrary to nature, but contrary to nature as known."[103] The supernatural thus not only preceded, but dominated, the natural. Finally, the universe was to disappear at the end of six ages, and all was to be reabsorbed in the supernatural. The world of nature, then, was merely a passing incident in a greater reality that contained it.

As in the universe at large, so in man the supernatural completely overshadows the natural. The soul is all-important and theory in regard to it is precise and dogmatic. "As to the soul," Isidore says, "the philosophers of this world have described with great uncertainty what it is, what it is like, where it is, what form it has, and what its power is. Some have said it is fire; others, blood; others that it is incorporeal and has no shape. A number have believed with rash impiety that it is a part of the divine nature. But we say that it is not fire nor blood, but that it is incorporeal, capable of feeling and of change; without weight, shape, or color. And we say that the soul is not a part, but a creature of God, and that it is not of the substance of God, or of any underlying matter of the elements, but was created out of nothing."[104] He says further, that the soul "has a beginning but cannot have an end".[105] All the activities by which life is manifested are considered as parts or functions of the soul. Dum

contemplatur, spiritus est; dum sentit, sensus est; dum sapit, animus est; dum intelligit, mens est; dum discernit, ratio est; dum consentit, voluntas est; dum recordatur, memoria est; et dum membra vegetat, anima est.[106]

In contrast with the soul the body scarcely deserves to be spoken of except with disparagement. Its goods are to be unhesitatingly sacrificed to those of the supernatural element in man, or rather, they are not regarded as goods at all. “It is advantageous,” Isidore says, “for those who are well and strong to become infirm, lest through the vigor of their health they be defiled by illicit passions and the desire for luxury”.[107] The present life of the body has no value; it is brief and wretched. “Holy men desire to spurn the world and devote the activity of their minds to things above, in order to convey themselves back to the place from which they have come, and withdraw from the place into which they have been cast.”[108] Thus philosophy of the supernatural culminated in asceticism.

Isidore’s supernatural world has its inhabitants, and in dealing with these he has a theology, an angelology, and a demonology; in all of which fields his ideas are more precise and clear-cut than where he speaks of the material world.

His theology is of little interest; it consists in the orthodox view of the time, accepted without a shadow of criticism. He says, “We are not permitted to form any belief of our own will, or to choose a belief that someone else has accepted of his own. We have God’s apostles as authorities, who did not themselves choose anything of what they should believe, but they faithfully transmitted to the nations the teaching received from Christ. And so even if an angel from heaven shall preach otherwise, let him be

anathema".[109]

The minor inhabitants of Isidore's supernatural world, the angels and demons, offer a more practical interest. They represent the stage of development at which the old polytheism of the Jews had adjusted itself to monotheism, but had by no means faded out of existence. Indeed, it is plain that at this time the immediate concern of the ordinary man was with these spirits, good and bad; while between man and God there were, for the most part, only mediate relations.

The number of these spirits was very great; each place had its angel, as had each man,—and, presumably, a demon as well. The seraphim, the highest order in the hierarchy of angels, were a multitude in themselves. We may surmise that for Isidore, as for Jerome, the entire human population of the world was as nothing compared with the entire population of spirits.[110]

The good angels are marshalled in a hierarchy of nine orders, to which they were assigned in order of merit at the beginning of the world, and to each of these a specified task is given. For example, the order named virtues (*virtutes*) has charge of miracles; and the business of the seraphim is "to veil the face and feet of God".[111] The nature of the angels is described succinctly in a paragraph of the *Differentiae*:

> Angels are of spiritual substance; they were created before all creatures and made subject to change by nature, but were rendered changeless by the contemplation of God. They are not subject to passion, they possess reason, are immortal, perpetual in blessedness, with no anxiety for their felicity, and with foreknowledge of the future. They govern the

> world according to command; they take bodies from the upper air;[112] they dwell in the heavens.[113]

The special virtue of the good angels is subjection to God. “There is no greater iniquity for them than to wish to glory not in God but in themselves”.[114] The gaps in their ranks caused by the fall of the bad angels were to be filled from the number of the elect.[115]

The demons, or bad angels, were created along with the good; indeed the devil, their leader, was first created of all the angels. It was “before the time of the visible universe” that their fall took place; at that time they lost “all the good of their natures” and all possibility of pardon.[116] They are the “enemies of mankind” and are “sent on the service of vengeance”. The only restraint on their malignity is that they are obliged to obey God. Isidore sums up their activities in a fear-inspiring way:

> They unsettle the senses, stir low passions, disorder life, cause alarms in sleep, bring diseases, fill the mind with terror, distort the limbs, control the way in which lots are cast, make a pretence at oracles by their tricks, arouse the passion of love, create the heat of cupidity, lurk in consecrated images; when invoked they appear; they tell lies that resemble the truth; they take on different forms, and sometimes appear in the likeness of angels.[117]

Their capacity for evil tasks is increased by their superior intelligence, which retains “the keen perception of the angelic creation”.[118] Their power of foreknowledge, and, in addition, the duration of their experience, make the struggle against them a hopeless one for man. They are also incredibly

persistent: “The devil never rests from his attack on the just man”, who is “sometimes reduced to straits of despair”.[119]

It is evident that these demons were an all-pervading factor in the life of the time. They were conceived of as entering the mind, both waking and sleeping, and furnishing it with the very material for thought and action. The Christian, by the aid of the good angels, was alone able to defeat them, and, moreover, he alone realized the necessity of combating them. The pagans of the pre-Christian era, on the other hand, were believed to have been willing victims. The trail of demonic influence could be found in every department of their life and thought, especially in their religion, which was very close to demon worship, and in their philosophy and poetry.[120]

It is of interest to notice in detail Isidore’s scale of values for secular learning, as shown in opinions expressed throughout his works. How did the fields of thought that had filled the horizon of the thinker of classical times, appear in the perspective of the dark ages?

Philosophy,[121] in the first place, no longer stands for any active principle; all its old aspect of metaphysical and ethical inquiry has been lost. It is merely a container in which minor subjects are arranged in a comprehensive plan, and the only interest which it presents, as philosophy, is to be found in the question of what minor subjects are included and how they are grouped. Here Isidore is more inconsistent than usual. He gives three plans of the field of knowledge, all substantially differing from one another in details and all strikingly different from his own marshaling of all knowledge

in the *Etymologies*. The only reflection of value suggested by the treatment of philosophy in Isidore's works is that in being de-secularized it has completely lost its essential content. It can, therefore, no longer be a source of offence to any Christian.

The pagan philosophy, however, was a different thing. It was known to have been concerned with the same problems as was Christian theology. It had thus a certain right to exist and a certain value, but this terminated with the appearance of Christianity. As Isidore puts it, "the philosophers of this world certainly knew God, but the humility of Christ displeased them and they went astray"; "they fell in with wicked angels and the devil became their mediator for death as Christ became ours for life".[122] After Christian theology had settled beyond the shadow of a doubt the problems that had occupied the pagan philosophers, these latter could cause only trouble. Pagan philosophy now stood only for a perversion of the wisdom which was found in its true form in the books of the Scriptural canon and the works of the church Fathers. Its "errors" were believed to be the source of the heresies in the church. "The same material is used and the same errors are embraced over and over again by philosophers and heretics".[123]

Isidore's idea of the function of poetry is a peculiar one. "It is the business of the poet," he says, "to take veritable occurrences and gracefully change and transform them to other appearances by a figurative and indirect mode of speech".[124] From this it might be inferred that he thought that the use of poetry was to furnish material for allegorical interpretation. He ranks the poets of pagan antiquity below the philosophers, and brings serious charges against them. He asserts that they have "disregarded

the proper meanings of words under the compulsion of metre" and have thus been guilty of introducing a great amount of confusion into thought and language.[125] His most vigorous indictment of pagan poetry, however, is that it had its origin in the pagan religions, which he identifies with demon worship. He quotes Suetonius to establish this point: "When men ... first began to know themselves and their gods, they used for themselves a modest way of living and only necessary words, while for the worship of their gods they devised magnificence in each". This "magnificence" of speech is alleged to have been poetry.[126] With such opinions, he naturally desired the ostracism of poetry. "The Christian is forbidden to read their lies."[127]

Toward pagan philosophy and poetry, then, Isidore's attitude is hostile, and it is very improbable that he ever wasted any time on them. But in the field of secular knowledge apart from these subjects he has, within limits, a use for the inheritance left by pagan Rome. It is his chief claim to recognition that he was not absolutely content with the de-secularized science that he found in Ambrose, Jerome and Augustine, but had the independence to go behind it and draw upon its original sources in Roman literature. The spirit in which he did this, however, was not the spirit of revolt, but apparently only a natural desire for more extended information. His critical faculty did not warn him that in seeking this information from pagan sources he was passing from one intellectual atmosphere to another; his mind was too literal and plodding and dwelt too much on details to notice when it was on dangerous ground. His resort to pagan science was not always happy in its result; but the many blunders which he made cannot affect the merit of his enterprise in

going beyond the circle of Christian writers; and it must be said for his version of secular knowledge, as contained in his secular writings, that, poor as it was, it was one without which the middle ages would have been a great deal poorer.

As a matter of fact, Isidore did not leave the science of the Roman Empire in a state much worse than that in which he found it. It had been undergoing a process of decay for centuries. At their best the Roman men of science had been unable even to appropriate the more abstract parts of Greek science. They were governed throughout by a short-sighted practicality, as when, for instance, in the case of the mathematical sciences they tried to take over results without taking the method of reaching or verifying them. In the natural sciences their inferiority was only less marked. Here the absence of critical method permitted the incorporation of many superstitious notions. As has been pointed out, the Roman science was wholly a science of authority, and the greatest scientist was the greatest accumulator of previous authorities. Thus throughout its course in the Roman world science had been beating a retreat. By Isidore's time these forces of short-sighted utilitarianism, the spirit of subservience to authority, and superstition, had brought it to a state of inoffensive feebleness such that it was more welcome to the Christian than was either poetry or philosophy.

This Roman pseudo-science could not, however, hold an important place in the thinking of the time: the fundamental conceptions that prevailed forbade it. The material world held a low place, as we have seen; on every side evidence can be found of an ascending scale of values from the material through the moral to the spiritual. Upon this idea is founded

"the triple method of interpretation"[128] used in the Scriptures and elsewhere, and with it is connected the triple division of knowledge into natural science, ethics, and theology. There was not only an ascending scale of value for the different sorts of knowledge, but an ascending scale of validity. Spiritual truth and moral truth transcended the truth of material facts, whose stubbornness had been forgotten and had not yet been re-discovered. Yet, with all this depreciation of the material, it in some measure reasserted itself: as the literal meaning had to be grasped in the Scriptures before the higher meaning could be educed, so the material world had to be recognized before its higher meaning could be ascertained. This was the basis for science in the philosophy of the dark ages.

In this way Isidore's pseudo-science was brought into harmony with religion. Natural science was, indeed, concerned with the lowest and faintest form of reality, namely, the material world; but even material things had their spiritual implications, and because of this were worthy of an orderly survey. The *De Natura Rerum*, in which each term is explained first as it relates to the natural world and then as to its higher meaning, shows how science played the subordinate part just indicated. It is of great interest at this point to notice that Isidore's successor, Rabanus Maurus, in his comprehensive encyclopedia *De Universo*, which follows Isidore's *Etymologies* closely, adds, however, the higher meanings which Isidore had left out in his work.[129] It is the importance of natural science from this point of view that Isidore has in mind in a passage in the *Sententiae*: "It does no harm to anyone if, because of simplicity, he has an inadequate idea of the elements, provided only he speaks the truth of God.

For even though one may not be able to discuss the incorporeal and the corporeal natures, an upright life with faith makes him blessed."[130]

He is far, however, from expressing complete approval of pagan science; the perversity of the pagan scientists forbids this. "The philosophers of the world are highly praised for the measuring of time, and the tracing of the course of the stars, and the analysis of the elements. Still, they had this only from God. Flying proudly through the air like birds, and plunging into the deep sea like fishes, and walking like dumb animals, they gained knowledge of the earth, but they would not seek with all their minds to know their Maker".[131]

In judging the quality of Isidore's science as science, we must remember that he is separated from Pliny, his great predecessor in the encyclopedic field, by nearly six centuries, and that those six centuries form a period of continuous intellectual decline; and, further, we must bear in mind the fact that Pliny himself sometimes copied what he did not understand, and was so little of a scientist as even to welcome the marvelous.[132] After this, what can be expected from Isidore? That he wrote what he did write, at the time he did, is in itself the astonishing fact. His work is the only symptom of intellectual life in two centuries of Western European history.

Isidore's view of the past was as simple and dogmatic as his view of the universe at large; in fact it was conditioned by his world-view. The acceptance of Christianity and the new scale of values thus introduced had of necessity involved the projection of the new interests into the past. The legendary background of the new religion had accelerated the process. The past, as seen by writers

of the pagan civilization and as reflecting the interests of that civilization, now became of no service, and, as a whole, was dropped. The pagan histories were regarded as written by men whose point of view was wholly false and mischievous, even though sometimes their facts might be correct. They were approached by the Christian re-adjusters of history in much the same spirit as that in which the modern historian goes to the medieval chronicle, though with an opposite aim: the modern historian is after what is social and human, while Augustine and Orosius were after illustrations of the ways of God to man.[133]

By Isidore's time, then, the Christian view of the past had become completely de-secularized. Biblical tradition dominated all historical thinking. On the six days of creation was centered special attention. This point, at which the natural emanated from the supernatural, fascinated the medieval thinker as the doctrine of evolution does the modern. It formed the touch-stone by the aid of which was interpreted not only the material world,[134] but also the course of history. In parallelism with the six days and the six periods in man's life, the history of the world was divided with absolute definiteness into six ages. Isidore himself was living in the sixth and last of these, "the residue of which was known to God alone".[135] His view of the past had no perspective; or rather, it had an inverted perspective, because the increasing confusion of every department of the sublunar world led him to dwell in preference upon the earlier time when the course of history was confined to the pure stream of Hebrew tradition, when the supernatural manifested itself more frequently, and when even the names of personages were charged with prophetic meaning.

In this inverted perspective the history of the Hebrews naturally formed a prominent part. The Hebrew people of antiquity and their language, which is traced back to Adam, were *the* original race and language. It was only “at the building of the tower after the flood that the diversity of languages arose”. On this occasion not only did the different languages of later history appear, but at the same time and as a result, the different races of mankind were constituted.[136] All languages, then, and all races, are variants of the Hebrew type. Isidore believed that even in his time some of the nations could be traced back and identified with the original Hebrew stock by etymologizing on their names. Others, however, had cast aside their old names and taken others, “either from kings or countries or customs or other causes”, and the genealogy of these he believed to be irretrievably lost.[137]

CHAPTER IV

Isidore's Relation to Education

The question of perpetuating the pagan range of educational subjects presented a great difficulty to the leaders of patristic and early medieval thought, so great a difficulty that some of them were almost more ready to discard education than to try to separate it from its heathen entanglements. In both the Greek and Roman worlds formal education had been late in developing; as a consequence its tone was wholly secular. Its object was to put the youth of the ruling classes in touch with the culture and life of the time. The subjects found most serviceable for study were literature, rhetoric, and philosophy. The sciences known to the ancients gradually gained a foot-hold also, and instruction began to be given in a number of them, including geometry, music, arithmetic, astronomy, medicine, and architecture. Finally, the subject-matter of education settled down to the stereotyped list of seven subjects, known as "the seven liberal arts", from which there was apparently little deviation in later Roman and medieval times.[138] This formal education of the Romans was so well established and enjoyed such prestige that in spite of Christian hostility it continued to flourish until the increasing disorganization of society in the fifth and sixth centuries made the continuance of secular schools

impossible.

Upon their disappearance the whole burden of maintaining education fell upon the church. In the church organization the effective bodies for such an activity were the groups of clergy attached to cathedrals and to monasteries. There was no system established by a central authority and enforced by public opinion to guide the efforts made by these bodies, and it is plain that in each case educational facilities for the training of priests would be provided in accordance with the intelligence and character of the different bishops and abbots. Where the ecclesiastical authorities were ignorant or careless, the training of the priest or monk must have degenerated to a sort of apprenticeship. The evidence which we possess of the illiteracy[139] of the clergy would lead us to infer that in the dark ages education, in any sense worthy of the name, was sporadic, the product of the happy coincidence of opportunity and an ecclesiastic intelligent enough to realize it.[140]

The first comprehensive effort[141] to deal with the educational situation from the Christian standpoint was made by Cassiodorus and was designed expressly to meet the needs of the inmates of a monastery in Southern Italy. Naturally he put forth his main endeavor on the side of what may be called theology, but, in addition, he felt impelled to give very brief and vague accounts of the seven liberal arts, which he was reluctantly forced to consider as an indispensable preparation for the former study.[142]

Cassiodorus' attitude toward these preliminary studies is a curious one. He believed that their subject-matter was to be found scattered through the Scriptures and that "the teachers of secular learning"

had gathered together the disjointed bits of information and organized them into the seven liberal arts. As a consequence he thought that a knowledge of these arts was of assistance when any passage relating to them was met in the reading of the Scriptures. In spite of this, however, it seems to have been his opinion that the less use made of them the better, and that, if ignorance of the liberal arts was a fault, it was certainly one of a minor character and had the advantage of not endangering the Christian's faith.[143] With Cassiodorus the problem of education was little more than that of securing a training sufficient to enable one to read and study the Scriptures. The speculation cannot be avoided as to whether, if Christianity had depended, like Druidism, on an oral tradition, Cassiodorus might not have been willing to dispense with education altogether.

Isidore is the second writer to deal comprehensively with the subject-matter of Christian education. Before giving an account, however, of the way in which he met the problems that were presented to him, it is necessary to glance at the educational situation as it then existed in Spain. It appears from the enactments of the councils of Toledo in the sixth and seventh centuries that the clergy as a body were beginning to be concerned for the education of their order.[144] An article of the council of 531 directs that as soon as children destined for the secular clergy are placed under the control of the bishop, "they ought to be educated in the house of the church under the direction of the bishop by a master appointed for the purpose".[145] Another article[146] says that "those who receive such an education" should not presume to leave their own church and go to another "since it is not fair

that a bishop should receive or claim a pupil whom another bishop has freed from boorish stupidity and the untrained state of infancy". It is further directed that those who were "ignorant of letters" should not become priests. An article of the fourth council of Toledo in 633, at which Isidore probably presided, orders that "whoever among the clergy are youths should remain in one room of the atrium, in order that they may spend the years of the lustful period of their lives not in indulgence but in the discipline of the church, being put in charge of an older man of the highest character as master of their instruction and witness of their life".[147] These passages all refer to cathedral schools, but there is evidence equally good of the existence of similar schools in the monasteries.[148] Such, then, were the practical conditions, as far as known, which determined the educational activity of Isidore's time.

The spirit in which Isidore approached the task of furnishing a comprehensive treatment of the secular subject-matter of education was the one proper to his age. He held that its place was a subordinate one. He seems to be expressing his own and not a borrowed view when he says that "grammarians are better than heretics, for heretics persuade men to drink a deadly draught, while the learning of grammarians can avail for life, if only it is turned to better uses".[149] The same depreciation of the independent value of secular studies is reflected in his statement that the order of the seven liberal arts in the curriculum was one intended to secure a progressive liberation of the mind from earthly matters and "to set it at the task of contemplating things on high".[150] He evidently believed that it was the function of the seven liberal arts to raise the mind from a lower or material to a higher or spiritual plane of thought.[151]

In the *Etymologies*, as has been noticed, Isidore has combined the encyclopedia of education, as exemplified in the works of Martianus Capella and Cassiodorus, and the encyclopedia of the whole range of knowledge, of which the works of Varro, Pliny, and Suetonius are leading examples. The first three of the twenty books which are comprised in the *Etymologies* are evidently educational texts; the last twelve as evidently belong to the encyclopedia of all knowledge.[152] The question is in which of these divisions the intervening books should be classed. If we look to Isidore's predecessors for guidance on this point, we find that Capella gives only the seven liberal arts, while Cassiodorus gives not only a comprehensive account of preparatory studies in the form of the seven liberal arts, but adds in his *De Institutione Divinarum Litterarum* a treatment of the higher, or religious, education of the monk. The supposition that Isidore followed the example of Cassiodorus is the more natural one. Their educational purpose was much the same: Cassiodorus had in mind the training of the monk, while Isidore was concerned with the education of the priest. It is, all things considered, more natural to suppose that Isidore is giving in Books I-VIII of his *Etymologies* a comprehensive survey of the education of the secular clergy, than to suppose that his educational texts stopped short at the end of the seven liberal arts.

If this supposition is correct, the outline of this survey is as follows: Grammar (Bk. I), Rhetoric and Dialectic (Bk. II), Arithmetic, Geometry, Music, Astronomy (Bk. III), Medicine (Bk. IV), Laws and Times (Bk. V), the books and services of the church (Bk. VI), God, the angels, and the orders of the faithful (Bk. VII), the church and the different sects (Bk. VIII). The inclusion of medicine, law, and

chronology, which were not in the corresponding plan of Cassiodorus,[153] meant merely an enlargement of his scheme to fit it for the slightly different purpose which Isidore had in mind. The reason for the inclusion of these subjects is the practical one: in the absence of any other educated class priests were obliged to have some slight knowledge of medicine and law, while the intricacy of the church calendar of the time made chronology a professional necessity.

At first sight this plan of educational subjects would seem to be at variance with our accepted idea that the seven liberal arts covered the whole field of preparatory training. A closer examination shows, however, that in form at least Isidore kept them in a class by themselves; and when he passes from them to medicine he is careful to specify that it is not one of the liberal arts, but forms a "second philosophy".[154] By this he means that medicine—and the same may be assumed for laws and times—is placed in the higher and not the preparatory stage of education, and that in this sphere it plays a minor part.

If, then, this view of the subject-matter of the first eight books of the *Etymologies* is correct, it will be admitted that in Isidore's organization of education a significant step has been taken. In the education of the Greek and Roman world there was nothing to parallel the medieval and modern university development, which has been characterized until recently by the three professional schools of law, medicine, and theology. In Isidore's plan we have, for the first time, as professional studies, first, what corresponds to the later theology, and, in subordination to this, the subjects of law, medicine and chronology. It is evident, therefore, that we have here in embryo, as it were, the organization of the

medieval university; law and medicine have only to be secularized and freed from their subordination to theology, and the medieval university in its complete form appears.

PART II

THE ETYMOLOGIES

BOOK I

ON GRAMMAR

INTRODUCTION

GRAMMAR did not appear as a separate body of knowledge until a late period in the Greek civilization. The merest ground-work of the science had sufficed to meet all the demands of education, of philosophy, and of a literature in course of production; for its development it was necessary to await a period of literary criticism. When the Alexandrian scholars began to compare the idiom of Homer with that of their own day, the requisite stimulus for the scientific study of language was given, and grammar may be regarded as dating from the Alexandrian age.

What was at that time termed grammar, γραμματική, included far more than the modern

science; it was the study of literature at large. The grammarian might have nothing to do with what we call grammar, but be a student of textual criticism or mythology. Any sort of study undertaken for the purpose of elucidating the poets was grammatical. Like the modern professor of literature, the only invariable characteristic of the grammarian was his literary point of view.[155]

The grammatical studies of the Romans were patterned closely after those of the Greeks; the Greek terminology and organization of the science were adopted without change. The Roman interest in the subject was no doubt heightened by the fact that the Roman culture was a bilingual one; thus a broad basis for the study was furnished, and naturally much attention was given to the derivation of words. A large number of scholarly works was produced, and the inferiority of the borrowed Roman culture is perhaps less noticeable in this department than in any other.

It was inevitable that this 'grammar', in a condensed form, should come to be used in common education. Its outlines, however, were rather vague, and many of its departments did not lend themselves to the concise statement necessary in a text-book. The first Greek school grammar, the τεχνὴ γραμματικὴ[156] of Dionysius Thrax, which was destined to be the basis of all the school grammars of antiquity, appeared about 80 B.C. It is noticeable that although the definition of grammar that is given[157] is the definition of the grammar of the scholars, the subjects actually treated are little more than the parts of speech. It was natural that there should be this gap between promise and performance. For a long time no doubt this mere outline was filled in by the oral interpretation of the

masterpieces in the manner of the scholars; but when these ceased to be studied, in the early medieval period, the study of grammar was confined to the material offered in the text-books.[158]

The first of the Romans to produce a school grammar was Remmius Palaemon, who flourished in the first half of the first century. He had many successors in the later centuries of the Roman Empire, and the literary tradition of the school grammar continued unbroken into the Middle Ages. The most influential exponent of the subject was Aelius Donatus, whose *Ars*, written in the fourth century, was used throughout the Middle Ages. The chief writers of grammatical texts in the centuries preceding Isidore were Victorinus, Donatus, Diomedes, Charisius, and Martianus Capella in the fourth; Consentius and Phocas in the fifth; and Cassiodorus in the sixth. No new contributions were being made to the science, and these writers had no other resource than to copy their predecessors, which they did in a slavish manner.[159] The verbal similarity in all of them is so strong that it is impossible to trace with certainty the immediate source of any one of the later writers.

Isidore's account of grammar is of somewhat more than the average length[160] found in these text-books, but its lack of solid substance, in which it differs from the books of the fourth century, measures the decline in intellectual grasp and thoroughness of the two intervening centuries. Donatus, Servius, and even Capella, stick closely to the technique of the subject and are thorough-going; their books are calculated to afford a severe discipline to the student. But in Isidore a feebleness in handling the subject is evident; he is apparently unaware of the superior importance of such subjects

as conjugation and declension, and he is very easily led into confusion by the trains of thought suggested by his frequent derivations.[161]

ANALYSIS[162]

A. Introductory.
   1. Definition of *ars* and *disciplina* (ch. 1).
   2. Definition of the seven liberal arts (ch. 2).
   3. The Hebrew and Greek alphabets (ch. 3).
   4. The Latin alphabet (ch. 4).

B. Grammar.
   1. Definition and divisions[163] (ch. 5).
   2. Parts of speech (chs. 6–14).
      a. *de nomine* (ch. 7).
         Propria (four sub-classes of proper nouns are given).
         Appellativa (twenty-eight sub-classes of common nouns are given).
         Nominis comparatio (comparison of adjectives).
         Genera (genders).
         Numerus.
         Figura (simple and compound nouns).
         Casus.[164]
      b. *de pronomine*[165] (ch. 8).
      c. *de verbo* (ch. 9).
         Formae (desiderative, inchoative and frequentative verbs).
         Modi (indicative, imperative, optative, conjunctive, infinitive, impersonal).
         Conjugationes.[166]

Genera (active, passive, neuter, common, and deponent verbs).

d. *de adverbio*[167] (ch. 10).
e. *de participio* (the participle) (ch. 11).
f. *de conjunctione* (ch. 12).
g. *de praepositionibus* (ch. 13).
h. *de interjectione* (ch. 14).

3. Articulate speech (ch. 15).
4. The syllable (ch. 16).
5. Metrical feet[168] (ch. 17).
6. Accent[169] (chs. 18, 19).
7. Punctuation (ch. 20).
8. Signs and abbreviations (*Notae*) (chs. 21–26).
   a. *Notae sententiarum* (critical marks used in manuscripts).
   b. *Notae vulgares* (shorthand).
   c. *Notae militares* (abbreviations used in military rolls).
   d. *Notae litterarum* (cipher-writing).
   e. *Notae digitorum* (sign language).
9. Orthography (ch. 27).
10. Analogy[170] (ch. 28).
11. Etymology (ch. 29).
12. Glosses (ch. 30).
13. Synonyms (ch. 31).
14. Barbarisms, solecisms[171] and other faults[172] (chs. 32–34).
15. Metaplasms (poetic license in changing the forms of words) (ch. 35).
16. *Schemata* (rhetorical figures) (ch. 36).
17. Tropes[173] (ch. 37).
18. Prose (ch. 38).

19. Metres[174] (ch. 39).
20. The fable (ch. 40).
21. History (chs. 41–44).

EXTRACTS

Chapter 2. On the seven liberal arts.[175]

1. The disciplines belonging to the liberal arts are seven. First, grammar, that is, practical knowledge of speech. Second, rhetoric, which is considered especially necessary in civil causes because of the brilliancy and copiousness of its eloquence. Third, dialectic, called also logic, which separates truth from falsehood by the subtlest distinctions.

2. Fourth, arithmetic, which includes the significance and the divisions of numbers. Fifth, music, which consists of poems and songs.

3. Sixth, geometry, which embraces measurements and dimensions. Seventh, astronomy, which contains the law of the stars.

Chapter 3. On the ordinary letters.

1. The foundations of the grammatic art are the ordinary letters, which elementary teachers[176] are occupied with, instruction in which is, as it were, the infancy of the grammatic art. Whence Varro calls it *litteratio*. Letters are signs of things, symbols of words, whose power is so great that without a voice they speak to us the words of the absent; for they introduce words by the eye, not by the ear.

2. The use of the letters was invented in order to remember things. For things are fettered by letters in order that they may not escape through forgetfulness. For in such a variety of things all could not be learned by hearing and held in the memory.

4. Latin and Greek letters have evidently come

from the Hebrew. For among the latter *aleph* was first so named; then [judging] by the similarity of sound it was transmitted to the Greeks as *alpha*; likewise to the Latins as *a*. For the borrower fashioned the letter of the second language according to similarity of sound, so that we can know that the Hebrew language is the mother of all languages and alphabets.[177]

7. The letter Y Pythagoras of Samos first made, after the model of human life, whose lower stem denotes the first of life, which is unsettled and has not yet devoted itself to the vices or the virtues. The double part which is above, begins in youth; of which the right side is steep, but leads to the blessed life; the left is easier, but leads down to ruin and destruction....

8. Among the Greeks there are five mystic letters.[178] The first is Y, which denotes human life, of which we have just spoken. The second is Θ, which denotes death. For judges used to place this letter, theta, at the names of those whom they condemned to death; and it is called theta ἀπὸ τοῦ θανάτου, *i.e.*, from death. Whence also it has a weapon through its middle, *i.e.*, the sign of death. Of which a certain one speaks thus:

O multum ante alias infelix littera theta!

9. The third is T, indicating the shape of the cross of the Lord.... The remaining two, the first and the last, Christ claims for himself. For he is himself the beginning, himself the end, saying: “I am α and ω,” for they pass into one another in turn, and alpha passes in regular succession to ω and again ω returns to alpha; in order that the Lord might show in himself that he was the way from the beginning to the end and from the end to the beginning.

Chapter 4. On the Latin alphabet.

17. The nations gave the names of the letters in accordance with the sound in their own language, noting and distinguishing the sounds of the voice. After they had noted them, they gave them names and forms; and they made the forms in part at pleasure, in part according to the sound of the letters; as, for example, i and o, of which one has a slender stem, just as it has a thin sound; the sound of the other is gross (*pinguis*), just as its form is full.

Chapter 5. On grammar.

1. Grammar is the science of speaking correctly, and is the source and foundation of literature.[179] This one of the disciplines was discovered next after the ordinary letters, so that those who have already learned the letters may learn by it the method of speaking correctly. Grammar took its name from letters, for the Greeks call letters γράμματα.

4. The divisions of the grammatic art are enumerated by certain authorities as thirty; namely, eight parts of speech, the articulate voice, the letter, the syllable, metrical feet, accent, marks of punctuation, signs and abbreviations, orthography, analogy, etymology, glosses, synonyms, barbarisms, solecisms, [other] faults, metaplasms, schemata, tropes, prose, metres, fables, histories.

Chapter 6. On the parts of speech.

1. Aristotle first taught two parts of speech, the noun and the verb. Then Donatus defined eight. But all revert to these two chief ones, that is, to the noun and the verb, which indicate the person and the act. The remainder are appendages, and trace their origin to these.

2. For the pronoun arises from the noun and performs its function, as *orator*, *ille*. The adverb arises

from the noun, as *doctus*, *docte*. The participle from the noun and verb, as *lego*, *legens*. But the conjunction and preposition and interjection are included in those mentioned.[180] Many therefore have defined five parts because these are superfluous.

Chapter 21. On critical marks (*notae sententiarum*).

1. In addition there were certain marks in the writings of celebrated authors, which the ancients set in poems and histories to discriminate among the passages. A mark is a separate form placed like a letter, to indicate some judgment about a word, thought or verse. There are twenty-six marks used in annotating verses, which are enumerated below with their names.[181]

Chapter 22. On shorthand.

1. Ennius[182] first invented 1,100 shorthand signs. The use of the signs was that scribes wrote whatever was said in public meeting or in court, several standing by at one time and deciding among themselves how many words and in what order each should write. At Rome Tullius Tiro, Cicero's freedman, was the first to invent shorthand, but only for prepositions.[183]

2. After him Vipsanius Philargius and Aquila, Maecenas's freedman, each added a number of signs. Then Seneca, collecting them all and arranging them and increasing their number, raised the total to 5,000. The signs (*notae*) are so-called because they *denote* words or syllables by marks,[184] and bring them again to the *notice* of readers, and they who have learned them are now properly called *notarii*.

Chapter 27. On orthography.

1. Orthography is Greek, and it means in the

Latin correct writing; for ὀρθή in the Greek means correct, and γραφή means writing. This branch of knowledge teaches us how we ought to write. For as the art[185] treats of the inflection of the parts of speech, so orthography deals with the knowledge of writing, as, for example,

ad, when it is a preposition, takes the letter *d*; when it is a conjunction, the letter *t*.

2. *Haud*, when it is an adverb of negation, is terminated by the letter *d* and is aspirated at the beginning; but when it is a conjunction, it is written with the letter *t* and is without aspiration.

7. Forsitan ought to be written with *n* at the end, because its uncorrupted form is *forte si tandem*.

Chapter 29. On etymology.

1. Etymology is the derivation of words,[186] when the force of a verb or a noun is ascertained through interpretation. This Aristotle called σύμβολον, and Cicero, *notatio*, because it explains the names of things;[187] as, for example, *flumen* is so called from *fluere*, because it arose from flowing.

2. A knowledge of etymology is often necessary in interpretation, for, when you see whence a name has come, you grasp its force more quickly. For every consideration of a thing is clearer when its etymology is known. Not all names, however, were given by the ancients in accordance with nature, but certain also according to whim, just as we sometimes give slaves and estates names according to our fancy.

3. Hence it is that the etymologies of some names are not found, since certain things have received their name not according to the quality in which they originated, but according to man's arbitrary choice. Etymologies are given in accordance with cause, as *reges* from *regere*, that is, *recte agere*; or

origin, as *homo* because he is from the earth (*humus*); or from contraries, as *lutum* (mud) from *lavare*—since mud is not clean—and *lucus* (sacred grove), because being shady it has little light (*parum luceat*).

4. Certain words also were formed by derivation from other words; as *prudens* from *prudentia*. Certain also from cries, as *graculus* (jackdaw) from *garrulitas*. Certain also have sprung from a Greek origin, and have changed over into the Latin, as *silva*,[188] *domus*.

5. Other things have derived their names from the names of places, cities, or rivers. Many also are drawn from the languages of foreign peoples; whence their derivation is perceived with difficulty; for there are many barbarous words unknown to the Greeks and Latins.

Chapter 32. On barbarism.

1. Barbarism is the uttering of a word with an error in a letter or in a quantity: a letter, as *floriet*, when *florebit* is correct; a quantity, if the first syllable is prolonged instead of the middle one, as *latebrae*, *tenebrae*. And it is called barbarism from the barbarian peoples, since they were ignorant of the purity of Latin speech; for each nation becoming subject to the Romans, transmitted to Rome along with their wealth their faults, both of speech and of morals.

Chapter 37. On tropes.

1. Tropes are so named by the grammarians from a Greek word which in Latin means *modi locutionum*. They are turned from their own meaning to a kindred meaning that is not their own. And it is very difficult to comment on the names of them all, but Donatus gave for practice a list of thirteen selected from the whole number.

2. Metaphor is the assumption of a transfer of

meaning in some word, as when we say *segetes fluctuare* (the grain-fields billow), *vites gemmare*, when we do not find any waves or gems in these things, but the words are transferred from the old application to a new one. These and other tropical forms of speech are veiled with figurative cloaks with reference to the things to be understood, with the view that they may exercise the intelligence of the reader, and may not be cheap because they are unadorned and easily apprehended.

22. Allegory is the saying of things that do not belong to the matter in hand (*alienoloquium*), for one thing is said, another is understood; as, *tres in littore cervos conspicit errantes*, where the three leaders of the Punic war, or the three Punic wars are indicated; and in the *Bucolics*, *aurea mala decem misi*, *i.e.*, ten pastoral eclogues to Augustus. There are many species of this figure, of which seven are conspicuous: irony, antiphrasis, enigma, charientismus, paroemia, sarcasmus, astysmus.

23. It is irony where the thought is given a contrary meaning by the manner of speech. By this figure something is said cleverly, either in the way of accusation or insult, as the following:

Vestras, Eure, domos, illa se jactet in aula
Aeolus, et clauso ventorum carcere regnet.

And why *aula* (palace) if it is *carcer* (prison)! It is made clear by the manner of speech, for the manner of speech says *carcer*. *Jactet in aula* is irony, and the whole is expressed in a contradictory manner of speech by the figure of irony which mocks by praising.

24. Antiphrasis is language to be understood to the contrary, as, *lucus* (sacred grove), since it is without light (*lux*) because of the excessive gloom of

the woods....

25. Between irony and antiphrasis there is this difference, that irony indicates by the manner of speaking alone what is meant, as when we say to a man doing ill, “Bonum est quod facis”. But antiphrasis indicates the contrary not by the voice of the speaker, but only in the words, whose derivation is the opposite [of their meaning].

Chapter 39. On metres.

4. Whatever is measured by verse feet is a poem (*carmen*). It is thought that the name was given because it was pronounced rhythmically (*carptim*), or ... because they who sang such things were supposed to be out of their minds (*mente carere*).

9. ... [The hexameter] excels the rest of the metres in authority, being alone of them all fitted as well to the greatest tasks as to the small, and with an equal capacity for sweetness and delight.... It is also older than the other metres. It is proved that Moses was the first to use it in the song of Deuteronomy, long before Pherecydes and Homer. Whence also it is evident that the making of poems was older among the Hebrews than among the nations. Since Job, too, who goes back as far as Moses, sang in hexameter verse, [using] the dactyl and the spondee.

12. Hecataeus of Miletus is said to have been the first among the Greeks to compose this metre; or, as others think, Pherecydes of Syros, and this metre before Homer was called Pythian, after Homer, heroic.

17. It is manifest that David the prophet was the first to compose and sing hymns in praise of God. Later among the nations Timothoe who (*quae*) lived in the time of Ennius, long after David, wrote the first hymns in honor of Apollo and the Muses. *Hymni*

is translated from the Greek to the Latin as *laudes*.

25. Among grammarians they are wont to be called *centones* who [take] from the poems of Homer and Virgil with a view to their own works, and put together in patchwork fashion many bits found here and there to suit each subject.

26. Proba, wife of Adelphos, composed at great length a cento from Virgil about the structure of the universe and the gospels,[189] the subject-matter being made up verse by verse, and the verses being arranged appropriately to suit the subject-matter. And a certain Pomponius, among other poems (*otia*) of his own pen, wrote *Tityrus* from the same poet in honor of Christ.

Chapter 41. On history.

1. History is the story of what has been done, and by its means what has taken place in the past is perceived. It is called in the Greek *historia*, ἀπὸ τοῦ ἱστορεῖν, that is from seeing (*videre*) and learning (*cognoscere*). For among the ancients no one wrote history unless he had been present and witnessed what was to be described. For we understand what we see better than we do what we gather by hearsay.

2. For what is seen is told without lying. This discipline belongs to grammar because whatever is worth remembering is entrusted to letters....

Chapter 42. On the first writers of history.

1. Moses was the first among us to write a history of the beginning of the world. Among the nations Dares Phrygius was the first to publish a history of the Greeks and Trojans, which they say was written by him on palm-leaves.

2. And after Dares, Herodotus is considered the first historian in Greece. After whom Pherecydes was famous, at the time when Esdras wrote the law.

Chapter 43. On the usefulness of history.

1. Histories of the heathen do no harm to their readers where they tell what is useful. For many wise men have put past deeds into their histories for the instruction of the present.

2. Besides, in history the total reckoning of past times and years is embraced and many necessary matters are examined in the light of the succession of consuls and kings.

Chapter 44. On the sorts of history.

1. There are three sorts of history. The doings of one day are called *ephemeris*. Among us this name is *diarium*....

2. What is arranged according to separate months is called *kalendaria*.

3. *Annales* are the deeds of the years, one by one. For whatever was related in the commentaries from year to year as worthy of memory, in peace and war, by sea and land, they named annals from the deeds of a year.

4. But history is a thing of many years or times, and through diligence in it the yearly commentaries are put into books. Between history and annals there is this difference, that history belongs to the times which we see, and annals belong to years which our age does not know. Whence Sallust is made up of history; Livy, Eusebius and Hieronymus of annals and history.

BOOK II

ON RHETORIC

INTRODUCTION

RHETORIC held a position in the ancient world that the modern reader has difficulty in understanding. Democratic government, including the popular administration of justice, at a time when all discussion was necessarily oral, created an ideal condition in Athens and the other Greek states for the development of oratory. In the life of the Roman republic, too, there was enough of the popular element to make public speaking of the greatest importance. The art of rhetoric was therefore in close touch with the real interests of life. It was not merely a school discipline, but a preparation for a definite activity that held a high place in the esteem of the people, and it embodied a set of sensible ideas on public speaking in which the tendency to over-elaboration and artificiality characteristic of scholastic disciplines was kept in check by the wholesome influences that came from practical application.

With the establishment of the Roman Empire public discussion of political matters quickly disappeared, and forensic oratory for the same reason tended to decline. Thus the chief element which had given vitality to ancient rhetoric was

eliminated. Roman oratory, however, died hard. It nursed itself on various pretences and shows. Much of the old interest in oratory turned back on rhetoric, which was thus exposed to a double danger, as an educational discipline that had lost connection with practical life and as a subject that had become too fashionable. When once the new influence had gained headway a strong tendency to artificiality was revealed. Rhetoric became scholastic and ridiculously overburdened with classification and terminology; it grew more lifeless as it grew more systematic. Interest then gradually subsided. Treatises grew shorter and drier, and consisted largely of long lists of terms defined without critical understanding of their meaning. The subject now held its place by the mere force of authority.

This was the state of rhetoric in Isidore's time, and his treatment reflects the condition to which it had been reduced. He says that "it is easy for the reader to admire but impossible to understand" the books on rhetoric, and, further, that when they are laid aside "all recollection vanishes." From a writer with this attitude little need be expected. His few miserable pages, compared with Quintilian's interesting treatise, measure fully the decline of rhetoric during the first six centuries A.D. What Isidore gives is merely a summary, so cursory and disjointed that it frequently cannot be understood without liberal reference to the fuller treatises of his predecessors.

In Isidore's *De Rhetorica* practically the whole of Cassiodorus' text-book on this subject is incorporated without acknowledgment. Two authorities, Victorinus and Cicero, are quoted,[190] but on referring to Cassiodorus it becomes plain that even here Isidore is merely copying his authority's citation

of authority. However his brief chapter on law cannot be paralleled in any extant treatise before his time and its insertion must be credited to his initiative.

ANALYSIS[191]

I. Definition (ch. 1).
II. Chief writers (ch. 2).
III. Divisions (ch. 3).
  1. *Inventio.*
  2. *Dispositio.*
  3. *Elocutio.*
  4. *Memoria.*
  5. *Pronuntiatio.*
IV. The three kinds of cases (ch. 4).
  1. *Deliberativum.*[192]
  2. *Demonstrativum.*[193]
  3. *Judiciale.*[194]
V. The two-fold status of cases[195] (ch. 5).
  1. *Rationalis.*
    a. *Conjectura.*[196]
    b. *Finis.*[197]
      (1) *Juridicialis.*[198]
        (a) *Absoluta.*[199]
        (b) *Assumptiva.*[200]
          (*a*) *Concessio.*[201]
            Purgatio.[202]
            Deprecatio.[203]
          (*b*) *Remotio criminis.*[204]

(*c*) *Relatio criminis.*[205]

(*d*) *Comparatio.*[206]

(2) *Negotialis.*[207]

c. *Qualitas.*[208]

d. *Translatio.*[209]

2. *Legalis.*

a. *Scriptum et voluntas.*[210]

b. *Leges contrariae.*[211]

c. *Ambiguitas.*[212]

d. *Collectio.*[213]

e. *Definitio legalis.*[214]

VI. The three-fold division of controversies[215] (ch. 6).

1. *Simple.*
2. *Compound.*
3. *Complex.*

VII. The four parts of a speech[216] (ch. 7).

1. *Exordium.*
2. *Narratio.*
3. *Argumentatio.*
4. *Conclusio.*

VIII. The five modes of cases[217] (ch. 8).

1. *Honestum.*
2. *Admirabile.*[218]
3. *Humile.*
4. *Anceps.*
5. *Obscurum.*

IX. Argumentation (ch. 9).

1. *Inductio.*
2. *Ratiocinatio.*[219]

a. *Enthymema.*
b. *Epicherema.*
c. *Mendacium.*[220]

X. Law[221] (ch. 10).
XI. The sententious saying (ch. 11).
XII. Confirmation and denial (ch. 12).
XIII. Personification and expression of character (chs. 13–14).
XIV. Kinds of subjects (ch. 15).
Finitum.
Infinitum.
XV. Style and diction (ch. 16).
XVI. The three ways of speaking (ch. 17).
Humile.
Medium.
Grandiloquium.
XVII. Parts of a sentence (ch. 18).
XVIII. Faults to be avoided[222] (chs. 19–20).
XIX. Figures[223] (ch. 21).

EXTRACTS

Chapter 1. On rhetoric and its name.

1. Rhetoric is the science of speaking well in civil questions for the purpose of persuading to what is just and good. It is called rhetoric in the Greek ἀπὸ τοῦ ῥητορίζειν, that is, from eloquence of speech. For speech among the Greeks is called ῥῆσις, and the orator ῥήτωρ.

2. Rhetoric is allied to the grammatic art. For in grammar we learn the science of speaking correctly, and in rhetoric we discover in what way to express

what we have learned.

Chapter 2. On the discoverers of the art of rhetoric.

1. This discipline was invented by Gorgias, Aristotle and Hermagoras among the Greeks, and translated into Latin by Tullius and Quintilian, but with such eloquence and variety that it is easy for the reader to admire, impossible to understand.

2. For while he holds the parchment the connected discourse as it were cleaves to his memory, but presently when it is laid aside all recollection vanishes. Perfect knowledge of this discipline makes the orator.

Chapter 3. On the name of the orator and the parts of rhetoric.

1. The orator is the good man skilled in speaking. 'The good man' means nature, character, accomplishments (*artibus*). 'Skilled in speaking' means studied eloquence, which consists of five parts: invention, ordering, diction and style, memory, delivery, and the purpose, which is to persuade of something.

2. Skill in speaking consists in three things: nature, learning, practise; nature, that is, talent; learning, knowledge; practice, continuous labor. These are the things that are looked to not only in the orator but in every artist with a view to accomplishment.

Chapter 4. The three kinds of causes.

1. There are three kinds of causes: deliberative, epideictic, judicial. The deliberative kind is that in which there is a discussion as to what ought or ought not to be done in regard to any of the practical affairs of life. The epideictic, in which a character is shown to be praiseworthy or reprehensible.

2. The judicial, in which opinion as to reward or punishment with reference to an act of an individual is given.

Chapter 16. Style and diction.

2. One must use good Latin and speak to the point. He speaks good Latin who constantly uses the true and natural names of things, and is not at variance with the style and literary refinement of the present time. Let it not be enough for him to be careful of what he says, without saying it in a clear, attractive manner; nor that only, without saying what he says wittily also.

Chapter 21. On figures.

1. Speech is amplified and adorned by the use of figures. Since direct, unvaried speech creates a weariness and disgust both of speaking and hearing, it must be varied and turned into other forms, so that it may give renewed power to the speaker, and become more ornate and turn the judge from an aloof countenance and attention.

ON DIALECTIC

INTRODUCTION

In tracing the fortunes of logic through the period of decadence and the dark ages the effect upon it of a transition from a pagan to a Christian environment need scarcely be taken into consideration. Such marks of degeneration as it shows must be attributed simply to the general decay of thought, which was marked in both pagan and Christian spheres. By its character logic was well adapted to pass from the

service of Greek philosophy and science to that of Christian theology: it had been worked out mainly as a method of Greek science, which was especially backward in the fields where induction plays a large part; consequently the Greek logic is not inductive. It is the logic of universals ready-made, and it has nothing to do with their making; it receives universals as authoritative. It was therefore most welcome to Christian thinkers, since it was precisely adapted to "the task of drawing out the implications of dogmatic premises."[224]

It was not until a very late period that logic appeared in the Latin language in the form of a school text. In fact, with the exception of Varro's Dialectic in his "Nine Books of the Disciplines," which has been lost, there were no writings on logic in the Latin down to the fourth century. Instruction in the subject was apparently given in Greek and to but few pupils. In the fourth century, however, Greek was going out of use, and it became necessary, if logic was to be saved in the schools, to have Latin text-books.[225] The need was met by a line of text-writers, of whom Marius Victorinus (c. 350) was the first. The oldest Latin school-book on logic that has survived, however, is that of Martianus Capella. Neither he nor his two successors, Cassiodorus and Isidore, were versed in the subject; they were merely compilers of educational encyclopedias. Such was the perfunctory origin of the Latin text-books on logic. [226]

The reader of Isidore's account of logic is struck by the enthusiasm displayed. Speaking of Aristotle's Categories he says: "This work of Aristotle's should be read attentively, since, just as is stated therein, all that a man says is included in the ten categories."[227] Further on he quotes the saying that

"Aristotle dipped his pen in intellect when he wrote the *Perihermeniae*."[228] Again, a study of Apuleius "will introduce the reader advantageously with God's help to great paths of understanding."[229] All of these passages, however, come word for word from Cassiodorus. Isidore's enthusiasm as well as his bibliography seems to lack genuineness.[230]

ANALYSIS

I. Definition of dialectic (chs. 22, 23).
   1. Distinction between dialectic and rhetoric.
II. Definition of philosophy (ch. 24).
III. The Isagoges[231] of Porphyry (ch. 25).
   1. The five predicables: genus, species, differentia, proprium, accidens.
IV. The Categories of Aristotle (ch. 26).
V. Aristotle's *De perihermeniis*[231] (ch. 27).
   1. Thought as expressed in language.
VI. The syllogisms (ch. 28).
   1. Categorical syllogisms.
   2. Hypothetical syllogisms.
VII. Definition (ch. 29).
   The fifteen kinds of definition.
VIII. Arguments (*topica*) (ch. 30).
   The twenty-two *loci* of arguments.
IX. Opposites (ch. 31).

EXTRACTS

Book II, Chapter 22. On dialectic.

1. Dialectic is the discipline elaborated with a view of ascertaining the causes of things. In itself it is the sub-division of philosophy that is called logical,

i.e., rational, capable of defining, enquiring and expressing precisely. For it teaches in the several kinds of questions how the true and false are separated by discussion.

2. The first philosophers used dialectic in their discourses, but they did not reduce it to the practical form of an art. After them Aristotle systematized the subject-matter of this branch of learning, and called it dialectic, because there is discussion of words (*dictis*) in it; for λεκτὸν means *dictio*. And dialectic follows after the discipline of rhetoric because they have many things in common.

Chapter 23. On the difference between the dialectical and the rhetorical art.

1. Varro, in the nine books of the *Disciplinae*, distinguished dialectic and rhetoric by the following simile: "Dialectic and rhetoric are as in man's hand the closed fist and the open palm, the former drawing words together, the latter scattering them."

2. If dialectic is keener in expressing things precisely, rhetoric is more eloquent in persuading to the belief it desires. The former seldom appears in the schools, the latter goes without a break [from the schools] to the law-court. The former gets few students, the latter often whole peoples.

3. Before they come to the explanation of the Isagoge, philosophers are wont to give a definition of philosophy, in order that the things which concern it may be shown more easily.

Chapter 24. On the definition of philosophy.

1. Philosophy is the knowledge of things human and divine, united with a zeal for right living. It seems to consist of two things, knowledge and opinion.

2. It is knowledge when anything is known with

definiteness; opinion, when a thing lurks as yet in uncertainty and seems in no way established, as for example, whether the sun is [only] as large as it seems or greater than all the earth; likewise whether the moon is a sphere or concave; and whether the stars adhere to the heavens or pass in free course through the air; of what size the heaven itself is and of what material it is composed; whether it is quiet and motionless or revolves with incredible speed; how great is the thickness of the earth, or on what foundations it continues poised and supported.

3. The word philosophy, translated into Latin, means *amor sapientiae*. For the Greeks call amor φιλὸν, and sapientiae σοφίαν. The sub-division of philosophy is three-fold: first, natural philosophy, which in Greek is called *physica*, in which there is discussion of the search into nature; the second, moral, which in Greek is called *ethica*, in which the subject is morals; the third, rational, which in the Greek is called *logica*, in which the discussion is as to how the truth itself is to be sought in respect to the causes of things or the conduct of life.

4. In physics, then, the cause of inquiry, in ethics, the manner of living, in logic, the method of understanding, are concerned. Among the Greeks, Thales of Miletus, one of the seven wise men, was the first to search into natural philosophy. For this man first regarded with contemplative thought the causes of the heavens and the force of the things of nature. And this division of philosophy Plato afterward divided into four separate parts, namely, into arithmetic, geometry, music, astronomy.

5. Socrates first established ethics with a view to correcting and ordering conduct, and he devoted all his attention to the discussion of right living, dividing it into the four virtues of the soul, namely,

wisdom, justice, fortitude, temperance.

6. Wisdom is engaged with things, and by it the evil is distinguished from the good. Fortitude, by which adversity is endured with calmness. Temperance, by which lust and concupiscence are bridled. Justice, by which through righteous judgment his own is rendered to each.

7. Plato added logical philosophy, which is called rational, and by it he analyzed the causes of things and of conduct, and examined their force in a rational way, dividing it into dialectic and rhetoric. It is called logical, that is, rational, for among the Greeks λόγος means both word and reason.

8. The divine utterances also consist of these three kinds of philosophy. For they are wont to discuss nature, as in Genesis or Ecclesiastes; or conduct, as in Proverbs and here and there in all the books; or logic, instead of which our [philosophers] assert the claim of theology,[232] as in the Song of Songs or the Gospels.

9. Likewise some of the teachers have defined philosophy in its name and parts as follows: “Philosophy is the probable knowledge of divine and human affairs, as far as is possible for man.” Otherwise: “Philosophy is the art of arts and the science of sciences.” Again: “Philosophy is the meditation upon death, a definition which better suits the Christians, who trampling on worldly ambition, live in the intercourse of learning after the likeness of their future country.”

10. Others have defined the scheme of philosophy as made up of two parts, of which the former is contemplative, the latter practical. The contemplative (*inspectiva*) is divided into natural, theoretical, and divine. Theoretical is divided into four parts, into arithmetic, music, geometry, and

astronomy.

11. Practical (*actualis*) philosophy is divided into moral, economic, and civil. Contemplative is the name given that in which, passing beyond the visible, we enjoy some contemplation of the divine and celestial, and behold them with the mind alone, since they pass beyond the bodily gaze.

12. Natural philosophy is the name given when the nature of each and every thing is discussed, since nothing arises contrary to nature in life, but each thing is assigned to those uses for which it was purposed by the Creator, unless perchance by God's will it is shown that some miracle appears.

13. It is called divine philosophy when we discuss the ineffable nature of God or the spiritual beings that are in some degree of a lofty nature.

14. The science which considers abstract quantity is called theoretical. For that is called abstract quantity which we separate from the material, or from other accidents, by the intellect, and treat by reasoning alone, as *e.g.*, equal, unequal, and other matters of this kind....

16. Further, that is called practical philosophy which by its workings makes problems clear, of which there are three parts, moral, economic, and civil. That is called moral by which an honorable custom (*mos*) of living is sought and practices tending to virtue are established. That is called economic (*dispensativa*) in which the order of domestic affairs is wisely arranged. That is called civil by which the advantage of a whole state is secured.

Chapter 25. On the Isagoges of Porphyry.

1. After the definitions of philosophy in which all things are embraced under general heads, let us now

describe the Isagoges of Porphyry. Isagoge in the Greek means *introductio* in the Latin, being meant for those, it is plain, who are beginning philosophy, and containing an explanation of first principles. In regard to anything whatever it is made clear what its nature is, by unfailing definition of the substance.

2. For setting down first the genus, then the species, we subjoin also other things that are possibly related, and by setting aside common qualities we make distinctions, continually interposing differences until we arrive at the proper quality of that which we are examining, its meaning being made definite, as, for example: *Homo est animal rationale, mortale, terrenum, bipes, risus capax*.

3. When the genus *animal* is mentioned the substance of man is declared. For with reference to man the genus is animal; but since it has a wide application, the species, *terrenum*, is added and now what belongs to the air or water is excluded. And a difference is added, as, for example, *bipes*, which is given on account of the animals that go on several feet. Likewise *rationale*, because of the animals which lack reason; and *mortale*, because man is not an angel.

4. Afterwards, when the common qualities had been set aside, the property was added at the end, for it is the characteristic of man alone to laugh. In this way the complete definition to indicate man was reached. Aristotle and Tully held that the full definition of this science consisted of genus and differences.

5. Later certain authorities, expressing their position more fully, in their teaching divided perfect substantial definition into five divisions, as if into five organic parts. And the first of these deals with genus, the second with species, the third with

difference, the fourth with proper quality, the fifth with accident.

Chapter 26. On the categories of Aristotle.

1. Next follow the categories of Aristotle, which in Latin are called *praedicamenta*, within which all discourse is embraced throughout its various meanings.

5. There are ten sorts of categories, namely, *substantia*, *quantitas*, *qualitas*, *relatio*, *situs*, *locus*, *tempus*, *habitus*, *agere*, *pati*.

15. This work of Aristotle ought to be read with attention, since, as has been observed, whatever man speaks is included within the ten categories. It will help also to the understanding of the books that are devoted either to rhetoric or to logic.[233]

Chapter 27. On Interpretation (*de Perihermeniis*).

1. There follows next the book On Interpretation, which is extremely subtle and guarded in its various formulas and repetitions, of which it is said: "Aristotle when he wrote the Perihermeniae dipped his pen in intellect."

Chapter 28. On syllogisms.

1. Next follow the syllogisms of dialectic, wherein the advantage and excellence of that whole art is exhibited, the inferences of which greatly aid the reader in searching out the truth, so that the common error of deceiving an adversary by the sophisms of false conclusions disappears.

2. There are three formulae of categorical syllogisms. To the first formula belong nine modes....

12. To the second formula belong four modes....

16. To the third formula belong six modes.

22. Let him who desires to understand fully these formulas of the categorical syllogisms read the book

entitled *Apuleii Perihermeniae*, and he will learn matters that are treated with subtlety.[234] And by their clearness and well-weighed character they will introduce the reader advantageously with God's help to great paths of understanding. Now let us come to the hypothetical syllogisms in order.

23–25. The modes of the hypothetical syllogisms that have a conclusion are seven.... If anyone desires to know more fully the modes of the hypothetical syllogisms let him read Marius Victorinus' book entitled *De Syllogismis Hypotheticis*.[234]

26. Next let us approach the topic of dialectical definitions, which have such surpassing worth that they may rightly be called the clear manifestations of speech, and in a sense the guides to expression.

Chapter 29. On the division of definitions, abbreviated from the book of Marius Victorinus.

1. The definition of the philosophers is that which in describing things sets forth what the thing in itself is—not, of what sort it is—and how it ought to be made up of its parts. For it is a brief statement separating the nature of each thing from its class, and marking it off by its peculiar meaning. Definitions are divided into fifteen sorts. The first kind of definition is the substantial (οὐσιώδης), which is named definition in the proper and true sense, as, for example, *Est homo animal rationale, mortale, risus disciplinaeque capax*. This definition descends through species and differences and comes to the property, and expresses most fully what man is.

16. Now let us come to the *topica*, which are the seats of arguments, the fountains of ideas, and the sources of speech.

Chapter 30. On the topics.

1. *Topica* is the science of finding arguments. The division of the *topica* or the *loci* from which arguments are derived is three-fold. For some inhere in the very thing that is under discussion; there are others, called *affecta* (closely connected), which are known to be derived in a certain sense from other things; others, which are taken from outside [the subject]....

18. It is clearly a wonderful thing that whatever the nimbleness and variety of the human mind could discover, searching for ideas in different cases, could have been gathered into unity; that free and spontaneous intelligence is limited. For wherever it turns, whatever thoughts it enters on, the mind must fall upon some of those that have been described.

BOOK III

On the Four Mathematical Sciences

ON ARITHMETIC

INTRODUCTION

In examining Isidore's *De Arithmetica* two peculiarities of the development of the subject should be borne in mind. In the first place, the predominant position among the mathematical sciences which Isidore claims for arithmetic was one acquired by it comparatively late. Owing perhaps to the awkwardness of the Greek notation of number[235] geometry had been developed first, and historically arithmetic was an off-shoot from geometry and borrowed its terminology largely from it.[236] It was not given an independent form until the time of Nicomachus (fl. 100 A.D.) whose *Introductio Arithmetica* was "the first exhaustive work in which arithmetic was treated quite independently of geometry."[237] Once it become independent, arithmetic, instead of geometry, came to be regarded as the fundamental mathematical science. The old tradition is reflected in Martianus Capella's order of subjects, in which geometry is placed first and arithmetic second, while the newer tradition is seen in the order of Cassiodorus and Isidore, who both have passages also emphasizing the fundamental

character of arithmetic.

The second peculiarity is one which will surprise the modern reader who is familiar with arithmetic as a utilitarian study. The ancient *arithmetica* had nothing to do with the art of reckoning, which was called *logistica*.[238] The science and the art of numbers were completely divorced and the latter was excluded from the higher education as we have it in the seven liberal arts. Consequently we can expect nothing practical in Isidore's *De Arithmetica*. Nothing is said of methods of calculation, elementary or advanced, and, as a matter of course, nothing is to be found here on such topics as the use of the abacus[239] or the method of computing Easter, though the latter was the greatest mathematical problem of the time.

Isidore's source in the *De Arithmetica* was Cassiodorus,[240] whom he copies with little change; while Cassiodorus' work was apparently a bare abstract of Boethius' translation of Nicomachus. Isidore's account is of great brevity and contains a number of unexplained technical terms.

EXTRACTS

PREFACE. Mathematics is called in Latin *doctrinalis scientia*. It considers abstract quantity. For that is abstract quantity which we treat by reason alone, separating it by the intellect from the material or from other non-essentials, as for example, equal, unequal, or the like. And there are four sorts of mathematics, namely, arithmetic, geometry, music and astronomy. Arithmetic is the science of numerical quantity in itself. Geometry is the science of magnitude and forms.[241] Music is the science that treats of numbers that are found in sounds.

Astronomy is the science that contemplates the courses of the heavenly bodies and their figures, and all the phenomena of the stars. These sciences we shall next describe at a little greater length in order that their significance may be fully shown.

Chapter 1. On the name of the science of arithmetic.

1. Arithmetic is the science of numbers. For the Greeks call number ἀριθμός. The writers of secular literature have decided that it is first among the mathematical sciences since it needs no other science for its own existence.

2. But music and geometry and astronomy, which follow, need its aid in order to be and exist.

Chapter 2. On the writers.

1. They say that Pythagoras was the first among the Greeks to write of the science of number, and that it was later described more fully by Nicomachus, whose work Apuleius first, and then Boethius, translated into Latin.

Chapter 3. What number is.

1. Number is multitude made up of units. For one is the seed of number but not number. *Nummus* (coin) gave its name to *numerus* (number), and from being frequently used originated the word.

Unus derives its name from the Greek, for the Greeks call *unus* ἕνα, likewise *duo*, *tria*, which they call δύο and τρία.

2. *Quattuor* took its name from a square figure (*figura quadrata*). *Quinque*, however, received its name from one who gave the names to numbers not according to nature but according to whim. *Sex* and *septem* come from the Greek.

3. For in many names that are aspirated in Greek we use *s* instead of the aspiration. We have *sex* for

ἑξ, *septem* for ἕπτα, and also the word *serpillum* (thyme) for *herpillum*. *Octo* is borrowed without change; they have ἔννεα, we *novem*; they δέκα, we *decem*.

4. *Decem* is so-called from a Greek etymology, because it ties together and unites the numbers below it. For to tie together and unite is called among them δεσμεύειν.[242]

Chapter 4. What numbers signify.

1. The science of number must not be despised. For in many passages of the holy scriptures it is manifest what great mystery they contain. For it is not said in vain in the praises of God: "Omnia in mensura et numero et pondere fecisti." For the senarius, which is perfect in respect to its parts,[243] declares the perfection of the universe by a certain meaning of its number. In like manner, too, the forty days which Moses and Elias and the Lord himself fasted, are not understood without an understanding of number.

3. So, too, other numbers appear in the holy scriptures whose natures none but experts in this art can wisely declare the meaning of. It is granted to us, too, to depend in some part upon the science of numbers, since we learn the hours by means of it, reckon the course of the months, and learn the time of the returning year. Through number, indeed, we are instructed in order not to be confounded. Take number from all things and all things perish. Take calculation from the world and all is enveloped in dark ignorance, nor can he who does not know the way to reckon be distinguished from the rest of the animals.

Chapter 5. On the first division into *even* and *odd*.

1. Number is divided into even and odd. Even

number is divided into the following: evenly even, evenly uneven, and unevenly even, and unevenly uneven.[244] Odd number is divided into the following: prime and uncompounded, compounded, and a third class which comes between (*mediocris*) which in a certain way is prime and uncompounded, but in another way secondary and compounded.

2. An even number is that which can be divided into two equal parts, as II, IV, VIII.[245] An odd number is that which cannot be divided into equal parts, there being one in the middle which is either too little or too much, as III, V, VII, IX, and so on.

3. Evenly even number is that which is divided equally into even number, until it comes to indivisible unity, as for example, LXIV has a half XXXII, this again XVI; XVI, VIII; VIII, IV; IV, II; II, I, which is single and indivisible.

4. Evenly uneven is that which admits of division into equal parts, but its parts soon remain indivisible, as VI, X, XVIII, XXX, and L, for presently, when you divide such a number, you run upon a number which you cannot halve.

5. Unevenly even number is that whose halves can be divided again, but do not go on to unity, as XXIV. For this number being divided in half makes XII, divided again VI, and again, III; and this part does not admit of further division, but before unity a limit is found which you cannot halve.

6. Unevenly uneven is that which is measured unevenly by an uneven number, as XXV, XLIX; which, being uneven numbers, are divided also by uneven factors, as, seven times seven, XLIX, and five times five, XXV. Of odd numbers some are prime, some compounded, some mean (*mediocris*).

7. Prime numbers are those which have no other factor except unity alone, as three has only a third,

five only a fifth, seven only a seventh, for these have only one factor.

Compound numbers are they which are not only measured by unity, but are produced by another number, as IX, XV, XXI, XXV. For we say three times three are nine, and seven times three are XXI, and three times five are XV, and five times five are XXV.

8. Mean (*mediocris*) numbers are those which in a certain fashion seem prime and uncompounded and in another fashion secondary and compounded. For example, when IX is compared with XXV, it is prime and uncompounded, because it has no common factor except unity alone, but if it is compared with XV it is secondary and compounded, since there is in it a common factor in addition to unity, that is, III. Because three times three make nine, and three times five make fifteen.[246]

9. Likewise of even numbers some are excessive, others defective, others perfect.[247] Excessive are those whose factors being added together exceed its total, as for example, XII. For it has five factors: a twelfth, which is one; a sixth, which is two; a fourth, which is three; a third, which is four; a half, which is six. For one and two and three and four and six being added together make XVI, which is far in excess of twelve....

10. Defective numbers are those which being reckoned by their factors make a less total, as for example, ten....

11. The perfect number is that which is equalled by its factors, as VI.... The perfect numbers are, under ten, VI; under a hundred, XXVIII; under a thousand, CCCCXCVI.

Chapter 6. On the second division of all number.

1. All number is considered either with reference

to itself or in relation to something. The former is divided as follows: some are equal, as for example, two; others are unequal, as for example, three.[248] The latter is divided as follows: some are greater, some are less. The greater are divided as follows: into *multiplices* (multiple), *superparticulares*, *superpartientes*, *multiplices superparticulares*, *multiplices superpartientes*. The less are divided as follows: *Sub-multiplices* (sub-multiple), *sub-superparticulares*, *sub-superpartientes*, *sub-multiplices sub-superparticulares*, *sub-multiplices sub-superpartientes*.

6. ... The *superparticularis numerus* is when a greater number contains in itself a lesser number with which it is compared, and at the same time one part of it.

7. For example; III when compared with II contains in itself two and also one, which is the half of two. IV when compared with III, contains three and also one, which is the third of three. Likewise V, when compared with IV, contains the number four and also one, which is the fourth part of the said number four, and so on.

8. The *superpartiens numerus* is that which contains the whole of a lesser number and in addition two parts of it, either thirds or fifths or other parts. For example, when V is compared with III, the number five contains three and in addition to this two parts of it.

Chapter 7. On the third division of all number.

1. Numbers are abstract or concrete. The latter are divided as follows: first, lineal; second, superficial; third, solid. Abstract number is that which is made up of abstract units. For example, III, IV, V, VI, and so on.

2. Concrete number is that which is made up of

units that are not abstract, as for example, the number three, if it is understood of magnitude, whether line, superficies, or solid, is called concrete.

4. The number of superficies is that which is constituted not only by length but also by breadth, as triangular, square, pentangular, or circular numbers, and the rest that are contained in a plane surface or superficies.

5. The circular number, when it is multiplied by itself, beginning with itself, ends with itself. For example, *Quinquies quini vicies quinque*.

6. ... The spherical number is that which being multiplied by the circular number begins with itself and ends with itself; for example, five times five are twenty-five, and this circle being multiplied by itself makes a sphere, that is, five times XXV make CXXV.

Chapter 8. On the distinction between arithmetic, geometry, and music.

1. Between arithmetic, geometry and music there is a difference in finding the means. In arithmetic in the first place you find it in this way. You add the extremes and divide and find the half; as for example, suppose the extremes are VI and XII, you add them and they make XVIII. You divide and get IX, which is the mean of arithmetic (*analogicum arithmeticae*), since the mean is surpassed by the last by as many units as it surpasses the first. For IX surpasses VI by three units, and XII surpasses it by the same number.

2. According to geometry you find it this way. The extremes multiplied together make as much as the means multiplied, for example, VI and XII multiplied make LXXII; the means VIII and IX multiplied make the same.

3. According to music you find it in this way: The

mean is exceeded by the last term by the part by which it exceeds the first term, as for example, VI is surpassed by VIII by two units, which is a third part, and by the same part the mean VIII is surpassed by the last term which is XII.

Chapter 9. That infinite numbers exist.

1. It is most certain that there are infinite numbers, since at whatever number you think an end must be made I say not only that it can be increased by the addition of one, but, however great it is, and however large a multitude it contains, by the very method and science of numbers it can not only be doubled but even multiplied.

2. Each number is limited by its own proper qualities, so that no one of them can be equal to any other. Therefore in relation to one another they are unequal and diverse, and the separate numbers are each finite, and all are infinite.

ON GEOMETRY

INTRODUCTION

In spite of the high development of geometry among the Greeks it never took root as a pure science in the western Roman world,[249] and neither the various practical applications of its principles nor its use as a disciplinary educational subject sufficed to fasten thoughtful attention upon it; in consequence, it lost almost its entire content. As it appears in the four writers who treat of it in later Roman and early medieval times, Martianus Capella, Boethius,[250] Cassiodorus, and Isidore, it furnishes a

striking commentary upon the intellectual conservatism that could retain without a suspicion of criticism a subject that was no longer anything but empty form.

The substance of Isidore's *De Geometria* comes with little change from Cassiodorus. It is noteworthy that these two writers have nothing that does not go with the subject according to the modern conception of it, and do not follow the example of their predecessor Martianus Capella,[251] in whose account of the seven liberal arts the void caused by the loss of the proper content of geometry is filled with geography.

TRANSLATION[252]

Book III, Chapter 10. On the inventors of geometry and its name.

1. The science of geometry is said to have been discovered first by the Egyptians, because when the Nile overflowed and all their lands were overspread with mud, its origin in the division of the land by lines and measurements gave the name to the art. And later, being carried further by the keenness of the philosophers, it measured the spaces of the sea, the heavens, and the air.

2. For, having their attention aroused, students began to search into the spaces of the heavens, after measuring the earth; how far the moon was from the earth, the sun itself from the moon, and how great a measure extended to the summit of the sky; and thus they laid off in numbers of stades with probable reason the very distances of the sky and the circuit of the earth.

3. But since this science arose from the measuring of the earth, it took its name also from its beginning.

For *geometria* is so named from the earth and measuring. For the earth is called γῆ in Greek, and measuring, μέτρον. The art[253] of this science embraces lines, intervals, magnitudes, and figures, and in figures, dimensions and numbers.

Chapter 11. On the four-fold division of geometry.

1. The four-fold division of geometry is into plane figures, numerical magnitude, rational magnitude, and solid figures.

2. Plane figures are those which are contained by length and breadth. Numerical magnitude is that which can be divided by the numbers of arithmetic.

3. Rational magnitudes are those whose measures we can know, and irrational, those the amount of whose measurement is not known.

4. Solid figures are those that are contained by length, breadth, and thickness, which are five in number, according to Plato.

Chapter 12. On the figures of geometry.

1. The first of the figures on a plane surface is the circle, a figure that is plane, and has a circumference, in the middle of which is a point upon which everything converges (*cuncta convergunt*) which geometers call the center, and the Latins call the point of the circle.

2. A quadrilateral figure is one on a plane surface, and it is contained by four straight lines....

3. A sphere is a figure of rounded form equal in all its parts.

A cube is a solid figure which is contained by length, breadth, and thickness.

5. A cone (*conon*) is a solid figure which narrows from a broad base like the right-angled triangle.

6. A pyramid is a solid figure which narrows to a point from a broad base like fire. For fire in Greek is

called πῦρ.

7. Just as all number is contained within ten so the outline of every figure is contained within the circle.

Chapter 13. On the first principles of geometry.

1. ... A point is that which has no part. A line is length without breadth. A straight line is one which lies evenly in respect to its points. A superficies is that which has length and breadth alone.

Chapter 14. On the numbers of geometry.

1. You search into the numbers of geometry as follows: the extremes being multiplied, amount to as much as the means multiplied; as for example, VI and XII being multiplied, make LXXII; the means VIII and IX being multiplied, amount to the same.

ON MUSIC

INTRODUCTION

As an educational subject music is the oldest of those grouped under the heading of the seven liberal arts. In Plato's time music and gymnastic were the staples of education, and the former term meant chiefly the study of poetry, with music in the proper sense of the word as a mere adjunct. As the different subjects, such as grammar, rhetoric, geometry, arithmetic, appeared in the curriculum, the field of music narrowed and it held a less commanding place. Conflicting points of view in regard to it appear to have arisen. The older educational tradition connected music with grammar and the other literary studies. On the other hand, the

influence of the Pythagorean theory of number and of its application to music tended to dissociate grammar and music, and to place the latter in relation to the mathematical sciences. It has been noticed that among the older Roman writers from whom evidence on this matter can be drawn—Cicero, Varro, Seneca, Quintilian, and others—the association of music and grammar appears the natural one, while in the Roman writers of the second, third, and fourth centuries both traditions prevail, with an increasing preference for placing music among the mathematical sciences, where it finally found itself when the canon of the seven liberal arts was formed, and where it remained to the end of the middle ages.[254]

In Isidore little is to be found to justify the mathematical environment of music. It is true that at times he defines it as a mathematical science[255] and he insists on the musical view of the universe as a necessary complement to other views. "Without music," he says, "there can be no perfect knowledge, for there is nothing without it. For even the universe itself is said to have been formed under the guidance of harmony."[256] But, with the exception of a paragraph on the musical mean, his treatment is entirely taken up with the non-mathematical aspect of the subject, and the definition "music is the practical knowledge of melody"[257] is the one that more closely fits the occasion.

The treatment[258] of music is of about the same length as that of arithmetic, and is devoted mainly to definitions of musical terms and brief descriptions of wind and stringed instruments. It appears that Isidore knew nothing of music in a technical sense. [259]

EXTRACTS

Book III, Chapter 15. On music and its name.

1. Music is the practical knowledge of melody, consisting of sound and song; and it is called music by derivation from the Muses. And the Muses were so-called ἀπὸ τοῦ μῶσθαι, that is, from inquiring, because it was by them, as the ancients had it, that the potency of songs and the melody of the voice were inquired into.

2. Since sound is a thing of sense it passes along into past time, and it is impressed on the memory. From this it was pretended by the poets that the Muses were the daughters of Jupiter and Memory. For unless sounds are held in the memory by man they perish, because they cannot be written.

Chapter 16. On its discoverers.

1. Moses says that the discoverer of the art of music was Jubal, who was of the family of Cain and lived before the flood. But the Greeks say that Pythagoras discovered the beginnings of this art from the sound of hammers and the striking of tense cords. Others assert that Linus of Thebes, and Zethus, and Amphion, were the first to win fame in the musical art.

2. After whose time this science in particular was gradually established and enlarged in many ways, and it was as disgraceful to be ignorant of music as of letters. And it had a place not only at sacred rites, but at all ceremonies and in all things glad or sorrowful.

Chapter 17. On the power of music.

1. And without music there can be no perfect knowledge, for there is nothing without it. For even the universe itself is said to have been put together

with a certain harmony of sounds, and the very heavens revolve under the guidance of harmony. Music rouses the emotions, it calls the senses to a different quality.

2. In battles, too, the music of the trumpet fires the warriors, and the more impetuous its loud sound the braver is the spirit for the fight. Also, song cheers the rowers. For the enduring of labors, too, music comforts the mind, and singing lightens weariness in solitary tasks.

3. Music calms overwrought minds also, as is read of David, who by his skill in playing rescued Saul from an unclean spirit. Even the very beasts and snakes, birds and dolphins, music calls to hear its notes. Moreover whatever we say or whatever emotions we feel within from the beating of our pulses, it is proven that they are brought into communion with the virtues through the musical rhythms of harmony.

Chapter 18. On the three parts of music.

1. There are three parts of music, namely, *harmonica*, *rhythmica*, *metrica*. *Harmonica* is that which distinguishes in sounds the high and the low. *Rhythmica* is that which inquires concerning the succession of words as to whether the sound fits them well or ill.

2. *Metrica* is that which learns by approved method the measure of the different metres, as for example, the heroic, iambic, elegiac, and so on.

Chapter 19. On the triple division of music.

1. It is agreed that all sound which is the material of music is of three sorts. First is *harmonica*, which consists of vocal music; second is *organica*, which is formed from the breath; third is *rhythmica*, which receives its numbers from the beat of the fingers.

2. For sound is produced either by the voice, coming through the throat; or by the breath, coming through the trumpet or tibia, for example; or by touch, as in the case of the cithara or anything else that gives a tuneful sound on being struck.

Chapter 20. On the first division of music which is called *harmonica*.

1. The first division of music, which is called *harmonica*, that is, modulation of the voice, has to do with comedians, tragedians, and choruses, and all who sing with the proper voice.[260] This [coming] from the spirit and the body makes motion, and out of motion, sound, out of which music is formed, which is called in man the voice.

2. *Harmonica* is the modulation of the voice and the concord or fitting together of very many sounds.

3. *Symphonia* is the managing of modulation so that high and low tones accord, whether in the voice or in wind or stringed instruments. Through this, higher and lower voices harmonize, so that whoever makes a dissonance from it offends the sense of hearing. The opposite of this is *diaphonia*, that is, voices grating on one another or in dissonance.

7. *Tonus* is a high utterance of voice. For it is a difference and measure of harmony which depends on the stress and pitch of the voice. Musicians have divided its kinds into fifteen parts, of which the hyperlydian is the last and highest, the hypodorian the lowest of all.

8. Song is the modulation of the voice, for sound is unmodulated, and sound precedes song.

Chapter 21. On the second division, which is called *organica*.

1. The second division, organica, has to do with those [instruments] that, filled with currents of

breath, are animated so as to sound like the voice, as for example, trumpets, reeds, Pan's pipes, organs, the pandura, and instruments like these.[261]

Chapter 22. On the third division, which is called *rhythmica*.

1. The third division is *rhythmica*, having to do with strings and instruments that are beaten, to which are assigned the different species of cithara, the drum, and the cymbal, the sistrum, acitabula of bronze and silver, and others of metallic stiffness that when struck return a pleasant tinkling sound, and the rest of this sort.[262]

2. The form of the cithara in the beginning is said to have been like the human breast, because as the voice was uttered from the breast so was music from the cithara, and it was so-called for the same reason. For *pectus* is in the Doric language called κίθαρα.

Chapter 23. On the numbers of music.

1. You inquire into the numbers according to music as follows: setting down the extremes, as for example, VI and XII, you see by how many units VI is surpassed by XII, and it is by VI units; you square it; six times six make XXXVI. You add those first-mentioned extremes, VI and XII; together they make XVIII; you divide XXXVI by XVIII; two is the result. This you add to the smaller amount, VI namely; the result will be VIII and it will be the mean between VI and XII. Because VIII surpasses VI by two units, that is by a third of six, and VIII is surpassed by XII by four units, a third part [of twelve]. By what part, then, the mean surpasses, by the same is it surpassed.

2. Just as this proportion exists in the universe, being constituted by the revolving circles, so also in the microcosm—not to speak of the voice—it has such great power that man does not exist without

harmony.[263]

ON ASTRONOMY

INTRODUCTION

The science of astronomy, in its history from the great period of Greece down to the dark ages, furnishes almost as complete a spectacle of decay as does geometry. It is quite certain "that Aristarchus taught the annual motion of the earth around the sun, and both he and Seleukus taught the diurnal rotation of the earth,"[264] but the general scientific development of the age was not sufficient to assimilate this advanced theory, and astronomers went back to a geocentric universe. Strange to say, the later rise of practical astronomy at Alexandria, and the development of pure mathematics, did not secure a return to the more advanced theory, the efforts of the later astronomers being devoted, not to a reconsideration of the fundamental theses of the subject, but to putting the geocentric theory on a secure mathematical basis. The greatest of these astronomers, Ptolemy (second century A.D.), left in his *Syntaxis* a comprehensive summing up of mathematical astronomy.

Among the Romans no scientists arose to assimilate the results of the work of the Greeks, and sound ideas as to the form of the universe were rare even in the most intelligent circles. Since systematic observation was not practiced, and a knowledge of the higher mathematics did not exist among the Romans, their astronomy was a matter of tradition and authority. Therefore upon the acceptance of

Christianity and the realization that there was a conflict between the Greek and the Hebrew cosmologies, it was a comparatively easy matter to accept the Scriptures instead of the secular writers as the source of authority.

In Isidore's ideas on cosmology a curious inconsistency appears. On the one hand, he shows that he regards the words of the Scripture as the final authority, and he frequently gives expression to primitive notions in accord with the Hebrew cosmology. On the other hand, he displays a greater liberality than is shown by his predecessor, Cassiodorus, or by any other Christian writer in the Latin language up to his time, in borrowing from the pagan writers on astronomy. The explanation of this may be that it was a natural reaction from dogmatic narrowness, made possible for him by the favorable conditions offered by contemporary Spain; but the more probable supposition is that his natural vagueness of mind and lack of critical power enabled him to be much more liberal in effect than he in reality would have wished to be.[265]

Another feature of Isidore's *De Astronomia* that deserves notice is his attitude toward the forbidden science of astrology.[266] He denies a fundamental assumption of the science, namely, that Mercury and Venus, for example, have as planets an influence analogous to their characters in mythology, and he asserts that the names of the planets and fixed stars, as used in astrology, have no validity. This was vigorous reasoning for the dark ages, and to all appearance it completely cut away the foundation of astrology.[267] Nevertheless Isidore believed that astrology had some truth—the magi who announced the birth of Christ were, he believed, astrologers—but this truth arose "out of a deadly alliance of men

and bad angels." His attitude, then, seems to be that astrologers may forecast the future, but that their ability to do so depends on the assistance of demons, and that the drawing up of nativities is merely a pretence to cloak this partnership.

Little is known of astronomy as a subject in the Roman schools. It no doubt formed part of the curriculum, but apparently no text-book was produced between the time of Varro and that of Martianus Capella. The three school treatises of late Roman and early medieval times, written by Capella, Cassiodorus, and Isidore, were all the work of educational encyclopedists from whom nothing of a scientific character could be expected.

EXTRACTS

Book III, Chapter 24. On the name of astronomy.

1. Astronomy is the law of the stars, and it traces with inquiring reason the courses of the heavenly bodies, and their figures, and the regular movements of the stars with reference to one another and to the earth.

Chapter 25. On its discoverers.

1. The Egyptians were the first to discover astronomy. And the Chaldeans first taught astrology and the observance of nativity. Moreover, Josephus asserts that Abraham taught astrology to the Egyptians. The Greeks, however, say that this art was first elaborated by Atlas, and therefore it was said that he held the heavens up.

2. Whoever was the discoverer, it was the movement of the heavens and his rational faculty that stirred him, and in the light of the succession of seasons, the observed and established courses of the

stars, and the regularity of the intervals, he considered carefully certain dimensions and numbers, and getting a definite and distinct idea of them he wove them into order and discovered astrology.

Chapter 26. On its teachers.

1. In both Greek and Latin there are volumes written on astronomy by different writers. Of these Ptolemy[268] is considered chief among the Greeks. He also taught rules by which the courses of the stars may be discovered.[269]

Chapter 27. The difference between astronomy and astrology.

1. There is some difference between astronomy and astrology. For astronomy embraces the revolution of the heavens, the rise, setting, and motion of the heavenly bodies, and the origin of their names. Astrology, on the other hand, is in part natural, in part superstitious.

2. It is natural astrology when it describes the courses of the sun and the moon and the stars, and the regular succession of the seasons. Superstitious astrology is that which the mathematici follow, who prophesy by the stars, and who distribute the twelve signs of the heavens among the individual parts of the soul or body, and endeavor to predict the nativities and characters of men from the course of the stars.

Chapter 28. On the subject-matter of astronomy.

1. The subject-matter of astronomy is made up of many kinds. For it defines what the universe is, what the heavens, what the position and movement of the sphere, what the axis of the heavens and the poles, what are the climates of the heavens, what the

courses of the sun and moon and stars, and so forth.

Chapter 29. On the universe and its name.

1. *Mundus* (the universe) is that which is made up of the heavens and earth and the sea and all the heavenly bodies. And it is called *mundus* for the reason that it is always in *motion*. For no repose is granted to its elements.

Chapter 30. On the form of the universe.

1. The form of the universe is described as follows: as the universe rises toward the region of the north, so it slopes away toward the south; its head and face, as it were, is the east, and its back part the north.

Chapter 31. On the heavens and their name.

1. The philosophers have asserted that the heavens are round, in rapid motion, and made of fire, and that they are called by this name (*coelum*) because they have the forms of the stars fixed on them, like a dish with figures in relief (*coelatum*).

2. For God decked them with bright lights, and filled them with the glowing circles of the sun and moon, and adorned them with the glittering images of flashing stars.

Chapter 32. On the situation of the celestial sphere.

1. The sphere of the heavens is rounded and its center is the earth, equally shut in on every side. This sphere, they say, has neither beginning nor end, for the reason that being rounded like a circle it is not easily perceived where it begins or where it ends.

2. The philosophers have brought in the theory of seven heavens of the universe, that is, globes with planets moving harmoniously, and they assert that by their circles all things are bound together, and

they think that these, being connected, and, as it were, fitted to one another, move backward and are borne with definite motions in contrary directions.

Chapter 33. On the motion of the same.

1. The sphere revolves on two axes, of which one is the northern, which never sets, and is called Boreas; the other is the southern, which is never seen, and is called Austronotius.

2. On these two poles the sphere of heaven moves, they say, and with its motion the stars fixed in it pass from the east all the way around to the west, the *septentriones* near the point of rest describing smaller circles.

Chapter 34. On the course of the same sphere.

1. The sphere of heaven, [moving] from the east towards the west, turns once in a day and night, in the space of twenty-four hours, within which the sun completes his swift revolving course over the lands and under the earth.

Chapter 35. On the swiftness of the heavens.

1. With such swiftness is the sphere of heaven said to run, that if the stars did not run against its headlong course in order to delay it, it would destroy the universe.

Chapter 36. On the axis of the heavens.

1. The axis is a straight line north, which passes through the center of the globe of the sphere, and is called axis because the sphere revolves on it like a wheel, or it may be because the Wain is there.

Chapter 37. On the poles of the heavens.

1. The poles are little circles which run on the axis. Of these one is the northern which never sets

and is called Boreas; the other is the southern which is never seen, and is called Austronotius.

Chapter 38. On the *cardines* of the heavens.

1. The *cardines* of the heavens are the ends of the axis, and are called *cardines* (hinges) because the heavens turn on them, or because they turn like the heart (*cor*).

Chapter 40. On the gates of the heavens.

1. There are two gates of the heavens, the east and the west. For by one the sun appears, by the other he retires.

Chapter 42. On the four parts of the heavens.

1. The *climata* of the heavens, that is, the tracts or parts, are four, of which the first part is the eastern, where some stars rise; the second, the western, where some stars set; the third, the northern, where the sun comes in the longer days; the fourth, the southern, where the sun comes in the time of the longer nights.

4. There are also other *climata* of the heavens, seven in number, as if seven lines from east to west, under which the manners of men are dissimilar, and animals of different species appear; they are named from certain famous places, of which the first is Meroe; the second, Siene; the third, Catachoras, that is Africa; the fourth, Rhodus; the fifth, Hellespontus; the sixth, Mesopontus; the seventh, Boristhenes.[270]

Chapter 43. On the hemispheres.

1. A hemisphere is half a sphere. The hemisphere above the earth is that part of the heavens the whole of which is seen by us; the hemisphere under the earth is that which cannot be seen as long as it is under the earth.

Chapter 44. On the five circles of the heavens.

1. There are five zones in the heavens, according to the differences of which certain parts of the earth are inhabitable, because of their moderate temperature, and certain parts are uninhabitable because of extremes of heat and cold. And these are called zones or circles for the reason that they exist on the circumference of the sphere.

2. The first of these circles is called the Arctic, because the constellations of the Arcti are visible enclosed within it; the second is called the summer tropic, because in this circle the sun makes summer in northern regions, and does not pass beyond it but immediately returns, and from this it is called tropic.

3. The third circle is called ἰσημερινὸς, which is equivalent to *equinoctialis* in Latin, for the reason that when the sun comes to this circle it makes equal day and night (for ἰσημερινὸς means in Latin day equal to the night) and by this circle the sphere is seen to be equally divided. The fourth circle is called Antarctic,[271] for the reason that it is opposite to the circle which we call Arctic.

4. The fifth circle is called the winter tropic (χειμερινὸς τροπικός), which in the Latin is *hiemalis* or *brumalis*, because when the sun comes to this circle it makes winter for those who are in the north and summer for those who dwell in the parts of the south.

Chapter 47. On the size of the sun.

1. The size of the sun is greater than that of the earth and so from the moment when it rises it appears equally to east and west at the same time. [272] And as to its appearing to us about a cubit in width, it is necessary to reflect how far the sun is from the earth, which distance causes it to seem

small to us.

Chapter 48. On the size of the moon.

1. The size of the moon also is said to be less than that of the sun. For since the sun is higher than the moon and still appears to us larger than the moon, if it should approach near to us it would be plainly seen to be much larger than the moon. Just as the sun is larger than the earth, so the earth is in some degree larger than the moon.

Chapter 49. On the nature of the sun.

1. The sun, being made of fire, heats to a whiter glow because of the excessive speed of its circular motion. And its fire, philosophers declare, is fed with water, and it receives the virtue of light and heat from an element opposed to it. Whence we see that it is often wet and dewy.

Chapter 50. On the motion of the sun.

1. They say that the sun has a motion of its own and does not turn with the universe. For if it remained fixed in the heavens all days and nights would be equal, but since we see that it will set tomorrow in a different place from where it set yesterday, it is plain that it has a motion of its own and does not move with the universe. For it accomplishes its yearly orbits by varying courses, on account of the changes of the seasons.

2. For going further to the south it makes winter, in order that the land may be enriched by winter rains and frosts. Approaching the north it restores the summer, in order that fruits may mature, and what is green in the damp weather may ripen in the heat.

Chapter 51. What the sun does.

1. The rising sun brings the day, the setting sun the night; for day is the sun above the earth, night is the sun beneath the earth. From the sun come the hours; from the sun, when it rises, the day; from the sun, too, when it sets, the night; from the sun the months and years are numbered; from the sun come the changes of the seasons.

2. When it runs through the south it is nearer the earth; when it passes toward the north it is raised aloft. God has appointed for it different courses, places, and times for this reason, lest if it always remained in the same place all things should be consumed by its daily heat—just as Clement says: “It takes on different motions, by which the temperature of the air is moderated with a view to the seasons, and a regular order is observed in its seasonal changes and permutations. For when it ascends to the higher parts it tempers the spring, and when it comes to the summit of heaven it kindles the summer heats; descending again, it gives autumn its temperature. And when it returns to the lower circle it leaves to us the rigor of winter cold from the icy quarter of the heavens.”

Chapter 52. On the journey of the sun.

1. The eastern sun holds its way through the south, and after it comes to the west and has bathed itself in ocean, it passes by unknown ways beneath the earth, and again returns to the east.

Chapter 53. On the light of the moon.

1. Certain philosophers hold that the moon has a light of its own, that one part of its globe is bright and another dark, and that turning by degrees it assumes different shapes. Others, on the contrary, assert that the moon has no light of its own, but is illumined by the rays of the sun. And therefore it

suffers an eclipse if the shadow of the earth is interposed between itself and the sun.

Chapter 56. On the motion of the moon.

1. The moon governs the times by alternately losing and recovering its light. It advances like the sun in an oblique, and not a vertical course, for this reason, that it may not be opposite the center of the earth and often suffer eclipse. For its orbit is near the earth. The waxing moon has its horns looking east; the waning, west; rightly, because it is going to set and lose its light.

Chapter 57. On the nearness of the moon to the earth.

1. The moon is nearer the earth than is the sun. Therefore having a narrow orbit it finishes its course more quickly. For it traverses in thirty days the journey the sun accomplishes in three hundred and sixty-five. Whence the ancients made the months depend on the moon, the years on the course of the sun.

Chapter 58. On the eclipse of the sun.

1. There is an eclipse of the sun as often as the thirtieth moon reaches the same line where the sun is passing, and, interposing itself, darkens the sun. For we see that the sun is eclipsed when the moon's orb comes opposite to it.

Chapter 59. On the eclipse of the moon.

1. There is an eclipse of the moon as often as the moon runs into the shadow of the earth. For it is thought to have no light of its own but to be illumined by the sun, whence it suffers eclipse if the shadow of the earth comes between it and the sun. The fifteenth moon suffers this until it passes out

from the center and shadow of the interposing earth and sees the sun and is seen by the sun.

Chapter 60. On the distinction between *stella*, *sidus*, and *astrum*.

1. *Stellae*, *sidera*, and *astra* differ from one another. For *stella* is any separate star. *Sidera* are made of very many stars, as Hyades, Pleiades. *Astra* are large stars as Orion, Bootes. But the writers confuse these names, putting *astra* for *stella* and *stella* for *sidera*.[273]

Chapter 61. On the light of the stars.

1. Stars are said to have no light of their own, but to be lighted by the sun like the moon.

Chapter 62. On the position of the stars.

1. Stars are motionless, and being fixed are carried along by the heavens in perpetual course, and they do not set by day but are obscured by the brilliance of the sun.

Chapter 63. On the courses of the stars.

1. Stars either are borne along or have motion. Those are borne along which are fixed in the heavens and revolve with the heavens. Certain have motion, like the planets, that is, the wandering stars, which go through roaming courses, but with definite limitations.

Chapter 64. On the varying courses of the stars.

1. According as stars are carried on different orbits of the heavenly planets, certain ones rise earlier and set later, and certain rising later come to their setting earlier. Others rise together and do not set at the same time. But all in their own time revolve in a course of their own.

Chapter 65. On the distances of the stars.

1. Stars are at different distances from the earth and therefore, being of unequal brightness, they are more or less plain to the sight; many are larger than the bright ones which we see, but being further away they appear small to us.

Chapter 66. On the circular number of the stars.

1. There is a circular number of the stars by which it is said to be known in what time each and every star finishes its orbit, whether in longitude or latitude.[274]

2. For the moon is said to complete its orbit in eight years, Mercury in twenty, Lucifer in nine, the sun in nineteen, Pyrois in fifteen, Phaeton in twelve, Saturn in thirty. When these are finished, they return to a repetition of their orbits through the same constellations and regions.

3. Certain stars being hindered by the rays of the sun become irregular, either retrograde or stationary, as the poet relates, saying:

Sol tempora dividit aevi
Mutat nocte diem, radiisque potentibus astra
Ire vetat, cursusque vagos statione moratur.

Chapter 67. On the wandering stars.

1. Certain stars are called *planetae*, that is, wandering, because they hasten around through the whole universe with varying motions....

Chapter 68.

1. *Praecedentia* or *antegradatio* of stars is when a star seems to be making its usual course and [really] is somewhat ahead of it.

Chapter 69.

1. *Remotio* or *retrogradatio* of stars is when a star,

while moving on its regular orbit, seems at the same time to be moving backward.

Chapter 70.

1. The *status* of stars means that while a star is continuing its proper motion it nevertheless seems in some places to stand still.

Chapter 71. On the names of stars.

3. *Stellae* is derived from *stare*, because the stars always remain (*stant*) fixed in the heavens and do not fall. As to our seeing stars fall, as it were, from heaven, they are not stars but little bits of fire that have fallen from the ether, and this happens when the wind, blowing high, carries along with it fire from the ether, which as it is carried along gives the appearance of falling stars. For stars cannot fall; they are motionless (as has been said above) and are fixed in the heavens and carried around with them.

16. A comet is so-called because it spreads light from itself as if it were hair (*comas*). And when this kind of star appears it indicates pestilence, famine, or war.

17. Comets are called in the Latin *crinitae* because they have a trail of flames resembling hair (*in modum crinium*). The Stoics say there are over thirty of them, and certain astrologers have written down their names and qualities.

20. The planets are stars which are not fixed in the heavens like the rest, but move along in the air.... Sometimes they move towards the south, sometimes towards the north, generally in a direction opposite to that of the universe, sometimes with it, and their Greek names are Phaeton, Phaenon, Pyrois, Hesperus, Stilbon.

21. To these the Romans have given the names of their gods, that is, of Jupiter, Saturn, Mars, Venus,

Mercury. Deceiving themselves and wishing to deceive [others] into worship of these gods, who had bestowed upon them somewhat in accordance with the desire of the world, they pointed to the stars in heaven, saying that that was Jove's star, that Mercury's, and the empty idea arose. This erroneous belief the devil cherished, but Christ destroyed.

22. Moreover as to the constellations which are given names by the heathen, in which the likeness of living creatures is traced by means of the stars, like Arctos, Aries, Taurus, Libra, and others, they who first discerned constellations in a number of stars were influenced by superstitious vanity and imagined a bodily form, giving them, because of certain reasons, the likenesses and names of their gods.

23. For they named Aries, the first constellation—to which, as to Libra, they assign the middle line of the universe[275]—after Jupiter Ammon, on whose head image makers fix the horns of a ram (*arietis cornua*).

24. This the heathen set as the first among the constellations because in the month of March, which is the beginning of the year, they say the sun is moving in that constellation.

26. Cancer, too, they so named because when the sun comes to that constellation in the month of June, it begins to move backward in the manner of a crab (*in modum cancri*), and brings in the shorter days; for in this creature front and rear are indistinguishable and it advances either way, so that its fore part may be behind and its back part before.

32. Moreover *Aquarius* and *Pisces* they named from the rainy season, because heavier rains fall in winter when the sun turns at these constellations. And it is a wonderful folly of the heathen that they have raised to the heavens not only fish, but rams

also, and he-goats and bulls, she-bears and dogs, crabs and scorpions. They have also placed among the stars of heaven an eagle and a swan, in memory of Jove, because of the myths about him.

33. They believed, too, that Perseus and his wife Andromeda were received into the heavens after their death, so they marked out likenesses of them in the stars, and did not blush to call them by their names.

37. But by whatever fashion of superstition these are named by men, they are nevertheless stars, which God made at the beginning of the universe and ordained to mark the seasons with regular motion.

38. Therefore observations of these constellations, or nativities, or the rest of the superstition that attaches itself to the observance of the stars—that is, to a knowledge of the fates—and is doubtless opposed to our faith, ought to be ignored by Christians in such a way that it would seem they had not been written.

39. But a good many, enticed by the fairness and brightness of the constellations, have in their blindness fallen into the errors of the stars, so that they endeavor to foreknow future events by the noxious computations that are called *mathesis*; but not only the teachers of the Christian religion, but also Plato and Aristotle and others of the heathen, moved by truth, condemned them with unanimous opinion, saying that confusion as to [future] things was produced rather from such a belief.

40. For if, as they say, men are driven by the compulsion of their birth to various kinds of acts, why should the good deserve praise, or the evil feel the vengeance of the law....

41. This succession of the seven secular disciplines was terminated in astronomy by the

philosophers for this purpose forsooth, that it might free souls, entangled by secular wisdom, from earthly matters, and set them at meditation upon the things on high.

BOOK IV

ON MEDICINE[276]

INTRODUCTION

THE Greek science of medicine was one which reached a high degree of development. As early as the fifth century B.C. it appears in the school of Hippocrates, divested of nearly all trace of its origin in superstition and magic, and largely relying on careful observation and interpretation of symptoms. This school already possessed a considerable body of recorded observations. At Alexandria, later, further progress was made, especially in the subject of anatomy. At this time the dissection—and even vivisection—of the human body was practiced, though there are few traces of it earlier, and later it was forbidden. The last great land-mark in the history of ancient medicine is to be found in the works of Galen (second century A.D.) who summed up, extended, and interpreted the medical knowledge of preceding times.

In medicine, however, as in Greek science generally, theoretical and philosophical elements often prevailed to the detriment of the pragmatical. Examples of this are to be seen in the theory of the four humors, first found in the Hippocratic writings; in the belief of the Methodist school, which held that disease consisted in the contraction and relaxation of the pores (πόροι); and in the doctrines of the Pneumatic school, which maintained that health and

disease resulted from the influence of the universal soul (πνεῦμα). A reaction against this tendency is evidenced by the empirics, who professed to reject all general notions and to rely on experience alone. However, the increasing predominance of the theoretical is shown in the case of Galen, who secured his ascendency over succeeding ages by his extravagant theoretical system rather than by his really great practical knowledge.

No contribution to medicine was made by the Romans. Although the profession appeared among them in the second century B.C., it remained a thing apart, in the hands of Greek physicians.[277] Of the three chief writers on the subject in the Latin language, two, Celsus and Pliny, were not physicians but encyclopedists, who were necessarily compilers rather than scientists.[278] The only writer of importance who approached his work from a professional standpoint was Caelius Aurelianus, and his book is of importance chiefly because its Greek original is lost.[279] This neglect of medicine is explained in part by the fact that physicians stood low in the social scale. Another more powerful influence was the increasing fashionableness of Oriental religions with their superstition and addiction to magic practices. Toward the close of the empire the decline was rapid in medicine as in other fields. Abridgements, which cut down quality unconsciously as much as they did quantity consciously, held the field. Itinerant quacks and "folk-medicine" gradually ousted the lay profession until finally what little science remained was in the hands of priests and monks, who needed a smattering of the subject for the people of their parishes, and the inmates of monasteries and hospitals.[280]

Isidore does not say for what purpose he wrote his *De Medicina*, whether to serve as a text-book to aid in the education of the clergy in the way indicated above, or merely in the spirit of the encyclopedist. A number of considerations point strongly to the former conclusion. In the first place, medicine is placed in juxtaposition with the seven liberal arts, and is separated from subjects more nearly akin to it. Secondly, the attitude which Isidore displays in speaking of medicine is one which remembers that this subject was once classed with the liberal arts. He feels called upon to explain why "the art of medicine is not included among the liberal disciplines", and his explanation is one drawn from the pedagogical sphere; he tells us that medicine is "a second philosophy", by which he means to say that it belongs to the highest stage of education, but plays therein a minor part. Finally, we must remember that Cassiodorus, whose comprehensive plan of education had great influence with Isidore, had recognized the need of medical knowledge in the education of the clergy, as shown in his chapter "On monks having the care of the infirm".

It is not known what were the immediate sources of Isidore's *De Medicina*. The ultimate authority for his account of diseases is the work of the Methodist Caelius Aurelianus, whose eight books containing a classification of diseases into acute and chronic are reproduced by Isidore in two chapters that occupy the greater part of the space that he devoted to medicine.

EXTRACTS

Chapter 1. On medicine.

1. Medicine is that which guards or restores the health of the body, and its subject-matter deals with diseases and wounds.

2. And so it includes not only those things which are presented in the art (*ars*) of those who are called *medici* in the proper sense, but food, drink, and covering as well; in short, all the guarding and defence by which our body is protected against blows and accidents from the outside.

Chapter 2. On its name.

1. Its name is believed to have been given to medicine from *modus*, that is, moderation, so that not enough but a little be used. For nature is made sorrowful by much and rejoices in the moderate. Whence also they who drink in quantities and without ceasing of herb juices (*pigmenta*) and antidotes, are troubled. For all immoderation brings not welfare but danger.

Chapter 3. On the founders of medicine.

1. Apollo is called among the Greeks the author and founder of the art of medicine. His son, Aesculapius, enlarged it by his fame and work. But after Aesculapius perished by a thunder-bolt, the business of curing is said to have been forbidden and the art disappeared with its author.

2. And it remained unknown for nearly five hundred years down to the time of Artaxerxes, king of the Persians. Then Hippocrates, born in the island of Cos, his father being Asclepius, brought it back to the light of day.

Chapter 4. On the three schools (*haereses*) of medicine.

1. And so these three men founded as many schools. The first, *Methodica*,[281] was established by

Apollo, and it follows remedies and charms. The second, *Empirica*,[282] that is, relying on experience, was established by Aesculapius, which depends not on the interpretation of symptoms, but on experience alone. The third, *Logica*,[283] that is, rational, was invented by Hippocrates.

2. For the latter, separating the qualities of ages, districts, and diseases, examined the practice of the art in a rational way. The *Empirici*, then, follow experience alone; the *Logici* add reason to experience; the *Methodici* observe neither the elements, nor seasons, nor ages, nor causes, but the substances of diseases alone.

Chapter 5. On the four humors of the body.

1. Health is the integrity of the body and the compound (*temperantia*) made by nature from hot and moist which is the blood, whence also it has been named *sanitas*, as it were *sanguinis status* (state of the blood).

2. Under the general name of *morbus* (disease) all disorders of the body are embraced, to which the ancients gave the name of *morbus* in order to indicate by the very name the power of death (*mortis*) which arises from it. Between health and disease the mean is cure, and unless it harmonizes with the disease it does not lead to health.

3. All diseases arise from the four humors, that is, from blood, bile, black bile, and phlegm. Just as there are four elements so also there are four humors, and each humor imitates its element: blood, air; bile, fire; black bile, earth; phlegm, water. There are four humors, as four elements, which preserve our bodies.

4. *Sanguis*[284] (blood) took its name from a Greek source, because it invigorates, sustains and gives life

to the body. *Cholera*[285] (bile) the Greeks named because it is ended in the space of one day, whence it was named *cholera*, that is, *fellicula*, that is, effusion of bile (*fel*). For the Greeks call bile χολή.

5. *Melancholia* (black bile) is named because an abundance of bile has been mixed with the dregs of black blood....

6. *Sanguis* in the Latin is so-called because it is *suavis*, whence men in whom *sanguis* is predominant are pleasant and bland.

7. *Phlegma* they have named because it is cold. For the Greeks call cold φλέγμονα. According to these four humors the well are governed, and from them the diseases of the infirm arise. For when they have grown too great beyond the course of nature, they cause illnesses.

8. From blood and bile acute disorders come, which the Greeks call ὀξέα; from phlegm and black bile troubles of long standing, which the Greeks call χρόνια.

Chapter 6. On acute diseases.

1. *Oxea* is acute disease which either quickly passes or more quickly kills, as pleurisy, phrensy, for ὀξὺ in Greek means swift and sharp. χρόνια is prolonged bodily disease which lingers through many seasons, as gout, phthisis.... Certain disorders have received their names from causes proper to them.

2. *Febris* (fever) is derived from *fervor*, for it is an excess of heat.

3. Frenzy is so-called because the mind is affected, since the Greeks call the mind φρένες, or else because they gnash (*infrendant*) with the teeth, for *frendere* means to strike the teeth together. It is excitement with exasperation and dementia caused

by the power of bile.

17. Pestilence is a contagion, and when it seizes one it quickly passes to more. It is produced from a corruption of the air, and makes its way by penetrating into the inward parts. Although this is generally caused by the powers of the air, still it is certainly not caused against the will of Omnipotent God.... It is a disease so acute that it affords no time to hope for life or death, but a sudden weakness and death come at the same moment.

Chapter 7. On chronic diseases.

3. *Scotoma* took its name from an accidental quality, because it brings a sudden darkness to the eyes along with a whirling (*vertigo*) of the head. Now there is a whirling as often as the wind rises and starts the dust going round and round.

4. So too in man's head the air passages[286] and the veins produce a windiness from the resolving of moisture[287] and make a whirling in his eyes whence *vertigo* is named.

5. Epilepsy took its name because while seizing the mind it also holds the body. For the Greeks call seizure ἐπιλημψία. And it comes from the melancholy humor whenever it becomes abundant and has turned toward the head. This disorder is also called *caduca* (the falling sickness), because the sick man falls and suffers from spasms.

6. The common herd call these also *lunatici* because their madness[288] comes upon them according to the course of the moon....

Chapter 8. On diseases that appear on the surface of the body.

11. Leprosy is a scaly roughness of the skin, like *lepidus* (pepper-wort), whence it took its name, and its color now turns to black, now to white, now to

red. On the body of a man leprosy is diagnosed in this way, if a varied color appears here and there between sound parts of the skin, or if it spreads everywhere in such a way as to make all of one unnatural color.

12. The *morbus elephantiacus*[289] is so called from the resemblance to an elephant, whose naturally hard and rough skin gave the name to the disease among men, because it makes the surface of the body like the hide of an elephant; or it may be because it is a great disorder, like the animal itself from which it has derived its name.

Chapter 9. On remedies and medicines.

1. The curative power of medicine must not be despised. For we remember that Isaiah sent something of medicinal nature to Hezekiah when he was sick, and Paul the apostle said a little wine was good for Timothy.

3. There are three kinds of cures in all. The first is the dietetic; the second, the pharmaceutical; the third, the surgical. Diet (*diaeta*) is the observance of the law of life. Pharmacy is curing by medicines. Surgery is cutting with the knife; for with the knife is cut away that which does not feel the healing of medicines....

5. Every cure is wrought either by contraries or by likes. By contraries, as cold by warm and dry by moist, just as in man pride cannot be cured except by humility.

6. By likes, as a round bandage is put on a round wound, or an oblong one on an oblong wound. For the very bandage is not the same for all wounds, but like is fitted to like....

7. *Antidotum* in the Greek means in the Latin *ex contrario datum*. For contraries are cured by

contraries in the medical system. On the other hand likes are cured by likes, as for example, πικρὰ which means bitters because its taste is bitter. It received a suitable name because the bitterness of disease is dispelled by its bitterness.

Chapter 13. On the beginning of medicine.[290]

1. Inquiry is made by certain why the art of medicine is not included among the liberal disciplines. Because of this, that they embrace separate subjects, but medicine embraces all. For the physician is commanded to know grammar, in order to be able to understand and set forth what he reads.

2. In like manner rhetoric, too, that he may be able to define by true arguments the diseases which he treats. Moreover logic, to scrutinize and cure the causes of infirmities by the aid of reason. So, too, arithmetic, on account of the number of hours in paroxysms and of the days in periods.

3. In the same manner geometry, on account of the qualities of districts and the situations of places, in respect to which it teaches what one ought to observe. Moreover, music will not be unknown to him, for there are many things that are read of as accomplished by this discipline in the case of sick men, as it is read of David that he saved Saul from an unclean spirit by the art of melody. The physician Asclepiades, too, restored one who was subject to frenzy to his former health by music.

4. Lastly, he will know astronomy, by which to contemplate the system of the stars and the change of the seasons, for as a certain physician says, our bodies change too, along with the qualities of the heavens. Hence it is that medicine is called “a second philosophy”. For both disciplines claim the whole man. For as by one the soul is cured, so is the body

by the other.

BOOK V

ON LAWS[291]

INTRODUCTION

THERE was a marked difference between the development of law and that of the other subjects so far treated by Isidore in the *Etymologies*. The latter were of Greek origin, and, with the exception of rhetoric, they appeared as strangers in the Roman environment and never formed an integral part of Roman culture. Instead, they suffered from continuous decay, and by the time of the disintegration of the Roman state they were reduced to such a condition that the "fall of Rome" meant nothing to them. On the other hand, law was an indigenous product of Roman society, upon which the Roman intellect had expended its greatest and most successful efforts, and although it inevitably shared in the general intellectual deterioration of the time, and showed a marked decline after the period of the great jurists, the beginning of its rapid decay is coincident in each section of western Europe with the close of Roman rule. Thus "the fall of Rome" played much the same part in the history of law as the transition from a Greek to a Roman environment had done for the bulk of the intellectual possession of the ancient civilization. After this event law was on terms of equality with the other branches of

knowledge, and within two centuries, as judged by its presentation in the *Etymologies*, it was reduced to as low an estate as they.

Isidore's *De Legibus* is divided into two distinct parts. The first is of a general nature, and embraces such topics as law-givers, *jus civile*, *jus gentium*, *jus naturale*, why laws are made, and what character a law ought to have. The second part is more specific; it treats of legal instruments, the law of property, crimes, and punishments. The whole forms a scholastic conglomerate of elements derived from every stage in the development of Roman law and exhibits a point of view that is philological and Christian as much as legal.

Because of its importance in the history of law, this book of the *Etymologies* has been subjected to more detailed study than any other, but in spite of this its sources have not been clearly determined. In addition to the Scriptures and Isidore's authorities on word derivation, he is believed to have drawn on the *Breviarium Alaricianum*, the Theodosian code, the text-books of Gaius and Ulpian, and the *Sentences* of Paulus. Although the Justinian code was issued a century before the compilation of the *Etymologies*, it seems improbable that Isidore made any use of it, or had even heard of it.[292]

The purpose of the *De Legibus* was, no doubt, to serve as a text-book.[293] The amount of space given to it, which is about the average of that allotted to each of the liberal arts, and the fact that it treats of law in a general way, point to this conclusion. Its position in the *Etymologies*, following, with Medicine, immediately after the liberal arts, is also an indication of its educational character. The best proof of this, however, is found in the number of separate manuscripts in which the *De Legibus* is

reproduced in a catechetical form.[294] At least eight of these are in existence, and the earliest of them is attributed to the ninth century.

EXTRACTS

Chapter 1. On law-givers.

1. Moses first of all set forth the divine laws in the sacred writings for the Hebrew people. King Phoroneus was the first to establish laws and courts for the Greeks.

2. Mercurius Trismegistus first gave laws to the Egyptians. Solon first legislated for the Athenians. Lycurgus first made rules of law for the Lacedaemonians and pretended Apollo's authority for them.

3. Numa Pompilius, who succeeded Romulus in the kingdom, was the first to give laws to the Romans. Later, when the people could not endure their quarrelsome magistrates they appointed decemvirs to write the laws, and they translated the laws from the books of Solon into the Latin language, and set them up on twelve tables.

4. These men were A. Claudius, T. Genutius, P. Sextius, Spur. Viturius, C. Julius, A. Manlius, Ser. Sulpitius, P. Curiatius, T. Romilius, Sp. Postumius. These were the decemvirs chosen to write the laws.

5. The consul Pompeius was the first who wished to arrange the laws systematically, but he did not persevere, through fear of detractors. Then Caesar began to do it, but he was slain.

6. By degrees the old laws became obsolete through time and neglect; but a mention of them seems necessary although they are not in use now.

7. The new laws began with the emperor Constantine and the rest who followed him, but they

were confused and in disorder. Later, in imitation of Gregorianus and Hermogenianus, the younger Theodosius arranged a code of constitutions from the time of Constantine, under the title of each emperor, which he called Theodosian from his own name.

Chapter 2. On laws human and divine.

1. All laws are either divine or human. Divine laws depend on nature, human laws on customs; and so the latter differ, since different laws please different peoples. Divine law is *fas*; human law is *jus*. To pass through another's property is of divine but not of human law.

Chapter 3. On the difference between *jus*, *leges*, *mores*.

1. *Jus* is the general term and *lex* is a kind of *jus*. *Jus* is so-called because it is just (*justum*). All *jus* is made up of laws and customs.

2. *Lex* is the written ordinance. *Mos* is custom approved by its antiquity, or unwritten *lex*. For *lex* is derived from *legere* (to read), because it is written.

3. *Mos* is old custom and is drawn merely from *mores*. *Consuetudo* (custom) is a sort of *jus* established by *mores*, which is taken instead of *lex* when *lex* fails. And it makes no difference whether it depends on writing or reason, since reason commends written law also.

4. Moreover if *lex* is in accordance with reason, all that is in accordance with reason will be *lex*, as far as it agrees with religion, is in harmony with knowledge, and is beneficial for salvation. And *consuetudo* is so-called because it is in common use.

Chapter 4. On *jus naturale*.

1. *Jus* is either natural, or civil, or universal (*jus gentium*). *Jus naturale* is what is common to all

peoples, and what is observed everywhere by the instinct of nature rather than by any ordinance, as the marriage of man and woman, the begetting and rearing of children, the common possession of all, [295] the one freedom of all, the acquisition of those things that are taken in the air or sea or on the land.

2. Likewise the restoring of property entrusted or lent, the repelling of violence by force. For this, or whatever is like this, is nowhere considered unjust, but natural and fair.

Chapter 5. On *jus civile*.

1. *Jus civile* is what each people or state has enacted as its own law, for human and divine reasons.

Chapter 6. On *jus gentium*.

1. *Jus gentium* is the seizing, building, and fortifying of settlements, wars, captivities, servitudes, postliminies, treaties, peaces, truces, the obligation not to violate an ambassador, the prohibition of intermarriage with aliens. And [it is called] *jus gentium* because nearly all nations observe it.

Chapter 7. On *jus militare*.

1. *Jus militare* is the ceremony of beginning war, the obligation in making a treaty, the going out against the enemy when the signal is given, and the joining of battle; likewise the retreat when the signal is given; likewise the punishment of a soldier's fault if a post should be deserted. Likewise the amount of pay, the grades of office, and the honor of rewards, as when a crown or a necklace is given.

2. Likewise the determination of the booty, and the just division according to rank of persons and labors undergone, likewise the share of the commander.

Chapter 8. On *jus publicum*.

1. *Jus publicum* has to do with sacred things, and priests and magistrates.

Chapter 9. On *jus quiritium*.

1. *Jus quiritium* is the law proper to the Romans, by which none is bound but the *Quirites*, that is, the Romans, as in regard to inheritances, declarations of entry upon inheritances, guardianships, acquiring by prescription; which laws are found among no other people, but they are proper to the Romans and made for them alone.

2. The *jus quiritium* is made up of laws, plebiscites, decrees of the senate, constitutions and edicts of emperors and opinions of jurists.

Chapter 10. On *lex*.

1. *Lex* is the enactment of the people, by which the elders, together with the plebeians, passed some law.

Chapter 11. On plebiscites.

1. Plebiscites (*scita*) are what the common people alone enact....

Chapter 12. On the *senatus consultum*.

1. A *senatus consultum* is that which the senators alone determine in council for the people.

Chapter 13. On the constitution or edict.

1. A constitution or edict is what the king or emperor enacts or proclaims.

Chapter 14. On the responses of the jurists (*responsa prudentum*).

1. They are the responses which the jurisconsults are said to make to men who consult them. From this

the responses of Paulus were so named. For there were certain wise men and judges of equity who composed and published institutions of civil law, by which they settled the suits and contentions of disputants.

Chapter 15. On consular and tribunitian laws.

1. Certain laws are named from those who secured their enactment, as consular, tribunitian, Julian, Cornelian. Papius and Poppaeus, *consules suffecti*[296] under Caesar Octavianus, carried a law which was called from their names *Papia Poppaea*, offering rewards to fathers for rearing children.

2. Under the same emperor, Falcidius, a tribune of the people, carried a law that no one should bequeath property in such a way that a fourth, at least, should not remain for the heirs. And it was named the *lex Falcidia* from him. Aquilius also secured the passage of a law which is called *Aquilia* to the present time.

Chapter 16. On the *lex satyra*.

1. A *lex satyra* is one which speaks at the same time of many things, being so called from the abundance of things, as it were from *saturitas* (fullness); whence to write satire is to compose poems with varied contents, as those of Horace, Juvenal, and Persius.

Chapter 17. On the Rhodian laws.

1. The Rhodian laws are the laws of commerce on the sea, being so called from the island of Rhodes where was a great trade in ancient times.

Chapter 18. On privileges.

1. Privileges (*privilegia*) are laws applying to individuals, private laws, as it were. For *privilegium* is

so called because it is applied to a private person (*in privato feratur*).

Chapter 19. What law can do.

1. Every law either permits something, as that a brave man should compete for a prize, or forbids, as that no one should be allowed to ask the sacred maidens in marriage, or punishes, as that he who has committed murder should suffer capital punishment. For human life is governed by the reward or punishment of the law.[297]

Chapter 20. Why law was made.

1. Laws were made in order that the boldness of men may be checked by fear of them, and innocence be safe among the wicked, and the power of harm bridled among the wicked by the dread of punishment.

Chapter 21. What law ought to be.

1. Law will be honorable, just, possible, according to nature, according to the custom of the country, adapted to the place and time, necessary, useful, clear also, lest it contain anything in its obscurity that tends to fraud, drawn up for no one's private advantage, but for the common good of all citizens.

Chapter 24. On legal instruments.

1. *Voluntas* (will) is the general name for all legal instruments, and it has received this name because it issues from free will, not from compulsion.

2. *Testamentum* (will) is so named because, unless the testator dies, what is written in it cannot be established or known, since it is closed and sealed; and it is called *testamentum* because it is not in effect until the burial of the testator (*testatoris monumentum*); whence the Apostle says: *Testamentum*

in mortuis confirmatur.

3. *Testamentum* has not only this meaning in the Holy Scriptures, that it is in effect only when the testators are dead, but they also called every agreement (*pactum et placitum*) *testamentum*; for Laban and Jacob made a *testamentum* which was certainly to be in effect while they were living. And in the Psalms is read: *Adversum te testamentum disposuerunt*; and many others of the sort.

4. The *tabulae* of a will are so called because not only wills but letters were written on hewn *tabulae* (boards) before paper and parchment were used. Whence letter-carriers are called *tabularii*.

5. The testament of the civil law is made valid by the signature of five witnesses.

6. The testament of the praetorian law is sealed with the seals of seven witnesses; the former testament is made in the presence of citizens, and from that is called *civile*; the latter in the presence of the praetors, and thence is of the praetorian law.

7. A *testamentum holographum* is one wholly written and signed in the hand-writing of the maker. From this it got its name. For the Greeks use the word ὅλον for whole, and γραφή for writing.

8. A testament has no legal force if its maker has forfeited his civil rights, or if it has not been made in due form.

9. A testament is *inofficiosum* where an attempt has been made to disinherit the children and recourse has been had to persons outside [the family] without regard to the duty of natural affection.[298]

10. The *testamentum ruptum* is so named because it is made void through the birth of a posthumous child who is neither disinherited nor made an heir by name.

11. A testament is suppressed when it is not publicly made known, to the injury of heirs or legatees or freedmen; and although it is not kept secret, it nevertheless is thought to be suppressed if it is not made known to the aforesaid persons.

12. *Nuncupatio* (nuncupative will) is when the testator reads the will aloud, saying: "These things I thus give and bequeath as they are written on these tablets and on this wax; and do you Roman citizens be my witness", and this is called *nuncupatio*. For *nuncupare* means to name and confirm openly.

13. The *jus liberorum* is the right of childless couples to name each other as heir in the place of children.

23. *Emptio* (purchase) and *venditio* (sale) is an exchange of goods and a contract arising from agreement.

24. *Emptio* (purchase) is so called because it is *a me tibi* (from me to you); *venditio* is as it were *venundinatio*, that is, from *nundinae* (market day).

27. *Donatio usufructuaria* is so named because the giver retains the usufruct of the thing, the title vesting in him to whom it has been given.

Chapter 25. On property (*rebus*).

3. *Res* is derived from possessing rightly (*recte*); *jus* from possessing justly (*juste*).... What is wickedly possessed is not the owner's. He possesses wickedly who uses his own wickedly or takes possession of another's.... He who is captured by greed is possessed, not possessing.

4. *Bona* belong to the honorable or noble, and they are called *bona* so that they may not have a base use but men may use them for good things.

5. *Peculium* belongs properly to minors or slaves. For *peculium* is that which the father or master allows

his son or slave to treat as his own....

ON TIMES[299]

INTRODUCTION

To the early and medieval Christian chronology was a subject of absorbing interest. For him the course of the world's history was authoritatively laid down in the Biblical account, and looking back over it he thought he saw that it was passing by well-marked stages to an end that was to be as sharply defined as its beginning had been. It was inevitable that there should be an attempt to plot its progress and even to form some general notion as to its end. For this purpose the Greek chronology was accepted in its entirety and extended by a set of extravagant assumptions, acceptable to the uncritical minds of the time, back to the beginning of the world. By this means an authoritative chronological exposition of past time was secured, such as under wise interpretation would disclose more clearly the rate and manner in which God's purpose was working itself out.[300]

The chronology presented by Isidore traces the course of time along the line of the Roman emperors from Heraclius back to Julius Caesar, and then by way of the Ptolemaic dynasty to Alexander the Great. Here a transition is made to the Persian kings, who are followed back to Darius near the beginning of the fifth age. The four ages between the captivity of the Jews and the creation are marked by Biblical personages only.

There are two matters of importance to be noted

in connection with the *De Temporibus*.[301] Isidore is the first to introduce into formal chronology the division of the world's history into six ages. The idea was not his, however; he was merely putting into practice a suggestion given repeatedly in Augustine's writings,[302] and used by Orosius in his *History Against the Pagans*. In the second place, it should be remarked that Isidore shows no signs of being aware of the proposal of Dionysius Exiguus for an era beginning with the birth of Christ. It is true that Isidore's sixth age is supposed to begin at that time, —although as a matter of fact it begins at the death of Julius Caesar,[303]—but his era is a world era beginning at the creation.

EXTRACTS

Book V, Chapter 28. On the word *chronica*.

1. *Chronica* is the Greek word which in Latin is rendered *series temporum* (succession of times), such as Eusebius, bishop of Caesarea, wrote in Greek and the priest Hieronymus translated into Latin; for χρόνος in Greek is translated by *tempus* in the Latin.

Chapter 29. On moments and hours.

1. Time is divided into moments, hours, days, months, years, lusters, generations (*saecula*), ages. A moment is the least and briefest time, so-called from the motion (*motu*) of the stars.

2. ... *Hora* is a Greek name and still has a Latin sound. For *hora* is a limit (*finis*) of time, just as *horae* are the limits of the sea and of streams and the borders of garments.[304]

Chapter 30. On days.

5. The days are named from the gods (*dii*) whose

names the Romans bestowed on certain heavenly bodies. They named the first day from Sol, which is the chief of the heavenly bodies just as this same day is the chief of all the days.

6. The second they named from Luna, which is next to Sol in splendor and size and borrows its light from it. The third they named from the star of Mars, which is called Pyrois; the fourth, from the star of Mercurius, which certain ones name Stilbon.

7. The fifth, from the star of Jupiter, which they call Phaeton; the sixth, from the star of Venus, which they call Lucifer, which has more light than all the other stars.

The seventh day, from the star of Saturnus, which being placed in the seventh heaven is said to complete its course in thirty years. And the heathen gave names to the days from the seven stars because they thought that some influence was active upon themselves through the same [stars], saying that they had life (*spiritus*) from Sol, body from Luna, ability and eloquence from Mercurius, pleasure from Venus, blood from Mars, self-control (*temperantia*) from Jupiter, and the humors from Saturn. Such indeed was the folly of the heathen who created such ridiculous imaginations. But among the Hebrews the first day is called *una Sabbati*, which among us is *dies Dominicus*, which the heathen have dedicated to Sol. The second day of the week is *secunda Sabbati*, which the heathen call *dies Lunae*; the third day of the week, *tertia Sabbati*, which they call *dies Martis*; the fourth day of the week, *quarta Sabbati*, which is called *Mercurii dies* by the pagans; the fifth day of the week, *quinta Sabbati*, that is, fifth day from *dies Dominicus*, which among the heathen is called *dies Jovis*: the sixth day of the week, *sexta Sabbati*, which is called by them *dies Veneris*. The seventh from *dies*

Dominicus is *Sabbatum*, which the gentiles have devoted to Saturnus and have named *dies Saturni*. Sabbatum is translated from the Hebrew into the Latin as *requies*, because God rested on that day from all his works.

The ecclesiastical method of speaking the names of the days comes better from the lips of Christians; still, if custom should perchance influence anyone so that what he disapproves of in his heart comes forth from his mouth, let him know that all those from whom these days were named were men, and on account of certain services of a human sort (*mortalia*), since they were very powerful and were prominent in this world, divine honors were bestowed on them by their admirers, both in respect to the days and the stars, but first the stars were named after men and then the days were named after the stars.

Chapter 31. On night.

1. *Nox* is derived from *nocere* (to injure) because it injures the eyes. And it has the light of the moon and stars in order that it may not be without beauty, and that it may comfort all who work by night, and that the light may be sufficiently tempered for certain creatures that cannot endure the light of the sun.

3. Night is caused either because the sun is worn out with his long journey and is weary when he comes to the last stretch of heaven and blows out his weakened fires; or because he is driven under the lands with the same force with which he carried his light over them, and thus the shadow of the earth makes night. Whence Virgilius says:

Ruit Oceano nox
Involvens umbra magna terramque polumque.

Chapter 33. On months.

1. The word *mensis* is Greek, being derived from the word for moon. For in the Greek language the moon is called μήνη; whence among the Hebrews the regular (*legitimi*) months are reckoned not from the circle of the sun, but from the course of the moon, which is from new moon to new moon.

2. Because of the swifter course of the moon and the fear that an error of reckoning might arise because of its speed, the Egyptians began to reckon the day of the month from the course of the sun, since the slower course of the sun could be comprehended more easily.

Chapter 34. On the solstices and equinoxes.

2. There are two solstices: first, the summer solstice, eight days before the Kalends of July, from which time the sun begins to return to the lower circles; the second, the winter solstice, eight days before the Kalends of January, when the sun begins to make for the higher circles, whence the day of the winter solstice is the shortest and that of the summer solstice the longest.

3. Likewise there are two equinoxes: one in the spring and the other in the autumn, which the Greeks call ἰσημερίαι. These equinoxes are the eighth day before the Kalends of April and the eighth day before the Kalends of October, because the year formerly was divided into two parts only, that is, into the summer and the winter solstice, and into two hemispheres.

Chapter 35. On the seasons.

1. There are four seasons of the year: spring, summer, autumn, winter. And they are called seasons (*tempora*) from tempering,[305] since they are tempered in turn by moisture, dryness, heat, and

cold.

2. It is known that after the creation of the universe the seasons were divided into three months each, according to the quality of the sun's course.... And the ancients make the following divisions of these seasons: in the first month spring is called *novum*, in the second, *adultum*, in the third, *praeceps*. [306]

7–8. These seasons are assigned also to separate parts of the heavens. The spring is given to the Orient, because then all things arise (*oriuntur*) from the earth; summer to the South, because its division is more intense in its heat; winter to the North, because it is torpid with colds and perpetual frost; autumn to the Occident, because it has serious diseases. Whence, too, the leaves of the trees fall. The bordering of cold and heat and the contending of opposite airs causes the autumn to abound in diseases.

Chapter 36. On years.

1. The year is the circle of the sun when it returns to the same place in relation to the stars, after three hundred and sixty-five days....

3. There are three kinds of years. For the year is the lunar, of thirty days, the solstitial, which contains twelve months, or the great year, when all the planets return to the same place, which happens after many solstitial years.

Chapter 38. On generations and ages.

5. Age (*aetas*) is used properly in two ways: for it is either the age of man, as infancy, prime, old age; or the age of the world, whose first age is from Adam to Noe; the second, from Noe to Abraham; the third, from Abraham to David; the fourth, from David to the migration of Judah to Babylon; the fifth, from

then to the coming of the Saviour in the flesh; the sixth, which is now in progress and which will continue until the world is ended.

6. Julius Africanus was the first of our [writers] to set forth in the style of simple history, in the time of Marcus Aurelius Antoninus, the passing of these ages by generations and reigns. Then Eusebius, bishop of Caesarea, and the priest Hieronymus of holy memory, published a complex history of chronological tables, using reigns and dates at the same time.[307]

7. Then others, among them especially Victor, bishop of the church of Tununa, reviewed the histories of earlier writers and filled out the deeds of subsequent ages down to the consulate of the second emperor Justinus.

8. We have noted with what brevity we could the total of these times from the beginning of the world to the emperor Augustus Heraclius and Suinthilanus, king of the Goths, adding at the side a column of dates by the evidence of which the total of past time may be known.

Chapter 39. On the ordering of times (chronology). [308]

1. The first age contains at its beginning the creation of the world. On the first day under the name of light God created the angels; on the second, under the name of firmament, the heavens; on the third, under the name of parting, the waters and the land; on the fourth day, the lights of heaven; on the fifth, living things of the waters; on the sixth, living things of the land and man, whom he called Adam.

[Years]

2. Adam in his 230th year begat Seth, from whom [sprang] the children of God. 230

Seth in his 205th year begat Enos, who began to call upon the name of the Lord. 435

Enos in his 190th year begat Cainan. 625

Cainan in his 170th year begat Malaleel. 795

Second Age

5. Sem in the second year after the flood begat Arphaxad, from whom sprang the Chaldeans. 2244

Arphaxad in his 135th year begat Sala, from whom sprang the Samaritans and Indians. 2379

Sala in his 130th year begat Heber, from whom sprang the Hebrews. 2509

6. Heber in his 144th year begat Phaleg. The tower was built. 2643

Phaleg in his 130th year begat Ragan. The gods are first worshiped. 2773

Ragan in his 132nd year begat Seruch. The kingdom of the Scythians begins. 2905

7. Seruch in his 130th year begat Nachor. The king of the Egyptians appears. 3035

Nachor in his 79th year begat Tharam. The kingdom of the Scythians and the Sycionii appears. 3114

Tharam in his 70th year begat Abraham. Zoroaster discovered magic. 3184

Third Age

12. Abdon ruled eight years. Troy was captured. 4025

Samson ruled twenty years. Ascanius founded Alba. 4045

The priest Eli ruled forty years. The ark of the covenant was captured. 4085

Samuel ruled forty years. Homer is believed to have lived at this time. 4125

Fourth Age

13. David ruled forty years. Carthage is founded by Dido. Gad, Nathan and Asaph prophesied. 4165

Solomon ruled forty years. The temple at Jerusalem was built. 4205

Fifth Age

19. The captivity of the Hebrews, seventy years. Judith writes history. 4680

Darius, thirty-four years. The captivity of the Jews is ended. 4714

Xerxes, twenty years. The tragedians Sophocles and Euripides are famous. 4734

20. Artaxerxes, forty years. Esdras renews the law which was burned. 4774

Darius, called also Nothus, nineteen years. This time possessed Plato and Gorgias, the first teacher of rhetoric. 4793

25. Ptolemaeus, eight years. The art of rhetoric begins at Rome. 5118

Dionysius, thirty years. Pompey takes Judaea. 5148

Cleopatra, two years. Egypt is conquered by the Romans. 5150

Julius Caesar, five years. He was the first to possess sole authority. 5155

Sixth Age

26. Octavian, fifty-six years. Christ is born. 5211

Tiberius, twenty-three years. Christ is crucified. 5234

Caius Caligula, four years. Matthew wrote his gospel. 5238

27. Claudius, fourteen years. Mark published his gospel. 5252

Nero, fourteen years. Peter and Paul are put to death. 5266

Vespasian, ten years. Jerusalem was destroyed by Titus. 5266

41. Tiberius, six years. The Lombards take Italy. 5779

Mauritius, twenty-one years. The Goths become Catholic. 5800

Phocas, eight years. The Romans are defeated by the Persians. 5808

42. Eraclius is now governing the empire in his seventeenth year.

The Jews in Spain are being made Christian. The remainder of the sixth age is known to God alone.

BOOKS VI-VIII

THEOLOGY[309]

INTRODUCTION

AFTER the five books devoted to the seven liberal arts there follow three which are grouped together by unity of subject and are sharply differentiated from the remainder of the *Etymologies*, which is prevailingly secular in tone. The contents of these three form a summary of the non-secular thought of the time.[310] Their presence in the midst of an encyclopedia of secular learning is to be explained, as we have seen, by the probability that their purpose was educational, and that they are to be regarded as the texts of the final stage in the priestly training. They thus form the conclusion of Isidore's educational encyclopedia.[311]

ANALYSIS

I. The books and services of the Church (Book VI).
   1. The Old and New Testaments (ch. 1).
   2. The writers and names of the holy books (ch. 2).
   3. Books (chs. 3–14).
      a. Libraries.
      b. Translators.

c. Writers of many books.
d. Kinds of books.
e. Writing materials.

4. The canons of the Gospels (ch. 15).
5. The canons of the Councils (ch. 16).
6. The Easter cycle and other feasts (ch. 17).
7. The services of the Church (ch. 18).

II. God, the angels and the orders of the faithful (Book VII).

1. God (ch. 1).
2. The Son of God (ch. 2).
3. The Holy Spirit (ch. 3).
4. The Trinity (ch. 4).
5. The angels (ch. 5).
6. The meaning of biblical names (chs. 6–10).
7. Martyrs (ch. 11).
8. The clergy (ch. 12).
9. Monks (ch. 13).
10. The remainder of the faithful (ch. 14).

III. The Church and the different sects (Book VIII).

1. The Church and the synagogue (ch. 1).
2. Religion and faith (ch. 2).
3. Heresy (chs. 3–5).
   a. The heresies of the Jews.
   b. The heresies of the Christians.

4. Heathen philosophers (ch. 6).
5. Poets (ch. 7).
6. Sibyls (ch. 8).
7. Magi (ch. 9).
8. Pagans (ch. 10).
9. Heathen gods (ch. 11).

BOOK VI
On the Books and Services of the Church

EXTRACTS

Chapter 1. On the Old and New Testaments.

1. The Old Testament is so-called because when the New came it was at an end, of which the Apostle speaks: Vetera transierunt, et ecce facta sunt omnia nova.

2. The New Testament is so-called because it brings in the new. For men do not learn it, except those renewed from their former state through grace and now belonging to the New Testament, which is the kingdom of heaven.

3. The Hebrews accept on Esdras' authority twenty-two books of the Old Testament, according to the number of their letters,[312] dividing them into three series, namely, the Law, the Prophets, and the Hagiographi.

4. The first series of the Law is accepted in five books, of which the first is Beresith, which is Genesis; the second, Veele Samoth, which is Exodus; the third, Vaicra, which is Leviticus; the fourth, Vajedabber, which is Numbers; the fifth, Elleaddebarim, which is Deuteronomy.

6. The second series is that of the Prophets, in which eight books are contained, of which the first is

Josue Ben-Nun, which in Latin is called Jesu Nave; the second, Sophtin, which is Judges; the third, Samuel, which is the first of Kings; the fourth, Malachim, which is the second of Kings; the fifth, Isaias; the sixth, Jeremias; the seventh, Ezechiel; the eighth, Thereazer, which is called 'Of the Twelve Prophets,' which books are taken as one since they are placed together on account of their brevity.

7. The third is the series of the Hagiographi, that is, those who write what is holy, in which are nine books, of which the first is Job; the second, the Psalms; the third, Misse, which is the Proverbs of Solomon; the fourth, Cohaleth, which is Ecclesiastes; the fifth, Sir Hassirim, which is the Song of Songs; the sixth, Daniel; the seventh, Dibrehajamin, which is Verba dierum, *i.e.*, Paralipomenon (Chronicles); the eighth, Esdras; the ninth, Esther. And all of these together, five, eight, and nine, make twenty-two just as they were inclusively given above.

8. Certain add Ruth and Cinoth, which in the Latin is Lamentatio Jeremiae, to the hagiographa and make twenty-four volumes of the Old Testament, like the twenty-four elders who stand in the sight of the Lord.

9. There is with us a fourth series consisting of those books of the Old Testament which are not in the Hebrew canon. Of which the first is the book of Wisdom (Sapientiae); the second, Ecclesiasticus; the third, Thobias; the fourth, Judith; the fifth and sixth, of the Machabees. Although the Jews set these aside as apocryphal, still the church of Christ honors and preaches them among the divine books.

10. In the New Testament are two series: first the Evangelic, in which are Matthew, Mark, Luke and John; second, the apostolic, in which are Paul in fourteen epistles, Peter in two, John in three, James

and Jude in one each, the Acts of the Apostles and the Apocalypse of John.

11. Moreover the whole of each Testament is triply divided, that is, into history, morals, and allegory. Again those three have many divisions, for example, what was done and said by God, what by the angels, or by men, what was foretold by the prophets of Christ and his body; what of the devil and his members; what of the old and the new people; what of the present age, and the coming kingdom, and the judgment.

Chapter 2. On the writers and names of the sacred books.

1. These are said to be the authors of the Old Testament according to the Hebrew tradition. First Moses wrote a cosmography of divine history in five volumes, which is named Pentateuch.

8. The book of Josue received its name from Jesus, son of Nave, whose history it contains, and the Hebrews assert that the same Josue was its writer, in the text of which, after the crossing of the Jordan, the kingdoms of the enemy are overthrown and the land divided among the people, and by the separate cities, villages, mountains and boundaries the spiritual realms of the church and the heavenly Jerusalem are prefigured.

18. Solomon, son of David, king of Israel, wrote three volumes according to the number of his names, of which the first is in Hebrew Misle, which the Greeks name Parabolae, the Latins, Proverbia, because in it he sets forth figurative expressions and likenesses of the truth under the form of a parallel.

19. The truth itself he has reserved to its readers to understand. The second book is called Coheleth, which in the Greek is Ecclesiastes, in Latin,

Concionator, because its discourse is not especially addressed to one, as in Proverbs, but generally to all, teaching that all things which we see in the universe are perishable and short-lived, and for this reason little to be desired.

20. The third book he called Sir hassirim, which is translated Cantica Canticorum in the Latin, where in a marriage song he sings in mystic fashion the union of Christ and the church....

21. The songs in these three books are said to be written in hexameter and pentameter verse as Josephus and Hieronymus say.

40. These are the four Evangelists whom the holy spirit indicated in Ezechiel in the four animals. And there are four animals, because the faith of the Christian religion is spread by their preaching through the four quarters of the world.

41. And they were called animals (*animalia*) because the Gospel of Christ is preached by them on account of the soul (*anima*) of man. And they were full of eyes within and without, since they perceive that what was said by the prophets and what had been promised was being fulfilled.

42. And their legs were straight because there is nothing crooked in the Gospels. And as for the six wings apiece that cover their legs and faces, those things which were hid are revealed at the coming of Christ.

50. These are the writers of the sacred books who, speaking by the holy spirit for our edification, wrote both the precepts of living and the rule for believing.

51. In addition to these there are other volumes called apocrypha, and they are called apocrypha, that is, set aside, because they are doubted. For their origin is hidden and was not clear to the Fathers

from whom the authority of the genuine scriptures has come down to us by a most certain and well-known tradition. In these apocrypha, although some truth is found, there is no canonic authority, on account of the many things that are false, and it is rightly judged by the wise that they ought not to be believed [to be the work] of those to whom they are ascribed.

52. For many [works] were brought forward by the heretics under the name of the prophets, and many of later origin under the name of the apostles, and all of those after careful examination were separated from the authority of the canon, under the name of apocrypha.

Chapter 4. On translators.

1. This man [Ptolemy Philadelphus] asked Eleazer the high-priest for the Scriptures of the Old Testament, and had them translated from Hebrew into Greek by seventy translators, and kept them in the library of Alexandria.

2. Being placed separately in separate cells they so translated all, by the influence of the holy spirit, that nothing was found in the text of any one of them, that was different in the rest, even in the order of the words.

5. The priest, Hieronymus, being expert in the three languages, translated the Scriptures also from Hebrew into Latin and expressed them with eloquence, and his translation is rightly preferred to the rest. For it is nearer to the literal, and plainer because of the clearness of its expression, and truer, as being done by a Christian translator.

Chapter 7. Those who wrote much.

1. Marcus Terentius Varro among the Latins wrote innumerable books. Among the Greeks also

Chalcenterus is extolled with marvelous praises because he wrote so many books that no one of us could even copy in his own hand-writing as many works of other men.

2. Of our own writers, too, among the Greeks, Origen in his toil upon the Scriptures surpassed both Greeks and Latins in the number of his works. Hieronymus asserts that he had read 6,000 of his books.

3. However Augustine surpassed the zeal of all these by his genius and wisdom. For he wrote so much that no one is able in the days and nights even to read his books, far less to write them.

Chapter 16. On the canons of the councils.

5. Among the rest of the councils we know there are four venerable synods which embrace the whole faith in its chief heads, like the four Gospels or the four rivers of Paradise.

6. Of these the first, the Nicene synod of 318 bishops, was held when Constantine was emperor. In it the blasphemy of the Arian perfidy was condemned, which the same Arius gave utterance to concerning the inequality of the holy Trinity. The same holy synod in the creed defined God the son as consubstantial with God, the father.

7. The second synod of 150 fathers gathered at Constantinople under Theodosius the elder, and condemning Macedonius, who denied that the Holy Spirit was God, proved that the Holy Spirit was consubstantial with the Father and the Son, giving the form of the creed which the whole confession, Greek and Latin, preaches in the churches.

8. The third synod, the first of Ephesus, of 200 bishops, was held under Theodosius II, and it condemned with a just anathema Nestorius, who

asserted that there were two persons in Christ, and showed that the one person of the Lord Jesus Christ was immanent in the two natures.

9. The fourth synod of 630 priests was held at Chalcedon under Martianus, and it condemned by the unanimous vote of the fathers Euthyches, abbot of Constantinople, who asserted that the nature of the Word of God and of flesh was one, and his defender, Dioscorus, bishop of Alexandria, and Nestorius himself a second time, along with the remaining heretics, the same synod stating that Christ the Lord was so born of the virgin that we confess in him the substance both of the divine and of the human nature.

These four are the principal synods, stating most fully the doctrine of faith; and whatever councils there are which the holy Fathers, full of the spirit of God, have ratified, after the authority of these four, they continue established in all strength.

Chapter 17. The cycle of Easter.

10. After the completion of this [95-year cycle] [313] a return must be made to the beginning. In ancient times the church used to celebrate Easter on the 14th of the moon at the same time as the Jews, whatever day it came on; this way of celebrating the holy Fathers forbade at the council of Nicaea, giving directions to make inquiry not only for the Easter moon and month, but also to observe the day of the resurrection of the Lord, and because of this they extended Easter from the 14th of the moon to the 21st, in order that the *dies Dominicus* might not be left out.

12. The eve of Easter is spent in watching because of the coming of our King and God, that the time of the resurrection may find us not sleeping but waking.

And the reason for this night is a double one, either because he received life at that time when he suffered, or because he is to come for judgment at the same hour at which he arose.

13. And we celebrate Easter in such a way as not merely to call to memory the death and resurrection of Christ but also to consider the rest that is told about him with reference to its mystic meaning (*ad sacramentorum significationem*).

14. For on account of beginning the new life, and on account of the new man which we are bidden to put on and to put off the old, purging away the old ferment in order that we may be a new sprinkling (*conspersio*), since Christ is sacrificed as our Pascha (Passover); on account of this newness of life, then, the first month in the months of the year is mystically assigned to the Easter festival.

15. And that Easter is celebrated on a day in the third week, that is, a day that occurs between the fourteenth and twenty-first, this signifies that in the whole time of the world, which is based on the unit of seven days, this mystery has now opened a third time.

16. For the first time is before the law, the second under the law, the third under grace. Wherein the mystery before hidden in the prophetic allegory is now plain, and the resurrection of the Lord is on the third day on account of these three periods of the world.

17. As to the fact that Easter day is sought through seven days from the fourteenth to the twenty-first, this is done on account of the number seven, by which the meaning of completeness is often figured, which is also assigned to the church itself because it is universal. For this reason also John, the apostle, writes to the seven churches.

18. And by the name of the moon in the Scriptures, on account of its mutability it is signified that the church as yet is established [only] in the mortality of the flesh.

19. An observance of different opinions as to the feast of Easter sometimes produces error. For the Latins seek for the moon of the first month from the third day before the Nones of March to the third before the Nones of April, and if the fourteenth day of the moon comes on Sunday, they postpone Easter to another Sunday.

20. The Greeks observe the moon of the first month from the eighth before the Ides of March to the day of the Nones of April, and if the fifteenth day of the moon comes on the Lord's day, they celebrate Easter. A difference of this sort between them disturbs the regularity of the Easter canon.

BOOK VII
On God, the Angels, and the Orders of the Faithful

EXTRACTS

Chapter 1. On God.

1. The most blessed Hieronymus, a man of the greatest learning and skilled in many languages, first rendered into the Latin language the meaning of the Hebrew names. And leaving out many for brevity, I propose to insert certain of them in this work with their meanings in addition.

2. For the explanation of words sufficiently indicates what they mean. For certain have the reason for their names in peculiar causes. And at the beginning we set down ten names by which God is

called among the Hebrews....

Chapter 5. On angels.

2. The word angel is the name of a function, not of a nature; for they are always spirits, but are called angels when they are sent.

3. And the license of painters makes wings for them in order to denote their swift passage in every direction, just as also in the fables of the poets the winds are said to have wings on account of their velocity....

4. The sacred writings testify that there are nine orders of angels, namely, angels, archangels, thrones, dominions, virtues, principalities, powers, cherubim and seraphim. And we shall explain by derivation why the names of these functions were so applied.

5. Angels are so called because they are sent down from heaven to carry messages to men....

6. Archangels in the Greek tongue means *summi nuntii* in the Latin. For they who carry small or trifling messages are called angels; and they who announce the most important things are called archangels.... Archangels are so called because they hold the leadership among angels.... For they are leaders and chiefs under whose control services are assigned to each and every angel.

17. Certain functions of angels by which signs and wonders are done in the world are called virtues, on account of which the virtues are named.

18. Those are powers to whom hostile virtues are subject, and they are called by the name of powers because evil spirits are constrained by their power not to harm the world as much as they desire.

19. Principalities are those who are in command of the hosts of the angels. And they have received the name of principality because they send the

subordinate angels here and there to do the divine service....

20. Dominions are they who are in charge even of the virtues and principalities, and they are called dominions because they rule the rest of the hosts of the angels.

21. Thrones are the hosts of angels who in the Latin are called *sedes*; and they are called thrones because the creator presides over them, and through them accomplishes his decisions.

22. Cherubim ... are the higher hosts of angels who, being placed nearer, are fuller of the divine wisdom than the rest....

24. The seraphim in like manner are a multitude of angels, and the word is translated from the Hebrew into the Latin as *ardentes* or *incendentes*, and they are called *ardentes* because between them and God no other angels stand, and therefore the nearer they stand in his presence the more they are lighted by the brightness of divine light.

25. And they veil the face and feet of God sitting on his throne, and therefore the rest of the throng of angels are not able to see fully the essence of God, since the seraphim cover him.

28. To each and every one, as has been said before, his proper duties are appointed, and it is agreed that they obtained these according to merit at the beginning of the world. That angels have charge over both places and men, an angel testifies through the prophet, saying: “Princeps regni Persarum mihi restitit” (Dan. x. 13).

29. Whence it is evident that there is no place that angels have not charge of. They have charge also over the beginnings of all works.

30. Such is the order or classification of the angels who after the fall of the wicked stood in

celestial strength. For after the apostate angels fell, these were established in the continuance of eternal blessedness.

32. As to the two seraphim that are read of in Isaiah, they show in a figure the meaning of the Old and the New Testament. But as to their covering the face and feet of God, it is because we cannot know the past before the universe, nor the future after the universe, but according to their testimony we contemplate only the intervening time.

Chapter 6. On men who received prophetic names.

1. Most of the men of early times have the origin of their names in appropriate causes. And their names have been given in such a prophetic way that they are in harmony with either their future or their antecedent causes.

2. However we shall now examine merely their literal meaning in history, without touching on the inner meaning of the spirit.

Chapter 11. On martyrs.

4. There are two kinds of martyrs, one in open suffering, the other in the hidden virtue of the spirit. For many, enduring the lyings-in-wait of the enemy and resisting all carnal desires, have become martyrs even in time of peace, because they have sacrificed themselves in their heart to the omnipotent God, and if they had lived in time of persecution, they could have been martyrs in reality.

Chapter 12. On the clergy.

4. The order of bishops is four-fold, namely, patriarchs, archbishops, metropolitans, and bishops.

5. Patriarch in the Greek tongue means highest of the fathers, because he holds the first, that is, the Apostolic place, and he is honored by such a name

because he holds the highest office, as for example, the patriarch of Rome, Antioch or Alexandria.

BOOK VIII[314]
The Church and the Different Sects

EXTRACTS

Chapter 1. On the church and the synagogue.

4. The church began at the place where the holy spirit came from heaven and filled those who were sitting together.

5. In view of its present sojourn in strange parts the church is called Sion, because from the distant viewpoint of this sojourn it contemplates the promise of heavenly things, and therefore it has received the name Sion, that is, contemplation.

6. Moreover in view of the peace of the future land it is called Jerusalem, for Jerusalem means vision of peace. For there, all suffering ended, it shall possess with near contemplation the peace which is Christ.

Chapter 3. On heresy.

1. *Haeresis* is so-called in the Greek from choosing, because, forsooth, each one chooses for himself what seems to him to be better, as the Peripatetic philosophers, the Academic, the Epicureans, and the Stoics, or as others who, following perverse belief, have departed from the church of their own free will.

2. And so heresy is named in the Greek from its meaning of choice, since each at his own will chooses what he pleases to teach or believe. But we are not permitted to believe anything of our own will, nor to choose what someone has believed of his.

3. We have God's apostles as authorities, who did not themselves of their own will choose anything of what they should believe, but they faithfully transmitted to the nations the teaching received from Christ. And so, even if an angel from heaven shall preach otherwise, he shall be called anathema.

Chapter 5. On the heresies of the Christians.

69. There are also other heresies[315] without founders or names: some of whom believe that God has three forms; and others say that the divinity of Christ is capable of suffering; and others set a date in time to the generation of Christ by the Father. Others believe that by the descent of Christ the liberation of all[316] in the lower regions was accomplished; others deny that the soul is the image of God; others think that souls are changed to demons and to animals of every sort; others hold different views about the constitution of the universe; others think there are innumerable universes; others make water co-eternal with God; others go on their bare feet; others do not eat in company with men.

70. These heresies have arisen against the catholic faith and have been condemned beforehand by the apostles and the holy fathers, or by the councils, and while they are not consistent with one another, being divided among many different errors, they still conspire with one assent against the church of God. But whoever understands the holy Scripture otherwise than as the sense of the Holy Spirit, by whom it was written, demands, though he do not withdraw from the church, he can be still called a heretic.

Chapter 6. On the heathen philosophers.

1. Philosophers are so-called by a Greek name, which in Latin means *amatores sapientiae*. For he is a

philosopher who has a knowledge of divine and human things, and keeps wholly to the way of right living.

2. The name of the philosophers is said to have first originated with Pythagoras. For when the ancient Greeks boastfully named themselves sophists, that is, wise men, or teachers of wisdom, he was asked what he professed to be, and he modestly replied that he was a philosopher, that is, lover of wisdom, since to make a profession of wisdom seemed very arrogant.

3. And so in later times it became the practice to give only the name of philosopher, no matter how great the learning in matters pertaining to wisdom each seemed to himself or to others to possess. And these philosophers are divided into three classes: for they are either natural philosophers (*physici*), or moral (*ethici*), or rational (*logici*).

4. The natural philosophers are so-called because they treat of nature....

5. The moral philosophers are so-called because they discuss morals....

6. The rational philosophers are so named because they add reason to nature and morals.... These are divided into their schools, some having names from their founders, as *Platonici*, *Epicurei*, *Pythagorici*; others from their places of meeting, as *Peripatetici*, *Stoici*, *Academici*.

7. The *Platonici* are named from the philosopher Plato. They assert that God is the creator of souls, the angels of bodies; they say that after many cycles of years souls return to different bodies.

9. [The Stoics] assert that no one is happy without virtue. They claim that every sin is equally sinful, saying: “He is as guilty who steals chaff as he who steals gold, he who kills a waterfowl as he who

kills a horse; for it is not the thing but the spirit (*non animal sed animus*) that makes the sin."

10. These also say that the soul perishes with the body. They love the virtue of self-control, and seek eternal glory although they assert that they are not immortal.

11. The *Academici* are named from Academia, Plato's villa at Athens, where he taught. These believe that all things are uncertain; but although it must be admitted that many things which God willed to surpass the understanding of man, are uncertain and hidden from us, yet there are very many things which can be received by the senses and apprehended by man.

15. The Epicureans are named from Epicurus, a certain philosopher, a lover of vanity not of wisdom, whom the very philosophers themselves called a swine because he wallowed in carnal filth and asserted that bodily pleasure was the highest good, and even said that the universe was not formed and ruled by a divine Providence.

16. But he assigned the origin of things to atoms, that is, to indivisible material bodies, from the chance combination of which all things arise and have arisen. He said that God did nothing, that all things are corporeal, that the soul is not different from the body. And so he said, "I shall not exist after I die."

22. These errors of the philosophers have given rise also to heresies in the church....

23. When it is said that the soul perishes, Epicurus is honored; and the denial of the resurrection of the flesh is taken from all the philosophers; and where matter is put on an equality with God, it is the teaching of Zeno; and where anything is read about a God of fire, Heraclitus

comes in. The same material is used and the same errors are embraced over and over by heretics and philosophers.

Chapter 7. On poets.

1. Tranquillus thus tells why poets were so named: “When men putting off savagery first began to have a settled mode of life and to obtain a knowledge of themselves and their gods, they contrived a modest way of living and necessary words for themselves, but sought for magnificence in each for the worship of their gods.

2. And so, just as they made temples more beautiful than the homes of that time, and images larger than men’s bodies, so they thought that [the gods] must be honored with an eloquence even more stately, and they extolled their merits in splendid words and pleasure-giving verse.”

10. The function of a poet is in this, that by the aid of a figurative and indirect mode of speech he gracefully changes and transforms to a different aspect what has really taken place. But Lucan is not placed in the number of poets because he seems to have composed a history, not a poem.

Chapter 8. On the sibyls.

3. The most learned authors relate that there were ten Sibyls. Of whom the first was the Persian; the second, the Libyan; the third, the Delphian, born in the temple of the Delphian Apollo, who foretold the Trojan wars and very many of whose verses Homer inserted in his work; the fourth, the Cimmerian in Italy; the fifth, the Erythraean, Herophyla by name, born in Babylon, who foretold to the Greeks on their way to Ilium that they would perish and Homer would write lies; she was called Erythraean because her verses were found in that

island; the sixth, the Samian....

5. The seventh, the Sibyl of Cumae, who brought nine books to Tarquinius Priscus in which were written the secrets[317] of Rome....

6. The eighth, the Sibyl of Hellespont, born in Trojan territory, who is said to have lived in the days of Solon and Cyrus.... The ninth, who prophesied at Ancyra. The tenth, the Sibyl of Tibur, Albunea by name.

7. Verses of all these are published, in which it is manifestly proved that they wrote many things about God and Christ and the heathen. The Erythraean Sibyl, however, is said to be the most celebrated and famous of them all.

Chapter 9. On the magi.

1. The first of the magi was Zoroaster, king of the Bactrians, whom Ninus, king of the Assyrians, slew in battle, and of whom Aristotle writes that on the evidence of his works it is clear that he composed 2,000,000 verses.

2. This art was enlarged by Democritus many centuries later when Hippocrates was famous for his knowledge of medicine....

3. And so this vanity of the magic arts flourished during many generations in the whole world by the teaching of the bad angels, through a certain knowledge of the future and the summoning up of infernal spirits. Their inventions are divinations, auguries, the so-called oracles, and necromancy.

4. And there is no miracle in the feats of the magicians, whose arts of wickedness reached such perfection that they actually resisted Moses by wonders very like his, turning twigs to serpents and water to blood.

5. It is said that there was a very famous

magician, Circe, who turned Ulysses' companions into beasts. We also read of a sacrifice which the Arcadians offered to their god Lycaeus when all who ate of it were changed to the shapes of beasts.

6. And it is plain that the famous poet wrote of a certain woman who excelled in the magic arts: "She promises to soothe by her charms the minds of whomsoever she wishes, and to cause others cruel anxieties; to stay the current in the stream, to turn the stars back. She summons the spirits of the dead at night; you shall hear the earth bellow beneath your feet and see the ash trees come down the mountain side."[318]

7. Why should I tell further of the sorceress—if it is right to believe it—how she summoned the soul of the prophet Samuel from the secret places of hell and presented him to the gaze of the living—if we are to believe that it was the soul of the prophet and not some fantastic deceit created by the trickery of Satan.

8. Prudentius, too, tells of Mercury: "It is said that he recalled the souls of the dead to the light by the power of the wand he held, and others he condemned to death." And a little later he adds: "The wicked art can summon unsubstantial forms with its magic murmur and utter incantations over sepulchral ashes, and others it can deprive of life."

9. The magi are they who are usually called *malefici* because of the greatness of their guilt. They throw the elements into commotion, disorder men's minds, and without any draught of poison they kill by the mere virulence of a charm.

10. ... They summon demons, and dare to work such juggleries that each one slays his enemies by evil arts. They use blood also, and victims, and often touch dead bodies.

11. Necromancers are they by whose incantations the dead appear to revive and prophesy and answer questions.... To summon them blood is thrown on a corpse; for they say demons love blood, and therefore as often as necromancy is practiced blood is mixed with water, that they may be more easily attracted owing to the color of blood.

12. The *hydromantii* are so named from water. For it is hydromancy to summon the shades of demons by looking into water and to see their likenesses or mockeries, and to be told some things by them, while the pretence is made that it is actually the dead who are being questioned by the aid of blood.[319]

13. This sort of divination is said to have been introduced by the Persians. Varro says there are four kinds of divination, namely, by earth, air, water, fire; hence geomancy, hydromancy, aeromancy, pyromancy.

14. *Divini* (sooth-sayers) are so called as if they were *Deo pleni* (full of God); for they pretend that they are full of divinity and they guess men's future by a deceitful cleverness.

There are two sorts of [this] divination, skill and frenzy.

16. *Arioli* (sooth-sayers) are so named because they utter their execrable prayers at the altars (*aras*) of idols and make funeral offerings, and because of their solemn observances they receive responses from demons.

23. The *genethliaci* are so named because of their observance of natal days. They lay out men's nativities according to the twelve constellations of heaven, and by the course of the stars endeavor to foretell the characters, deeds, and fortunes of the new-born, that is, under what sign each has been born, and what result it has for the life of him who is

born.

25. At first the interpreters of the stars were called *magi*, as is read of those who announced the birth of Christ in the Gospel; later they had only the name of *mathematici*.

26. A knowledge of this art was granted up to the time of the Gospel, that when Christ was born no one after that should read the nativity of anyone from heaven.

30. To these belong also the *ligatures*, with their accursed remedies, which medical science condemns, whether in charms or in signs or in suspending and binding articles.

31. In all these the demonic art has arisen from a pestilential association of men and bad angels. Whence all must be avoided by Christians and rejected and condemned with thorough-going malediction.

Chapter 10. On the heathen.

2. The Gentiles are they who are without the law and have not yet believed. Moreover they are called Gentiles because they are in their con-genital state, that is, just as in the flesh they have plunged down into sin, to wit, serving idols and not yet regenerate.

Chapter 11. On the gods of the heathen.

1. They whom the pagans assert to be gods are known to have been men at one time, and in accordance with the life and services of each one they began to be worshiped among their own people after their death, as, in Egypt, Isis; in Crete, Jove; among the Moors, Juba; among the Latins, Faunus; among the Romans, Quirinus.

2. ... And in their praises the poets, too, have helped, and by writing poems have raised them up to the heavens.

3. It is said that the invention of certain arts has given rise to worship, as medicine for Aesculapius, craftsmanship for Vulcan. And they get their names from their activities, as Mercurius because he is in charge of merchandise; Liber from liberty.

4. There were also certain brave men and founders of cities, upon whose death men, because they loved them, made images of them, so as to have some comfort from the contemplation of their likenesses, but this error, it is now plain, so insinuated itself among later men by the influence of demons, that the persons whom earlier men honored for the sake of memory and nothing else, were believed by their successors to be gods, and were worshiped.

5. The use of images arose when, because of longing for the dead, likenesses or representations were made of them as if they had been received into heaven. And demons substituted themselves to be worshiped on earth in their place, and persuaded deceived and wretched men that sacrifices should be made to them.

12. While wicked pride, whether of men or of demons, commands and desires this worship, on the other hand pious humility, whether of men or of holy angels, refuses it when offered to them and shows to whom it is due.

15. Demons, they say, were named by the Greeks as if δαήμονας, that is, clever and knowing about things. For they foreknow many things that are to come, and because of this they are wont to give some responses.

16. For there is in them a knowledge of things greater than is in human weakness, partly by the keenness of their subtler sense, partly by the experience of very long life, partly by God's

command as revealed by the angels. They are strong in the nature of their aerial bodies.

17. Before their transgression, indeed, they had celestial bodies. But they fell and changed to an aerial quality, and they are not allowed to occupy the purer stretches of yonder airy space, but those misty parts, and this serves as a sort of prison for them until the time of judgment. These are the apostate angels, and their chief is the devil.

18. The devil (*diabolus*) in Hebrew means flowing downward (*deorsum fluens*), because he despised a calm station at heaven's height and fell in downward ruin by the weight of his pride; but in Greek devil means accuser, whether because he reports the guilty deeds to which he is himself the tempter, or because he accuses the innocence of the elect with false crimes. Whence the angel's voice says in the Apocalypse: "The accuser of our brethren has been cast down, who accused them in the sight of God day and night."

19. *Satanas* signifies in Latin the adversary, or deserter. He is the adversary, for he is the foe of truth, and struggles to resist the virtues of the holy; and the deserter, because he became an apostate and did not stand by the truth in which he was created; and the tempter, because he demands that the uprightness of the just be tried, as is written in Job.

20. Antichrist is so named because he is going to oppose Christ. It is not as certain simple-minded persons understand, that he is called Antichrist because he is going to come before Christ, that is, that Christ will come after him; not so, but Antichrist in the Greek means in the Latin *contrarius Christo*, for ἀντὶ in Greek means *contra* in Latin.

21. For when he comes he will say falsely that he is Christ, and he will fight against him, and will

oppose the sacraments of Christ, in order to destroy the Gospel of truth.

22. For he will try to repair the temple at Jerusalem and to restore all the ceremonies of the old law; moreover he is Antichrist who denies that Christ is God, for he is opposed to Christ; all who go out of the church and are cut off from the unity of faith are themselves Antichrist.

37. They say that *Janus* is the gate (*janua*), as it were, of the universe, or the heavens or the months; they make Janus with two faces because of the East and the West; when they make him with four faces and call him the double Janus they refer this to the four quarters of the universe or to the four elements or seasons. But when they make this pretence they make a monster, not a god.

56. They say that Diana [Apollo's] sister is at the same time Luna and the divinity of roads. And they represent her as a maiden because nothing grows on a road. And both [Apollo and Diana] are falsely represented as having arrows because the sun and moon send their rays from heaven down to the earth.

81. *Pan* is a Greek name; the Latin is *Silvanus*; the god of the country people whom they invented to represent nature, whence he is called Pan, that is, *all*. For they pretend that he is made out of every kind of element.

82. For he has horns to represent the rays of the sun and moon; he has a skin, marked by spots, because of the stars of heaven; his face is red to represent the ether; he carries a Pan's-pipe of seven reeds because of the harmony of the heavens in which are seven sounds, and the seven notes of the voice.

89. These[320] and others are the fabulous imaginations of the heathen, and, being rightly

understood, they are such that their worship, though in ignorance, brings damnation.

100. They say *manes* are the gods of the dead, whose power, they assert, is between the moon and the earth....

101. *Larvae* they say are demons made from men who have been wicked. It is said to be their nature to terrify little ones and to gibber in dark corners.

BOOK IX

ON LANGUAGES, RACES, EMPIRES, WARFARE, CITIZENS, RELATIONSHIPS

INTRODUCTION

IN SPITE of the apparent lack of unity indicated by the title, the subject of Book IX may be fairly described as mankind. It is true that language is the first topic, but it is brought in merely because Isidore believed that differences of race were based on differences of language. It is followed by a survey of the races of mankind, ending with an account of the races that had won military prominence. Isidore then turns to man within the state and treats of him first as a soldier and then as a citizen. Finally man is taken up as a member of the family, and an account of family relationship and of marriage is given.[321]

ANALYSIS

I. Languages (ch. 1).
II. Mankind (ch. 2).
    1. Mankind the descendants of the sons of Noah (Secs. 2–37).
    2. General view of the peoples of the earth with their Hebrew origin where known (Secs. 37–135).
III. Empires, rulers, and warfare (ch. 3).
IV. Terms relating to civil life (ch. 4).

V. The family (chs. 5–7).
   1. The direct line (ch. 5).
   2. Relatives and degrees of relationship, with the "prohibited degrees" (ch. 6).
   3. Marriage (ch. 7).

EXTRACTS

Chapter 1. On the languages of the nations.

1. The diversity of languages arose after the flood, at the building of the tower; for before that proud undertaking divided human society among different languages (*in diversos signorum sonos*) there was one tongue for all peoples, which is called Hebrew. This the patriarchs and prophets used, not only in their conversation, but in the sacred writings as well. At first there were as many languages as peoples, then more peoples than languages, because many peoples sprang from one language.

3. There are three sacred languages, Hebrew, Greek, and Latin, and they are supreme through all the world. For it was in these three languages that the charge against the Lord was written above the cross by Pilate. Wherefore, because of the obscurity of the holy Scriptures, a knowledge of these three languages is necessary, in order that there may be recourse to a second if the expression in one of them leads to doubt of a word or its meaning.

4. But the Greek tongue is considered most famous among the tongues of the nations. For it is more resonant than the Latin and all other tongues, and its variety is discerned in its five divisions: of which the first is called κοινή, that is, debased or common, which all use.

5. The second is Attic, that is, the Athenian

speech which all the writers of Greece used. The third is Doric, which the Egyptians have and the Sicilians. The fourth is Ionic. The fifth, Aeolic, which the Aeoles spoke. In observing the Greek tongue there are definite distinctions of this sort; for their language is divided in this way.

6. Certain have asserted that there are four Latin languages, namely, the early, the Latin, the Roman, the corrupted. The early is that which the oldest Italians used in the time of Janus and Saturn, a rude speech, as is shown in the songs of the Salii; the Latin, which they spoke in Latium under Latinus and the kings of Tuscia, in which the twelve tables were written.

7. The Roman, which began to be spoken by the Roman people after the kings were driven out, which was used by the poets Naevius, Plautus, Ennius, Virgilius, the orators Gracchus, Cato, Cicero, and the rest. The corrupted Latin, which, after the empire was extended more widely, burst into the Roman state along with customs and men, corrupting the soundness of speech by solecisms and barbarisms.

10. Every language, Greek, Latin, or of other nations, any man can grasp by hearing it, or can get from a teacher by reading. Though a knowledge of all languages is difficult for anyone, still no one is so sluggish that, situated as he is in his own nation, he should not know his own nation's language. For what else is he to be thought except lower than the brute animals? For they make the sound that is proper to them, but he is worse who lacks a knowledge of his own language.

11. What sort of language God spoke at the beginning of the world when he said "Let there be light", it is difficult to discover. For there were no languages yet. Likewise [it is hard to learn] in what

tongue he spoke later to man's external ear, especially when he spoke to the first man or to the prophets, or when God's voice sounded corporally[322] as when he said, "Thou art my beloved son", where it is believed by certain authorities that he used that one and single language that existed before there was a diversity of language. However among the different nations it is believed that God speaks to them in that same tongue which they themselves use, so as to be understood by them.

12. God speaks to men, not through the agency of invisible substance, but by an embodied being, in which form he has willed to appear to men when he has spoken. The Apostle says also: "If I speak with the tongues of men and of angels", where the question arises in what tongue angels speak. Not that angels have languages, but this is said figuratively.

13. Likewise it is asked what tongue men will speak in future. The answer is nowhere found....

14. And we have written first about tongues and later about nations for the reason that nations have arisen from tongues, not tongues from nations.

Chapter 2. On names of Nations.

2. The nations among whom the earth is divided are seventy-three. Fifteen from Japhet, thirty-one from Cham, twenty-seven from Sem, which make seventy-three, or rather, as calculation shows, seventy-two, and as many languages began to exist throughout the lands, and increasing they filled the provinces and islands.

9. ... These[323] are the nations of the stock of Sem, possessing the southern land from the sun-rise all the way to the Phoenicians.

25. ... These[323] are the nations of the stock of Cham, who hold all the southern part from Sidon all

the way to the Strait of Cadiz.

37. These are the nations of the stock of Japhet, which possessed the half of Asia and all Europe as far as the British Ocean, leaving names to both places and peoples from Mt. Taurus to Aquilo, of which at a later time a great many were changed, but the rest remain as they were.

38. For the names of many peoples have remained in part, so that it is evident to-day whence they were derived, as the Assyrians from Assur, the Hebrews from Heber, but they have changed in part, through length of time, so that the most learned men scanning the oldest histories have with difficulty been able to find the origins, not of all, but of some of them.

39. ... And if all things should be considered, it is evident that a greater number of peoples have changed their names than have kept them, and different reasons have imposed different names on them. For the Indi were so-called from the river Indus which bounds them on the west.

40. The Seres[324] obtained a name from their own town, a people lying toward the East, among whom wool taken from trees is woven.

89. The Goths are believed to have been named from Magog, son of Japhet, from the likeness of the last syllable. These the ancients called Getae, rather than Goths, a race brave and very powerful, of lofty massive stature, fear-inspiring in the matter of arms....

96. The Vindilicus is a river bursting forth in the extremity of Gaul, near which stream the Vandals are said to have dwelt, and to have derived their name from it.

97. The nations of Germany are so-called because their bodies are of monstrous size, and their tribes

are terrible, being inured to the fiercest cold, and they have derived their characteristics from the rigor of the climate, of fierce spirit and always unconquerable, living on plunder and hunting. Of these there are very many tribes, varying in their armor and in the color of their dress and with different languages, and the derivation of their names is doubtful.... The frightfulness of their barbarism contributes a certain fearfulness of sound to their very names.

100. The tribe of Saxons, dwelling on the shores of the Ocean and among pathless marshes, brave and active. And from this they get their name, because they are a hardy and very strong race of men, and one that surpasses other tribes in piracy.

101. It is believed that the Francs were so-called from a certain leader. Others think that their name comes from the savagery of their character. For their customs are uncouth, and they have a natural fierceness of spirit.

102. Certain suspect that the Britons were so-called according to the Latin because they are stupid (*bruti*), a people situated in the midst of the Ocean, separated by the sea, as it were, beyond the circle of lands.

105. In accordance with diversity of climate, the appearance of men and their color and bodily size vary and diversities of mind appear. Thence we see that the Romans are dignified, the Greeks unstable, the Africans crafty, the Gauls fierce by nature and somewhat headlong in their disposition, which the character of the climates brings about.

132. The Anthropophagi, a very fierce people, situated in the direction of the Seres. And they are named Anthropophagi because they eat human flesh. And just as in the case of these, so in the case of

other peoples throughout the ages, names have been changed either because of kings, or countries, or customs, or some other causes, so that the first origin of their name is not evident, owing to distance of time.

133. Moreover those who are called Antipodes, because they are believed to be opposite to our feet, so that, being as it were placed beneath the earth, they tread in footsteps that are opposed to our feet. It is by no means to be believed, because neither the solid texture nor the center of the earth admits it. Besides, this is not established by any historical evidence, but the poets arrive at this conclusion by a sort of reasoning.

Chapter 3. On kingdoms and terms used in warfare.

2. Whole nations have enjoyed sovereignty each in its own turn, as the Assyrians, Medes, Persians, Egyptians, Greeks, whose turns the lot of time so rolled around that one was destroyed by another. Amid all the kingdoms of the earth, however, two are said to be more glorious than the rest; that of the Assyrians first, then that of the Romans, being separated and distinguished from one another both in time and place.

3. For as the former was earlier and the latter later, so the former arose in the East and the latter in the West; finally at the destruction of the former the beginning of the latter immediately appeared. All other kingdoms and all other kings are regarded as appendages of these.

BOOK X

ALPHABETICAL LIST OF WORDS[325]

EXTRACTS

1. Though the derivation of words by the philosophers involves this belief, that *homo* comes from *humanitas*, *sapiens* from *sapientia*, because *sapientia* exists before *sapiens*, still another special cause is evident in the derivation of certain names, as *homo* from *humus*, whence in a true sense *homo* is so called. And we have set down certain of these derivations in this work for the sake of example.

44. *Compilator*, one who mixes the words of other men with his own as painters are wont to mix and pound different things in a mortar. Of this crime the famous poet of Mantua was once accused when he had translated certain verses of Homer and mingled them with his own, and when he was called by his rivals a plunderer of the ancients he replied: “Magnarum esse virium clavam Herculi extorquere de manu”.

194. *Nepos*,[326] so called from a certain kind of scorpion that eats its own young, excepting one which has a seat upon its back; this one, being saved, eats its father. Whence men who eat up in luxury the goods of their parents are called *Nepotes*.

235. *Rationator*, so-called, a great man because he can give a reason for all the things which are allowed to be wonderful.

BOOK XI[327]

ON MAN AND MONSTERS

ANALYSIS

I. Man and his parts (ch. 1).
   A description of the human body.
II. The six ages of man (ch. 2).
III. Monsters.
   1. Monstrous births (ch. 3, 1–11).
   2. Monstrous races (ch. 3, 12–27).
   3. The imaginary monsters of pagan mythology (ch. 3, 28–39).
   4. Transformations (ch. 4).

EXTRACTS

Chapter 1. On man and his parts.

4. *Homo* is so named because he is made of *humus* (earth), as it is told in Genesis: "Et creavit Deus hominem de humo terrae." And the whole man made up of both substances, that is, of the union of soul and body, is termed *homo* by an abuse of the word.

6. Man is two-fold, the inner and the outer. The inner man is the soul (*anima*); the outer man, the body.

7. *Anima* received its name from the heathen, for the reason that it is wind (*ventus*). Wind is called in the Greek ἄνεμος; and we seem to live by drawing air into the mouth. But this is most clearly false,

because *anima* comes into being long before air can be received into the mouth, because it is already alive in the womb of the mother.

8. *Anima* therefore is not air, as certain have thought who have not been able to form a conception of an incorporeal nature.

9. The evangelist asserts that *spiritus* is the same thing as *anima*, saying: "Potestatem habeo ponendi animam meam et rursus potestatem habeo sumendi eam." And in regard to the *anima* of the Lord at the time of the passion, the same evangelist thus spoke, saying: "et inclinato capite emisit spiritum."

10. For what is it to send forth the *spiritus*, if not to lay down the *anima*. But the *anima* is so called because it lives, and the *spiritus* because of its spiritual nature, or because it breathes (*inspiret*) in the body.

11. Likewise *animus* is the same as *anima*. But *anima* is of life, *animus* of wisdom. Whence the philosophers say that even without *animus* the life remains, and without the mind, *anima* endures....

12. ... It is not *anima*, but what excels in *anima* that is called *mens*, its head or eye, as it were. Whence man himself is called the image of God in respect to *mens*. However all those things are united to *anima* so that it is one thing. The *anima* has received different names according to the working of different causes.

13. ... When it gives life to the body, it is *anima*; when it wills,[328] it is *animus*; when it knows, it is *mens*; when it recollects, it is *memoria*; when it judges what is right, it is *ratio*; when it breathes, it is *spiritus*; when it is conscious of anything, it is *sensus*....

14. *Corpus* is so called because being corrupted, it perishes. For it is perishable and mortal and must

sometime be dissolved.

16. The body is made up of the four elements. For earth is in the flesh; air in the breath; moisture in the blood; fire in the vital heat. For the elements have each their own part in us, and something is due them when the structure is broken up....

18. The bodily senses are five: sight, hearing, smell, taste, touch. Two of these open and close; two are always open.

56. The arteries are so named because the air, that is, the breath, is carried by them from the lungs; or because they retain the breath of life in their narrow and close passages, whence they emit the sounds of the voice, which would all sound alike if the movement of the tongue did not create differences of the voice.

77. *Lac* (milk) derives its name from its color, because it is a white liquor, for the Greeks call white λεῦκος and its nature is changed from blood; for after the birth whatever blood has not yet been spent in the nourishing of the womb flows by a natural passage to the breasts, and whitening by their virtue, receives the quality of milk.

86. *Ossa* (bones) are the solid parts of the body. For on these all form and strength depend. *Ossa* are named from *ustus* (burned), because they were burned by the ancients, or as others think, from *os* (the mouth), because there they are visible, for everywhere else they are covered and concealed by the skin and flesh.

92. *Terga*, because it is on the back that we lie flat on the earth (*terra*); men alone can do this, for dumb animals lie either on the belly or on the side; whence the word *tergum* is applied to them mistakenly.

108. The knees are the meeting-points of the thighs and lower legs; and they are called knees

(*genua*) because in the womb they are opposite to the cheeks (*genae*). For they adhere to them there and they are akin to the eyes, the revealers of tears and of pity. For the knees (*genua*) are so called from the cheeks (*genae*).

109. In short they assert that man in his beginning and first formation is so folded up that the knees are above, and by these the eyes are shaped so that there are deep hollows. Ennius says: "Atque genua comprimit artagena." Thence it is that when men fall on their knees they at once begin to weep. For nature has willed that they remember their mother's womb where they sat in darkness, as it were, until they should come to the light.

118. *Cor* is derived from a Greek term—what they call καρδία (heart)—or, it may be, from *cura* (cure). For in it dwell all anxious thought and wisdom. And it is near the lungs for this reason, that when it is fired by anger it may be cooled by the liquid of the lungs. It has two arteries, of which the left has more blood, the right, more air. From it also is the pulse we find in the right arm.

120. The *pulsus* (pulse) is so called because it beats (*palpitet*), and by its evidence we perceive that there is sickness or health. Its motion is two-fold; a simple motion which is made up of a single beat, and a composite, made up of several movements—irregular and unequal. And these movements have definite limits....

121. The veins are so called because they are the passages of the flowing blood, and its streamlets spread through all the body, by which all the parts are moistened.

124. The Greeks call the lungs πλεύμων, because they are the bellows of the heart and in them is πνεῦμα, that is, *spiritus*, by which they are stirred

and moved, whence they are called *pulmones*....

125. *Jecur* (liver) has its name because in it fire (*ignis*) has its seat, and from there it flies up into the head. Thence it spreads to the eyes and the other organs of sense and the limbs, and by its heat it changes into blood the liquid that it has appropriated from food, and this blood it furnishes to the several parts to feed and nourish them. In the liver pleasure resides and desire, according to those who dispute about natural philosophy.

127. The spleen is so called from corresponding to (*supplementum*) the liver on the opposite side in order that there may be no vacuum, and this certain men believe was formed with a view to laughter. For it is by the spleen we laugh, by the bile we are angry, by the heart we are wise, by the liver we love. And while these four elements remain, the animal is whole.

Chapter 3. On human monstrosities.

1. Portents, Varro says, are those births which seem to have taken place contrary to nature. But they are not contrary to nature, because they come by the divine will, since the will of the creator is the nature of each thing that is created. Whence, too, the heathen themselves call God now nature, now God.

2. A portent, therefore, happens not contrary to nature, but contrary to known nature....

4. Certain creations of portents seem to have been made with future meanings. For God sometimes wishes to indicate what is to come by disgusting features at birth, as also by dreams and oracles, that he may give forewarning by these, and indicate to certain nations or certain men coming destruction. This has been proved by many trials.

5. ... But these portents which are sent in

warning, do not live long, but die as soon as they are born.

12. And just as there are monstrous individuals in separate races of men, so in the whole human kind there are certain monstrous races, as the Gigantes, Cynocephali, Cyclopes, and the rest.

15. The Cynocephali are so called because they have dogs' heads and their very barking betrays them as beasts rather than men. These are born in India.

16. The Cyclopes, too, the same India gives birth to, and they are named Cyclopes because they are said to have a single eye in the midst of the forehead. These have the additional name ἀγριοφαγίται because they eat nothing but the flesh of wild beasts.

17. The Blemmyes, born in Libya, are believed to be headless trunks, having mouth and eyes in the breast; others are born without necks, with eyes in their shoulders.

18. In the remote east, races with faces of a monstrous sort are described. Some without noses, with formless countenances; others with lower lip so protruding that by it they shelter the whole face from the heat of the sun while they sleep; others have small mouths, and take sustenance through a narrow opening by means of oat-straws; a good many are said to be tongueless, using nod or gesture in place of words.

19. They say the Panotii in Scythia have ears of so large a size that they cover the whole body with them. For πᾶν in Greek means all, and ὦτα, ears.

21. The Satyrs are manikins with upturned noses; they have horns on their foreheads, and are goat-footed, such as the one St. Anthony saw in the desert. And he, being questioned, is said to have answered the servant of God, saying, "I am mortal,

one of the inhabitants of the waste, whom the heathen, misled by error, worship as the Fauns and Satyrs."

23. The race of the Sciopodes is said to live in Ethiopia. They have one leg apiece, and are of a marvelous swiftness, and the Greeks call them Sciopodes from this, that in summertime they lie on the ground on their backs and are shaded by the greatness of their feet.

24. The Antipodes in Libya have feet turned backward and eight toes on each foot.

28. Other fabulous monstrosities of the human race are said to exist, but they do not; they are imaginary. And their meaning is found in the causes of things, as Geryon, King of Spain, who is said to have had a triple form. For there were three brothers of such harmonious spirit that it was, as it were, one soul in three bodies.

Chapter 4. On transformations to beasts.

2. Moreover they affirm with no fabulous lying but with historic proof, that Diomedes' companions were changed to birds. And certain say that witches are created from human beings. For the shapes of the wicked change for their many villanies, and they turn bodily into beasts, whether by magic charms or by the use of herbs.

3. Many creatures go through a natural change and by decay pass into different forms, as bees [are formed] by the decaying flesh of calves, as beetles from horses, locusts from mules, scorpions from crabs.

BOOK XII

ON ANIMALS

INTRODUCTION

THE history of zoölogical knowledge during the ten centuries from Aristotle to Isidore may be indicated with sufficient clearness by enumerating three of the works that survive. They are Aristotle's "History of Animals", the zoölogical part (Books VIII-XI) of Pliny's "Natural History", and Isidore's "On Animals". On the first, belonging to the fourth century B.C., Cuvier has pronounced judgment as "one of the greatest monuments that the genius of man has raised to the natural sciences".[329] Pliny, four centuries later, is commended by Cuvier for his industry and learning, but reproached for his predilection for the fabulous, and his absolute lack of scientific order and of the scientific spirit.[330] Six centuries later a résumé of zoölogical knowledge is given in the *Etymologies*, which is of no value except for the information it gives of the benighted character of the medieval intellect.

Isidore's zoölogy is shown in a better light, however, when it is compared with that of the *Physiologus*,[331] his great rival in this field throughout the Middle Ages. This is a collection of fabulous accounts of animals, with the moral and spiritual lessons that were drawn from them. In it the ancient science is seen in its most de-secularized form; nature knowledge is made absolutely

subservient to religious teaching, and in the process actual knowledge is driven out and fable takes its place. It must be reckoned to Isidore's credit that he resisted the temptation to give "the higher meaning".

ANALYSIS

I. Flocks and herds and beasts of burden (ch. 1).
II. Wild beasts (ch. 2).
III. Small creatures (ch. 3).
IV. Serpents (ch. 4).
V. Worms (ch. 5).
VI. Fishes (ch. 6).
VII. Birds (ch. 7).
VIII. Small flying creatures (ch. 8).

EXTRACTS

Chapter 1. On flocks and work animals.

1. Adam first named all living creatures, assigning a name to each in accordance with its purpose at that time, in view of the nature it was to be subject to.

2. But the nations have named all animals in their own languages. But Adam did not give those names in the language of the Greeks or Romans or any barbaric people, but in that one of all languages which existed before the flood, and is called Hebrew.

9. A sheep is a domesticated animal with soft wool, harmless and calm in disposition.

10. The wether (*vervex*) is so called from its strength (*vires*) ... or because it has a worm (*vermen*) in its head, and, excited by the itch of these worms, they butt one another and fight and smite one another with great fury.

17. And so these animals (*Ibices*), as we have said,

remain among the loftiest rocks, and if ever they perceive the hostile presence of wild beast or of man they throw themselves down from the highest summits, and land unharmed on their horns.

18. [Deer] are foes of snakes, and when they feel that they are weighed down with weakness they draw snakes out from their holes by the breath of their nostrils and overcoming the deadly poison[332] they refresh themselves by eating them. They made known the plant dittany. For they eat it, and shake out the arrows that have stuck in them.

19. They give a wondering attention to the whistling sound of the Pan's pipes. They listen sharply with up-pricked ears, not with hanging ears. If ever they swim across great rivers or seas, they lay the head on the haunch of the one in front, and following one another in turn they feel no weariness from the weight.

43. Horses have a high spirit; for they prance in the fields, they scent war, they are roused by the trumpet-sound to battle, they are roused by the voice and urged to the race, they grieve when they are beaten, they are proud when they win a victory. Certain know the enemy in battle, so that they bite the foe. Some recall their own masters, and forget obedience if their masters are changed; some allow none but their masters to mount them; when their masters are slain or are dying, many shed tears. The horse is the only creature that weeps for man and feels the emotion of grief....

Chapter 2. On beasts of prey.

5. When lions sleep, their eyes are on the watch; when they walk about they obliterate their tracks with their tails that the hunter may not find them. When a cub is born it is said to sleep for three nights

and three days. Then the shaking, as it were, of the ground where it lies, because of its father's roaring, is said to awaken the sleeping cub.

6. Toward man the nature of the lion is kind, so that they cannot become angry unless attacked. Their pity is shown by continual examples. For they spare the fallen, they allow captives they meet to return home; they do not kill man unless very hungry.

17. The Gryphes are so called because they are winged quadrupeds. This kind of wild beast is found in the Hyperborean Mts. In every part of their body they are lions, and in wings and head are like eagles, and they are fierce enemies of horses. Moreover they tear men to pieces.

20. They say the urine [of the lynx] is changed to the hardness of a precious stone, which is called *lincurius*, and by the following proof it is shown that the lynxes are conscious of this; for when they have urinated, they cover the urine with sand as well as they can, from a sort of meanness of nature, lest such a product be turned to the advantage of man.

21. *Castores* (beavers) are so named from castrating. For their testicles are useful for medicine and therefore when they perceive a hunter, they castrate themselves and cut away their potency by a bite. Of these Cicero speaks in *Scauriana*: "They ransom themselves by that part of the body for which they are most sought."

24. [The wolf] is a ravenous beast and greedy for blood, and of it the country people say that a man loses his voice if a wolf sees him first. And therefore if a person is suddenly silent, they say, "It is the wolf in the fable". But if the wolf perceives that he has been noticed first, he lays aside his boldness....

25. ... No creature is more sagacious than dogs, for they have more understanding than other

animals.

26. For they alone recognize their names, love their masters, guard their masters' houses, risk their lives for their masters, of their own free will rush upon the prey with their master, do not abandon even their master's dead body. And finally their nature is such that they cannot exist without men. In dogs two things are to be regarded, courage and speed.

38. *Musio* is so called because it is a foe to mice (*muribus*). Common people call it cat (*catus*) because it catches [mice]. Others say, because it sees (*catat*). For it has such sharp sight that it overcomes the darkness of the night by the brightness of its eyes.

Chapter 3. On small animals.

1. *Mus* (mouse) is a tiny animal; it has a Greek name;[333] but any word that is derived from it becomes Latin. Others say *mures* are so named because they are born from the *humor* (moisture) of the earth. For *mus* is equivalent to *terra*, and from the word comes *humus* too. The liver of these creatures grows at the full moon, just as certain things that belong to the sea grow, which grow smaller again when the moon lessens.

3. *Mustella* (weasel) is so called, being, as it were, *mus longus* (long mouse); for *telum* (missile) is so called from its length. This creature, somewhat wily in its disposition, moves and changes its nest in the house when it is nursing its young. It chases snakes and mice. And there are two sorts of weasels. For one is a creature of the woods, and is of a different size, which the Greeks call ἴκτιδες. The other wanders about in houses. Now they have an erroneous idea who say that the weasel conceives in its mouth, and gives birth through its ear.[334]

4. In Sardinia is a very tiny creature, spider-shaped, which is called *solifuga*, because it shuns the daylight. It is very common in silver mines, secretly creeping along, and it poisons those who unknowingly sit down on it.

8. *Grillus* (cricket or grasshopper) has its name from the sound of its voice. This creature walks backward, tunnels the earth, makes a loud sound at night. The ant goes hunting it, having itself lowered by a hair into its hole, first blowing the dust out, that it may not hide itself, and thus it is dragged out in the embrace of the ant.

9. *Formica* (ant) is so called because it carries morsels (*ferat micas*) of grain. Its wisdom is great. For it looks forward to the future and in summer makes ready food to be eaten in winter. At the harvest, too, it picks out wheat and refuses to touch barley. After it rains it always puts out the grain [to dry]. It is said there are ants in Ethiopia of a dog's shape, and these dig up golden sands with their feet, and they watch them in order that no one may carry them off, and those that do seize them, they pursue till they kill.

10. *Formicoleon* (ant-lion) has its name for this, that it is a lion of the ants, or at least ant and lion at the same time. For it is a small creature that is very hostile to ants. It hides itself in the sand and kills the ants as they are carrying grains. And it is called lion and ant because it is, as it were, an ant to other animals, but a lion to ants.[335]

Chapter 4. On serpents.

3. The serpent has received its name because it crawls (*serpit*) with unnoticed steps; for it does not go with strides that are observable, but creeps on by the trifling impulses of its scales. But those that go on four feet, like lizards and newts, are called not

serpents but reptiles. Now serpents are reptiles because they creep (*reptant*) on their belly and breast; and there are as many poisons as there are genera; as many deaths as there are species; as many dolors, as colors.

4. The dragon (*draco*) is the largest of all serpents and of all living things upon earth. This the Greeks call δράκοντα. And it was taken into the Latin so that it was called *Draco*. And frequently being dragged from caves it rushes into the air, and the air is thrown into commotion on account of it. And it is crested, has a small face and narrow blow-holes through which it draws its breath and thrusts out its tongue. And it has its strength not in its teeth but in its tail, and it is dangerous for its stroke, rather than for its jaws.

5. It is harmless in the way of poison, but poison is not necessary for it to cause death, because it kills whatever it has entangled in its folds. And from it the elephant is not safe because of its size. For it lies in wait near the paths by which elephants usually go, and entangles the elephant's legs in its folds, and kills it by strangling. It grows in Ethiopia and in India, in the very burning of perennial heat.

12. It is said that when the asp begins to feel the influence of the wizard who summons her forth with certain forms of words suited thereto, in order that he may bring her out from her hole—when the asp is unwilling to come forth, she presses one ear against the earth, and the other she closes and covers up with her tail, and so refuses to hear those magical sounds, and does not come out at the incantation.

36. The Salamander is so called because it is strong against fire; and amid all poisons its power is the greatest. For other [poisonous animals] strike individuals; this slays very many at the same time;

for if it crawls up a tree, it infects all the fruit with poison and slays those who eat it; nay, even if it falls in a well, the power of the poison slays those who drink it. It fights against fires, and alone among living things, extinguishes them. For it lives in the midst of flames without pain and without being consumed, and not only is it not burned, but it puts the fire out.

Chapter 5. On worms.

1. A worm is a creature that as a rule comes into being without any begetting from flesh or wood or any earthy substance, although sometimes they are born from eggs, as the scorpion. Worms belong either to earth or water or air[336] or flesh or leaves or wood or clothes.

3. *Sanguissuga*, a water worm, is so named because it sucks blood. For it lies in wait for drinkers, and when it is carried into their throats or fastens itself anywhere, it draws the blood, and when it has taken its fill of gore, it vomits it out, to suck in again fresh blood.

Chapter 6. On fishes.

3. Certain kinds of fishes are amphibious, being so called because they have the practice of walking on land and of swimming in the water.

4. Men gave names to the beasts of the field and wild animals and birds, before the fishes, because they were seen and known first. And later, when the kinds of fishes had been learned by degrees, names were applied either from their likeness to land animals, or to suit the species, whether in regard to habits, color, shape, or sex.

6. [Fish receive their names] from sex, as the *musculus* (mussel) because it is the masculine of whale, for by union with the mussel it is said this

monster conceives.

8. There are huge sorts of whales with bodies the size of mountains, like the whale that received Jonah, whose belly was of such magnitude that it held something like a hell, the prophet saying: “He heard me from the belly of hell”.

14. *Thynni* (tunnies) have a Greek name. They appear in spring-time. They come in on the right side and go out on the left. They are supposed to do this because they see more keenly with the right eye than with the left.

25. *Mullus*, so called because it is *mollis* (soft) and most tender, by eating which they relate that lust is held in check and that the keenness of the sight is dimmed; moreover men who have often eaten it have a fishy smell. The killing of a mullet in wine brings a distaste for wine to those who have drunk thereof.

34. *Echeneis*, a small fish, half-a-foot long, took its name because it holds a ship[337] back by clinging to it. Though the winds rush and the gusts rage it is seen nevertheless that the ship stands still as if rooted in the sea, and does not move, not because the fish holds it back but merely because it clings to it.

35. The uranoscope is so called from an eye which it has in its head, by which it always looks upward.

41. The likeness of the eel (*anguilla*) to the snake (*anguis*) has given it its name. Its origin is in mud. Whence whensoever it is taken, it is so slippery that the more determinedly one squeezes it the quicker it slips away. They say, too, that a river of the east, the Ganges, produces them three hundred feet long. If an eel is killed in wine they who drink of it have a loathing for wine.

43. Lamprey (*muraena*) the Greeks term μύραινα, because it coils itself in circles. They say that this fish is of the female sex only, and that it conceives from the serpent. On this account it is enticed by the fishermen by hissing like a serpent, and it is taken. It is killed with difficulty by the stroke of a club but at once by that of a ferule. It is certain that it has its life in its tail, for if the head is struck it is hard to kill it, but when its tail is struck it dies at once.

53. Mussels (*musculi*) as we have said before are shell-fish, and oysters conceive from their milk, and they are called *musculi* as if it were *masculi*.

56. Certain relate what is incredible, that ships go more slowly if they carry a tortoise's right foot.

Chapter 7. On birds.

3. Birds (*aves*) are so called because they have no definite roads (*viae*) but speed hither and thither through pathless (*avia*) ways.

9. Many names of birds were evidently made up from the sound of their cry, as *grus*, *corvus*, *cygnus*, *pavo*, *ulula*, *cuculus*, *graculus*, and so on. For the variety of their cry told men what they were to be called.

10. The eagle (*aquila*) is so called from its sharpness (*acumine*) of sight. For it is said to possess such power of vision that when it is borne over the sea with motionless wing and is not visible to human sight, even from such a lofty place it sees the fishes swim, and descending like a missile from an engine it seizes its booty and flies with it to the shore.

11. It is also said not to lower its gaze from the rays of the sun, and for this reason it lifts its young ones in its talons and exposes them to the rays of the sun, and keeps as worthy of its kind those which it sees keep a motionless gaze, and drops down as

degenerate whatever ones it sees turning their gaze downward.

18. The swan (*cygnus*) is so called from singing, because it pours forth sweet song in modulated tones. And it sings sweetly for the reason that it has a long curving neck, and it must needs be that the voice, struggling out by a long and winding way, should utter various notes.

19. They say that in the Hyperborean regions when cithara players lead, many swans fly up and sing very harmoniously.

44. The crow (*cornix*), a bird full of years, has a Greek name[338] among the Latins, and augurs say it increases a man's anxieties by the tokens it gives, that it reveals ambushes, and foretells the future. It is great wickedness to believe this, that God entrusts his counsels to crows.

66. To the hoopoe (*upupa*) the Greeks give its name because it attends to (*consideret*) human excrements and feeds on stinking filth, a most foul bird, helmeted with upstanding crests, always lingering at graves and human excrements. And whoever anoints himself with its blood, on going to sleep will see demons choking him.

67. *Tuci*, which is the name the Spaniards give to cuckoos (*cuculi*), were evidently named from their peculiar cry. These have a time for coming, perched on the shoulders of kites because of their short and weak flights, in order that they may not grow weary and fail in the long spaces of the air. Their saliva produces grasshoppers. [The cuckoo] eats the eggs it finds in the sparrow's nest, and substitutes its own, which the sparrow receives and sets on and cares for.

79. All kinds of flying things are born twice. For first the eggs are born, then by the heat of the mother's body they are formed and given life.

Chapter 8. On small winged creatures.

1. Bees (*apes*) are so called because they hold to one another by the feet, or it may be because they are born without feet (*pes*). For it is only later on that they get feet and wings. These are skilful in the business of producing honey, they dwell in homes allotted to them, they arrange their dwellings with a skill that makes no mistake, they store the hive from various flowers, and forming their wax-cells, they fill the camp with unnumbered young, and they have an army and kings, they make wars, flee from smoke, and are enraged by noise.

2. A good many have proved by experiment that these spring from the carcasses of cattle. For in order to create them the flesh of slain calves is beaten, in order that worms may be created from the rotten gore, and these afterward turn to bees. In a correct sense bees (*apes*) are so called because they spring from *boves* as hornets from horses, drones from mules, wasps from asses.

BOOKS XIII AND XIV

[On Universe and Earth]

INTRODUCTION

In books XIII and XIV Isidore gives a complete and systematic account of the material universe, taking up and treating in order the heavens, the atmosphere, water, and earth. His treatment of the last two is especially full and constitutes a geographical description of the earth's surface as known at his time.[339]

ANALYSIS

I. The universe (Bk. XIII, ch. 1).
II. Atoms (ch. 2).
III. Elements (ch. 3).
IV. The heavens (chs. 4–6).
    1. The parts of the heavens.[340]
    2. The circles of the heavens.[340]
V. The air and the clouds (chs. 7–11).
    1. Thunder.
    2. Lightning.
    3. The rainbow and cloud forms.
    4. The winds.
VI. Waters (chs. 12–22).
    1. Springs.
    2. The sea.

3. The ocean.
4. The Mediterranean.
5. Bays, etc.
6. Lakes.
7. The abyss.
8. Rivers.

VII. The dry land (Bk. XIV, ch. 1).
1. The circle of lands (chs. 2–5).
(1) Asia.
(2) Europe.
(3) Africa.
2. Islands (ch. 6).
3. Promontories (ch. 7).
4. Mountains, etc. (ch. 8).
5. The lower parts of the earth (ch. 9).

BOOK XIII
On the Universe and its Parts

EXTRACTS

Preface.—In this book, as it were in a brief outline we have commented on certain causes in the heavens, and the sites of the lands, and the spaces of the sea, so that the reader may run them over in a little time, and learn their etymologies and causes with compendious brevity.

Chapter 1. On the universe.

1. The universe is the heavens, the earth, the sea, and what in them is the work of God, of whom it is said: “And the universe was made by him”. The universe (*mundus*) is so named in Latin by the

philosophers because it is in continued motion (*motu*), as for example, the heavens, the sun, moon, air, seas. For no rest is permitted to its elements, and therefore it is always in motion.

2. Whence also the elements seem to Varro living creatures, since, he says, they move of themselves. The Greeks have borrowed a name for the universe from ornament, on account of the variety of the elements and the beauty of the stars. For it is called among them κόσμος, which means ornament. For with the eyes of the flesh we see nothing fairer than the universe.

3. It is agreed that there are four *climata*, that is, tracts of the universe: East, West, North, South.

Chapter 2. On the atoms.

1. The philosophers call by the name of atoms certain parts of bodies in the universe so very minute that they do not appear to the sight, nor admit of τομή, that is, division, whence they are called atoms. These are said to flit through the void of the whole universe with restless motions, and to move hither and thither like the finest dust that is seen when the rays of the sun pour through the windows. From these certain philosophers of the heathen have thought that trees are produced, and herbs and all fruits, and fire and water, and all things are made out of them.

2. Atoms exist either in a body, or in time, or in number, or in the letters. In a body as a stone. You divide it into parts, and the parts themselves you divide into grains like the sands, and again you divide the very grains of sand into the finest dust, until if you could, you would come to some little particle which is now [such] that it cannot be divided or cut. This is an atom in a body.

3. In time, the atom is thus understood: you divide a year, for example, into months, the months into days, the days into hours, the parts of the hours still admit of division, until you come to such an instant of time and fragment of a moment as it were, that it cannot be lengthened by any little bit and therefore it cannot be divided. This is the atom of time.

4. In numbers, as for example, eight is divided into fours, again four into twos, then two into ones. One is an atom because it is indivisible. So also in case of the letters. For you divide a speech into words, words into syllables, the syllable into letters. The letter, the smallest part, is the atom and cannot be divided. The atom is therefore what cannot be divided, like the point in geometry....

Chapter 3. On the elements.

1. *Hyle*[341] is the name the Greeks apply to the first material of things, which is in no way formed, but has a capacity for all bodily forms, and out of it these visible elements are shaped. Wherefore they have derived their name from this source.[342] This *hyle* the Latins called *materia*, for the reason that everything in the rough from which something is made, is always called *materia*....

2. The Greeks moreover call the elements στοιχεῖα,[343] because they are akin to one another in the harmony of like quality and a sort of common character, for they are said to be allied with one another in a natural way, now tracing their origin from fire all the way to earth, now from earth all the way to fire, so that fire fades into air, air is thickened to water, water coarsened to earth, and again earth is dissolved into water, water refined into air, air rarefied into fire.

3. Wherefore all elements are present in all, but each of them has received its name from that which it has in greater degree. And they have been assigned by divine providence to the living creatures that are suited to them, for the Creator himself filled the heaven with angels, the air with birds, the sea with fish, the earth with men and other living creatures.

Chapter 5. On the parts of the heavens.

1. Ether is the place in which the stars are, and it signifies that fire which is separated on high from the whole universe. Ether is the element itself; and *aethra* is the glow of the ether and is a Greek word.

Chapter 7. On the air and the clouds.

1. Air is emptiness, having more rarity mixed with it than the other elements. Of it Virgil says:

Longum per inane secutus.

Air (*aer*) is so called from αἴρειν (to raise), because it supports the earth or, it may be, is supported by it. This belongs partly to the substance of heaven, partly to that of the earth. For yonder thin air where windy and gusty blasts cannot come into existence, belongs to the heavenly part; but this more disordered air which takes a corporeal character because of dank exhalations, is assigned to earth, and it has many subdivisions: for being set in motion it makes winds; and being vigorously agitated, lightnings and thunderings; being contracted, clouds; being thickened, rain; when the clouds freeze, snow; when thick clouds freeze in a more disordered way, hail; being spread abroad, it causes fine weather; for it is known that thick air is a cloud and that a cloud that thins and melts away, is air.

2. ... Now the thickening of the air makes clouds.

For the winds gather the air together and make a cloud. Whence is the expression: “Atque in nubem cogitur aer.”

Chapter 8. On thunder.

1. Thunder (*tonitruum*) is so called because its sound terrifies (*terreat*), for *tonus* is sound. And it sometimes shakes everything so severely that it seems to have split the heavens, since when a great gust of the most furious wind suddenly bursts into the clouds, its circular motion becoming stronger and seeking an outlet, it tears asunder with great force the cloud it has hollowed out, and thus comes to our ears with a horrifying noise.

2. One ought not to wonder at this since a vesicle, however small, emits a great sound when it is exploded. Lightning is caused at the same time with the thunder, but the former is seen more quickly because it is bright and the latter comes to our ears more slowly....

Chapter 9. On thunder-bolts.

1. ... Clouds striking together make thunder-bolts: for in all things collision creates fire, as we see in the case of stones, or when wheels rub together, or in the woods. In the same way fire is created in the clouds; whence they are clouds before, lightnings later.

2. It is certain that it is from wind and fire that thunder-bolts are formed in the clouds, and that they are launched by the impulse of the winds; and the fire of a thunder-bolt has greater force in penetrating because it is made of subtler elements than our fire, that is, the fire we make use of....

Chapter 10. On the rainbow and the causes of clouds.

1. The rainbow is so called from its resemblance to a bent bow. Its proper name is Iris and it is called

Iris, as it were *aeris* (of the air), because it comes down through the air to earth. It comes from the radiance of the sun when hollow clouds receive the sun's ray full in front, and they create the appearance of a bow, and rarified water, bright air, and a misty cloud under the beams of the sun create those varied hues.

2. Rains (*pluviae*) are so called because they flow, as if *fluviae*. They arise by exhalation from earth and sea, and being carried aloft they fall in drops on the lands, being acted upon by the heat of the sun or condensed by strong winds.

13. Shadow (*umbra*) is air that lacks sun, and is so called because it is made when we interpose ourselves in the rays of the sun. It moves and is ill-defined, because of the motion of the sun and the force of the wind. As often as we move in the sun, it seems to move with us, because wherever we encounter the rays of the sun, we take the light from that place, and so the shadow seems to walk with us and to imitate our motions.

Chapter 11. On the winds.

2. There are four chief winds. The first of these is from the east, *Subsolanus*, and *Auster* from the south, *Favonius* from the west, and from *Septentrio* (north) a wind of the same name blows. These winds have kindred winds one on each side.

3. *Subsolanus* has on its right *Vulturnus*, on its left *Eurus*; *Auster* has on its right *Euroauster*, on its left *Austroafricus*; *Favonius* on its right *Africus*, on its left *Corus*. Further, *Septentrio* has on its right *Circius*, on its left *Aquilo*. These twelve winds surround the globe of the universe with their blasts.

20. ... In the spring and autumn the greatest possible storms appear when it is neither full summer

nor full winter, whence, as [the time] is an intervening one, bordering on both seasons, storms are caused from the conjunction of contrary airs.

Chapter 12. On the waters.

2. The two most powerful elements of human life are fire and water, whence they who are forbidden fire and water are seriously punished.

3. The element of water is master of all the rest. For the waters temper the heavens, fertilize the earth, incorporate air in their exhalations, climb aloft and claim the heavens; for what is more marvelous than the waters keeping their place in the heavens!

4. It is too small a thing to come to such a height; they carry with them thither swarms of fishes; pouring forth, they are the cause of all growth on the earth. They produce fruits, they make fruit trees and herbs grow, they scour away filth, wash away sin, and give drink to all living things.

Chapter 13. On the different qualities of waters.

5. Linus, a fountain of Arcadia, does not allow miscarriages to take place. In Sicily are two springs, of which one makes the sterile woman fertile, the other makes the fertile, sterile. In Thessaly are two rivers; they say that sheep drinking from one become black; from the other, white; from both, parti-colored.

10. Hot springs in Sardinia cure the eyes; they betray thieves, for their guilt is revealed by blindness. They say there is a spring in Epirus in which lighted torches are extinguished, and torches that are extinguished are lighted. Among the Garamantes they say there is a spring so cold in the daytime that it cannot be drunk, so hot at night that it cannot be touched.

Chapter 14. On the sea.

2. ... The depth of the sea varies; still the level of its surface is invariable.

3. Moreover that the sea does not increase, though it receives all streams and all springs, is accounted for in this way; partly that its very greatness does not feel the waters flowing in; secondly, because the bitter water consumes the fresh that is added, or that the clouds draw up much water to themselves, or that the winds carry it off, and the sun partly dries it up; lastly, because the water leaks through certain secret holes in the earth, and turns and runs back to the sources of rivers and to the springs.

Chapter 15. On the ocean.

1. *Oceanus* is so named by both Greeks and Latins because it flows like a circle around the circle of the land; it may be from its speed because it runs swiftly (*ocius*); or because like the heavens it glows with a dark purple color. *Oceanus* is, as it were, κυάνεος (dark purple). It is this that embraces the shores of the lands, approaching and receding with alternate tides. For when the winds breathe in the depths, it either pushes the waters away or sucks them back.

2. And it has taken different names from the neighboring lands; as *Gallicus*, *Germanicus*, *Scythicus*, *Caspius*, *Hyrcanus*, *Atlanticus*, *Gaditanus*. The Gaditanian strait was named from *Gades* where the entrance to the *Mare Magnum* first opens from the Ocean. Whence when Hercules had come to Gades he placed the columns there, believing that there was the limit of the circle of the lands.

Chapter 16. On the Mediterranean Sea.

1. The *Mare Magnum* is that which flows from the west out of the Ocean and extends toward the South,

and then stretches to the North. And it is called *Magnum* because the rest of the seas are smaller in comparison with it. It is also called Mediterranean because it flows through the midst of the land (*per mediam terram*) as far as the Orient, separating Europe and Africa and Asia.

Chapter 20. On the abyss.

1. The abyss is the deep water which cannot be penetrated; whether caverns of unknown waters from which springs and rivers flow; or the waters that pass secretly beneath, whence it is called abyss. For all waters or torrents return by secret channels to the abyss which is their source.

Chapter 21. On rivers.

6. Certain of the rivers have received their names from causes peculiar to them, and of these some which are told of as famous in history should be mentioned.

7. Geon is a river issuing from Paradise and surrounding the whole of Ethiopia, being called by this name because it waters the land of Egypt by its flood, for γῆ in the Greek means *terra* in the Latin. This river is called Nile by the Egyptians, on account of the mud which it brings, which gives fertility.

8. The river Ganges, which the holy Scriptures call Phison, issuing from Paradise, takes its course toward the regions of India.... It is said to rise in the manner of the Nile and overflow the lands of the East.

9. The Tigris, a river of Mesopotamia, rises in Paradise, and flows opposite the Assyrians (*contra Assyrios*), and after many windings flows into the Dead Sea. And it is called by this name because of its velocity, like a wild beast that runs with great speed.

10. The Euphrates, a river of Mesopotamia,

greatly abounding in gems, rises in Paradise and flows through the midst of Babylonia.... It irrigates Mesopotamia in certain places just as the Nile does Alexandria. Sallust, however, a most reliable author, asserts that the Tigris and the Euphrates arise from one source in Armenia, and going by different ways are far separated, an intervening space of many miles being left, and the land which is enclosed by them is called Mesopotamia. Therefore as Hieronymus noted, there must be a different explanation of the rivers of Paradise.

24. Tanus was the first king of the Scythians, from whom the river *Tanais* is said to have been named. It rises in the Riphaean forest, and separates Europe from Asia, flowing in the midst between two divisions of the world, and emptying into the Pontus.

35. Certain rivers were overwhelmed in the flood, and shut off by the mass of the lands, but certain ones which were not, burst forth by passages that were at that time violently formed from the abyss.

Chapter 22. On floods.

2. The first flood occurred under Noah, when the Omnipotent, offended at man's guilty deeds, covered the whole circle of the lands[344] and destroyed all, and there was one stretch of sky and sea; and we observe the proof of this to the present time in the stones which we are wont to go to see in the distant mountains, which have mingled in them the shells of mussels and oysters, and besides are often hollowed by the waters.

3. The second flood was in Achaea in the time of the patriarch Jacob and of Ogygius, who was the founder and king of Eleusina, and gave his name to the place and time.

4. The third flood was in Thessaly in the time of

Moses and Amphictyon, who reigned third after Cecrops. At which time a flood of waters destroyed the greater part of the peoples of Thessaly, a few escaping by taking refuge in the mountains, especially on mount Parnassus, on whose circuit Deucalion then possessed dominion. And he received those who fled to him on rafts, and warmed and fed them on the twin peaks of Parnassus, and so the fables of the Greeks say that the human race was re-created from stones—because of the inborn hardness of the heart of man.

BOOK XIV
On the Earth and its Parts

EXTRACTS

Chapter 1. On the earth.

1. The earth is placed in the middle region of the universe, being situated like a center at an equal interval from all parts of heaven; in the singular number it means the whole circle;[345] in the plural[346] the separate parts; and reason gives different names for it; for it is called *terra* from the upper part where it suffers attrition (*teritur*); *humus* from the lower and *humid* part, as for example, under the sea; again, *tellus*, because we take (*tollimus*) its fruits; it is also called *ops* because it brings opulence.[347] It is likewise called *arva*, from ploughing (*arando*) and cultivating.

2. Earth in distinction from water is called dry; since the Scripture says that “God called the dry land, earth”. For dryness is the natural property of earth. Its dampness it gets by its relation to water. As to its motion (earthquakes) some say it is wind in its

hollow parts, the force of which causes it to move.

3. Others say that a generative water moves in the lands, and causes them to strike together, *sicut vas*, as Lucretius says. Others have it that the earth is sponge-shaped, and its fallen parts lying in ruins cause all the upper parts to shake. The yawning of the earth also is caused either by the motion of the lower water, or by frequent thunderings, or by winds bursting out of the hollow parts of the earth.

Chapter 2. On the circle of lands.[348]

1. The circle of lands (*orbis*) is so called from its roundness, which is like that of a wheel, whence a small wheel is called *orbiculus*. For the Ocean flowing about on all sides encircles its boundaries. It is divided into three parts; of which the first is called Asia; the second, Europe; the third, Africa.

2. These three parts the ancients did not divide equally; for Asia stretches from the South through the East to the North, and Europe from the North to the West, and thence Africa from the West to the South. Whence plainly the two, Europe and Africa, occupy one-half, and Asia alone the other. But the former were made into two parts because the Great Sea enters from the Ocean between them and cuts them apart. Wherefore if you divide the circle of lands into two parts, East and West, Asia will be in one, and in the other, Europe and Africa.

Chapter 3. On Asia.

1. Asia was so called from the name of a certain woman who held dominion over the East in the time of the ancients. Lying in the third part of the circle of lands it is bounded on the east by the sun-rise, on the south by the ocean, on the west by our sea, on the north by lake Maeotis and the river Tanais. It has many provinces and regions, of which I shall briefly

explain the names and sites, beginning with Paradise.

2. Paradise is a place lying in the parts of the Orient, whose name is translated out of the Greek into the Latin as *hortus*. In the Hebrew it is called Eden, which in our tongue means delight. And the two being joined mean garden of delight; for it is planted with every kind of wood and fruit-bearing tree, having also the tree of life; there is neither cold nor heat there, but a continual spring temperature.

3. And a spring, bursting forth from its center, waters the whole grove, and divides into four rivers that take their rise there. Approach to this place was closed after man's sin. For it is hedged in on every side by sword-like flame,[349] that is, girt by a wall of fire whose burning almost reaches the heaven.

4. A guard of cherubim, too, that is, of angels, is set over the burning of the fiery rampart to ward off evil spirits, in order that the flames may keep men off, and good angels, bad ones, that the approach to Paradise may not be open to any flesh or to the spirit of wickedness.

5. India is so called from the river Indus, by which it is bounded on the west. It stretches from the southern sea all the way to the sun-rise, and from the north all the way to Mount Caucasus, having many peoples and cities and the island of Taprobana, full of elephants, and Chryse and Argyra, rich in gold and silver, and Tyle, which never lacks leaves on its trees.

Chapter 4. On Europe.

2. Europe, which was parted off to form a third part of the circle, begins at the river Tanais, passing to the west along the Northern ocean as far as the limits of Spain. Its Eastern and Southern parts begin at the Pontus, extend along the whole Mare

Magnum, and end at the island of Gades.

Chapter 5. On Libya (Africa).

3. It begins at the boundaries of Egypt,[350] extending along the South through Ethiopia as far as Mt. Atlas. On the north it is bounded by the Mediterranean Sea, and it ends at the strait of Gades, having the provinces Libya Cyrenensis, Pentapolis, Tripolis, Byzacium, Carthago, Numidia, Mauritania Stifensis, Mauritania Tingitana, and in the neighborhood of the sun's heat, Ethiopia.

14. Ethiopia is so called from the color of its people, who are scorched by the nearness of the sun. The color of the people betrays the sun's intensity, for there is never-ending heat here. Whatever there is of Ethiopia is under the south pole. Towards the west it is mountainous, sandy in the middle, and toward the eastern region, a desert. Its situation extends from the Atlas Mts. on the west to the bounds of Egypt on the east. It is bounded on the south by the ocean, on the north by the river Nile. It has many peoples, of diverse appearance and fear-inspiring because of their monstrous aspect.

17. Besides the three parts of the circle there is a fourth part across the Ocean on the South,[351] which is unknown to us on account of the heat of the sun, in whose boundaries, according to story, the Antipodes are said to dwell.

Chapter 6. On Islands.

2. Britannia, an island of the Ocean, completely separated from the circle of lands by the sea that flows between, is called by the name of its people. It lies in the rear of the Gauls and looks toward Spain. Its circuit is 4,875 miles; there are many large rivers in it and hot springs, and an abundant and varied supply of metals. Jet is very common there, and

pearls.

3. Thanatos, an island of the Ocean in the Gallic sea, separated from Britain by a narrow strait, with fields rich in grain and a fertile soil. It is called Thanatos from the death of snakes, for it is destitute of them itself, and earth taken thence to any part of the world kills snakes at once.

4. Thyle is the furthest island in the Ocean, between the region of North and that of West,[352] beyond Britain, having its name from the sun, because there the sun makes its summer halt, and there is no day beyond it; whence the sea there is sluggish and frozen.

6. Scotia, the same as Hibernia, an island very near Britain, narrower in the extent of its lands but more fertile; this reaches from Africa towards Boreas, and Iberia and the Cantabrian ocean are opposite to the first part of it. Whence, too, it is called Hibernia. It is called Scotia because it is inhabited by the tribes of Scots. There are no snakes there, few birds, no bees; and so if any one scatters among beehives stones or pebbles brought thence, the swarms desert them.

8. The Happy Isles (*Fortunatae insulae*) ... lie in the Ocean opposite the left of Mauretania, very near the West, and separated from one another by the sea.

12. Taprobana is an island lying close to India on the Southeast, where the Indian Ocean begins, extending in length eight hundred and seventy-five miles, in width, six hundred and twenty-five. It is separated [from India] by a river that flows between. It is all full of pearls and gems. Part of it is full of wild beasts and elephants, but men occupy part. In this island they say that there are two summers and two winters in one year, and that the place blooms twice with flowers.

21. Delos is said to be so named because after the flood which is said to have come in the time of Ogygius, when continuous night had overshadowed the circle of lands for many months, it was lightened by the rays of the sun before all lands, and got its name from that, because it was first made visible to the eye. For the Greeks call visible δῆλος.

Chapter 9. On the under parts of the Earth.

9. Gehenna is a place of fire and sulphur, which they think is so named from the valley sacred to idols which is near the wall of Jerusalem, which was filled in former time with bodies of the dead. For there the Hebrews used to sacrifice their own sons to demons, and the place itself was called Gehennon. Therefore the place of future punishment where sinners are to be tortured is denoted by the name of this place. (We read in Job) that there is a double Gehenna, both of fire and of frost.

11. Just as the heart of an animal is in its midst, so also *infernus* is said to be in the midst of the earth.

BOOK XV

ON BUILDINGS AND FIELDS

ANALYSIS

I. Cities (ch. 1).

Of India (6), Persia (7–10), Mesopotamia (12–13), Syria (14–15), Palestine (16–26), Phoenicia (27–28), Egypt (31–36), Asia Minor (37–41), Greece (43–48), Italy (49–62), Gaul (63–65), Spain (66–72), Northern Africa (74–77).

II. Architecture.[353]

1. City architecture (ch. 2).
    a. Kinds of cities (3–14).
    b. Walls (17–21).
    c. Gates, squares, sewers, etc. (22–46).
2. Dwellings (ch. 3).
3. Buildings for religious purposes (ch. 4).
4. Storehouses (ch. 5).
5. Workshops (ch. 6).
6. Entrances (ch. 7).
7. Parts of buildings (ch. 8).
8. Defences (ch. 9).
9. Tents (ch. 10).
10. Tombs (ch. 11).
11. Buildings in the country (ch. 12).

III. Fields, landmarks, land-measures[354] (chs. 13–15).
IV. Roads (ch. 16).

EXTRACTS

Chapter 1. On cities.

5. The Jews assert that Shem, son of Noah, whom they call Melchisedeck, was the first after the flood to found the city of Salem in Syria, in which was the kingdom of the same Melchisedeck. This city the Jebusaei held later, from whom it got the name Jebus, and so the two names being united, Jebus and Salem became Hierusalem, and this was later called Hierosolyma by Solomon, as if Hierosolomonia.

42. Constantinople, a city of Thrace, Constantine called after his own name, the only city equal to Rome in deeds and power. This was first founded by Pausanias, king of the Spartans, and called Byzantium, because it extends between the Adriatic and the Propontis, or because it is a store-house for the wealth of land and sea.[355] Whence Constantine judged it very fit to become his store-house for land and sea. And it is now the seat of Roman power, and the capital of the whole Orient, as Rome is of the Occident.

66. Caesaraugusta Tarraconensis,[356] a town of Spain, was both founded and named by Caesar Augustus, excelling all the cities of Spain in the beauty of its site and in its attractions (*deliciis*), and more famous than all, and distinguished (*florens*) for the graves of the sainted martyrs.

67. The Africans under Hannibal occupied the coast of Spain and built Carthago Spartaria, which presently was captured and made a colony by the Romans, and gave its name also to the province. But

now it has been destroyed and reduced to desolation by the Goths.

69. Caesar Augustus built Emerita after he had taken Lusitania and certain islands of the Ocean, giving it a name from the fact that he placed his veteran soldiers there. For veterans, freed from service, are called *emeriti*.

70. Olyssipona (Lisbon) was founded and named by Ulysses, and at this place, as historians say, the heavens are separated from the earth and the seas from the lands.

71. Hispalis (Seville) Julius Caesar founded, and called it Julia Romula from his own name and the name of the city of Rome. It is called Hispalis from its situation, because it is placed on marshy ground, the stakes (*palis*) being driven deep, that it might not slip because of its slippery and unsteady foundations.

72. Gades is a town founded by the Carthaginians who also founded Carthago Spartaria.

Chapter 4. On sacred buildings.

8. Fanes (*Fana*) are so called from Fauns to whom the heathen blindness erected temples wherein those who sought for guidance might hear the responses of demons.

9. *Delubra*, the name the ancients gave to temples having springs in which they washed themselves (*diluebantur*) before entering.... These are at the present time sanctuaries with sacred springs in which the regenerate faithful purify themselves, and they were well called *delubra* with a sort of prophetic meaning; for they are for the washing away of sins.

Chapter 15. On land measurements.

1. Measure is whatever limit is set in respect to weight, capacity, length, height and mind (*animus*). And so the ancients divided the circle of lands into

parts, the parts into provinces, the provinces into regions, the regions into districts, the districts into territories, the territories into fields, the fields into centuries, the centuries into acres (*jugera*), the acres into *climata* [about sixty feet square], then the *climata* into *actus* [120 x 4 ft.], perches, paces, grades (*gradus*), cubits, feet, palms, inches, (*uncia*), and fingers. For so clever were they.

BOOK XVI

ON STONES AND METALS[357]

ANALYSIS

I. Kinds of earth (ch. 1).
II. Earthy substances made out of water (*de glebis ex aqua*[358]) (ch. 2).
III. Common stones (ch. 3).
IV. The less common stones (ch. 4).
V. Marbles (ch. 5).
VI. Gems (chs. 6–15).
1. Green gems (ch. 7).
2. Red gems (ch. 8).
3. Purple gems (ch. 9).
4. White gems (ch. 10).
5. Black gems (ch. 11).
6. Parti-colored gems (ch. 12).
7. Crystalline gems (ch. 13).
8. Glowing gems (ch. 14).
9. Gold-colored gems (ch. 15).
VII. Glass (ch. 16).
VIII. Metals (chs. 17–24).
1. Gold (ch. 18).
2. Silver (ch. 19).
3. Bronze (ch. 20).
4. Iron (ch. 21).
5. Lead (ch. 22).

6. Tin (ch. 23).
7. Amber (ch. 24).

IX. Weights (ch. 25).

X. Measurements (chs. 26, 27).

Abbreviations for units of measurement (ch. 27).

EXTRACTS

Chapter 4. On the less common stones.

3. *Gagates* (jet) was first found in Cilicia, thrown up by the water of the river Gagates. Whence it was named, although it is very abundant in Britain. It is black, flat, smooth, and burns when brought near to fire. Dishes cut out of it are not destructible. If burned it puts serpents to flight, betrays those who are possessed by demons, and reveals virginity. It is wonderful that it is set on fire by water and extinguished with oil.

19. *Amiantos* (amianth) ... resists all poisons, especially those of the magi.

Chapter 7. On green gems.

8. Certain believe that the jasper gives both attractiveness and safety to its wearers, but to believe this is a sign not of faith but of superstition.

9. The topaz is of the green sort and it glitters with every color. It was found first in an island of Arabia in which Troglodyte pirates, worn out with hunger and storm, discovered it when they pulled the roots of herbs. This island was sought for afterward, and was at length found by seamen, being all covered with clouds. And on this account the place and the gem received the name from cause. For τοπάζειν in the Troglodyte language denotes

seeking.

12. Heliotropium[359] ... receives the sun-light after the manner of a looking-glass, and reveals the eclipses of the sun, showing the moon passing under. In the case of this gem there is also a most manifest proof of the shamelessness of the magi, because they say its wearer is not visible if he takes an infusion of the plant heliotrope and in addition utters certain charms.

Chapter 8. On red gems.

1. ... The magi assert that [coral] resists thunder-bolts,—if it is to be believed.

Chapter 10. On white gems.

4. *Galactites* (milk-stone) is milk-white, and being rubbed it gives a white fluid that tastes like milk, and being tied on nursing mothers it increases the flow of milk. If it is hung on the necks of children it is said to create saliva, and it is said to melt in the mouth and take away the memory.

Chapter 13. On crystals.

1. It is said that crystal glitters and is of a watery color because it is snow that has hardened into ice in the course of the years.... It is produced in Asia and Cyprus, and especially in the Alps of the north, where there is no hot sun even in summer. Therefore the ice itself is bared, and hardening through the years gives this appearance which is called crystal. This, being set opposite to the rays of the sun, so seizes upon its flame that it sets fire to dry fungi or leaves. Its use is to make cups, but it can endure nothing but what is cold.

2. *Adamas* ... Though this is an unconquerable despiser of the steel and of fire, yet it is softened by the fresh, warm blood of stags, and then is shattered

by many blows of an iron instrument.

3. It is said to reveal poisons as does amber (*electron*), to drive away useless fears, to resist evil arts.

Chapter 14. On glowing gems.

7. *Dracontites* is forcibly taken from the brain of a dragon, and unless it is torn from the living creature it has not the quality of a gem; whence magi cut it out of dragons while they are sleeping. For bold men explore the cave of the dragons, and scatter there medicated grains to hasten their sleep, and thus cut off their heads while they are sunk in sleep, and take out the gems.

Chapter 15. On yellow gems.

17. *Glossoptera* is like the human tongue whence it took its name. It is said to fall from heaven when the moon is in eclipse, and the magi attribute great power to it, for they think that to it the motions of the moon are due.

21. There are also certain gems which the heathen use in certain superstitions.

22. By the fragrance of the *liparia*,[360] they relate that all wild beasts are summoned. By the *ananchitis*[360] in divination by water they say the likenesses of demons are summoned. By the *synochitis*[360] they assert that the shades of those below that have been summoned forth, are held.

23. *Chenelites* is the eye of the Indian tortoise, of a varied purple. By means of this magi pretend that the future is foretold, if it is put on the tongue.

25. *Hyaenia* is a stone found in the eye of the hyena and they say that if it is placed under the tongue of a man he foretells the future.

Chapter 20. On bronze.

4. Corinthian bronze is a mixture of all metals, and it was first made by accident at Corinth, when the city was taken and burned. For when Hannibal had taken the city, he piled all the statues of bronze and gold and silver into one heap and burned them.

Chapter 21. On iron.

2. There is no body with elements so dense, so closely interlacing and interwoven, as iron; whence in it there is hardness and cold.

Chapter 25. On weights.

1. It is a delight to learn the manner of weights and measures. For all corporeal substances, as it is written, from the highest even to the lowest, are ordered and shaped within the limits of measure, number, and weight. To all corporeal things nature has assigned weight. Its own weight regulates everything.

2. Moses, who preceded all the philosophers of the nations in time, first told us of measures and numbers and weight in different passages in the Scripture. Phidon of Argos was the first to establish a system of weights in Greece.

19. *Uncia* ... And it is reckoned a lawful weight for this reason, that the number of its scruples measures the hours of the day and night, or because reckoned twelve times it makes a pound.

20. *Libra* (pound) is made up of twelve ounces, and thence is counted a kind of perfect weight, because it is made up of as many ounces as a year is months. And it is called *libra* because it is *libera* (free) and embraces all the aforementioned weights within itself.

23. *Centenarium* is a weight of one hundred pounds. And this weight the Romans established because of the perfection of the number one

hundred.

Chapter 26. On measures.

1. Measure is the limiting of something in amount or time. It has to do with either corporeal substance or time. It has to do with corporeal substance as, for example, the length or shortness of men, pieces of timber, and columns; even the sun has a measure proper to its circle, which geometricians dare to inquire into. It has to do with time as, for example, hours, days, years; whence we say that we measure the feet of the hours.

2. But speaking in a limited sense, measure (*mensura*) is so named because by it fruits and grain are meted, that is, wet and dry measure, as *modius* (peck), *artabo* (three and half modi), *urna* (pitcher), *amphora* (jar).

10. *Modius* (peck) is so named because after its own mode it is perfect. It is a measure of forty-four pounds, that is, of twenty-two *sextarii*. The cause of this number is derived from this, that in the beginning God made twenty-two works. For on the first day he made seven, that is, matter in the rough, angels, light, the upper heavens, earth, water, and air. On the second day, the firmament alone. On the third day, four things: the seas, seeds, sowing, and plantings. On the fourth day, three things: the sun and moon and stars. On the fifth day, three: fishes, and creeping things of the water, and flying creatures. On the sixth day, four: wild beasts, flocks, creeping things of the earth, and man. And in all twenty-two kinds were made in the six days. And there are twenty-two generations from Adam to Jacob, from whose seed sprang all the people of Israel, and twenty-two books of the Old Testament as far as Esther, and twenty-two letters of the alphabet

out of which the doctrine of the divine law is composed. According to these precedents a modius of twenty-two *sextarii* was established by Moses according to the measure of the holy law, and although different nations in their ignorance add weight to this measure or detract from it, still among the Hebrews it is kept unchanged by divine ordinance.

Chapter 27. Abbreviations for weights.

1. The marks for weight are unknown to most and thence they cause readers to err. So let us add their shapes and characters as they were set down by the ancients.[361]

BOOK XVII

ON AGRICULTURE

ANALYSIS

I. Writers on rural affairs (ch. 1).
II. The cultivation of the fields (ch. 2).
III. Grains (ch. 3).
IV. Leguminous plants (ch. 4).
V. Vines (ch. 5).
VI. Trees (chs. 6–7).
    1. Species of trees (ch. 7).
VII. Aromatic shrubs (ch. 8).
VIII. Aromatic and common herbs (ch. 9).
IX. Vegetables (chs. 10, 11).

BOOK XVIII

ON WAR AND AMUSEMENTS

ANALYSIS

I. War[362] (chs. 1–14).
1. Kinds of war (ch. 1).
2. Triumphs (ch. 2).
3. Standards (ch. 3).
4. Trumpets (ch 4).
5. Armor (chs. 5–14).
a. Swords (ch. 6).
b. Spears (ch. 7).
c. Arrows (ch. 8).
d. Quivers (ch. 9).
e. Slings (ch. 10).
f. The battering ram (ch. 11).
g. Shields (ch. 12).
h. Coats of mail (ch. 13).
i. Helmets (ch. 14).
II. The law-court (*de foro*) (ch. 15).
III. Spectacles[363] (chs. 16–59).
1. Gymnastic contests (chs. 17–26).
2. The circus (chs. 27–41).
3. The theatre (chs. 42–51).
4. The amphitheatre (chs. 52–58).
5. Condemnation of spectacles (ch. 59).
IV. Gambling (chs. 60–68).

V. Ball-playing (ch. 69).

EXTRACTS

Chapter 16. On spectacles.

1. Spectacles, as I think, is the general name given to pleasures which defile not of themselves, but through those things that take place there.

3. The origin of the word (*ludus*) is of no consequence when the origin of the thing is idolatry.... On this account the stain of its origin must be regarded, lest one should regard as good what took its origin in evil.

Chapter 27. On the sports of the circus.

1. The sports of the circus (*ludi circenses*) were established on account of worship, and because of the honoring of the heathen gods. Whence those who view them seem to be furthering the worship of evil spirits. For horse-racing was in former times practiced by itself, and its ordinary practice at least was no guilt, but when this natural practice was included in the games, it was transferred to the worship of demons.

Chapter 41. On the colors at the races.[364]

1. The same heathen have associated the colors worn by the horses with the elements: likening the red to the sun, that is, to fire; the white to air; the green to earth; the blue to the sea. Likewise they wished the red to run in summer because they are of a fiery color and all things are of a golden hue at that time; the white in winter because it is icy and everything is white; the green during the verdure of spring, because then the vine leaves are thickening.

2. They also consecrated the red to Mars from

whom the Romans are sprung, because the Roman standards are adorned with scarlet or because Mars delights in blood. The white [they consecrated] to western breezes and fine weather, the green to flowers and earth, the blue to the sea or air because they are of a caerulean color, the golden or saffron to fire and the sun, and the purple to Iris, which we call the bow, because Iris has many colors.

3. And so while under this pretence they pollute themselves with the gods and the elements of this world, they are known to be certainly worshiping the same gods and elements. Whence you ought to notice, Christian, how many unclean gods they have around. Therefore the place which many spirits of Satan have seized shall be alien to you. For all that place the devil and his angels have filled.

Chapter 45. On tragedians.

1. Tragedians are they who sang in mournful verse the ancient deeds and crimes of guilty kings, while the people looked on.

Chapter 46. On comedians.

1. Comedians are they who represented by song and gesture the doings of men in private life, and in their plays set forth the defilement of maidens and the love affairs of harlots.

Chapter 59. On the execration of these.

1. These spectacles of cruelty and this gazing upon vanities were established not only by the fault of men but by the command of demons. Wherefore a Christian ought to have nothing to do with the madness of the circus, with the shamelessness of the theatre, with the cruelty of the amphitheatre, with the atrocity of the arena, with the luxury of the *ludus*. For he denies God who ventures on such

things, becoming a violator of the Christian faith—he who seeks afresh that which he long before renounced in baptism, that is, the devil, his parades and his works.

BOOK XIX

ON SHIPS, BUILDINGS, AND GARMENTS[365]

ANALYSIS

I. Ships[366] (chs. 1–6).
   1. Seamen (ch. 1, 3–7).
   2. Kinds of ships (ch. 1, 8–27).
   3. Parts of ships (ch. 2).
   4. Sails (ch. 3).
   5. Ropes (ch. 4).
   6. Nets (ch. 5).

II. Furnaces of smiths (ch. 6).
   1. Tools of smiths (ch. 7).

III. Buildings (chs. 8–18).
   1. Construction (ch. 10).
   2. Adornment (chs. 11–17).
   3. Tools for building (ch. 18).

IV. Workers in wood (ch. 19).

V. Garments (chs. 20–29).
   1. Weaving (ch. 20).
   2. The dress of a priest under the law (ch. 21).
   3. The names of other articles of clothing (ch. 22).
   4. Peculiar costumes of certain peoples (ch. 23).
   5. Men's garments (ch. 24).
   6. Women's garments (ch. 25).
   7. Bedding, tablecloths, and so forth (ch. 26).

8. Wools (ch. 27).
9. Colors of garments (ch. 28).
10. Instruments for making cloth (ch. 29).

VI. Ornaments (chs. 30–32).
1. Head ornaments for women (ch. 31).
2. Rings (ch. 32).

VII. Girdles (ch. 33).

VIII. Footwear (ch. 34).

BOOK XX

ON PROVISIONS AND UTENSILS OF THE HOUSEHOLD AND THE FIELDS

ANALYSIS

I. Tables (ch. 1).
II. Food (ch. 2).
III. Drink (ch. 3).
IV. Dishes.
    1. For food (ch. 4).
    2. For drink (ch. 5).
    3. For wine and water (ch. 6).
    4. For oil (ch. 7).
V. Cooking utensils (ch. 8).
VI. Receptacles (ch. 9).
VII. Lamps (ch. 10).
VIII. Beds and seats (ch. 11).
IX. Vehicles (ch. 12).
X. Other utensils (ch. 13).
XI. Tools for the country (ch. 14).
XII. Tools for the garden (ch. 15).
XIII. Horse trappings (ch. 16).

APPENDIX I

[Isidore's Use of the Word *Terra*]

Further light on Isidore's conception of the earth can be gained by noticing his use of the word *terra* in the following passage, and comparing the passage with that from Hyginus on which it is based.

Isidore.	Hyginus.
Nunc terrae positionem definiemus et mare quibus locis interfusum videatur, ordine exponemus.	

Terra, ut testatur Hyginus, mundi media regione collocata, omnibus partibus coeli aequali dissidens intervallo centrum obtinet.

Terra mundi media regione collocata, omnibus partibus aequali dissidens intervallo, centrum obtinet sphaerae. Hanc mediam dividit axis in dimensione totius terrae.

Oceanus autem regione circumductionis spherae profusus prope totius orbis alluit fines. Itaque et siderum signa occidentia in eum cadere existimantur.

Oceanus autem regione circumductionis spherae profusus, prope totius orbis alluit fines. Itaque et signa occidentia in eum decidere existimantur. Sic igitur et terras contineri poterimus explanare.

Regio autem terrae dividitur trifariam e quibus una pars Europa, altera Asia, tertia Africa vocatur. Europam igitur ab Africa dividit mare ab extremis oceani finibus, et Herculi columnis. Asiam autem et Libyam cum Aegypto disterminat ostium Nili fluvii, quod Canopicon appellatur. Asiam ab Europa Tanais dividit bifariam se conjiciens in paludem, quae Maeotis appellatur. Asia autem, ut ait beatissimus Augustinus, a meridie per orientem usque ad septentrionem pervenit. Europa vero a septentrione usque ad occidentem,

Nam quaecumque regio est quae inter Arcticum et Aestivum finem collocata est, ea dividitur trifariam e quibus una pars, Europa; altera, Asia; tertia, Africa vocatur. Europam igitur ab Africa dividit mare ab extremis Oceani finibus, et Herculi columnis. Asiam vero et Libyam cum Aegypto disterminat os Nili fluminis quod Canopicon appellatur. Asiam ab Europa conjiciens in paludem quae Maeotis appellatur. (*Hygini Poeticon Astron., Mythographi Latini*, Thomas Muncherus, Amsterdam, 1681, vol. i, p.

atque inde Africa ab occidente usque ad meridiem.

Unde videntur orbem dimidium duae tenere, Europa et Africa. Alium vero dimidium sola Asia. Sed ideo illae duae partes factae sunt, quia inter utramque ab Oceano ingreditur, quidquid aquarum terras influit, et hoc mare Magnum nobis facit. Totius autem terrae mensuram geometrae centum octoginta millium stadiorum aestimaverunt. (*De Natura Rerum*, ch. 48.)

353.)

In the passage from Hyginus, *terra* in the singular is the spherical earth occupying the centre of the sphere formed by the universe. The ocean is on the surface of this spherical earth, and it washes “the limits of the circle of lands”. For this reason the

heavenly bodies "are [popularly] supposed to set in it." Hyginus then turns to the dry land (*terras*), and describes the land surface "between the boundaries of the Arctic and torrid zones" as divided into three parts, Europe, Asia, and Africa.

In Isidore *terra* means in the first instance, dry land, in the second—if he realized the meaning of Hyginus—the sphere; in the third, the dry land; in the fourth, the sphere. There is no evidence that Isidore was conscious of having made these transitions. He entirely omits the sentence in which Hyginus passes from the subject of the spherical earth to that of the lands. It is clear that Isidore has fallen into the same confusion here as in the passage quoted on p. 51; he uses the terminology of the spherical earth, while having no conception of anything but the flat earth.[367]

The difficulty offered by the word *sphera* in the passage quoted above from Isidore, is not insuperable, since it is clear from the following passage that he was not very definite in his notion of what a sphere was. A sphere and a circle apparently meant about the same thing to him.

> Cujus perfectionem spherae vel circuli multis argumentationibus tractans, rationabile Plato Fabricatoris mundi insinuat opus. Primo, quod ex una linea constat. Secundo, quod sine initio est et sine fine. Tertio, quod a puncto efficitur. Denuo, quod motum ex se habeat. Deinde quod careat indicio angulorum, et quod in se ceteras figuras omnes includat, et quod motum inerrabilem habeat, siquidem sex alii motus errabiles sunt, ante, a tergo, dextra, laevaque, sursum, deorsum. Postremo, et quod necessitate efficiatur, ut haec linea ultra circulum duci non possit. D. N. R., 12, 5.

APPENDIX II

Subdivisions of Philosophy

Philosophy was regarded by Isidore as a comprehensive term embracing all knowledge. He gives its subdivisions as follows:

I.		
Philosophia	Naturalis or Physica	Arithmetica Geometria Musica Astronomia
	Moralis or Ethica	Prudentia Justitia Fortitudo Temperantia
	Rationalis or Logica	Dialectica Logica

That Isidore felt the need of an adjustment of this plan to the Christian scheme of things is to be

perceived in the statement with which he accompanies it, that the Scriptures are made up of the three kinds of philosophy, natural, moral, and rational; and in the further statement that Christian scholars asserted the claims of Christian doctrine (*theorica*) to take the place of rational or logical philosophy.[368]

II. Philosophia[369]	Inspectiva	Naturalis	Arithmetica Geometria Musica Astronomia
		Doctrinalis Divinalis	
	Actualis	Moralis Dispensativa Civilis	

III. Philosophia[370]	Physica or Naturalis	Arithmetica Geometria Musica Astronomia Astrologia Mechanica Medicina
	Logica or Rationalis	Dialectica Rhetorica
	Ethica or	Prudentia Justitia

Fortitudo
Temperantia

In connection with this outline also an attempt at adjustment is made. Christian doctrine is placed, somewhat inappropriately, under the head of ethical philosophy: "Wisdom (*prudentia*) is the recognition of the true faith and the knowledge of the Scriptures, in which one must have regard for the triple method of interpretation. The first is that by which certain things are taken literally without any figure, as the Ten Commandments; the second is that by which certain things in the Scriptures are taken in a double sense, both in the definite historic meaning and in accordance with the understanding of figures, as in regard to Sara and Hagar; first, because they existed in reality, second, because the two Testaments are figuratively denoted by them. The third kind is that which is taken in a spiritual sense only, as the Song of Songs. For if it is understood according to the sound of the words and their literal force, the result is bodily wantonness rather than the excellence of the inner meaning. After the definition of wisdom let us now give the parts of justice (*justitia*), of which the first is to fear God, to venerate religion, to honor parents, to love the fatherland, to help all, to harm none, to embrace the bonds of brotherly love, to face the dangers of others, to bring aid to the wretched, to repay a good turn, to observe equity in judgments." (*Diff.*, 2, 39.)

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VITA

THE writer of this thesis was born in Prince Edward Island, Canada. He attended Dalhousie College, from which he graduated in 1894 with high honors in the Classics. He entered Harvard University in 1895, and received the degree of A. B. in 1896, and A. M. in 1897. From 1898 to 1908 he was Instructor, Assistant Professor and Professor of Latin at Colorado College, and from 1908 to 1911 Professor of History at the same institution. He spent the years 1908–9 and 1911–12 in the school of Political Science of Columbia University. He has taken courses with Professors Burgess, Dunning, Osgood, Robinson, Shotwell, and Sloane of Columbia. He is thirty-eight years old.

FOOTNOTES

[1] *Cf.* S. Reinach, *Orpheus*, p. 36.

[2] Neoplatonism, the last phase in the decline of ancient philosophy, profoundly influenced the Christian philosophy of patristic and medieval times, for which it prepared the way. The "first principle" of this philosophy was "the supra-rational, that which lies beyond reason and beyond reality." It was from this source that Christian mysticism and contempt for empirical knowledge were largely drawn. It has been said that Catholic Christianity "conquered

Neoplatonism after it had assimilated nearly everything that it possessed." Its influence was far greater in the eastern than in the western empire. See Harnack, *History of Dogma*, vol. i, App. 3, for a brief account of Neoplatonism. See also *Encycl. Brit.*, 11th edition, Art. "Neoplatonism."

[3] Nihil enim Isidorus intentatum reliquit: facultates omnes attigit, scientias humanas divinasque pertractavit, scriptores veteres profanos et sacros evolvit, atque in suum usum descripsit; nec contentus etymologico suo opere scientiarum encyclopaediam comprehendere, multa singillatim in sacrarum litterarum interpretatione disseruit, multa in omni alio theologiae genere, multa in philosophicis atque astronomicis argumentis, multa in re litteraria, chronologica et historica. Arevalo, *Prolegomena in Editionem S. Isidori Hispalensis*, cap. 1, 3.

[4] Arevalo in his *Prolegomena*, cap. 33, collects passages containing "laudes Isidori" from medieval writers, including Fredegarius, Alcuin, William of Malmesbury, Vincent of Beauvais, and others. Isidore is cited by Petrarch in a way which shows that he was much read in his time. Petrarch is giving authorities for his theory of poetry, and after mentioning Varro and Suetonius, he says: "Then I can add a third name, which will probably be better known to you, Isidore." *Cf.* Robinson and Rolfe, *Petrarch*, p. 263.

[5] Ac portenti quidem simile est, quot mihi antiquissimi Isidori Codices in Urbis (Rome) bibliothecis sed maxime in Vaticana occurrerint. Arevalo, *Prolegomena*, cap. 1, 7. Manuscripts of Isidore's works are numerous also in Spain and France.

[6] The editions of Isidore's complete works

are as follows: (1) that of de la Bigne published at Paris in 1580; (2) that of Grial, Madrid, 1599; (3) that of du Breul, Paris, 1601; that of Arevalus, Rome, 1796. Arevalus, in the *Prolegomena* to his edition, enumerates ten editions of the *Etymologies* between 1477 and 1577. Others of Isidore's works appeared also in frequent separate editions.

[7] See Cañal, *San Isidoro*, ch. 7.

[8] Martin A. S. Hume, *The Spanish People*, p. 45.

[9] See Teuffel and Schwabe, *History of Roman Literature*, vol. ii, sec. 495, 1, and *Poetae Latini Minores*, 5, 357.

[10] See Einhard, *Vita Caroli Magni* in *Monumenta Germaniae Historica, Scriptores* (Pertz ed.), vol. ii, p. 456.

[11] Another factor in the history of Spain at this time that may have had a slight influence on the culture of the country was the reoccupation of the southeastern part of the country by the Eastern Empire, which lasted from Justinian's time down to 628. The region so held included even Seville for some years.

[12] For the history of Spain under the Visigoths, see Lavisse et Rambaud, *Histoire Générale*, vol. i, chap. 3 (by M. A. Berthelot), and Altamira, *Historia de España*, vol. i, c. 1.

[13] In the *Acta Sanctorum, Aprilis 1* (April 4) is the life of Isidore supposed to have been written by Lucas Tudensis (13th century). Arevalo also gives a life by Rodericus Cerratensis (also 13th century). These 'lives' are full of fables and cannot be trusted as sole authorities for any

detail of Isidore's career.

[14] Severianus, Leander, Fulgentius, Florentina.

[15] Gregory's *Moralia* is dedicated to Leander.

[16] *Sancti Leandri Hispalensis Episcopi Regula sive de institutione virginum et contemptu mundi*, in Migne, *Patr. Lat.*, vol. 72, col. 866–898.

[17] Isidori *De Viris Illustribus Liber*, cap. 41.

[18] In one of Isidore's letters, addressed to Duke Claudius (Claudio duci), he says: "*Memento communis nostri doctoris Leandri.*" This seems to point to formal instruction given by Leander, and possibly to the existence of a school at Seville. Migne, *P. L.* 83, col. 905.

[19] Isidore, in his life of Leander (*De Viris Illustribus*, cap. 41), says: "(Leander) fluorit sub Reccaredo (d. 601) ... cujus etiam tempore vitae terminum clausit." Ildephonsus, in his life of Isidore (d. 636), says of him, "Annis fere quadraginta tenens pontificatus honorem" (Migne, *P. L.* 82, col. 68). Gregory the Great has a letter to Leander and one to Reccared belonging to the year 598–599 (Migne, *P. L.* 77, col. 1050–1056).

[20] Gams, *Kirchengeschichte von Spanien* ii, 2, pp. 89, 101.

[21] Contemporary sources for Isidore's life are: the passage in the *regula* of his brother Leander (Migne, *P. L.* 72, col. 892); the correspondence of Isidore (Migne, *P. L.*, 83, col. 893); Braulio's *Introduction* to Isidore's works (Migne, *P. L.* 82, col. 65); the life of Isidore given by Ildephonsus, bishop of Toledo (d. 667) in his

continuation of Isidore's *De Viris Illustribus*; and the letter of the clerk Redemptus, describing Isidore's death (Migne, *P. L.* 82, col. 68).

[22] Sancti Braulionis, Caesaraugust. episcopi *Praenotatio librorum Isidori*, Migne, *P. L.* 82, col. 65.

[23] The reference in this passage is undoubtedly to the difference between the colloquial Latin and that of the scholar. The same consideration may perhaps explain the decidedly peculiar comment of Ildephonsus on Isidore as a public speaker: "Nam tantae jucunditatis affluentem copiam in eloquendo promeruit, ut ubertas admiranda dicendi ex eo in stuporem verteret audientes, ex quo audita bis, qui audisset non nisi repetita saepius commendaret." Migne, *P. L.* 82, col. 68.

[24] This passage is found in Cicero, *Academica Posteriora* 1, 3, and is addressed to Varro.

[25] Braulio's list mentions a *Liber de Haeresibus* which does not appear in Arevalo's edition, and fails to mention the *Liber de Ordine Creaturarum* and the *Epistolae*, which are included. Ildephonsus's list is still less complete, leaving out the *Proœmia*, *Allegoriae*, *Numeri*, *Officia*, *Regula*, *De Ordine Creaturarum*, *Chronicon*, *De Viris Illustribus*, and the *Epistolae*.

[26] Quadam propria origine.

[27] Cato did not himself write on synonyms. But Isidore probably got this idea from the fact that synonyms were excerpted from his writings by later grammarians. See Teuffel, *History of Roman Literature*, 121, 6.

[28] Migne, *P. L.* 83, col. 9.

[29] There is a critical edition of *De Natura Rerum* by G. Becker, Berlin, 1857.

[30] Isidore describes this ruler in his *History of the Goths* as *scientia literarum magna ex parte imbutus*. See Migne, *P. L.* 83, col. 1073.

[31] "The higher meaning." Compare *De Natura Rerum*, chapter 26, 4: "Per hunc Arcturum, id est, Septentrionem, Ecclesiam septenaria virtute fulgentem intelligimus."

[32] See p. 64.

[33] See p. 24.

[34] See p. 126.

[35] "La Suma Teológica del Siglo VII." Menéndez y Pelayo, *Estudios de Crítica Literaria*, vol. 1, p. 149.

[36] If Isidore had been as thorough-going as Gregory in depreciating the secular he certainly would not have written the *Etymologies*. His strongest anti-secular spirit is shown in the chapter (13) *de libris gentilium* of the *Sententiae* where, following Gregory, he denounces "all secular learning." It is pretty plain, however, that he is here following his model rather than working out his own position, and in the last section of the chapter he modifies what he has said by admitting that grammar may "avail for life if only it is applied to better uses."

[37] It is not of great length—three hundred and twenty-eight quarto pages in the reprint of Arevalo's edition in Migne, *Patrologiae Latinae*, with about one-fifth of each page occupied by footnotes.

[38] See p. 46.

[39] See p. 165.

[40] See p. 175.

[41] The circumstances under which the *Etymologies* was written are referred to in Braulio's *Introduction* and in the life of Isidore by Ildephonsus (both in Migne, *P. L.* 82, col. 65–68); in the correspondence between Braulio and Isidore (Migne, *P. L.* 83, col. 910–914); and in the preface of the *Etymologies*.

[42] The oft-repeated expression, *Latinis, Graecis et Hebraicis litteris instructus*, found in the *Vita Sancti Isidori*, deserves no attention. There is no historical basis for the assertion that Isidore knew Greek or Hebrew. In view of the time, it would be more reasonable to demand proof that he did know them rather than that he did not. As to his knowledge of Greek, see Dressel, *De Isidori Originum Fontibus* in *Rivista di Filologia*, vol. iii (1874–75), p. 216. The legend of Isidore's wide linguistic learning persists, however, even in the 11th edition of the *Encyclopedia Britannica*. See Art. "Encyclopedia."

[43] *Cf. Etym.*, 2, 2, 1; 2, 25, 1 and 9; 3, 2. See pp. 111, 120, 125.

[44] The point has been made that Isidore shows his ignorance of the Greek language by the mistakes he made in the use of Greek words in his derivations. A few examples selected almost at random may be useful in this connection, although it must be remembered that the possibility of corruption in the text is always great.

(a) 3, 22, 6. "Chordas autem dictas a corde." (b) 3, 22, 8. "Lyra dicta ἀπὸ τὸ λυρεῖν a

varietate vocum." (c) 12, 1, 35. "Camur enim Graecum verbum curvum significat."

Why Isidore in (a) does not give the natural derivation from χορδή is not clear unless his knowledge of Greek was very slight. λυρεῖν, in (b), is a form that is not found in Greek. In (c) *camur* is not a Greek word written in Roman letters, as Isidore apparently thought. See Harper's *Latin Dictionary*. Compare also the form in which Aristotle's περὶ ἑρμηνείας is cited: *de perihermeniis*, *praefatio perihermeniarum*, *in libro perihermeniarum* (2, 27). Isidore's Greek has given his editors much trouble. See Migne, *Patr. Lat.* 81, 328, for comment upon it by Vulcanius, who edited the *Etymologies* in 1577.

[45] See p. 83.

[46] For a brief account of Oriental influences in Roman religion, see Dill, *Roman Society in the Last Century of the Western Empire* (London, 1898), ch. 4.

[47] Younger Pliny, *Epistles*, 3, 5.

[48] An outline of the contents of leading encyclopædic works, so far as known, is here given for purposes of comparison with the contents of the *Etymologies*.

Marcus Terentius Varro, 116–28 B.C.

Antiquitatum Rerum Humanarum et Divinarum Libri XLI.

Rerum Humanarum Libri XXV.

Bk. 1. Introduction.
2–7. de hominibus.
8–13. de locis (8, Rome; 11, Italy; 12, remaining Europe; 13, Asia and Africa).

14–19. de temporibus (14, introduction; 15, de saeculis; 16, de lustris; 17, de annis; 18, de mensibus; 19, de diebus).

20–25. de rebus.

Rerum Divinarum Libri XVI.

Bk. 26. Introduction.

27–29. de hominibus.

30–32. de locis.

33–35. de temporibus.

36–38. de rebus.

38–41. de diis.

This encyclopedia stands for the interests of the scholarly antiquarian rather than for those of the man interested in natural science. The work itself is lost, but the nature of its contents is fairly well known, thanks to St. Augustine. For further information regarding Varro's encyclopedic works, see Boissier, *Étude sur la vie et les ouvrages de M. Varron*, Paris, 1861; and *Geschichte der Römischen Literatur*, Martin Schanz, München, 1909, Erster Teil, Zweite Hälfte, 187, 188.

Verrius Flaccus (flourished under Augustus).

De Verborum Significatu.

The work itself has been lost, as also the greater part of the abbreviation of it to twenty books made by Pompeius Festus before 200 A.D. Festus's abridgement was further abridged by Paulus Diaconus in Charlemagne's time. It is regarded as certain that material in Isidore's *Etymologies* came directly or indirectly from the *De Verborum Significatu*. Nettleship, *Lectures and Essays*, Oxford, 1885.

Pliny the Elder (23–79 A.D.).

Naturalis Historiae Libri XXXVII.

Bk. 1. Contents and lists of sources.
2. Description of the universe.
3–6. Geography.
7. Man.
8. Animals.
9. Fishes.
10. Birds.
11. Insects.
12–27. Trees, shrubs, plants, including medicinal botany.
27–32. Medicinal zoölogy.
32–37. Metals, colors, stones, and gems, especially from the artist's point of view.

Dressel, *De Isidori Originum Fontibus*, pp. 243–247, in *Rivista di filologia*, 1874–75, gives an incomplete list of Isidore's borrowings from Pliny. He points out Isidore's carelessness in borrowing in one case where he shows that what Pliny tells us of the *echineis*, Isidore hastily assigns to the *mullus*. *Cf.* Isidore 12, 6, 25, with Pliny, 32; 8, 9, 70, 138–39.

Suetonius Tranquillus (last of first century and first half of second).

Prata.

This work is lost. It was an encyclopedia in at least ten books, of which the titles of some books and fragments have been recovered, a large portion of them from the *Etymologies* and *De Natura Rerum*. Among the subjects were *leges*,

mores, *tempora*, *mundus*, *animantium naturae*. Isidore quotes Suetonius twice. See A. Reifferscheid, *C. Suetoni Tranquilli Reliquiae*, Leipzig, 1860, pp. 155 *et seq.*, and Schanz, *Geschichte der Römischen Literatur*, Dritter Teil, pp. 47–66.

Nonius Marcellus (early fourth century).

Compendiosa Doctrina ad Filium.

Bks. 1–12. Grammatical in character, including one book, (5) *De Differentia Similium Significationum*.

13. de genere navigiorum.
14. de genere vestimentorum.
15. de genere vasorum vel poculorum.
16. de genere calciamentorum.
17. de coloribus vestimentorum.
18. de genere ciborum vel potorum.
19. de genere armorum.
20. de propinquitatum vocabulis.

This work is, in part, in dictionary form (Bks. 1–6). There is much resemblance between passages in Nonius Marcellus and in the *Etymologies*, which Nettleship believes to be due to the use of a common source. Nettleship, "Nonius Marcellus," in *Lectures and Essays*. Lindsay, *Nonius Marcellus*, Oxford, 1901.

[49] *Disciplinarum Libri IX*. Bk. 1. Grammar. Bk. 2. Dialectic. Bk. 3. Rhetoric. Bk. 4. Geometry. Bk. 5. Arithmetic. Bk. 6. Astrology. Bk. 7. Music. Bk. 8. Medicine. Bk. 9. Architecture. (Conjectural list of disciplines given by Ritschl, *Opusc.* 3, p. 312.)

[50] Martianus Capella, *De Nuptiis Philologiae et Mercurii*.

[51] See p. 91.

[52] *E.g.* Suetonius, *Prata*.

[53] See pp. 106, 114.

[54] Dressel, *De Isidori Originum Fontibus*, in *Rivista di filologia*, 1874–75, discusses Isidore's method of using his sources, and gives a list of writers and works to which he traces passages in Isidore, giving usually a list of the latter. The writers include Sallust, Justinus, Hegesippus, Orosius, Pliny, Solinus, the abridger of Vitruvius, Lucretius, Hyginus, Cassiodorus, Servius, the scholia on Lucan.

Nettleship, *Lectures and Essays*, Oxford, 1885, devotes attention chiefly to the encyclopedic tradition, treating of Verrius Flaccus, the *Glosses* of Placidus, the *Noctes Atticae* of Gellius, Nonius Marcellus, and Servius. He treats of Isidore only by the way, and lays stress on his debt to Suetonius, *Prata*, and Verrius Flaccus, *De Verborum Significatu*. See pp. 330–336, and for opinion of Latin encyclopedic tradition, pp. 283–285.

Reifferscheid, *Suetoni Reliquiae*, recovers several passages of Suetonius from Isidore.

C. Schmidt, *Quaestiones de musicis scriptoribus Romanis imprimis de Cassiodoro et Isidoro*, traces Isidore's *De Musica* to an unknown Christian writer.

G. Becker, editor of *De Natura Rerum*, Berlin, 1857, discusses the sources of that work especially, tracing it to Suetonius, Solinus, and Hyginus on the one hand, and Ambrose, Clement, Augustine, on the other.

H. Hertzberg, *Die Chroniken des Isidors, Forsch. zur deutschen Geschichte*, 15, 280 *et seq.*, discusses the sources of Isidore's *Chronica*, which he traces to Jerome's translation of Eusebius with later continuations. The same writer also treats of the

sources of *The History of the Goths* (Gött. 1874).

H. Usener, *Anecdoton Holderi* (Bonn, 1877), p. 65, asserts that Isidore did not use Cassiodorus' encyclopedia of the liberal arts.

M. Conrat, *Geschichte der Quellen und Literatur des Römischen Rechts im früheren Mittelalter* (Leipzig, 1891) treats of the sources of Isidore's *Leges*, pp. 151 *et seq.*; as also Voigt, *Jus Naturale*, 1, 576 *et seq.*, and Dirksen, *Hinterlassene Schriften*, 1, 185 *et seq.*

Arno Schenk, *De Isidori Hispalensis de natura rerum libelli fontibus*, Jena, 1909, finds that Isidore wrote the *De Natura Rerum* and the *Etymologiae* from his collection of excerpts which is drawn from Ambrose, Clement, Augustine, Jerome, the scholiast on Germanicus, Hyginus, Servius, the scholia on Lucan, Solinus, Suetonius, and a number of the Roman poets. This dissertation is largely meant to show that Reifferscheid in his work, *Suetoni Reliquiae*, had gone too far in attributing passages found in Isidore to Suetonius.

M. Klussman, *Excerpta Tertullianea in Isidori Hispalensis Etymologiis*, Hamburg, 1892, gives a list of nearly seventy passages borrowed by Isidore from Tertullian, at the same time pointing out that credit for the passages is nowhere assigned to the latter.

[55] For example, Isidore evidently had a theory as to the origin and value of language, but he does not state it anywhere, although innumerable times he approaches the subject in an oblique sort of way. See p. 99. Again, he never tells us whether he believed the earth to be flat or spherical; he uses at one time language that belongs to the spherical earth, and at another, language that can have sense only if he believed the earth to be flat. Here we have not only no definite statement of the conception—

although it must have existed in his mind, considering the frequency of his writings on the physical universe—but we have in addition the puzzle of deciding which set of expressions used in this connection was meaningless to him. See pp. 50–54 and Appendix.

[56] For Isidore's physical universe in general, see *Etym.* 3, 24–71; 13, 4–6; *De Natura Rerum*, 9–27. See pp. 142–154, 234, 243.

[57] Isidore seems to have kept an open mind on the question of the number of the spheres. He says: *de numero eorum* [*coelorum*] *nihil sibi praesumat humana temeritas*. *D. N. R.*, 13, 1.

[58] See 2, 24, 2 (p. 116).

[59] 3, 44; 13, 6. See p. 146.

[60] See Appendix I.

[61] De Quinque Circulis.

"In definitione autem mundi circulos aiunt philosophi quinque, quos Graeci παραλλήλους —id est, zonas—vocant, in quibus dividitur orbis terrae.... Sed fingamus eas in modum dextrae nostrae, ut pollex sit circulus ἀρτικός, frigore inhabitabilis; secundus circulus θερινὸς, temperatus habitabilis; medius circulus ἰσημερινὸς, torridus inhabitabilis; quartus circulus χειμερινὸς, temperatus habitabilis; quintus circulus ἀνταρτικὸς, frigidus inhabitabilis. Horum primus septentrionalis est, secundas solstitialis, tertius aequinoctialis, quartus hiemalis, quintus australis....

"Quorum circulorum divisiones talis distinguit figura (Fig. I).

3. "Sed ideo aequinoctialis circulus inhabitabilis est, quia sol per medium coelum currens nimium his locis facit fervorem, ita ut

nec fruges ibi nascantur propter exustam terram, nec homines propter nimium ardorem habitare permittantur. At contra *septentrionalis et australis circuli sibi conjuncti* idcirco non habitantur, quia a cursu solis longe positi sunt, nimioque caeli rigore ventorumque gelidis flatibus contabescunt.

4. "Solstitialis vero circulus, qui *in Oriente inter septentrionalem et aestivum* est collocatus, vel iste qui *in Occidente inter aestivum et australem* est positus, ideo temperati sunt eo quod ex uno circulo rigorem, ex altero calorem habeant. De quibus Virgilius:

"Has inter mediamque duae mortalibus aegris
Munere concessae divum.

"Sed qui proximi sunt aestivo circulo, ipsi sunt Aethiopes nimio calore perusti." *De Natura Rerum*, ch. x.

[62] The two passages in which Isidore states the theory of the zones correctly are from Hyginus, *Poeticon Astronomicon* (*Mythographi Latini*, ed. Muncker, Amsterdam, 1691). *Cf.* p. 146.

[63] For a similar confusion of *sphaera* and *circulus* see Appendix I.

[64] That this was Isidore's conception of the land surface is evident from many passages (*e.g.*, see p. 244) and is made certain from his map (p. 5). This map is found in an old edition of the *Etymologies* (*Libri Etymologiarum ... et de Summo Bono Libri III*, Venetiis, 1483) in the library of Union Theological Seminary.

[65] *Cf. Psalms*, 104, 2.

[66] *De Ordine Creaturarum Liber*, 4, 1–2.

[67] 3, 71, 3.

[68] *De Natura Rerum*, ch. 10.

[69] For a clear account of the theory of the four elements in medieval thought see *Les Quatre Elements*, J. Leminne in *Mémoires couronées par l'Académie Royale de Belgique*, v. 65, Bruxelles, 1903.

[70] *Etym.*, 13, 3. *Cf. D. N. R.*, 11.

[71] The theory of atoms is also stated by Isidore. See p. 235. It is not used, however, and is not fully stated. The part played in the theory by atoms of different sizes is not mentioned, and although "the void" is mentioned, its importance is not brought out.

[72] See Art. "Chemistry," *Encyclopedia Britannica*, 11th edition.

[73] *Etym.*, 13, 5, 1.

[74] *Diff.*, 1, 82.

[75] *De Ordine Creat. Liber*, 4, 5–6. *Cf. D. N. R.*, 11. The problem of "the waters above the firmament," which occupied the minds of the church fathers so much, and which is at variance with the cosmological side of the theory of the four elements, Isidore seems inclined to settle by regarding it as a miracle. *Cf. D. N. R.*, 14.

[76] In the *De Natura Rerum* and the *De Ordine Creaturarum*, as well as in Books XIII-XIV of the *Etymologies*, Isidore follows the order of the four elements in describing the universe. His fidelity to this order, as well as the variations of emphasis and of minor treatment which he introduced into it, are of interest. These may be exhibited in parallel form as follows:

	Etymologiae Books xiii and xiv	*De Natura Rerum*	*De Ordine Creaturarum*
	xiii, chaps. 4–6	chaps. 9–27	4–6
Fire (the heavens)	Astronomy, fuller	Astronomy, briefer, with an account of the angels, the inhabitants of the element of fire	
	xiii, 7–12	28–39	7–8
Air	The atmosphere and meteorological phenomena	The same, briefer, with an account of demons, the inhabitants of the air	

	xiii, 12–22	40–44	9	
Water	A description of water with a geography of the water surface of the earth	The description in very much abbreviated form	The same, in briefer, without the geography	
	xiv, 1–9	45–48	10–15	

Earth	A description of the dry land with a geography of the land surface of the earth	The description in very much abbreviated form	The same, briefer than in *De Natura Rerum*, with an account of men as the inhabitants of this element, their nature and future life

This table indicates the great stress Isidore laid upon the cosmological side of the theory of the four elements, as well as his tendency to use his large general ideas in relating the individual branches of knowledge. Here astronomy, meteorology, and geography are thus grouped together, and angelology is put into relation with astronomy and demonology with meteorology.

[77] *Etym.*, 13, 3, 3, and 8, 11, 17.

[78] *Diff.*, 2, 17, 48.

[79] *Diff.*, 2, 17, 67.

[80] Here blood and the element, air, are related; the passage quoted in the preceding paragraph shows a similar relation between

blood and the element water. Such inconsistencies are extremely common.

[81] *Etym.*, 4. 5.

[82] *Etym.*, 4, 7, 4.

[83] *Etym.*, 13, 7, 1.

[84] *Etym.*, 13, 3.

[85] *Etym.*, 13, 7. Almost side by side with this explanation of rain is another which says that rains "arise from an exhalation from land and sea, which being carried aloft falls in drops on the lands, being acted upon by the sun's heat, or condensed by strong winds," 13, 10, 2. Lightning is explained as caused by the collision of clouds (13, 9, 1); thunder, by their bursting (13, 8); the rainbow, by the sun shining into a hollow cloud (13, 10, 1).

[86] *D. N. R.*, 7, 4. *Cf. Etym.*, 5, 35, 1.

[87] *Sent.*, 1, 11, 1.

[88] "Mundus est universitas omnis, quae constat ex coelo et terra.... Secundum mysticum sensum, mundus competenter homo significatur, quia sicut ille ex quatuor concretus est elementis, ita et iste constat quatuor humoribus uno temperamento commistis. Unde et veteres hominem in communionem fabricae mundi constituerunt. Siquidem Graece mundus κόσμος, homo autem μικρόκοσμος, id est minor mundus, est appellatus." *D. N. R.*, 9, 2, and 3. *Cf.* 11, 3.

[89] *Sentent.*, 1, 8, 1–2.

[90] *Etym.*, 16, 25, 19.

[91] *Etym.*, 1, 3, 4. *Cf.* 6, 1, 3.

[92] *Etym.*, 11, 1, 109. *Cf. Diff.*, 2, 17, 56 and 71.

[93] While this mode of viewing the universe had its origin in pagan antiquity, and even earlier, its scope was greatly enlarged by Christian thinkers. Living in a world whose general constitution and purpose they thought they thoroughly understood, they were confident that even in its smallest details there could be perceived a conscious adaptation to the whole. This idea they often carried so far as seemingly to leave no place for chance or convention. Each trifling matter was given a meaning that was greater than itself.

[94] *Etym.*, 16, 26, 10.

[95] *Etym.*, 16, 25, 20.

[96] *Etym.*, 3, 23, 2.

[97] *Etym.*, 3, 4, 3.

[98] The explanation suggested accounts for the prevalence of allegory in medieval times. Among the less comprehensive and not characteristically medieval causes for it must be reckoned the influence of the parables that are explained in the New Testament, the occasional grossness of Biblical characters and language which called for an interpretation that would remove offence and offer edification, the congenial activity which allegorizing offered to the pious mind, and, finally, the fact that by a clever use of allegorical interpretation some desired end might be obtained.

[99] Migne, *P. L.*, 83, col. 303. “Inter haec igitur omnia decem praecepta solum ibi quod de Sabbato positum est figurate observandum

praecipitur. Quam figuram nos intelligendam, non etiam per otium corporale celebrandam, suscipimus. Reliqua tamen ibi praecepta proprie praecepta sunt, quae sine ulla figurata significatione observantur. Nihil enim mystice significant, sed sic intelliguntur ut sonant. Et notandum quia sicut decem plagis percutiuntur Aegyptii, sic decem praeceptis conscribuntur tabulae, quibus regantur populi Dei." The Scriptures were for Isidore *un vasto simbolismo* (Cañal, *San Isidoro*, p. 51).

[100] *D. N. R.*, 29, 2.

[101] *De Natura Rerum*, 14, 2.

[102] *Sent.*, 1, 8, 6.

[103] *Etym.*, 11, 3, 1 and 2.

[104] *Diff.*, 2, 100.

[105] *Diff.*, 2, 92.

[106] *Diff.*, 2, 97.

[107] *Sentent.*, 3, 3, 5.

[108] *Sentent.*, 3, 16, 5.

[109] *Etym.*, 8, 3, 2–3.

[110] Jerome, *In Isaiam*, Lib. xi, ch. 40. "Ita universa gentium multitudo supernis ministeriis et angelorum multitudini comparata pro nihilo ducitur." *Cf. Etym.*, 7, 5, 19.

[111] *Etym.*, 7, 5, 24.

[112] For appearance to man. *Cf.* Angeli corpora in quibus hominibus apparent, de superno aere sumunt. *Sentent.*, 1, 10, 19.

[113] *Diff.*, 2, 41.

[114] *Sentent.*, 1, 10, 16.

[115] *Sentent.*, 1, 10, 13.

[116] *De Ord. Creat.*, 8, 7–10.

[117] *Diff.*, 2, 41.

[118] *Sentent.*, 1, 10, 17.

[119] *Sentent.*, 3, 5, 35–36.

[120] See pp. 199–206.

[121] Four definitions are given, 2, 24, 3 and 9. *Cf.* 8, 6, 1; *Diff.*, 2, 149. See pp. 116–119. For the marshaling of the minor subjects under philosophy see Appendix II.

[122] *Sentent.*, 1, 17, 1–4.

[123] *Etym.*, 8, 6, 23. In books VII and VIII of the *Etymologies*, where the subjects taken up appear to be treated in the order of merit, the place of the pagan philosophers in the list is an instructive one. The list is as follows: God, the persons of the Trinity, angels, patriarchs, prophets and martyrs, the clergy, the faithful, heretics, pagan philosophers, poets, sibyls, magi, the heathen, and heathen gods, who are the equivalent of demons. See p. 196, note.

[124] 8, 7, 10.

[125] See p. 26.

[126] 8, 7, 1.

[127] *Sentent.*, 3, 13, 1. It seems extremely probable that Isidore did not quote from the poets directly but merely appropriated along

with other material the quotations contained in the sources which he consulted.

[128] "Illud trimodum intelligentiae genus," *Diff.*, 2, 154. *Cf.* "Tripliciter autem scribitur, dum non solum historialiter vel mystice sed etiam moraliter quid in unum quodque gerere debeat edocetur." *Contra Judaeos*, 2, 20. See also *De Ord. Creat.*, 10, 4–7 and *Etym.*, 6, 1, 11 (p. 186).

[129] *De Universo* is published in Migne, *Patr. Lat.*, 3. In the preface Rabanus says: "Much is set forth in this work concerning the natures of things and the meanings of words and also as to the mystical signification of things. Accordingly I have arranged my matter so that the reader may find the historical and mystical explanations of each thing set together (*continuatim positam*); and so may be able to satisfy his desire to know both significations." Isidore's *Etymologies* is said to have been left unfinished (quamvis imperfectum ipse reliquerit. Braulio's *Introduction*. See p. 25). The conjecture may be offered that the finishing of the work might have meant chiefly the insertion of "the higher meaning".

[130] *Sentent.*, 2, 1, 14.

[131] *Sentent.*, 1, 17, 2.

[132] Cuvier, *Histoire des Sciences Naturelles*, vol. i, pp. 260–280.

[133] *Cf.* Isidore's attitude: "The histories of the gentiles do no harm where they tell of what is profitable," 1, 41, 1. See p. 103.

[134] See p. 28 and note.

[135] 5, 38, 5; 5, 39.

[136] 9, 1, 1.

[137] 9, 2, 132.

[138] The basis on which the canon of the seven liberal arts was formed is indicated by a passage in Martianus Capella, who makes Apollo say in regard to the exclusion of medicine and architecture from it that "their attention and skill is given to mortal and earthly things, and they have nothing in common with the ether and the gods; it is not unseemly to reject them with loathing." (Ed. Eyssenhardt, IV, 13). The Christian Isidore held much the same notion as the pagan Capella. He believed that the order of the seven liberal arts terminating in astronomy was one whose object was "to free souls entangled by secular wisdom from earthly matters and set them at meditation upon the things on high" (3, 71, 41). See also pp. 65, 77. It is plain enough that education in both the pagan and Christian spheres was strongly affected by the mystical tendency of the time, and it is not too much to say that the seven liberal arts stand not so much for the impracticality of a "gentleman's" education as for that desirable in the education of a mystic.

[139] *Cf.* Cañal, *San Isidoro* (Sevilla, 1897), p. 23.

[140] *Cf.* Roger, *L'Enseignement des lettres classiques d'Ausone à Alcuin* (Paris, 1905), pp. 126–129.

[141] Of Augustine's treatises on grammar, dialectic, rhetoric, geometry, arithmetic, and music, all but that on music were lost within a very short time. They could have had but little influence. *Cf. Retract.*, 1, c. 6, and Teuffel and Schwabe, *History of Roman Literature*, Sect. 440, 7.

[142] M. Aurelii Cassiodori, *De Institutione Divinarum Litterarum* and *De Artibus ac Disciplinis Liberalium Litterarum*. In Migne, *P. L.*, vol. 70.

[143] Cassiodorus, *De Institutione Divinarum Litterarum*, Migne, *P. L.*, 70, 1108 and 1141. In the former of these passages Cassiodorus discusses also the question whether there should be absolute reliance on divine aid in the interpretation of the Scriptures—in which connection he cites miraculous interpretations by illiterate persons—or "whether it is better to continue in the use of the ordinary learning." He decides on the whole for the latter course. The fact that Cassiodorus wrote an account of the seven liberal arts shows perhaps that he was more benighted in his theory than in his practice. Gregory the Great, however, was more consistent and thorough-going. He stands as the typical example of extreme illiberality in the history of European education. His position is shown in the notorious letter addressed to the Bishop of Vienne: "A report has reached us which we cannot mention without a blush, that thou expoundest grammar to certain friends; whereat we are so offended and filled with scorn that our former opinion of thee is turned to mourning and sorrow.... If hereafter it be clearly established that the rumor which we have heard is false and that thou art not applying thyself to the idle vanities of secular learning (*nugis et secularibus litteris*), we shall render thanks to our God." Gregory the Great, Ep. ix. 54. The translation is that given in R. Lane-Poole, *Medieval Thought*.

[144] The second council of Toledo (531) devoted especial attention to the subject of preparation for the priesthood. See Mansi, *Sacrorum Conciliorum Collectio* (Florence, 1764), vol. 8 (*Concilium Toletanum II*).

[145] Mansi, vol. 8, p. 785.

[146] Cap. 2.

[147] Mansi, vol. 10, p. 626 (*Concilium Toletanum*, IV, Cap. 24).

[148] Isidore's *Regula Monachorum*, 20, 5.

[149] See p. 30.

[150] *Etym.*, 3, 71, 41.

[151] To this conception of the time, that the secular side of education was a necessary evil, of which a minimum use must be made, the school disciplines had in reality been adapting themselves for centuries by their growing formalism and loss of content. Among the seven liberal arts rhetoric is the best example of the former characteristic. It was so purely conventional a discipline in Isidore's time that, even though he wrote of it, he confesses that it made no impression on him, either good or bad. "When it is laid aside," he says, "all recollection vanishes." The loss of content, on the other hand, is best seen in Isidore's account of the four mathematical sciences, especially in that of geometry, which consists of nothing more than a few definitions.

[152] See p. 31 for outline of contents.

[153] However, Cassiodorus had in the *De Institutione Divinarum Litterarum* a chapter entitled "On monks having the care of the infirm". In this he urged upon them the reading of a number of medical works (those of Dioscorides, Hippocrates, Galen, Caelius Aurelianus, and "various others". Migne, *P. L.*, 70, 1146).

[154] 4, 13. See also p. 163.

[155] See Sandys, *History of Classical Scholarship*, pp. 6–10.

[156] It is still in existence. The best text is that of Uhlig, 1883 (Leipzig).

[157] "Grammar is a practical knowledge of the usages of language as generally current among poets and prose writers. It is divided into six parts: (1) trained reading with due regard to prosody; (2) explanation according to poetical figures; (3) ready statement of dialectical peculiarities and allusions; (4) discovery of etymology; (5) an accurate account of analogies; (6) criticism of poetical productions, which is the noblest part of grammatic art." *The Grammar of Dionysius Thrax*, translated by T. Davidson (St. Louis, 1874), p. 3. In contrast to this definition the body of the work is devoted to reading, punctuation, the alphabet, syllables, and the parts of speech.

[158] The older definition or its substance was still retained, however. See p. 97. Its retention is rather an evidence of conservatism than a proof of the continued study of the poets.

[159] The following list of passages gives some idea of the way in which grammatical works were produced in this age.

Vox sive sonus est aer ictus, id est percussus, sensibilis auditu quantum in ipso est. Probi, *Instituta Artium* in Keil, *Grammatici Latini*, vol. vi, p. 4, 13.

Vox est aer ictus sensibilis auditu, quantum in ipso est. Donati, *Ars Grammatica*. *Ibid.*, vol. iv, p. 367, 5.

Vox est aer ictus sensibilis auditu, verbis emissa, et exacta sensus prolatio. Sergii,

Explanationum in artem Donati, Liber I., *Ibid.*, vol. iv, p. 487, 4.

Vox est aer auditu percipibilis quantum in ipso est. Marius Victorinus, *Ars Grammatica*. *Ibid.*, vol. vi, p. 4, 13.

Vox quid est? Aer ictus sensibilisque auditu quantum in ipso est. Maximus Victorinus, *Ars Grammatica*. *Ibid.*, vol. vi, p. 189, 8.

Vox articulata est aer percussus sensibilis auditu quantum in ipso est. Cassiodorus, *Institutio de Arte Grammatica*. *Ibid.*, vol. vii, p. 215, 4.

Vox est aer ictus sensibilis auditu, quantum in ipso est. Isidore, *Etymologiae*, 1, 15.

These grammars are almost altogether made up of definitions which had become stereotyped.

[160] The greater length of his treatment is due to the fact that he includes more subjects than do the preceding writers of text-books. A comparison of his table of contents with those of Cassiodorus, Martianus Capella, Donatus, and Servius shows that he professes to cover much more than they; he has ten topics that do not appear in Donatus' *Ars Grammatica*, and a greater number that do not appear in Servius, Capella, or Cassiodorus.

[161] See especially his definition of verbum, 1, 9, 1.

[162] The analysis is meant to indicate briefly the formal organization of the subject. It is followed by selected passages in translation, which, while illustrating the technical treatment, are meant rather to give what is of more general interest. It must be remembered that this treatment by selected passages fails to give a just idea of the meagerness, attenuation, and confusion of the material considered as a whole.

[163] See p. 97.

[164] A set of terms unfamiliar to the modern student of grammar is given under this head. Nouns having six distinct case-forms are called *hexaptota*; those having five, *pentaptota*, and so on. See 1, 7, 33.

[165] Pronouns are classified according to use into *finita*, *infinita*, *minus quam finita*, *possessiva*, *relativa*, *demonstrativa*; and according to origin into *primigenia* and *deductiva*.

[166] Three conjugations are given.

[167] Note part of the definition: “Adverbium autem sine verbo non habet plenam significationem, ut hodie: adjicis illi verbum, hodie scribo, et juncto verbo implesti sensum.” 1, 10, 1.

[168] Isidore asserts that there are one hundred and twenty-four sorts of metrical feet, “four of two syllables, eight of three, sixteen of four, thirty-two of five, sixty-four of six.” 1, 17, 1.

[169] The ten so-called accents of the grammarians are described: the acute, the grave, the circumflex, the marks to indicate long and short vowels, the hyphen, the comma, the apostrophe, the rough and smooth breathing.

[170] This section is to be explained by reference to the chief controversy in the history of the science of grammar in classical times, that between analogy and anomaly, or whether grammatical regularity or irregularity was the more basic phenomenon. In Capella’s grammar *analogia* is the heading under which declensions of nouns and conjugations of verbs are given, while exceptions are grouped under the heading *anomala*. See Martianus Capella, Eyssenhardt, pp.

75–97. Also Sandys, *History of Classical Scholarship*, Index.

[171] Solecism is "the failure to put words together according to the correct method", while barbarism includes blunders in the use of single words. 1, 33, 1.

[172] Chiefly a parade of long words, like *perissologia*, *macrologia*, *tapinosis*, *cacosyntheton*, etc. 1, 34.

[173] A large number of poetical figures are described. This section is probably nothing but an evidence of conservatism, since Isidore certainly did not include a study of the poets in his scheme of education.

[174] A number of metres are described and some attention is given to different kinds of poetry, such as the elegiac, bucolic, hymn, cento, etc.

[175] Du Breul has *disciplinis*, not *artibus*.

[176] *Librarii et calculatores.*

[177] From Jerome, *ad Soph.*, in Migne, *Patr. Lat.*, 6, 7, 30.

[178] This sentence, as many others, is in the accusative and infinitive without any governing verb.

[179] *Liberalium litterarum.*

[180] *In complexum istarum cadunt.*

[181] See *Etym.*, 1, 21, 2–28.

[182] The grammarian.

[183] *Notas sed tantum praepositionum.* Probably abbreviations for prepositions and other connectives that were in frequent use.

[184] *Praefixis characteribus.*

[185] Among the seven liberal arts grammar is the art *par excellence*.

[186] *Cf. Quintilian*, 1, 6, 28.

[187] Quia nomina et verba rerum nota facit.

[188] *Cf.* 17, 6, 5, where *silva* (*xilva*) is derived from ξύλον (wood).

[189] *De Fabrica mundi et Evangeliis.*

[190] Isidore, *Etym.*, 2, 19, 14, "Praeterea secundum Victorinum enthymematis est altera definitio. Ex sola propositione, sicut jam dictum est, ita constat. 'Si tempestas vitanda est, non est navigatio requirenda.'"

Cassiodorus, *De Rhet.* Halm, *Rhetores Latini*, p. 500. "Praeterea secundum Victorinum enthymematis est altera definitio. Ex sola propositione, sicut jam dictum est, ita constat enthymema, ut est illud: 'si tempestas vitanda est, non est navigatio requirenda.'"

Isidore, *Etym.*, 2, 9, 18. "Hunc Cicero ita facit in arte rhetorica."

Cass. in Halm, p. 500, 18. "Hunc Cicero facit in arte rhetorica."

[191] The analytical treatment of this subject is obviously carried to an absurd degree. The whole activity of the orator is analyzed into five parts: *inventio*, *dispositio*, *elocutio* (wording), *memoria*, *pronuntiatio*. The whole subject-matter is analyzed into three parts: deliberative, epideictic, forensic. All court cases are analyzed from the point of view of the defence, according

to *status*, that is, according to the nature of the leading point in the case. The speech itself (*oratio*) is analyzed into four parts: introduction, narrative, argument and conclusion. All cases are analyzed again according to the psychological impression they make on the audience. All arguments are analyzed into regular and irregular syllogisms. Even negation, giving the lie, is analyzed into several sorts. Rhetorical figures are analyzed elaborately.

[192] "In which there is discussion of what ought or ought not to be done in regard to any of the practical affairs of life." 2, 4, 1. The *genus deliberativum* is divided into *suasio* and *dissuasio*, and each of these again, under the three headings, *honestum*, *utile*, *possibile*.

[193] Epideictic; divided into *laus* and *vituperatio*, 2, 4.

[194] Forensic rhetoric.

[195] Under this heading we have the chief effort of ancient rhetoric to be helpful to the defense in cases brought before the courts. The term *status* meant the crucial point in a case, and its subdivisions are intended to include the chief kinds of crucial points upon which the advocate must base his speech. The inference in both Isidore and Cassiodorus is that there is only one status in a case, but Quintilian (3, 6, 21) expressly says that there are more than one, and that the chief status in a case "is the strongest point in it on which the whole matter chiefly turns."

In this section Isidore borrows from Cassiodorus almost without change in the wording. In one case he has made a serious blunder in copying: the subdivisions that Cassiodorus places under *qualitas*, Isidore has

placed under *finis*. (Cass., *De Rhet.*, Halm, p. 496.)

[196] "When an act that is imputed to a person is denied by another" (2, 5, 3), and the balancing of evidence is the method of deciding.

[197] "When it is maintained that the act that is the matter of accusation is not that [specified], and its nature is shown by the use of definitions." 2, 5, 3.

[198] "In which the nature of justice and right and the abstract grounds of reward and punishment are gone into." 2, 5, 5.

[199] Term left undefined.

[200] "Which of itself offers no satisfactory ground for defence but seeks for defence beyond its own limits." 2, 5, 5.

[201] "When the accused does not deny the act but demands that it be pardoned." 2, 5, 6.

[202] "When the deed is confessed but guilt is denied" on the ground of ignorance, accident, or necessity. 2, 5, 8.

[203] "When the accused confesses that he has committed the wrong and has done so purposely, and still demands that he be pardoned, which kind can be of very rare occurrence." 2, 5, 8.

[204] "When the accused endeavors energetically to divert the charge made against him from himself and his guilt to another." 2, 5, 6.

[205] "When it is urged that there is justification because another had committed a

wrong before." 2, 5, 7.

[206] "When some other honorable or expedient act of another is alleged, for the accomplishing of which the act specified in the accusation is asserted to have been done." 2, 5, 7.

[207] "In which there is discussion of what is just in view of civil custom and equity." 2, 5, 5.

[208] "When the nature of the case is inquired into; and since the dispute is concerned with the real meaning and classification of the matter at stake, this is called the *constitutio generalis*." 2, 5, 3. This is the general heading under which all the sub-heads classified under *finis* should have been placed. Isidore made a mistake in copying from Cassiodorus, in whom the classification is correct.

[209] "When the case depends on this, that it is not the proper person who brings the action, or that it is not before the proper court, at the proper time, according to the proper law, charging the proper crime, demanding the proper punishment." 2, 5, 4.

[210] "When the words seem to be at variance with the intention of the writer." 2, 5, 9.

[211] "When two or more laws are perceived to be in conflict with one another." 2, 5, 9.

[212] "When what is written seems to have two or more meanings." 2, 5, 10.

[213] "When from what is written another thing also which is not written is inferred." 2, 5, 10.

[214] "When inquiry is made as to what is the force of a word." 2, 5, 10.

[215] A division applying only to the *genus deliberativum*.

[216] Six are usually given. Cassiodorus has *exordium*, *narratio*, *partitio*, *confirmatio*, *reprehensio*, *conclusio*. Halm, *Rhetores Latini Minores*, p. 497.

[217] An analysis of cases according to the emotional effect they are likely to have on the audience.

[218] "Ut admirentur (judices) quenquam ad defensionem eius accedere." Halm, 316, 34, from Sulpitius Victor.

[219] The irregular syllogism. Each sub-head is exhaustively analyzed.

[220] Giving the lie as conclusion of an irregular syllogism.

[221] A short account of the nature of law. This sub-head is not found in the text-books on rhetoric before Isidore's time.

[222] In the use of letters, words, and sentences.

[223] *Figurae verborum et sententiarum.* Samples of the former are *anadiplosis*, *paradiastole*, *antimetabole*, *exoche*; of the latter (forty-seven in all), *coenonesis*, *parrhesia*, *aposiopesis*, *aetiologia*, *epitrochasmus*. Cf. p. 107, note.

[224] H. W. Blunt, Art. "Logic," in *Encycl. Brit.*, 11th ed. See also Rashdall, *Universities of Europe in the Middle Ages* (Oxford, 1895), vol. i,

p. 36.

[225] It was thought that the Latin vocabulary was not well suited to the expression of the ideas of logic. *Cf.* Martianus Capella, *De Nuptiis Philologiae et Mercurii* (ed. Eyssenhardt) where Dialectica is about to speak: "Ac mox Dialectica, quanquam parum digne latine loqui posse crederetur, tamen promptiore fiducia restrictisque quadam obtutus vibratione luminibus etiam ante verba formidabilis, sic exorsa."

[226] It is true that the works of Boethius, which were not school texts, served to revivify the subject, but his influence was very slight in this respect until long after Isidore's time. M. Manitius, *Geschichte der lateinischen Literatur des Mittelalters* (München, 1911), pp. 29–32.

[227] 2, 26, 15. *Cf.* Cass. Migne, *P. L.*, vol. lxx, col. 1170.

[228] 2, 27, 1. *Cf.* Cass. Migne, *P. L.*, vol. lxx, col. 1170.

[229] 2, 28, 22. *Cf.* Cass. Migne, *P. L.*, vol. lxx, col. 1173.

[230] The substance of Isidore's *De Dialectica* is taken chiefly from Cassiodorus. A number of passages seem to be based on Martianus Capella: for example, *Etym.*, 2, 31, 1, on Martianus Capella (Eyssenhardt), 118, 8 ff.; *Etym.*, 2, 31, 4–5, on M. C., 118, 15–25; *Etym.*, 2, 31, 7, on M. C., 120, 9 ff.

[231] Isidore's ignorance of Greek has been inferred from his use of the forms, *isagogae* and *perihermeniae*. See p. 36.

[232] Du Breul has *theologia*; Arevalus,

theorica.

[233] This passage is copied from Cassiodorus and is not an indication that Isidore had read the work of Aristotle that is mentioned.

[234] A recommendation copied word for word from Cassiodorus.

[235] "The cumulative evidence is surely very strong that the alphabetic numerals were first employed in Alexandria early in the third century B.C." J. Gow, *A Short History of Greek Mathematics* (Cambridge, 1884), p. 48.

[236] We have in Isidore, for example, the terms *numerus trigonus*, *numerus quadratus*, *numerus quinquangulus*, and *linealis*, *superficialis*, and *circularis numerus*.

[237] Cajori, *Hist. of Math.*, p. 72.

[238] Gow, speaking of the Greek ἀριθμητική, says: "Its aim was entirely different from that of the ordinary calculator, and it was natural that the philosopher who sought in numbers to find the plan on which the creator worked, should begin to regard with contempt the merchant who wanted only to know how many sardines at ten for an obol he could buy for a talent." Gow, *op. cit.*, p. 72.

[239] Cantor believes that the use of the abacus had been forgotten before Isidore's time, *cf.* "calculator a calculis, id est a lapillis minutis quos antiqui in manu tenentes numeros componebant." *Etym.*, 10, 43. See Cantor, *Vorlesungen über Geschichte der Mathematik* (Leipzig, 1894–1900), vol. i, p. 774.

[240] Isidore adds to the account as found in Cassiodorus a few remarks about numbers in the

Scriptures, some derivations of numbers, and the sections on the means and on infinity.

[241] Du Breul has *magnitudinis et formarum*; Arevalo, *magnitudinis formarum*.

[242] This derivation points to a soft *c* in *decem*.

[243] Six was regarded as a perfect number, because it is equal to the sum of all its factors.

[244] *Pariter par, et pariter impar, et impariter par et impariter impar*. Since these all profess to be divisions of even number, the word odd is not used in the translation.

[245] To remind the reader of Isidore's notation Roman numerals are kept wherever he used them.

[246] The division into even, odd, and numbers sharing the characteristics of even and odd numbers goes back to Nicomachus. It is not a logical division, as the second class contains the third. See Gow, p. 90.

[247] *Superflui, diminuti, perfecti.*

[248] The examples are found in Du Breul. They do not appear in Arevalo.

[249] Cantor, *Vorlesungen über Geschichte der Mathematik*, vol. i, p. 521.

[250] The authenticity of the work on geometry that has been handed down under Boethius' name is questioned. (See Cantor, *ibid.*, pp. 536 *et seq.*) It contains the complete proof of only three of Euclid's propositions. It also contains calculations of areas of geometrical figures. See edition of Friedlein (Leipzig, 1867).

[251] *Cf.* Martianus Capella's definition: "Geometria vocor quod permeatam crebro admensamque tellurem eiusque figuram, magnitudinem, locum, partes et stadia possim cum suis rationibus explicare neque ulla sit in totius terrae diversitate partitio quam non memoris cursu descriptionis absolvam." Eyssenhardt, 198, 30.

[252] The whole of Isidore's *De Geometria* is here given, with the exception of a few passages that are untranslatable. It is given as a whole to enforce attention to the loss of the traditional content, partial or complete, which was so striking a feature of all the members of the quadrivium in early medieval times.

[253] *Hujus ars disciplinae. Ars* may be equal to 'hand-book' here.

[254] Schmidt, *Questiones de musicis scriptoribus Romanis, imprimis de Cassiodoro et Isidoro* (Darmstadt, 1899). This dissertation is in part an examination of the question whether the Roman writers associated music with grammar or the mathematical sciences in their enumerations of educational subjects. It contains a useful list of passages bearing on the seven liberal arts.

[255] Five definitions of music are given by Isidore, two making no allusion to its mathematical character. They are as follows:

"Musica est peritia modulationis sono cantuque consistens." *Etym.*, 3, 15, 1.

"Musica est disciplina quae de numeris loquitur qui inveniuntur in sonis." *Etym.*, 3, Preface.

"Musica est disciplina quae de numeris loquitur qui ad aliquid sunt his qui inveniuntur in sonis." *Etym.*, 2, 24, 15.

"Musica quae in carminibus cantibusque consistit." *Etym.*, 1, 2, 2.

"Musica est ars spectabilis voce vel gestu, habens in se numerorum ac soni certam dimensionem cum scientia perfectae modulationis. Haec constat ex tribus modis, id est, sono, verbis, numeris." *Diff.*, ii, cap. 39.

[256] *Etym.*, 3, 17, 1.

[257] *Etym.*, 3, 15, 1.

[258] C. Schmidt, *op. cit.*, after a detailed comparison of passages, concludes that Isidore did not obtain his material for *De Musica* from Cassiodorus or Augustine, but that all three go back independently to an original work produced by an unknown Christian writer. However, the numerous identical passages in Cassiodorus and Isidore would indicate that the latter had used the former at least as a guide in plagiarism. See Schmidt, pp. 26–52, and compare Dressel, *De Isidori Originum Fontibus* (Turin, 1874), pp. 5 and 6.

[259] Woodridge in the *Oxford History of Music* (Oxford, 1901), vol. i, p. 33, note, says of Isidore's *De Musica*, that it "clearly reveals the complete ignorance of his time. His dicta upon music are chiefly crude and misleading paraphrases from Cassiodorus and others, from which it is evident that the signification of the terms employed had completely escaped him. Modes are not mentioned by him [but *cf.* 3, 20, 7] and keys and genera are confounded together."

[260] *Qui voce propria canunt.*

[261] The pandura was a stringed instrument! In the succeeding sections these

instruments are briefly described, and the sambuca, another stringed instrument, is also included.

[262] Other instruments mentioned are *psalterum*, *lyra*, *barbitos*, *phoenix*, *pectis*, *indica*, *aliae quadrata forma vel trigonali*, *margaritum*, *ballematica*, *tintinnabulum*, *symphonia*.

[263] The general sense of the passage: "ut sine ipsius perfectione etiam homo symphoniis carens non consistat." 3, 23, 2. See p. 65.

[264] J. L. E. Dreyer, *History of the Planetary Systems from Thales to Kepler* (Cambridge, 1906), p. 141.

[265] See Introduction, p. 51.

[266] Tannery in his *Recherches sur l'histoire de l'astronomie ancienne* (Paris, 1893), has an interesting discussion of the successive names of the science of the heavenly bodies. He attributes the revival of the older term astronomy about the end of the third century A.D., to the association of the term astrology with divination. In Varro the name used was astrology.

[267] 3, 71, 21–40. See pp. 152–4.

[268] Du Breul has *Ptolemaeus, rex Alexandriae*.

[269] The canons by which Ptolemy calculated the position of the planets. Isidore makes no further reference to them.

[270] For map showing the *climata* see Konrad Miller, *Die ältesten Weltkarten* (Stuttgart, 1895), vol. iii, p. 127.

[271] This order is repeated in 13, 6.

[272] This passage indicates Isidore's belief in a flat earth. See pp. 51–54.

[273] Isidore does not observe the distinctions he lays down here. He does not seem to have known that Orion and Bootes were constellations.

[274] Du Breul has in addition: *latitudo intelligitur per signiferum, longitudo per proprium excursum*.

[275] The celestial equator.

[276] Subjects of medical interest are treated also in book xi (parts of the body, monstrous births, etc.), in book xii (healing springs), and in book xxii (diet). There is also a chapter (39) on pestilence in *De Natura Rerum*.

[277] Galen was one of these.

[278] Max Neuberger, *Geschichte der Medizin* (Stuttgart, 1906–1911), vol. i, pp. 310–321.

[279] *Ibid.*, vol. ii, p. 61 *et seq.*

[280] Neuberger, *op. cit.*, vol. ii, pp. 240–278 for an account of medicine in the early middle ages.

[281] This school was really founded in the first century B.C. According to it disease consists in a contraction or relaxation of the pores (*strictus status* or *laxus status*). Nothing but the supposed general condition of the body was of importance. Neuberger, *Geschichte der Medizin*, vol. 1, pp. 303–309.

[282] A school that appeared in the third century B.C., and corresponded in medicine to the skeptical movement in philosophy. All *a*

priori reasoning was rejected. *Ibid.*, vol. 1, pp. 276–284.

[283] The classical school of medicine founded by Hippocrates. Isidore fails to mention the Pneumatici and the Eclectici (*ibid.*, vol. 1, pp. 327–336), other prominent schools of medicine.

[284] The derivation which Isidore had in mind was probably ζῆν (to live).

[285] The sentence is a confused one. Isidore probably had in mind the derivation of *cholera* from χολή and ῥέω.

[286] *Arteriae.* Compare "Sanguis per venas in omne corpus diffunditur et spiritus per arterias." Cicero, *N. D.*, 2, 55, 138.

[287] Referring to the idea that the elements could pass into one another. See p. 60.

[288] Du Breul has *insania daemonum.*

[289] A kind of leprosy.

[290] *De initio medicinae.*

[291] The *De Legibus* constitutes Isidore's formal account of law. In bk. ii a chapter is devoted to the subject of law as a sub-division of rhetoric; it consists of definitions of general terms. In bk. ix there are chapters on citizens, and on degrees of kinship, which have a legal bearing. *Cf.* also bk. xviii, 15.

[292] Considering the intellectual stagnation of the time, it seems quite possible that the Justinian code was unheard of wherever it was not actually the law of the land. Vinogradoff gives the conclusion of modern scholarship as to this when he says (*Roman Law in Medieval*

Europe, London, 1909, p. 8): "The *Corpus Juris* of Justinian, which contains the main body of law for later ages, including our own, was accepted and even known only in the East and in those parts of Italy which had been reconquered by Justinian's generals. The rest of the western provinces still clung to the tradition of the preceding period, culminating in the official code of Theodosius II (A.D. 437)." Compare also Conrat, *Die Epitome Exactis Regibus*, Introd., pp. 248–257; Flach, *Droit Romain au Moyen Age* (Paris, 1890), especially pp. 52–57. Conrat, in his *Geschichte der Quellen und Literatur des Römischen Rechts in Früheren Mittelalter*, pp. 150–153, maintains, first, that there is no trace of evidence elsewhere in Isidore's works, of a knowledge of the existence of the Justinian code; and, second, that the internal evidence in the *De Legibus* points to the use of other sources. See also Ureña, *Historia Crítica de la Literatura Jurídica Española* (Madrid, 1897), vol 1, p. 294.

[293] The *De Legibus* should not be regarded as a text-book for a law school, but for the subject of law as forming a minor part of the preparation of a priest. See Introd., p. 87, and Flach, *op. cit.*, the fourth section of which (pp. 104–128) deals with the teaching of law from the sixth to the eleventh century.

[294] For an account of separate MSS. of Isidore's *De Legibus* (often containing also legal matter from bks. ii, ix and xviii), see Joseph Tardif, *Un Abrégé Juridique des Etymologies d'Isidore de Seville* in *Mélanges Julien Havet* (Paris, 1895).

[295] *Communis omnium possessio.*

[296] Holding the consulate for part of the year only.

[297] Reading *legis* for *eius*. See 2, 10.

[298] See Muirhead, *The Law of Rome*, p. 249.

[299] In his "On Times," Isidore is apparently condensing what he has written elsewhere. The first part of it, which gives an account of the divisions of time—the moment, hour, day, week, month, year, and so forth—is drawn from *De Natura Rerum*, which in turn was based on Suetonius, Solinus, Hyginus, of the heathen writers, and Ambrosius, Clement, and Augustine, of the Christian. (See p. 46.) In the second part, which consists of a brief chronology, Isidore condensed his *Chronicon*, which was drawn from Eusebius as translated and modified by Jerome, and supplemented by the later work of Prosper, Victor Tunnensis, and Joannis Biclarensis. The sources of the *Chronicon* have been thoroughly discussed by H. Hertzberg, *Ueber die Chronicon des Isidors von Sevilla* in *Forschungen zur Deutschen Geschichte* (Göttingen, 1875), vol. xv.

[300] At the same time chronology was incidentally made to show in a statistical way what a great priority Hebrew civilization had over its pagan rivals. *Cf.* pp. 79, 80.

[301] In some respects Isidore's chronology is peculiar, and differs from any known chronology of world-history of the time. For example, where Hieronymus gives the time from the flood to Abraham as 1072 years, Isidore gives it as 942 years; and where Africanus put the birth of Christ in the year 5500 of the world, Isidore put it in 5197. See Hertzberg, p. 376. Again, only the full years are noticed, the fractions of the older chronologies being either counted as integers or ignored, though this is not done according to any system. For table showing irregularities here, see *ibid.*, p. 325, notes 3 and 4.

[302] E.g. *De Civitate Dei*, xxii, 30.

[303] 5, 38, 5.

[304] *Hora* (hour) and *ora* (coast or border) are confused.

[305] *A communionis temperamento.*

[306] So in the case of summer, autumn, and winter.

[307] The reference in "complex history" (*complicem historiam*) is to the parallel sets of chronological tables of the histories of different peoples given by Eusebius.

[308] Sufficient of Isidore's chronology is translated to give an idea of its method and of the events mentioned in it. His dates for the six ages of the world are as follows:

First age	0–2242.
Second age	2242–3184.
Third age	3184–4125.
Fourth age	4125–4610.
Fifth age	4610–5155.
Sixth age	5155–?

The world according to Isidore's chronology was in its 5825th year. Although Isidore professes to start the sixth age with the birth of Christ, he really starts it with the beginning of the reign of Augustus. See *Chronicon*; Migne, *P. L.*, vol. 83, col. 1038.

[309] These three books are not grouped by Isidore under one name. There apparently was no name in existence by which to designate them, as *theologia* was not applied, commonly at least, to Christian doctrine before Abelard's time.

[310] The sources of bks. vi-viii differ from those of the remaining books of the *Etymologies* in being almost exclusively Christian. Isidore himself, in his non-secular writings, covers more fully the subjects which he here treats in a summary fashion. Compare bk. vi, chaps. 1 and 2, with *Proemia in Libros Veteris ac Novi Testamenti*; bk. vii, chaps. 6 and 7, with *Expositiones Mysticorum Sacramentorum* and *De Ortu et Obitu Patrum*; bk. viii, chaps. 1–5, with *Sententiarum Libri Tres*; bk. vi, chap. 19, and bk. vii, chaps. 12, 13, with *De Ecclesiasticis Officiis*.

[311] See pp. 43, 86.

[312] Of the alphabet.

[313] This passage is preceded by a table indicating the date of Easter for 95 years (627–721). It is clear that although Isidore was not acquainted with the plan of Dionysius Exiguus to institute the Christian era, he was acquainted with the essentials of his Easter table. Dionysius had given the dates for Easter in five 19-year cycles, dating from 525; in Isidore this is continued for the years 627 to 721. Isidore's table consists merely of parallel columns of the days of the month and corresponding days of the moon on which Easter fell. Each date is marked C or E, abbreviations for *communis annus* and *embolismus* which describe respectively the year of twelve and that of thirteen lunar months in use in the Hebrew chronology. A further abbreviation, B, stands opposite each fourth year, to mark the leap-years. The years are not numbered according to any era, and the assignment of dates, 627–721, is inferred from the dates given for Easter. See Ideler, *Chronologie*, vol. ii, p. 290 (Berlin, 1826). Isidore does not make it plain that he understood the mathematics of the computation of Easter. It is of

interest that in 643 the fourth synod of Toledo passed an enactment to secure a common observance of Easter throughout the Spanish churches, no doubt according to this Easter-table. See Gams, *Die Kirchengeschichte von Spanien* (Regensburg, 1874), vol. ii, part 2, p. 94.

[314] It is worth noticing that in bks. vii and viii Isidore gives a list of the whole hierarchy of supernatural and human existences beginning with God and ending with the devil. An inspection of the order of subjects will suggest to the reader that he was arranging them in order of merit. If this supposition is correct, the table of contents of these two books is a very significant one, as throwing light upon Isidore's scale of values for the divine, the human and the demonic.

[315] A list of heresies precedes.

[316] Du Breul, *hominum* instead of *omnium*.

[317] Reading *secreta* for *decreta*.

[318] Verg. *Aen.* 4, 487–491, not quoted directly but taken from Augustine, *De Civitate Dei*, 21, 6.

[319] From Augustine, *De Civitate Dei*, bk. vii. cap. 35.

[320] The reference is to heathen gods.

[321] Isidore gives a table of "the prohibited degrees" within which marriage was forbidden by the rule of the church. Since the introduction of Christianity these had been steadily extended until in Isidore's lifetime intermarriage within the seventh degree was prohibited by Pope Gregory. The analogy between the wide extension of "the prohibited degrees" in the dark

ages and that found among primitive peoples generally is remarkable. Westermarck, *History of Human Marriage*, p. 297, says: "As a rule among primitive peoples unaffected by modern civilization, the prohibited degrees are more numerous than in advanced communities, the prohibitions in many cases referring even to all the members of a tribe or clan." For an account of this development of marriage, see Westermarck, *op. cit.*, p. 308, and Smith and Cheetham's *Christian Antiquities*, art. "Prohibited Degrees." This social phenomenon of the dark ages is a development parallel to the recrudescence of the primitive in the intellectual sphere which is illustrated in so marked a manner in the *Etymologies* (*cf.* pp. 50–54).

[322] *Corporaliter.*

[323] The names of the nations are enumerated in the preceding sections.

[324] The name China appeared for the first time in the *Christian Topography* of Cosmas Indicopleustes. It does not appear in the *Etymologies*.

[325] This is the only part of the *Etymologies* in which Isidore gives up every principle of organization of his subject-matter except the alphabetical one. Elsewhere the terms are grouped according to their meaning, with sometimes traces of alphabetical order in the groups, but here the dictionary method alone is used.

[326] Grandson, sometimes has meaning of prodigal, spendthrift.

[327] In the first part of book xi are contained the remnants of the sciences of human

anatomy and physiology as the ancients had known them. The second part is devoted to unnatural births, which were regarded as having a prophetic meaning, and to monstrous races. It is not known what were Isidore's immediate sources for bk. xi. Most of the natural science of the later Roman empire, however, was drawn ultimately from Pliny. To correspond to Isidore's topics in this book of the *Etymologies*, comparative anatomy and physiology are found in Pliny's *Natural History*, bk. xi, ch. 44 *et seq.*, and chapters on monstrous races (*Gentium mirabiles figurae*) and on unusual and unnatural births (*prodigiosi, monstruosi partus*) are found in bk. vii.

[328] *Vult.*

[329] Cuvier, *Histoire des Sciences Naturelles*, vol. i, p. 166.

[330] Cuvier, vol. i, p. 264.

[331] The *Physiologus* probably originated at Alexandria in the first century A.D., and was translated into the Latin about the end of the fourth century. It was very popular with the church fathers. Isidore's *De Animalibus* exhibits its influence in many passages. See Lauchert, *Physiologus* (Strassburg, 1891), p. 103. A Greek version of the *Physiologus* is given by Lauchert and a Latin by Cahier in *Mélanges d'Archéologie*, Paris, vols. ii, iii, iv (1851–53).

[332] *Superacta pernicie veneni.*

[333] The Greek is μῦς.

[334] A notion found in the *Physiologus*.

[335] This animal is of literary origin and illustrates the danger of a literary science. For

some reason the Septuagint translators translated the Hebrew word for lion in Job 4:11 by the word μυρμηκολέων. The commentators later on, in their efforts to explain the term, evolved a new animal, a compound of ant and lion. See Lauchert, *Geschichte des Physiologus*, p. 21, and art. "Physiologus" in the *Encyclopedia Britannica*, 11th ed.

[336] *Aranea, vermis aeris*, 12, 5, 2.

[337] ἔχω, ναῦς.

[338] *Cornix* is not a Greek word, as Isidore seems to imply. Its nearest Greek equivalent is κορώνη.

[339] *Cf.* Beazley, *The Dawn of Modern Geography*, pp. 366–67. See also p. 53, note.

[340] Repeated with little change from *De Astronomia*. See pp. 145, 146.

[341] ὕλη.

[342] I.e., *elementa* = *hylementa*.

[343] The word στοιχεῖον means "one in a series."

[344] *Orbis.*

[345] *Orbem.*

[346] *Terrae.*

[347] *Opem fert frugibus.*

[348] See Map, p. 5.

[349] Romphaea flamma. *Cf. Etym.*, 18, 6, 3.

[350] Egypt is regarded as part of Asia. 14, 3,

27–28.

[351] Extra tres autem partes orbis, quarta pars trans Oceanum interior est in Meridie.

[352] See p. 145.

[353] Architecture appears in a disintegrated form in the *Etymologies* (bks. xv, chs. 2–12; xix, chs. 8–19). A comparison with Vitruvius's work on architecture (translated by J. Gwilt, London, 1880) shows that the main differences between the subjects treated by Isidore and those in Vitruvius's work lie in the omission by the former of the account of building materials (bk. ii), temple architecture, water supply (bk. viii), dialling, and mechanics.

[354] See Introd., p. 32. The two chapters, "De Mensuris Agrorum" and "De Itineribus," together with three chapters of bk. xvi, "De Ponderibus," "De Mensuris," "De Signis," are given in Hultsch, *Metrologicorum Scriptorum Reliquiae*, Leipzig, 1886 (*Scriptores Romani* in vol. ii). Hultsch finds (vol. ii, 34) that Isidore made use of Columella and a number of minor writers on these subjects.

[355] Isidore probably had in mind some derivation of Byzantium, which would explain his meaning here, but he gives no hint of what it was.

[356] Saragossa.

[357] Pliny's five books (xxxiii-xxxvii) on mineralogy in his *Natural History* are the chief source upon which later writers drew. An epitome of them, or rather, an epitome of an epitome, was made by Solinus in the third century. This underwent a further revision in the

sixth century. Isidore is supposed to have used both the epitome and the original, as well as an unknown source, from which he drew the medical virtues of the precious stones. *Cf.* King, *The Natural History, Ancient and Modern, of Precious Stones* (London, 1865), p. 6.

[358] Asphalt, alum, salt, soda, etc.

[359] Striped jasper.

[360] Unknown.

[361] Twenty-one of these are named.

[362] The information on military matters contained here and in bk. ix was drawn ultimately from the succession of Roman writers on military science. The chief of these were Frontinus, Hyginus, Vegetius.

[363] The title, *De Spectaculis*, and much of the material are drawn from Tertullian's *De Spectaculis*. See M. Klussman, *Excerpta Tertullianea in Isidori Hispalensis Etymologiis* (Hamburg, 1892).

[364] Compare Tertullian, *De Spectaculis*, chs. 6–9.

[365] At this point in his work Isidore turns from the 'sciences' to the useful arts.

[366] For a similar subject and treatment, compare *De Genere Navigiorum*, in Nonius Marcellus's encyclopedia. See p. 43.

[367] For passages illustrating Isidore's cosmology, see *Etym.*, 2, 24, 2; 3, 52, 1; 3, 47; 9, 2, 133; 11, 3, 24; 13, 1, 1. See also pp. 50–58 and notes.

[368] 2, 24, 3–8. See pp. 73–74, 116–119.

[369] 2, 24, 10–16.

[370] *Diff.*, 2, 39.

[371] The list given here is not a complete list of works consulted. The wide range of topics included in Isidore's encyclopedia has made it necessary to consult a great many books, and the great modern encyclopedias have been used continuously, especially the 11th edition of the *Encyclopedia Britannica*.

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- The book cover image was created by the transcriber and is placed in the public domain.
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- Other emendations made:

p. 14: "*Yerra*" → "*Terra*"

p. 141: placement of anchor for note [267] conjectured. None found.

p. 210: "25." → "9." and "of the stock of Cham, who stock of Sem" → "of the stock of Sem", both after checking the Latin original.

p. 233: Added "[On Universe and Earth]" as a general title to "Books XIII and XIV" chapter, both in this page and in the Table of Contents.

p. 243: placement of anchor for note [347] conjectured. None found.

p. 264: Added "[Isidore's Use of the Word *Terra*]" as a title to Appendix I, taken from the Table of Contents.

*** END OF THE PROJECT GUTENBERG EBOOK AN ENCYCLOPEDIST OF THE DARK AGES: ISIDORE OF SEVILLE ***

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