

Greek Philosophy and Encyclopedic Knowledge

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What does “encyclopedic knowledge” mean to us today? I believe that, as in the eighteenth and nineteenth centuries, what we mean by this term is a knowledge that strives to embrace in detail the greatest possible number of sciences and bodies of knowledge. As Sainte-Beuve said in 1850 regarding Madame de Genlis:

All these tastes, all these diverse talents, all these pleasurable arts, all these trades (for she didn't even omit the trades), made her a living Encyclopedia that prided itself upon being the rival and the antagonist of the other Encyclopedia.¹

The “other Encyclopedia” is obviously the *Encyclopædia (Encyclopédie ou dictionnaire raisonné des sciences, des arts et des métiers)* initiated under the direction of Diderot and d'Alembert in 1751. In the eyes of Diderot, it was in his day and age no longer possible for one single person to assimilate an encyclopedic knowledge. In the article that he devotes to the word “Encyclopedia,” Diderot writes: “... the aim of an *encyclopedia* is to collect all the knowledge scattered over the face of the earth, to present its general outlines and structure to the men with whom we live, and to transmit this to those who will come after us ... When we come to consider the immense subject matter of an *encyclopedia*, the only thing that we can distinctly perceive is that it cannot be the endeavor of one man alone. For how could one single man, in the short span of his life, succeed in knowing and developing the universal system of nature and art?” Today, since the sciences have increasingly developed over the last few centuries, we have encyclopedias that, extending the meaning of the term, cover one single science: in keeping with our domain of study, an example is Pauly's *Realencyclopädie der klassischen Altertumswissenschaften*, begun approximately one century after Diderot's and d'Alembert's *Encyclopedia*.

While in Diderot's mind philosophical reflections were not absent from the conception of his *Encyclopedia*, this work has hardly anything in common with the ancient *enkyklios paideia* of the Roman Empire, with two exceptions: first, the term "Encyclopedia" derives from this Greek term (as the Grand Robert indicates)², and second, both claim a universal program, although, as we shall see, this universality is understood completely differently in each case.³ The technical term *enkyklios paideia*, rarely used in ancient literature and not to be found before the late Roman Republic, should not be translated as "customary education" or "ordinary education" as has often been done, but as "complete, encyclopedic instruction (or culture)." In fact, scholars like Diderot who took up the term *enkyklios paideia* in the sense of encyclopedia as the title of their works embracing a universal knowledge did not mistake its meaning.⁴ For, far from referring to the education customarily lavished upon the youth of the upper social classes, consisting essentially in the study of grammar (= literature) and rhetoric, and excluding mathematical studies, the *enkyklios paideia* is the fruit of complex philosophical reflections that ultimately refer back to Plato,⁵ but can also be found in Aristotle.⁶ These reflections led to the conviction that all arts founded on reasoning formed a unified corpus, since all of their objects could be grasped using the same rational method – dialectic – such that if only one were thoroughly studied, it would be possible to learn all others easily. However, from this conviction of the unity of all sciences, it was concluded that, in order to understand even one, all the others needed to be studied in terms of their theoretical content. The idea of a unity of sciences implies that it is desirable to know them all. This is clearly expressed in a scholium from Dionysius of Thrace's *The Art of Grammar*, which has in addition the merit of identifying *expressis verbis* the *enkyklioi technai* with the sciences founded on reasoning:

Enkyklioi are the arts (*technai*) that some call *logikai* (= founded on reasoning), such as astronomy, geometry, (theoretical) music, philosophy, medicine, grammar, and rhetoric. They are called *enkyklioi* because he who learns an art must, perusing all of them, introduce into his own art that which he finds useful in each one of them.⁷

In the beginning of his treatise on architecture, the architect Vitruvius, who wrote slightly before Augustus' accession, enumer-

ates all sciences the knowledge of which seemed to him indispensable for a good mastery of architecture: literature (= grammar), geometry, the history of peoples, the ethical and physical components of philosophy, the theory of music, medicine, law, and astronomy. To those who might object to the vastness of this project for the learning of one single man, he replies:

Still, the observation that all sciences (*disciplinae*) have a common bond of union and intercourse with one another will lead to the belief that this can easily be realized: for the *encyklios disciplina* forms, as it were, a single body made up of these members.⁸

Vitruvius defines this unity in the following manner. In each art, practice (*opus*) must be distinguished from theory (*ratio*).⁹ The practice is specific to each art, while the theory is in common: "In all of the disciplines (*doctrinis*), many points, perhaps all, are in common, insofar as the theoretical discussion of them is concerned."

Therefore, it is not in the practical and technical details, specific to each art, that the *enkyklios paideia* seeks to embrace the totality of sciences based on reasoning, but in the domain of theoretical reflection, considered as common to all sciences. This theoretical reflection, as we shall see, was provided by the dialectical method. Thus, all aspects of art that belong to the domain of manual labor or are purely technical were excluded from the *enkyklios paideia*, in contrast to the contents of Diderot's *Encyclopedia* and later encyclopedias. The *enkyklios paideia* did not strive for a knowledge of details, but for a knowledge of the essence of each art founded on reasoning. From the start, the trades and the fine arts were excluded.

The number of sciences included in the *enkyklios paideia* was never fixed, for the simple reason that the phrase "art (or science) founded on reasoning" allowed different interpretations. For centuries, the question of determining whether or not medicine and architecture should be counted among these arts, for example, could not be agreed upon.¹⁰ From a strict point of view, one particularly defended by Platonists and Neoplatonists, medicine and architecture were too mixed up in the practice of everyday life to qualify as a "science founded on reasoning," which, according to them, required a certain distancing from the world of sensation. The authors who use the technical term *enkyklios paideia* furnish different listings, depending in part on their particular interests.

Vitruvius, as we have seen, considered grammar, geometry, history, philosophy, (theoretical) music, medicine, and law to be the indispensable sciences for a good mastery of architecture. And architecture, for him, obviously counted as a science founded on reasoning. Galen, the famous doctor of the second century A.D., includes the following sciences in the *enkyklios paideia*: medicine, rhetoric, (theoretical) music, geometry, arithmetic, calculation, astronomy, grammar, and law.¹¹ When Pliny the Elder (*Nat. hist. praef.* 14) says in his *Natural History* that he must consider all subjects included by the Greeks among the *enkyklios paideia*, whether these subjects were well known or little explored and obscured by personal invention, he obviously has in mind all the subjects that make up his work, i.e., astronomy, meteorology, geography, ethnology, zoology, botany, geology, and pharmacology: essentially, the subjects dealt with by the philosophers of Stoic and Peripatetic tendency, but never a part of the customary education of youth.

The terms *enkyklios paideia* or *encyklios disciplina* therefore refer to a program of study, unified in method and structure, that must be followed in order to achieve a complete education. It is also in a way a "cycle" (*kyklos* = circle, cycle), and the sciences that make it up can in turn be labeled *enkuklioi*. In Antiquity however, this cycle does not refer to a set number of sciences, such as the "seven arts" for example, but corresponds rather to the idea of internal unity and completeness. This idea of mutual completeness, unity, and interpenetration of the different sciences belonging to the *enkyklios paideia* could be metaphorically expressed: on the one hand, by the image of the circle, in Platonic philosophy, as the perfect geometric figure and the symbol of a whole closing upon itself, and on the other, by the circular path and the choir of Muses forming a circle around Apollo.¹²

While we can succeed in circumscribing the content of this notion by carefully reading the relatively rare texts where the term *enkyklios paideia* or its equivalents appear, it is unfortunately impossible, because of the loss of the greater part of Hellenistic and imperial philosophical literature, to attain a precise idea of the progressive development of this term. We must be satisfied with the few bits and pieces of texts capable of guiding us in certain directions. In Book III of the dialogue *De oratore* (completed in 55

B.C.), Cicero has Crassus attribute to Plato the idea of the unity of sciences, without however using, either here or in his numerous other works, the term *enkyklios paideia*:¹³

But if, he says, in its vastness, such a conception (that is, of the harmonious unity of the cosmos) seems to surpass human perception and intelligence, there is at least Plato's famous and true statement ... that the whole of the doctrinal content of the liberal and human sciences are held together by a unique link; since, as soon as we have seen the strength of this relation by which we know the origins and issues of things, we discover a marvelous agreement and harmony between all the sciences.¹⁴

Cicero is clearly referring here to the *Epinomis* 991e – 992a (*uno quodam vinculo = desmos heis*), although the author of the *Epinomis* in this place speaks only of the “unique link” tying together the mathematical sciences: arithmetic, geometry, theoretical music (that is, music as seen from the angle of mathematical proportions: rhythms, harmony), and astronomy. In the seventh book of the *Republic*, Plato more generally discusses the connection that exists between the sciences and that dialectic alone is capable of revealing.¹⁵ He says that, beginning in their twentieth year, the carefully selected young people must be presented again with “the various studies acquired without any particular order as children in their education, to be integrated into an overview that reveals the kinship of these studies with one another and with the nature of that which *is*.” According to Plato, this method of teaching old subjects from new angles also served to set apart those students who were capable of an overview, and thus gifted in dialectic, from those who weren't: “For the man who is capable of an overview is dialectical while the one who isn't, is not.” The ensuing text demonstrates that this synoptic instruction was supposed to lead, in their thirties, to the culmination of their studies, that is, to instruction in a superior form of dialectic enabling students, after having “released themselves from the eyes and the rest of sense, to go, in the company of truth, to that which *is* in itself.” This text reveals the existence in Plato's mind of two levels of dialectic that were distinguished, I believe, not by their methods, but by their objects of study,¹⁶ and by the degree of maturity and training of those who used them. Finally, in *Phaedrus* (266b), Socrates praises dialectic, which, through its method of analysis and synthesis, is always capable of discovering the essential: “Now I am myself,

Phaedrus, a lover of these divisions and syntheses, so that I may be able both to speak and to think. If I think anyone else has the capacity to look upon a unity that is also, by nature, the unity of a multiplicity, *I follow him in his footsteps, pursuing him as if he were a god*. And furthermore, those who can do this – whether I give them the right name or not, God knows – but at any rate up till now I call them experts in dialectic.”

Influenced by these texts, a complementary idea is expressed in Cicero’s *De oratore* (I, 187-188), according to which each one of the arts – (theoretical) music, geometry, astronomy, grammar, and rhetoric – could have been established as an art only with the help of dialectic, the science belonging to philosophy:

Nearly all the elements now contained in the arts were once dispersed and did not form a unified whole ... And so a certain art was called in from the outside, from another domain, which philosophers arrogate wholly to themselves, an art that would in a sense cement the disconnected and fragmented matter and bind it together by a certain method (*ratione quadam constringeret*).

Cicero’s above-cited texts are links in his proof of *De oratore*’s general thesis, which first affirms the essential unity of rhetoric and philosophy, the art of good speaking and the art of good living, and then requires an extensive general culture on the part of the perfect orator, since one cannot speak eloquently of things that one does not know. Obviously, the orator needs a knowledge of rhetoric, which cannot be learned without a prior knowledge of grammar, that is, literature with its complementary instruction in history; then he must have a knowledge of dialectic, the ethical and physical components of philosophy, and law. The acquisition of this multiple knowledge is facilitated by the knowledge of dialectic, which has not only structured and thereby constituted certain arts, but which also, by this very fact, serves as the link between them, making their kinship apparent. Though Cicero does not use the term *enkyklios paideia*, he nonetheless elucidates its meaning and philosophical origin. His texts, when compared with a few of Plato’s, have the merit of precisely showing what constitutes this unity of sciences founded on reasoning: it consists of the dialectical method, which is the science of all sciences or the theory of sciences, because it both founds them and links them together. The goal of the *enkyklios paideia* is not a knowledge of a

multitude of scattered details, but the acquisition of a general theory regarding the sciences founded on reasoning.

The *enkyklios paideia* nonetheless proposes that man be educated in a certain number of sciences, even if the point is to recognize the profound unity of these sciences. The idea was to undertake a multiplicity of studies and to acquire, if we stretch the notion of "sciences founded on reasoning," what the Ancients called polymathy. This term denoted a knowledge embracing the greatest possible number of bodies of knowledge. For Plato and other authors, this notion took on a pejorative coloring. In their minds, polymathy represented a lower form of knowledge. It was better to restrict oneself to an in-depth knowledge of a small number of sciences, choosing those indispensable to the philosophy professed, than to learn a large number of them superficially.

Having described in this first section the *enkyklios paideia*, complete instruction or culture, inherited by modern encyclopedists in name but not in spirit, I will now discuss the attitudes of the different philosophical schools during the Hellenistic and imperial periods vis-à-vis the *enkyklios paideia* and polymathy.¹⁷ A preliminary remark is however necessary. All philosophical schools of Antiquity had the principal goal of teaching their students a form of life, an ethical attitude likely to help them lead an untroubled life, and find and keep their mental equilibrium, even though the paths leading to this end could be very different depending on the school.¹⁸ In this perspective, philosophical knowledge, or any other type of knowledge, was only a means to an end, never the end in and of itself. This is also true, in my opinion, for Aristotle, for whom man's best and happiest life consisted in imitating, insofar as possible, the activity of the Divine Intellect. In this perspective, human intellectual activity, in seeking to attain knowledge for itself, could not "pursue any other individual and selfish interest that would be foreign to knowledge. It is an ethic of disinterestedness and of objectivity."¹⁹

This said, the Peripatetic school was really the one among the ancient philosophical schools to accord the highest value to the acquisition of a vast multiple knowledge, although its divergences

from modern encyclopedism remain quite important: the study of the trades and fine arts was excluded; research in the sciences had to be performed without financial gain and was inscribed in a particular philosophical framework. These principles were in fact common to all philosophical schools of Antiquity. The polymathic tendency of the Peripatetic school was manifest, and very subtly mocked in the pseudo-Platonic dialogue *The Rivals*, of cynical bent, commonly dated the third century B.C. This dialogue concerns the vanity of polymathic knowledge, and its consequent uselessness for the philosopher.

While under the direction of Theophrastus and Strato of Lampascus, the Peripatetic school, founded by Aristotle, remained faithful to the ideal of a polymathic knowledge solidly anchored in philosophy. When Demetrius of Phaleron, a disciple of Theophrastus, was appointed scientific advisor to Ptolemy I, and Strato became the tutor of this king's young son, the future Ptolemy II, this ideal was transplanted to Alexandria, which was thereby destined to become the famous center for learning during the Hellenistic period. If we believe Strabo, the Peripatetic school of Athens seems on the contrary to have restricted itself for over one hundred years to rhetorical exercises. It is true that neither rhetoric nor dialectic was ever neglected by Aristotle and his early successors, but making them the core of instruction was to introduce a major change in the spirit of Aristotelianism, since neither rhetoric nor dialectic was considered by Aristotle as integral parts of philosophy. With Critolaus of Phaselis, who was part of the famous delegation of Greek philosophers to Rome in 156/5, scientific interest seems to have re-emerged in the Peripatetic school, at least sporadically. Yet it was not until the first half of the first century A.D., with Andronicus of Rhodes, that the Peripatetic school markedly returned to the perspective of universality dear to Aristotle, even if, from this moment on, the principal activity of the school members consisted in writing up scholarly commentaries on Aristotle's works rather than in undertaking new research.

The Peripatetic attitude is typified by the entry in the *Suda* on Nicolaus of Damascus,²⁰ who lived in the second half of the first century B.C. The passage, inspired by Nicolaus' autobiography, is quoted in part below:

He (Nicolaus) had indeed become a zealous disciple of Aristotle and he loved the motley colors (i.e., the varied subject matters) of this man's *paideia*. He said that he was always grateful for all studies, because they contained much of what is suitable for a free man, much of what is useful in the conduct of life, and especially much of what helps one go through youth and old age agreeably ... And he was of the belief that the experience that one might have of studies or one's ignorance of them was not comparable to one's experience of or familiarity with the craft professions; that, on the contrary, for those who had chosen to live within the limits of moderation, the ignorance of the first was as shameful as the knowledge of the craft professions. Nicolaus indeed used none of his knowledge to make money or to sell as a commodity. Nicolaus said that the whole of the *paideia* resembled a voyage. Just as, during a voyage, those who leave their country and travel long distances stop here just to spend the night, or there to have lunch, and somewhere else to spend several days or see certain sites in passing, but afterwards, return home to remain there, those who cover the entire *paideia* must, in the same way, spend more time on certain subject matters and less on others; they must learn certain subjects thoroughly, others in part, and still others going no further than the elementary notions. Retaining from the other subject matters all that is of use, just like people who have come back to their true paternal home, they devote themselves to philosophy.

We can see that for Nicolaus of Damascus polymathy, or erudition, is indeed an ideal. But again we remark that this erudition is situated in an entirely other perspective than modern encyclopedism: on the one hand, for Nicolaus of Damascus, the learning of different subjects is linked to certain ethical exigencies, a concern that is completely foreign to the modern conception, and on the other hand, we see a total disdain for the craft professions.

Moving on to the Epicureans, at least those connected to the school at its beginning, they held in manifest contempt any type of knowledge that did not directly refer to Epicurus' teaching. For an Epicurean, it was enough to learn the works of the founder of the school, recall them incessantly, and firmly root them in one's mind. Let us listen to Cicero, who has Torquatus the Epicurean speak:

If you think this philosopher (i.e., Epicurus) uneducated, it is because he refused to consider any education worth the name that did not help to school us in happiness. Should he have spent his time ... either perusing poets, who give us nothing solid and useful, but merely childish amusement, or wearing himself out, like Plato, with music and geometry, arithmetic and astronomy, sciences that, starting from false premises, cannot be true, and that, if true, would moreover contribute nothing to make our lives more pleasant and therefore better; should he, I say, have studied arts like these, and neglected the master art, the art of life, so difficult and corre-

spondingly so fruitful? Epicurus was not uneducated: the real philistines are those who ask us to go on studying till old age the subjects that we ought to be ashamed not to have learnt in boyhood.²¹

Epicurus was therefore of the opinion that, having reached adulthood, one should no longer devote oneself to anything other than Epicurean philosophy and should renounce interest in any other subject matter. In his letter to Pythocles, Epicurus urges his disciple to “hoist all sails ... and steer clear of all culture.”²² Nonetheless, a certain evolution began to be felt around 150 B.C. with the Epicureans Demetrius of Laconia and Zeno of Citium. They began to study philology, which is to say grammar, not as an end in itself, but as a means of conserving Epicurus’ texts, defending them against misunderstandings, and eliminating the pseudepigraphs. Their growing interest in subject matters such as logic, poetry, physics, mathematics, and rhetoric was also explainable by their need to defend Epicurus’ doctrine against the polemics of the other philosophical schools, and thus represented an adaptation to surrounding cultural pressures.²³ Yet the acquisition of a poly-mathic or encyclopedic knowledge in the modern sense remained foreign to their preoccupations.

For the Stoics the situation was more complex. The Stoic doctrine of Reason as divine corporeal principle, pervading all levels of existence and exceptionally manifest in human reason and language, led the Stoics to take an interest in all forms of language, and to define their structures and the laws that govern them. It is as such that they contributed, in very large degree, to the development of grammar and the perfecting of logic. Among the Stoics can thus be counted eminent grammarians and philologists, particularly Crates of Mallos, from the school of Pergamum and his disciple Zenodotus; both were famous exegetes of Homer, among other things. Their method of interpreting Homer was however very different from the approach of the Alexandrian school of Peripatetic inspiration: while the Alexandrian school was distinguished by a cautious and objective approach to texts, the school of Pergamum, not satisfied with a literal exegesis, interpreted texts tendentiously, in a manner inspired by Stoic doctrines, thus preparing the way for the Neoplatonic and Christian methods of textual exegesis.

As for rhetoric and dialectic, which had become virtues for the Stoics, and were founded on truth and no longer on Aristotle's probable, these formed the third part of philosophy, logic. They were no longer studied, respectively, to acquire eloquence and to have an answer to everything, but gave rise instead to exercises intended to ensure the rectitude of verbal expression and to teach the practice of cogent logical deduction; such that the Stoa did not compete with the rhetoric schools that began to flourish in numerous Greek cities beginning in the second century B.C. Nonetheless, since the later Stoics had all gone through these schools in their youth, they usually did not hesitate, in practice, to use rhetoric to make their exhortations more effective.

Physics, for the Stoics as for Aristotle, also formed a part of philosophy. As S. Sambursky shows,²⁴ the Stoics sought to elaborate a coherent system that would be capable of explaining the essential phenomena of the physical world with the help of a limited number of fundamental hypotheses, especially that of dynamic continuity. The principal traits of this doctrine were elaborated by the ancient Stoics, especially Zeno and Chrysippus, in the fourth and third centuries B.C. The most important later addition seems to have been made in the first half of the first century B.C., thanks to Posidonius who reinforced the cosmic sense of the concepts of sympathy and *pneuma*.

The Stoic school thus allowed its members an interest in all sciences, literary and otherwise, on the condition that they practice them in accordance with its fundamental principles, and also on the condition that they exercise them in accordance with the ethical goal of Stoicism: the acquisition of virtue. A certain degree of polymathy was permitted, but the Stoic school's insistence on prior adhesion to the fundamental dogmas of the doctrine made it much more restrictive than the Peripatetic school. Such constraints no doubt led to a less empirical and experimental scientific approach than that inspired by the Peripatetic school. But it is only a matter of degree: it would be wrong to underestimate the role played by the *a priori* theses of Aristotle's philosophy in his biological and physical research.²⁵

Yet it was also possible to encounter within the Stoic school an attitude hostile to polymathy. Once the doctrinal system had been

elaborated, thanks to a few fundamental hypotheses taking into account the various scientific discoveries – a project completed by Chrysippus – a Stoic could admit that it was sufficient to learn these fundamental hypotheses, leaving aside the acquisition of detailed knowledge and renouncing research into phenomena still left unexplained. This orientation enabled Stoics to concentrate all their efforts on moral education, on the acquisition of wisdom, a goal so lofty and difficult to attain that it left practically no room for other occupations. Thus Ariston of Chios, one of Zeno's disciples, quite simply amputated from philosophy two of its parts: physics and logic. A similar attitude was also shared by the Stoics of the imperial era like Seneca and Epictetus. In his eighty-eighth letter to Lucilius, Seneca criticizes all that is superfluous in the teaching of philosophers – Stoics and others – who, he said, “debased themselves by separating syllables, studying the properties of conjunctions and prepositions, and envying grammarians and geometricians. Everything that served no purpose at all in the liberal arts (that is, in the arts worthy of the free man) was transferred to themselves, and they thus ended up knowing better how to speak than how to live.”²⁶ Here and elsewhere,²⁷ Seneca reacts against a certain Stoic tendency to being swept away by polymathy. Towards the end of the Hellenistic period, this polymathic tendency, inherent from the start of Stoicism, was to be reinforced again by the influence of Aristotle's work on the Stoic Posidonius of Apamea and others. The geographer and historian Strabo described Posidonius as “the most ‘polymathic’ man among the philosophers of our time.”²⁸ Strabo considered himself a Stoic,²⁹ and knew Posidonius' work well, and used it. His teachers also included the grammarian Tyrannion and the Peripatetic philosopher Xenarchus, and under the guidance of the Peripatetician Boethus of Citium he studied Aristotle's philosophy as well. In the introduction to his *Geography*, Strabo declares that polymathy is proper to the philosopher and that geography is one of the disciplines belonging to the domain of philosophy.³⁰ Thus, at about the same time, we find that polymathy is both refused and approved within the Stoic school.

Plato's attitude toward the sciences, and following him that of all of Platonism and Neoplatonism claiming his authority, was

always very selective. Plato's originality, as we know, consisted partly in proposing a program of studies for adults that included the four sciences based on mathematics: arithmetic, geometry, theoretical music, and astronomy, all crowned by dialectic which is used for purely philosophical purposes. The study of the four mathematical sciences was supposed to progressively detach these sciences from their practical applications and thereby lead to a high degree of abstraction. Plato was not concerned with geometry, arithmetic, astronomy, and music in the usual sense, but rather with a theology or philosophy of number, figure, sound, and the movements of astral bodies. This essential role of the four mathematical sciences and of dialectic in the education of an elite was never questioned in later Platonic tradition, leaving aside the Sceptic Academy. In middle-Platonism for example, Nicomachus of Gerasa was the first to offer a true proof, based on Platonico-Pythagorean ontology, of the unity of the four mathematical sciences, which he compares to the steps of a ladder or to the four paths (*tessares methodoi*) leading to knowledge of the intelligible. In the sixth century, the Neoplatonist Boethius, who was to produce a Latin version of Nicomachus' *Introduction to Arithmetic*, translated *tessares methodoi* in Latin by *quadrivium*, the quadruple way, a term that would later be transformed into *quadrivium*. In the Middle Ages, this concept, now a technical term, referred to the four mathematical sciences within the cycle of the seven liberal arts. This cycle is itself the last Platonic conception of a pedagogical program that gradually led from the world of sensation to knowledge of the intelligible. It is thus a pure product of philosophy, differing both from the *enkyklios paideia* and from the contents of the customary education that, since the Hellenistic period, had been lavished upon the young people belonging to the upper classes. The cycle was formed at the start of Neoplatonism, with the addition of grammar and rhetoric to the Platonic trunk of sciences. Its emergence was the result of a long evolution within Platonism, described in detail in my book *Arts libéraux et philosophie dans la pensée antique*. There I also interpret, by means of a continuous commentary, texts by Saint Augustine³¹ and by the Neoplatonist Martianus Capella that prove the Neoplatonic origin of this cycle. In any case, the essen-

tial point is that Platonism, until its end, was not inclined toward polymathic or encyclopedic studies.³²

The polymathic tendency, particular to certain philosophical schools of Antiquity, is the phenomenon that most resembles modern encyclopedism. In addition to the divergences underlined herein, the most important difference between these two attitudes is the following: for the philosophical schools, polymathy, vast culture, as well as limited culture, always aimed at the formation of man as man, the harmonious development of the whole human personality, and had a duty to culminate in the acquisition of wisdom as the art of life [*art de vivre*]. Modern encyclopedism, in contrast, has as its goal the mastery of nature and the development of material civilization.

*Translated from the French by Janine Alexandra Treves,
with Jennifer Curtiss Gage*

Notes

1. *Causeries du lundi* (Monday Chats), 14 October 1850, t. III, p. 20. At the author's request, translations of the quoted texts have been made directly from the French translation supplied by the author. In some cases, existing translations have been consulted.
2. There is a hesitation already present between *enkyklios paideia* (= A) and *enkyklos paideia* (= B) in the two most ancient manuscripts of the *Institutio oratoria* of Quintilian (I,10,1), dated the ninth century A.D.
3. I. Hadot, *Arts libéraux et philosophie dans la pensée antique*, Paris, *Etudes Augustiniennes*, 1984, pp. 263-293.
4. The subsequent confusion of *enkyklios paideia* with the customary education of youth, the liberal arts in general and the cycle of the seven liberal arts in particular, goes back to the German scholars of the nineteenth century, and was tirelessly repeated after them by a number of scholars, particularly H.-I. Marrou.
5. *Republic* 537c; *Phaedrus* 266b; *Epinomis* 991e-992a.
6. *Parts of Animals*, I, 639a.
7. *Grammatici Graeci* I, 3: *Scholia in Dionysii Thracis Artem grammaticam*, A. Hilgard, Leipzig, 1901, pp. 112, 16-20. The scholiast comments on the distinction established by Dionysius of Thrace (second century B.C.) between two classes of the arts, those founded on reasoning (*logikai technai*) and the practical arts (*praktikai technai*). As examples of the first, Denys mentions grammar, rhetoric, and philosophy; as examples of the latter, the arts of the carpenter and the blacksmith.

8. Vitruvius, *De architectura*, I, 1, 12.
9. *Ibid.*, I, 1, 15.
10. See Hadot, (note 3 above), pp. 99; 150; 157 n. 9; 176.
11. Galen, *Protreptikos*, 14, 38 f., p. 129, 10 ff. [Marquardt].
12. See Hadot, (note 3 above), pp. 276-282.
13. Cicero, *De oratore*, III, 6, 21.
14. See Cicero, *Pro Archia Poeta*, 2: "All of the arts that have any bearing upon culture. (*quae ad humanitatem pertinent*) have a certain common bond and are linked to one another by a kind of kinship."
15. Plato, *Republic*, VII, 537c ff.
16. See also H. J. Krämer, *Platonismus und hellenistische Philosophie*, Berlin, 1971, p. 21, and G. Ryle, "Dialectic in the Academy," in R. Brambaugh (ed.), *New Essays on Plato and Aristotle*, London, 1965, p. 55.
17. The following pages are supported by my discussions in *Arts libéraux et philosophie dans la pensée antique*, pp. 34-52 and 63-214, where detailed references and bibliographic information can be found.
18. See P. Hadot, *Qu'est-ce que la philosophie antique?*, Paris, 1995.
19. *Ibid.*, p. 130.
20. *Suidae Lexicon*, Vol. 3, p. 468., 13 ff. [Adler].
21. Cicero, *De Finibus*, I, 21, 71 f.
22. *Diogenes Laertius*, X, 6, p. 496 [Long].
23. See M. Erler, "Die Schule Epikurs," in *Grundriss der Geschichte der Philosophie – Die Philosophie der Antike*, Vol. 4, Basel, 1994, pp. 205-362.
24. *Physics of the Stoics*, London, 1971 (first edition, 1959).
25. See, for example, P. Louis, *Aristote, Les parties des animaux*, Paris, 1956, p. XIII.
26. *Epistulae Morales ad Lucilium*, 88, 2.
27. See Seneca's attacks on another part of "logic," that is, on the syllogistic quibble of the Stoic dialecticians. For example: *Ibid.*, 45, 5; 48, 6; 49, 5; 82, 21; 83, 9; 87, 41.
28. Strabo, *Geography*, XVI, 2, 10.
29. He likes to call the founder of the Stoic school "our Zeno": see, for example, *Ibid.*, I, 2, 34 and XV, 4, 27; see also XVI, 2, 10.
30. I, 1, 1.
31. Saint Augustine, *De ordine*, Book II. This dialogue was written at Cassiciacum during a period in which Saint Augustine underwent a strong Neoplatonist influence.
32. I will add only one detail perhaps of interest in our context: the studies of the mathematical and physical sciences were not part of the customary instruction of the golden youth in Antiquity, but took place within certain philosophical schools or in a strictly professional framework.