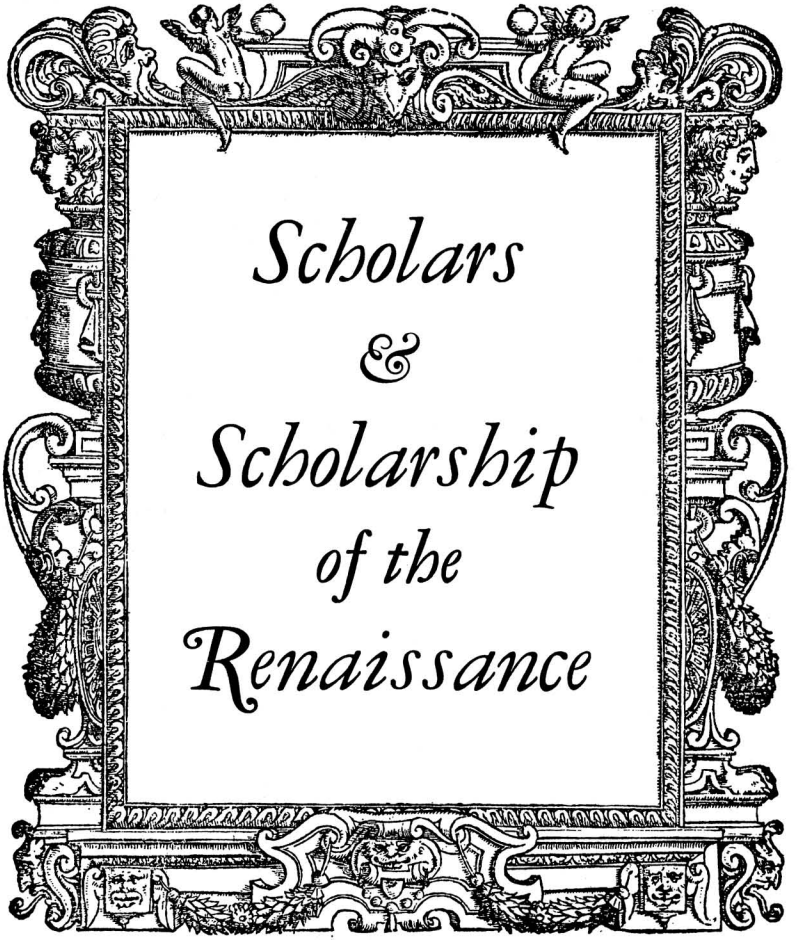
Scholars & Scholarship of the Renaissance



AN EXHIBITION
FROM THE COLLECTIONS OF
THE UNIVERSITY OF CHICAGO
LIBRARY

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IN A YEAR when the University of Chicago is celebrating the Renaissance in its numerous aspects, it seems particularly fitting that attention be paid to the scholars and teachers who were so largely responsible for the intellectual achievements of that period. Many of these men are dimly remembered today by name only, except by the very specialized scholar, while a few will be forever included among the great men of that or any other age. The books chosen from the University Library's collections exemplify a few of many varieties of scholarly pursuits that marked the fifteenth and sixteenth centuries. This exhibit is highly selective and not necessarily limited to the greatest written scholarly contributions of that era. It does touch, however, on some of the major intellectual and scholarly enterprises to which these early scholars gave so much of their learning and devotion.

1. ARISTOTLE. *Opera Graece.* Born of an ambitious plan to print systematically correct editions of the more famous Greek authors in the original language, the Aristotle was one of the largest and earliest books issued by Aldus Manutius. Before Aldus established his press in Venice in 1494–95, only a dozen Greek books had been printed; by the time of his death in 1515, his press had given scholars all the major Greek works of antiquity. To accomplish this feat of scholarship, Aldus founded his Neakademia, which selected the Greek authors to be printed and also helped solve the knotty philological and literary problems encountered in manuscripts secured from sources as distant as Poland. As an intellectual community from which Greek studies spread throughout Europe, Aldus' group included among its scholars Aleandro, Bembo, Ducas, Lascaris, Musurus, Erasmus, and Linacre. No mean scholar himself, Aldus edited this edition of Aristotle with the assistance of Alexander Bondinus. *Venice: Aldus, 1495–98. 5 volumes.*

2. LAURENTIUS VALLA (*ca.* 1407–57). *De elegantiis lingua latinae*. When Pope Nicholas V made Valla apostolic secretary in 1447, it was a clear indication of the triumph of humanism over the medieval tradition. For Valla, who was a priest, of course, not only had written favorably on the Stoic and Epicurean philosophies (*De voluptate*) and advocated a return to classical Latin but had even ridiculed the Latin of the Vulgate and accused St. Augustine of heresy. *De elegantiis*, which could be called a scientific analysis of the rules of Latin grammar and a study of style, was first published in 1471. It was so well received that it went through fifty-nine editions between that year and 1536. *Venice: Jacobus Rubeus, 1476. Gift of Frank W. Gunsaulus.*

3. PIETRO VETTORI (1499–1585). *Commentarii in primum librum Aristotelis de arte poetarum*. Among the many interpretations of Aristotle's works made since about 1500, Vettori's critical analysis of the *Poetics* ranks high. This is due to his comparison of many sources and many editions with an emphasis on philological and textual exegesis. For, unlike many commentators, Vettori was not motivated by the desire to make Aristotle fit into any preconceived theory of poetry but appears to have studied him primarily in order to restore as correct a reading of the text as possible. Although interest in most of Aristotle's works was showing the signs of waning in the sixteenth century, the newly rediscovered *Poetics* received increasing attention, possibly because the desire for literary creativity began to prevail over literary scholarship. *Basel: Oporinus, 1549.*

4. SYMPHORIEN CHAMPIER (1471–1539). *De Triplici disciplina*. As Lyons was on the threshold of becoming one of the great intellectual centers of Europe in the late fifteenth and early sixteenth centuries, its illustrious resident, Symphorien Champier, typified the developing humanistic attainments of France. An eminent physician in the Court of Lorraine and founder of the Lyons medical school,


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No. 3

Champier found time to write more than 105 treatises in over 40 volumes. Schooled in belles-lettres in Paris before receiving a medical education at Montpellier, his grounding in the writings of the ancients could not match the learning of the professional scholars. But his great enthusiasm and a scholarly preoccupation with the past led him to write this book, which included three short treatises on Plato's philosophy, a number of tracts on French history, an account of ancient inscriptions found in Lyons, and a theological treatise on the Orphic mysteries. *Lyons: Claude Devost (for Simon Vincent), 1508.*

5. JACQUES LEFÈVRE D'ÉTAPLES (1455–1537). *Arithmeticum opus.* The new intellectual and scholarly movements of France at the turn of the fifteenth century owed much to the devotion and reforming zeal of Jacques Lefèvre. After early travels in Italy, where he met Ficino, Poliziano, and Pico, he returned to Paris with the purpose of improving the curriculum at the university and revitalizing Aristotelian studies which had been distorted by the fusty growth of scholastic commentaries, indirect translations (primarily from the Arabic), and abridgments of the text. But, even though he advocated direct reading of texts, he felt that the student must first be strongly grounded in the *quadrivium.* With this in mind, he published in the work shown here his edition of an arithmetical treatise by Jordanus Nemorarius, a thirteenth-century German mathematician, and his own treatise on music. Although he personally took little interest in philological pursuits and devoted much of his later energies to theological studies, his deep sympathy with humanistic studies made him a leading intellectual light of his age. *Paris: H. Stephanus, 1514. Gift of Frank W. Gunsaulus.*

6. DESIDERIUS ERASMUS (*ca.* 1466–1536). *De recta Latini Graecique sermonis pronuntiatione.* Often styled the greatest of all the humanists, Erasmus was certainly among the more versatile in an age of versatility, with wide interests in scholarship as well as theology. Aside from his criti-

cal translation of the New Testament, his many editions of classical authors and his satires, Erasmus was very influential in establishing a standard Greek pronunciation through *De recta Latini Graecique. Basel: Froben, 1528.*

7. HENRI ESTIENNE (1528–98). *Plato.* Widely esteemed as Robert Estienne had been, his fame was surpassed by that of his son Henri. Henri might be called a scholar-printer, since he did his own editing from the sources of all the works he published. In the course of his life he thus produced 58 ancient Latin and 74 Greek authors, many for the first time. Among his greatest works is the *Thesaurus Graecae linguae*, a five-volume dictionary of Greek. Particularly noteworthy, too, is that Henri Estienne took an interest in French—in view of the generally exclusive attention paid to the ancient tongues, his concern with this subject was practically unique at this time. His *Plato*, typographically among his best works, represented a generally accepted edition until 1781, when the Bipontine edition appeared. *Geneva: H. Estienne, 1578. From the Berlin Collection.*

8. DIONYSIUS LAMBINUS (1520–72). *Cicero opera.* Among the many scholars editing the classical authors, Lambinus was a conservative, since his extreme concern for accuracy of the sources dominated his approach. He prided himself on the fact that in his edition of Lucretius he had restored the correct reading in eight hundred places. Lambinus did this not only by collating numerous sources but also by an independent study of the grammarians of ancient times, thus being able to reason out the original readings regardless of the state of the manuscripts at his disposal. As a result, some of his emendations of Cicero depart too far from the original. This criticism is all the more interesting when it is considered that Lambinus' name became a word, *lambiner*, in French, with the derogatory meaning "to dawdle or trifle." It was coined, no doubt, by those who found his detailed scholarship touched by pedantry. Yet

Lambinus' scholarship was widely admired by men themselves gifted and famous, such as Scaliger. *Paris: Jacobus Puteanus, 1573.*

9. GUILLAUME BUDÉ (1468–1540). *Commentarii linguae Graecae.* Budé shared with Erasmus, his friend and rival, the pinnacle of European scholarship. As literary adviser to Francis I and royal librarian, he was instrumental in establishing professorships in Greek, Hebrew, Latin, and mathematics which eventually formed the Collège de France. At the same time he urged the collection of Greek manuscripts for the use of French scholars. After writing pioneering studies on Roman law and monetary systems, he began his *Commentarii* at the urging of Erasmus. As in his earlier work, Budé's original intention was focused on a particular aspect of ancient history—in this instance the legal terminology of Greece and Rome—but this relatively narrow purpose expanded greatly under the weight of his massive erudition. The *Commentarii* grew into a lexicon of general information about classical antiquity which served students and fellow humanists throughout the entire sixteenth century. Budé's scholarship set an example that greatly influenced the establishment of classical studies, particularly Greek, in France. *Paris: Badius, 1529. From the Berlin Collection.*

10. JUSTUS LIPSIUS (1547–1606). *C. Cornelii Taciti opera omnia quae extant.* The vigor of humanistic scholarship in northern Europe in the late Renaissance was symbolized by the establishment of the University of Leyden in 1575. This new institution was fortunate in having among its great scholars Lipsius, whose extraordinary knowledge of Roman law, military history, and the classic Latin authors gave his lectures the widest scope. He represented a new wave of Renaissance scholarship broadening out from its original primarily stylistic interests. Lipsius' exegesis of the surviving manuscripts of Tacitus, generally considered his greatest work, was replete with genealogical tables, collation of

sources, and annotations and corrections. It survived as the authoritative edition until the nineteenth century. *Lyons: Gryphius, 1584.*

11. JOSEPH JUSTUS SCALIGER (1540–1609). *De emendatione temporum.* In an age of towering scholarly reputations, the name of Scaliger reigned for two generations. The great erudition and critical acumen of Joseph Scaliger were acquired from his distinguished father, Julius Caesar Scaliger, as well as from such equally eminent French scholars and teachers as Turnebus, Dorat, and Cujas. His attempts to fix historical and philological criticism on factual evidence led him to write his "restoration of chronology," which transformed the then narrow conception of antiquity and founded the science of chronology. The great amount of accumulated information about ancient generations of Greeks and Romans was placed chronologically in the context of the neglected history of the Babylonians, Egyptians, and other Near Eastern civilizations. While this book brought the ancient world into a new historical perspective, Daniel Heinsius, Scaliger's most famous pupil at Leyden, could write: "Of this work no one was ever competent to judge [it] without assistance." *Frankfort: Wechelum, 1593. From the Hengstenberg Collection.*

12. ISAAC CASAUBON (1559–1614). *De satyrica Graecorum et Romanorum satira libri duo.* Interesting and valuable though Casaubon's numerous writings are within the humanist tradition, they are less so than the fact that he was one of the first in this tradition more interested in the substance of literature—primarily that of the Greeks—than in style. His great interest and wide reading allowed him to enter the lives and customs of the ancients and thus to see their writings in a cultural context. *De satyrica,* in which Casaubon demonstrates that Roman satyrical poetry bore no relation to the satyrical drama of the Greeks, illustrates a new comparative approach in the general revival of early art and literature. *Paris: A. & H. Drovart, 1605. From the Berlin Collection.*

13. AULO PARRASIO (1470–1534). Annotator of *Scriptores rei militaris*. While the invention of printing greatly enhanced the humanists' access to the words of the ancients, it also complicated their quest for perfection in the classical texts they used. Corrupt texts had been indiscriminately chosen for the press at the same time that new and more accurate manuscript sources were being uncovered. It is apparent from this corrected copy of works of Roman military writers that its one-time owner, Aulo Parrasio, or perhaps some contemporary of his, had access to a better text than did the editor of the printed text. Throughout the present copy there are a variety of typical corrections of misunderstood signs of abbreviations, wrongly separated words, incorrectly printed words, omissions, etc. At the time of publication of this book, Parrasio lived in Milan, where he had the good fortune of discovering manuscripts of various classical authors. Parrasio bequeathed this copy to a fellow scholar, Antonio Sevipandi. *Bologna: Johannes de Benedictis, 1505. From the Berlin Collection.*

14. PHILIP MELANCHTHON (1497–1560). Annotator of Demosthenes' *Orations*. As a Christian humanist, Melanchthon advocated classical learning as a source of enriching Christian thought. At the early age of twenty-one, in his inaugural address at Wittenberg, he spoke of the benefits that would accrue from the reading of the Greek classics and the Scriptures in the original. Throughout his career as a churchman and reformer he continued to apply himself to the writing of classical textbooks which earned him the title "Praeceptor Germaniae." He lectured on a wide variety of classical authors, including Virgil, Cicero, Aristophanes, and Thucydides. His interest in and knowledge of Demosthenes is seen in his marginal interpretations of the text of the Olynathiacs and the first Phillippic in this edition, which he used when it was owned by his friend and fellow scholar, Simon Grynaeus. *Venice: Aldus, 1504. From the Emma B. Hodge Collection.*

λῃστὰς καὶ κόλακας, καὶ τοιούτους ἀνθρώπους, οἵους μεθυσθέντας ὀρχεῖσθαι, τοιαῦτα οἷα ἐγὼ νῦν ὀκνῶ πρὸς ὑμᾶς ὀνομάσαι. δῆλον δ' ὅτι ταῦτ' ἐστὶν ἀληθῆ. καὶ γὰρ οὓς ἐνθένδε πάντες ἀπήλαυνον ὡς πολὺ τῶν θαυματοποιῶν ἀσελγεστέρους ὄντας, Καλλίαν ἐκεῖνον τὸν δημόσιον, καὶ τοιούτους ἀνθρώπους, μίμους γελοίων, καὶ ποιητὰς αἰσχρῶν ᾀσμάτων, ὧν εἰς τοὺς συνόντας ποιοῦσιν ἕνεκα τοῦ γελασθῆναι, τούτους ἀγαπᾷ, καὶ περὶ αὑτὸν ἔχει. καίτοι ταῦτα εἰ καὶ μικρά τις ἡγεῖται, μεγάλα ὦ ἄνδρες Ἀθηναῖοι δείγματα τῆς ἐκείνου γνώμης, καὶ κακοδαιμονίας ἐστὶ τοῖς εὖ φρονοῦσιν. ἀλλ' οἶμαι νῦν μὲν ἐπισκοτεῖ τούτοις τὸ κατορθοῦν. αἱ γὰρ εὐπραξίαι δειναὶ συγκρύψαι, καὶ συσκιάσαι τὰ τοιαῦτα ὀνείδη. εἰ δέ τι πταίσει, τότε ἀκριβῶς αὐτοῦ πάντ' ἐξετασθήσεται. δοκεῖ δ' ἔμοιγ' ὦ ἄνδρες Ἀθηναῖοι δείξειν οὐκ εἰς μακράν, ἄν οἵ τε θεοὶ θέλωσι, καὶ ὑμεῖς βούλησθε. ὥσπερ γὰρ ἐν τοῖς σώμασιν ἡμῶν* ἕως μὲν ἂν ἐρρωμένος ᾖ τις, οὐδὲν ἐπαισθάνεται τῶν καθ' ἕκαστα σαθρῶν, ἐπὰν δὲ ἀρρώστημά τι συμβῇ, πάντα κινεῖται, κἂν ῥῆγμα, κἂν στρέμμα, κἂν ἄλλο τι τῶν ὑπαρχόντων σαθρὸν ᾖ, οὕτω καὶ τῶν πόλεων, καὶ τῶν τυράννων. ἕως μὲν ἂν ἔξω πολεμῶσιν, ἀφανῆ τὰ κακὰ τοῖς πολλοῖς ἐστιν. ἐπειδὰν δὲ ὅμορος πόλεμος συμπλακῇ, πάντα ἐποίησεν ἔκδηλα. εἰ δέ τις ὑμῶν ὦ ἄνδρες Ἀθηναῖοι τὸν Φίλιππον εὐτυχοῦντα ὁρῶν ταύτῃ φοβερὸν προσπολεμῆσαι νομίζει, σώφρονος μὲν ἀνθρώπου λογισμῷ χρῆται. μεγάλη γὰρ ῥοπή, μᾶλλον δὲ ὅλον ἡ τύχη παρὰ πάντ' ἐστὶ τὰ τῶν ἀνθρώπων πράγματα. οὐ μὴν ἀλλ' ἔγωγε εἴ τις αἵρεσίν μοι δοίη, τὴν τῆς ἡμετέρας πόλεως τύχην ἂν ἑλοίμην, ἐθελόντων ἃ προσήκει ποιεῖν* ὑμῶν αὐτῶν, καὶ κατὰ μικρόν, ἢ τὴν ἐκείνου. πολὺ γὰρ πλείους ἀφορμὰς εἰς τὸ τὴν παρὰ τῶν θεῶν εὔνοιαν ἔχειν ὁρῶ ὑμῖν ἐνούσας, ἢ ἐκείνῳ. ἀλλ' οἶμαι καθήμεθα, οὐδὲν ποιοῦντες. οὐκ ἔνι δ' αὐτὸν ἀργοῦντα, οὐδὲ φίλοις ἐπιτάττειν ὑπὲρ αὑτοῦ τι ποιεῖν, μή τί γε δὴ τοῖς θεοῖς. οὐ δὴ θαυμαστόν ἐστιν, εἰ στρατευόμενος, καὶ πονῶν ἐκεῖνος αὐτός, καὶ παρὼν ἐφ' ἅπασι, καὶ μηδένα καιρὸν μηδ' ὥραν παραλείπων, ὑμῶν μελλόντων, καὶ ψηφιζομένων, καὶ πυνθανομένων περιγίγνεται. οὐδὲ θαυμάζω τοῦτ' ἐγώ. τοὐναντίον γὰρ ἂν ἦν θαυμαστόν, εἰ μηδὲν ποιοῦντες ἡμεῖς ὧν τοῖς πολεμοῦσι προσήκει, τοῦ πάντα ποιοῦντος ἃ δεῖ, περιῆμεν. ἀλλ' ἐκεῖνο θαυμάζω, εἰ Λακεδαιμονίοις μέν ποτε ὦ ἄνδρες Ἀθηναῖοι, ὑπὲρ τῶν Ἑλληνικῶν δικαίων ἀντήρατε, καὶ πολλὰ ἰδίᾳ πλεονεκτῆσαι πολλάκις ὑμῖν ἐξόν, οὐκ ἠθελήσατε, ἀλλ' ἵνα οἱ ἄλλοι τύχωσι τῶν δικαίων, τὰ ὑμέτερα αὐτῶν ἀνηλίσκετε εἰσφέροντες, καὶ προεκινδυνεύετε στρατευόμενοι. νυνὶ δὲ ὀκνεῖτε ἐξιέναι, καὶ μέλλετε εἰσφέρειν ὑπὲρ τῶν ὑμετέρων αὐτῶν κτημάτων. καὶ τοὺς μὲν ἄλλους σεσώκατε πολλάκις πάντας, καὶ καθ' ἕνα αὐτῶν ἐν μέρει. τὰ δὲ ὑμέτερα αὐτῶν ἀπολωλεκότες κάθησθε. ταῦτα θαυμάζω. καὶ ἔτι πρὸς τούτοις, εἰ μηδεὶς ὑμῶν ὦ ἄνδρες Ἀθηναῖοι δύναται λογίσασθαι, πόσον πολεμεῖτε χρόνον Φιλίππῳ, καὶ τί ποιούντων ὑμῶν, ἅπας ὁ χρόνος διελήλυθεν οὗτος. ἴστε γὰρ δήπου τοῦθ', ὅτι μελλόντων ὑμῶν, ἑτέρους τινὰς ἐλπιζόντων πράξειν, αἰτιωμένων ἀλλήλους, κρινόντων, πάλιν ἐλπιζόντων, σχεδὸν ταῦτα ἅπερ νυνὶ ποιούντων, ὁ χρόνος ἅπας διελήλυθεν. εἶτα οὕτως ἀγνωμόνως ἔχετε ὦ ἄνδρες Ἀθηναῖοι, ὥστε δι' ὧν ἐκ χρηστῶν φαῦλα τὰ πράγματα γέγονε τῆς πόλεως, διὰ τῶν αὐτῶν τούτων ἐλπίζετε πράξεων, ἐκ φαύλων αὐτὰ χρηστὰ γενήσεσθαι; ἀλλ' οὔτ' εὔλογον, οὔτ' ἔχον ἐστὶ φύσιν τοῦτό γε. πολὺ γὰρ ῥᾷον ἔχοντας φυλάττειν, ἢ κτήσασθαι πάντα πέφυκε. νυνὶ δ' ὅ τι μὲν φυλάξομεν, οὐδέν ἐστιν ὑπὸ τοῦ πολέμου λοιπὸν τῶν πρότερον. κτήσασθαι δὲ δεῖ. αὐτῶν οὖν ὑμῶν τοῦτο ἔργον ἤδη. φημὶ δὴ δεῖν εἰσφέρειν χρήματα, αὐτοὺς ἐξιέναι προθύμως, μηδένα αἰτιᾶσθαι πρὶν ἂν τῶν πραγμάτων κρατήσητε. τηνικαῦτα δὲ

ὁ χρόνος ἅπας διελήλυθεν   οὔτε ἔχον φύσιν

15. THE COMPLUTENSIAN POLYGLOT BIBLE. The most vigorous proponent of learning in Spain was a staunch churchman who foresaw the reform of biblical and patristic studies through the application of humanistic scholarship. After founding the University of Alcalá in 1508, Cardinal Francisco Ximénez established a center for biblical studies which brought together scholars from Paris, Salamanca, and Italy. As the focus of Greek studies in Spain, the University became the ideal place to undertake Ximénez' cherished dream of printing for the first time the original Greek text of the New Testament, together with the Hebrew of the Old Testament and the Latin Vulgate version. The Greek manuscripts sent by Pope Leo X were edited by a group of skilled scholars, including Demetrius Ducas, who had previously edited one of the most important of Aldus' publications, the *Rhetores Graeci*. The first volume off the press was the New Testament, in 1514, followed three and a half years later by the four volumes of the Old Testament. Although it was the first printed edition of the New Testament in Greek, there was a delay until 1521 before it could be circulated. By this time, Erasmus and the enterprising Froben had been able to publish their hurried version. Erasmus said of his inferior edition, which was based on a much smaller number of manuscripts, that it was "precipitated rather than edited." *Alcalá de Henares: Arnao Guillen de Brocar, 1514–17. From the American Bible Union Collection.*

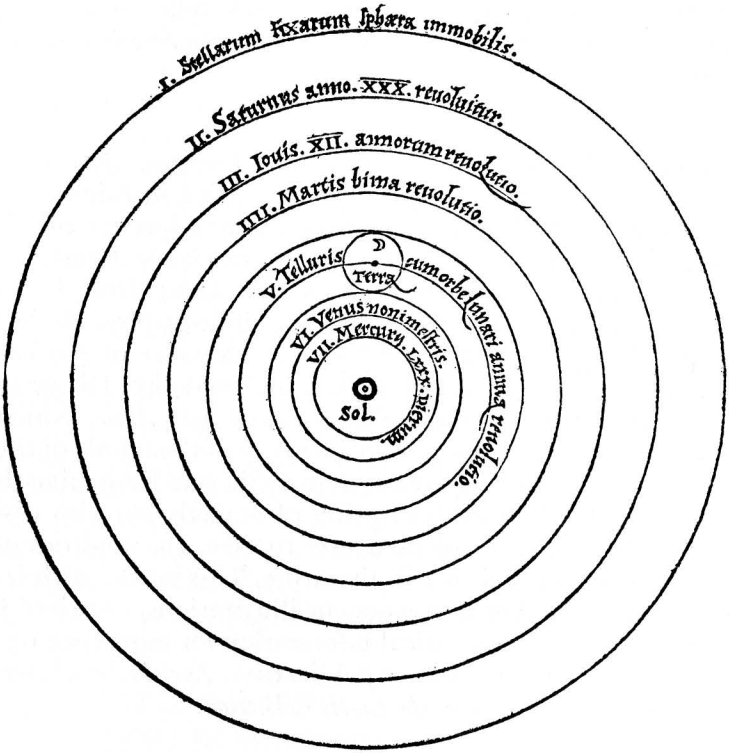
16. ANDREAS VESALIUS (1514–64). *De Humani corporis fabrica*. During the same period in which humanist scholars were busily reviving ancient medical texts, the foundation of their work was inadvertently being destroyed by a young professor of anatomy at Padua. Although Vesalius had received traditional training in Galenic medicine at Louvain and Paris and held no unorthodox opinions, the acute observations and descriptions of his *Fabrica* made him one of the principal innovators in the history of science. His book was a masterfully conceived work combining the talents of this great anatomist with the skills of a highly trained artisan who executed the woodcuts. Once in the

hands of physicians, it revealed the inadequacy of Galen's descriptions and made clear that the future of scientific study of the human body would require fresh and independent investigation. Although the aim of Vesalius' anatomy was simply to survey the human body part by part, layer by layer, it paved the way for the beginnings of modern scientific innovations which were to take place in the following century. *Basel: Oporinus, 1543. From the Morris Fishbein Collection.*

17. CONRAD GESNER. *Historia animalium.* No contemporary scholar encompassed more varied learning than Conrad Gesner, the Swiss polymath, whose interest culminated in works ranging from editions of classical authors, an early study of comparative linguistics, and a Greek-Latin dictionary, to the first universal bio-bibliography. He has been called "the German Pliny," the founder of modern zoölogy, and the father of modern bibliography. His great fame as a zoölogist rests on his *Historia animalium*, which was conceived as an encyclopedic survey of the whole of the animal and plant kingdoms. Gesner did not limit himself to a strict zoölogical description of animals but also discussed them in terms of their uses to man, the qualities of their souls, and their use in literature. This work, with its more than two thousand woodcut illustrations, remained a primary source of zoölogical information for more than one hundred and fifty years after publication. *Zurich: Froschauer, 1551–87. 5 volumes. From the Leslie Collection.*

18. NICHOLAS COPERNICUS (1473–1543). *De Revolutionibus orbium coelestium. On the Revolutions of the Heavenly Spheres*, dedicated to Pope Paul III, was the culmination of thirty years of patient sifting and evaluation of familiar astronomical data which had been collected and codified by earlier scholars and astronomers. Copernicus, the Polish churchman and theoretical astronomer, laboring from what was essentially a medieval point of view, did no experimentation and little observation in his attempt to reform the pre-

net, in quo terram cum orbe lunari tanquam epicyclo contineri diximus. Quinto loco Venus nono menſe reducitur. Sextum deniq; locum Mercurius tenet, octuaginta dierum ſpacio circũ currens. In medio uero omnium reſidet Sol. Quis enim in hoc



pulcherimo templo lampadem hanc in alio uel meliori loco ponere, quàm unde totum ſimul poſsit illuminare? Siquidem non inepte quidam lucernam mundi, alĳ mentem, alĳ rectorem uocant. Trimegiſtus uiſibilem Deum, Sophoclis Electra intuentẽ omnia. Ita profecto tanquam in ſolio regali Sol reſidens circum agentem gubernat Aſtrorum familiam. Tellus quoq; minime fraudatur lunari miniſterio, ſed ut Ariſtoteles de animalibus ait, maximã Luna cũ terra cognationẽ habet. Concipit interea à Sole terra, & impregnatur annuo partu. Inuenimus igitur ſub hac

vailing Ptolemaic idea that the heavenly bodies revolved around the earth in eighty uniformly moving spheres. The problem of explaining this complex system offended Copernicus' acute mathematical mind. His answers were not entirely satisfactory—he ended up with thirty-four spheres, for example—but, in reaching his conclusions, he had moved the earth from the center of the universe. Unintentionally, he wrote a revolutionary book which altered the place of man in the cosmos and prepared the way for the great scientific changes which were to occur in the succeeding century. *Nuremberg: I. Petreium, 1543.*

19. GEORGIUS AGRICOLA (1494–1555). *De ortu et causis subterraneorum.* When Agricola, a German physician with a classical education turned to the study of geology and mining, he laid the foundations of physical geology. His practice of medicine in a mining region gave him the opportunity to make direct observations. In *De ortu* . . . he departed from the Aristotelian view that stones and metals had their origins in the influence of heavenly bodies and looked for the natural causes of gravity, heat, cold, and evaporation. He was also the first to give an adequate explanation of the part played by erosion in the making of mountains. Undoubtedly, the re-examination of early sources by the humanists had a profound influence on scientists such as Agricola, especially in their reaction against the mystifications of the alchemists, mistaken for science and criticized as such by the humanists. The empirical approach, exemplified by Agricola in his works, represents one aspect of the scientific side of the new learning. *Basel: Froben, 1546.*

20. HIERONYMUS CARDANUS (1501–76). *De rerum varietate.* Cardanus' *De subtilitate rerum* (1551) combines mathematics, mysticism, and medicine in discussing those "things" perceptible through the senses rather than the intellect. Cardanus was an experimenter with a great interest in gadgets and mechanical contrivances. *De rerum varietate* is a supplement to *De subtilitate,* in which the misunder-

standing of the causes of natural phenomena are quite as interesting as if they had been valid explanations in view of the light they shed on scientific thinking of the time. Cardanus' "fault" lay chiefly in an excess of speculation which caused him sometimes to reason from newly observed phenomena to overly adventurous conclusions. Perhaps one can consider Cardanus as having anticipated the theory of evolution in his assumption that all animals originated from the worm. *Avignon: Mattheus Vincentinus, 1558. From the Mortimer Frank Collection.*

21. LEONHARD FUCHS (1501–66). *New kreüterbuch.* Although the tradition of collecting, classifying, and describing botanical specimens extended back to antiquity, a transformation of the herbal took place in the sixteenth century. This change was spurred by the discovery of a great many new specimens, the availability of authoritative texts of classical authors, and the technical means of reproducing illustrations by means of the woodcut. The most ambitious early attempt to record this new botanical information was undertaken by a Bavarian, Leonhard Fuchs, who had been trained in both the classics and medicine. Only the first of three projected volumes appeared, but this single volume contained more than 500 full-page woodcuts of plants, of which 400 were of German and 100 of foreign origin. The text was largely based on Dioscorides and included a plant nomenclature in Greek and Latin as well as in German. Issued in Latin in 1542, the German edition appeared in the following year and contained the first printed vocabulary of botanical terms. The illustrations were so accurately rendered that they were copied until the eighteenth century. *Basel: M. Isingrin, 1543.*

22. POLYDORE VERGIL (1470–1555). *Anglica historia.* A native of Italy, Vergil was educated in Padua and Bologna but moved in 1501 to England, where he remained for the greater part of his life. Among his works, the most important and influential was his history of England, which

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he wrote while living there. Yet, while his method was in advance of other histories especially in regard to the weighing of different sources and authorities against each other, he is also guilty of making up events or causes for which no one has been able to find explanations. Nevertheless, his work has remained a source for students of the period. Apparently the fact that he was not a native helped him in remaining somewhat critical of traditional stories accepted by the English. *Basel: M. Isingrin, 1555.*

23. ANGELO AMBROGINI POLIZIANO (1454–94). *Miscellanea.* Poliziano counted among his students such men as Reuchlin, Linacre, and Tessiras, making his influence considerable even if one were to disregard the value of his own work as a scholar and essayist. Living the life of the devoted scholar in the house of the Medici, he had the time to write prolifically not only scholarly work but poetry as well. The *Miscellanea*, a collection of essays on learned matters, primarily in philology and criticism, show him as a man with enormous enthusiasm for often minute matters, such as the spelling of Virgil's name or the use of the aspirate in Latin. *Basel: V. Curione, 1522. From the Berlin Collection.*

24. NICCOLÒ MACHIAVELLI (1469–1527). *Discorsi sopra la prima deca di Tito Livio.* Machiavelli turned to writing after his political career ended with the fall of Soderini in 1512. In keeping with his experiences as well as his temperament, Machiavelli took up politico-historical subjects rather than literary or purely historical studies. The fame of his *Principe* is responsible for a larger work such as the *Discorsi* being overlooked. In actuality *The Prince* is an outgrowth of this work, which served Machiavelli in setting forth his own views on maintaining states in the form of a commentary on Livy's history. *Rome: A. Blado, 1531.*

25. FLAVIO BIONDO (1388–1463). *Roma instaurata.* One is hard put in deciding whether Biondo should be considered primarily a historian or one of the first archeologists —possibly the first. For while his *Roma triumphans* is primarily a religious and constitutional history of Rome and his *Inclinatione Romani imperii decades* anticipates Gibbon, he must be counted as the preserver of many ancient monuments which would otherwise have been demolished. *Roma instaurata* describes pagan and Christian Rome in terms of its monuments and argues for their restoration. *Verona: Boninus de Boninis, 1481.*

26. JEAN BODIN (1530–96). *Methodus historica.* Jean Bodin wrote his *Methodus* at the age of thirty-five and embodied in it a number of ideas which he later expanded into other works examining and attempting to synthesize the universal laws governing the actions of men. Based on his training as a lawyer and on an encyclopedic knowledge, the *Methodus* described not only the process but the interpretation of historical writing. The book is divided into ten chapters, with such titles as "The Proper Arrangement of Historical Material," "The Choice of Historians," "The Type of Government in States" (from which his famous *Republic* was derived), and "A System of Universal Time." In contrast to earlier historians, Bodin gave particular emphasis to the interpretation rather than to the criticism of sources and stressed the influence of geographical environment on historical development. *Basel: Petri Pernae, 1576.*

27. JOHN BALE (1495–1563). *Illustrium majoris Britanniae scriptorum.* The richness of the humanistic spirit radiating from Italy touched John Bale only slightly. His extensive library contained only an Ovid and Cicero among its manuscripts, yet his devotion to learning and his antiquarian interest in England's past were seeds from which English scholarship would grow. At the same time that he was bitterly involved in religious controversies, Bale undertook the compilation of this catalogue of the works of English

authors who had written during the previous fourteen centuries. He scoured English libraries for his information, particularly those attached to Augustinian and Carmelite monasteries, which had been dispersed or destroyed by the dissolution. In his great industry he preserved in this work information which would otherwise have been irretrievably lost. *Ipswich: I. Overton, 1548.*

28. FRANCESCO ALBERTINI (d. 1520). *Opusculum de mirabilibus novae urbis Romae.* If the intellectual heritage of the past had to be gleaned from texts, the physical remains of ancient Rome could be easily seen and marveled at in the ruins which dotted the city. Archeological interest was further stimulated by discoveries of such masterpieces as the "Laocoön." Among early collectors of artifacts and systematic writers about Roman buildings and monuments was a Florentine, Francesco Albertini, who had previously assisted in the design of churches and collaborated in a book of Roman inscriptions. In his *Opusculum* Albertini not only described Roman antiquities under the headings "theaters and amphitheaters," "temples," "statues," and so forth, but also considered the contemporary building programs supported by Sixtus IV and Julius II. This work, dedicated to Pope Julius II, who had founded the Vatican museum in 1506, stands near the beginning of a long line of descriptions which served as topographical guides to the Eternal City. *Rome: Mazochium, 1510. From the Berlin Collection.*

29. GIORGIO VASARI (1511–72). *Le Vite de' piu eccelenti pittori, scultori ed architetti italiani.* Though a celebrated painter and architect, Vasari, who studied with Michelangelo and Andrea del Sarto, is today remembered chiefly for his collection of biographies of the artists of his country. A great source of factual information, this work transcends mere biography in so far as it may be said to be the earliest example of modern art criticism. *Florence: Giunti, 1568.*

30. GIOVANNI BAROZZI VIGNOLA (1507–73). *Le due regole della prospettiva.* Vignola's main theoretical work, *La Regola delli cinque ordini d'architettura*, which appeared in 1562, shows him to have been more strictly classical in theory than in his own architectural practice. The present work, a book on perspective, was left unfinished when he died and was completed by the printer Danti. While *Le due regole* contributes nothing new to the subject (its chief value today lies in its biographical information about Vignola), it was selected for exhibition because of the general tendency it reflects. The discovery of perspective led to a virtual free-for-all in Renaissance Italy, in which all artists were trying their hand at it. It must be considered part of the general movement toward more realistic representation expressed mathematically in the books on perspective and proportion which were issuing forth everywhere. *Rome: Francesco Zannetti, 1583.*

31. VINCENZO SCAMOZZI (1552–1616). *Discorsi sopra l'antichita di Roma.* As a young man, Scamozzi wrote a treatise on perspective which has not survived. Later in his life he was the first among Italian architects of the Renaissance to study Gothic buildings not because he necessarily admired them but rather because he found them remarkable from a structural point of view. While Scamozzi's most influential book was his *Dell'idea dell'architettura universale* (1615), the present work is more representative of the revival of interest in the Greeks and Romans pervading all fields. *Venice: F. Ziletti, 1582. From the Leslie Collection.*

32. GIOSEFFO ZARLINO (1517–90). *Le Istitutione harmoniche.* As a theologian and a student of Greek, Hebrew, philosophy, and mathematics, Zarlino typifies the varied intellectual interests of the so-called Renaissance man. In the field of music he is chiefly remembered as a theorist, although some of his own compositions have survived. Zarlino's *Istitutione* is an encyclopedic work interesting not only for the light it sheds on sixteenth-century musical practice

but also for the wide influence it exerted for a long time. Like most musical theorists before him, Zarlino summarized ancient musical theory. He gave it a different, a humanistic, aspect, however, by avoiding the mere reiteration of what the ancients had said and done. Instead he compared their words with current practices. It was Zarlino's view that in his time the ideas of the ancients were coming to full flower again. The Middle Ages were entirely rejected. *Venice: [printer unknown], 1558. Gift of Olga and Paul Menn.*

33. WILIBALD PIRCKHEIMER. Ptolemy's *Geographia.* Within fifty years of its translation from Greek into Latin early in the fifteenth century, the twelve-hundred-year-old text of Ptolemy's atlas reached the printing press. Thereafter, until it was supplanted by Mercator, it was the chief cartographical guide to the world. Frequently reprinted in new editions, the text and the maps were a challenge to successive generations of editors who attempted to keep pace with new discoveries as well as to fit them into Ptolemy's outmoded system of projection. Pirckheimer, the patrician-scholar of Nuremberg, shared with other German humanists a particular bent for mathematics and astronomy. With an extensive personal library to draw upon, as well as facility in Greek learned from Musurus, he undertook a new translation of the Ptolemaic text. But, like other scholars, he found the published result of his labors less than satisfactory. He complained to his printer that the text was not printed in the proper order and that the notes and the text did not always correspond. "If I had foreseen all this," he lamented, "I would rather have burnt my manuscript." Nevertheless, this edition, with its fifty woodcut maps and its elaborate ornamentation supplied by Dürer and other artists, was to be one of the most renowned editions of Ptolemy to be published. *Strassburg: J. Grüninger, 1525.*

34. SEBASTIAN MÜNSTER. *Cosmographia.* As the horizons of the sixteenth century broadened, practical-minded German scholars turned to the encyclopedic job of describing the wonders of the world. In their ambitious cosmographies they gave accounts which combined geographical and historical narratives country by country, region by region. To this they added observations on the character of the inhabitants, local customs, the natural environment, and whatever local pecularities struck their fancy. Among the most famous of these writers was Sebastian Münster, who shared his eminence as a Hebrew scholar with Johann Reuchlin. Münster, who was also trained in mathematics and astronomy, had prepared the way for this vast undertaking by writing and editing numerous books on geography and by carrying on an extensive correspondence with travelers. After eighteen years of collecting information, the first edition of his cosmography appeared in 1544; this was followed by forty German editions, as well as editions in several other languages. Münster tirelessly continued to expand the text and add illustrations during his lifetime. Although more than half the work was devoted to Germany, it was probably the prime popular source for information about the world in the sixteenth century. *Basel: H. Petri, 1550. From the Carter Harrison Collection.*