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also known as **Pierre de La** Ramée

(*b*. Cuts, Vermandois, France, 1515; *d*. Paris, France, 26 August 1572), *logic and method, pedagogy, mathematics, astronomy, optics, mechanics*.

Born into a family that had lost its wealth but not its title of nobility with the sack of Liège in 1468, Ramus was the son of Jacques de La Ramée, a laborer, and Jeanne Charpentier. After a primary education at home, in 1527 he entered the University of Paris (Collège de Navarre), where he met his costs by working as a manservant. Apparently an outstanding student, he first drew widespread attention in 1536 with his defense of an M.A. thesis, "Quaecumque ab Aristotele dicta essent, commentitia esse," in which he attacked not only the accuracy but also the authenticity of traditional Aristotelian philosophy. The precise meaning of the thesis, of which there is no extant text, hinges on the term *commentitia*. Translated by some as "false," the word connotes, rather, something made up as opposed to factual. Ong[1] has analyzed the question closely and has argued for a meaning close to "badly organized, unmethodical."

Ramus' teaching career began at the Collège du Mans, from which he soon moved, together with Omer Talon and Bartholomew Alexandre, to the Collège de l'Ave Maria. Attracted by Johannes Sturm to the rhetorical logic and pedagogical ideas of Rudolf Agricola, Ramus undertook a program of critical reeducation that in 1543 culminated in a broad-scale attack on Aristotelian logic, *Aristotelicae animadversiones*, and plans for a new arts curriculum. A counterattack led by Antoine de Govéa soon succeeded in obtaining a royal edict forbidding Ramus to teach or write on philosophical topics. Consequently Ramus turned to rhetoric and mathematics, in part for their inherent importance but also as guises for his logical theories.

Ramus' fortunes began to improve in 1545 when, as a result of staff shortages caused by the plague, he was called to the Collège de Presles. Shortly thereafter he became principal of the college, a position he held, with some interruptions, until his death. Through the intercession of his patron, Charles Cardinal de Guise (later Cardinal de Lorraine), Ramus was released from the 1544 teaching ban upon the accession of Henry II in 1547. The release did not, however, still the controversy Ramus had aroused and was continuing to enflame through the popularity of his lectures at Presles. Moreover, the position of royal lecturer, to which Ramus was appointed in 1551, gave him even greater freedom to attack his scholastic opponents and to espouse his often radical ideas.

Beginning in 1562 Ramus' intellectual positions became increasingly fused with religious and political issues. A defense of the Roman church by the Cardinal de Lorraine at Poissy in 1561 had the unintended consequence of leading Ramus to embrace Calvinism, which he then pursued with his usual enthusiasm. In 1562 Ramus published a plan of reform for the University of Paris. This plan grew out of the work of a commission appointed by Henry **II** in 1557, to which Ramus had been recommended by a vote of the university faculty. Although the text appeared anonymously, internal evidence[2] makes clear Ramus" authorship but not whether the commission was defunct and, therefore, whether Ramus was acting largely on his own. He suggested a reduction of the teaching staff, the abolition of student fees, and the financing of the institution with income from monasteries and bishoprics. He also proposed a chair of mathematics, which he later endowed from his own estate; a year of physics in the arts curriculum; the teaching of civil law in the law faculty; chairs of botany, anatomy, and pharmacy, and a year of clinical practice in the medical faculty; and the study of the Old Testament in Hebrew and the New Testament in Greek in the theological faculty;[3] The plan hardly endeared him to some of his academic colleagues, who were quick to suggest a link between it and Ramus' religious persuasion. Hence, late in 1562, when Calvinists were ordered out of Paris, Ramus fled to Fontainebleau, where he found refuge for a time with the Queen Mother, Catherine de Medicis.

On his return to Paris under the Peace of Amboise in 1563, Ramus resolved to avoid controversy; but by 1565 he was leading opposition to the naming of Jacques Charpentier (no relation), a long-time adversary, to the royal chair of mathematics. Charpentier, who had by then succeeded Ramus as the Cardinal de Lorraine's protégé and who enjoyed Jesuit support, kept his chair; and Ramus, ever more threatened, in 1567 again fled Paris, taking refuge with the Prince de Condé.

Sensitive to the worsening political situation, in 1568 Ramus returned to Paris, where he found his library ransacked. He stayed just long enough to ask leave of the king to travel in Germany. From 1568 to 1570 he toured the Protestant centers of Switzerland and Germany, where he encountered an enthusiastic welcome strangely coupled with opposition to his permanent settlement in a teaching post because of his non-Aristotelian doctrines. Lured back to Paris in 1570 by promises of tolerance, Ramus soon found himself with titles and salaries, but banned from teaching. In the midst of a vast publication project, he was caught by the St. Bartholomew's Day Massacre and, despite explicit royal protection, was cruelly murdered, apparently by hired assassins.[4]

Ramus' general intellectual stance, from which his thoughts on the sciences derived, was the complex result of two distinct educations and of a life spent entirely within an academic setting. As Ong has emphasized,[5] Ramus was primarily a pedagogue, whose views on the content of philosophy were shaped by the exigencies of teaching in the arts faculty. Having received first a traditional scholastic education, with its emphasis on the Aristotelian corpus, he then immersed himself in the humanist teaching of Rudolf Agricola, who focused on Ciceronian rhetoric and dialectic and on the revival of the seven liberal arts of classical antiquity. The tensions brought about by Ramus' attempt to reconcile and combine these two traditions is best reflected in his attitude toward Aristotle. Like many "anti-Aristotelians" of his day, he aimed his criticism not so much at Aristotle himself, for whom he had genuine respect, but at contemporary Aristotelians. To concentrate solely on Aristotle's works was to ignore or to fail to appreciate a whole body of equally classical material that was often better adapted to the purposes of education.

Aristotelians, Ramus argued, had lost sight of the proper goal of teaching and had become entangled in a sterile web of logical subtleties. In concentrating on forms of the syllogism, for example, scholastics forsook the main purpose of logic, to wit, the finding of arguments and their presentation in a manner designed to convince an audience.[6] By illustrating precisely this use of logic, the works of rhetoricians and dialecticians both before and after Aristotle (most notably, Cicero) provided a more effective means of teaching the subject.

Ramus' attitude reflected a basic epistemology quite close to Aristotle's, as Ramus himself realized. Reason was a natural faculty of man which, like all natural faculties, revealed itself in its actual exercise.[7] Just as general physical principles were the product of induction from particular phenomena of nature, so too the principles of logic should be derived from examples of its effective use by orators, rhetoricians, and dialecticians. Indeed, Ramus maintained, all teaching should be rooted in examples of the use of the subject, from which students could move more easily and naturally to the general precepts underlying that use. It is a mark of Ramus' continuing commitment to Aristotle that he sought the theoretical underpinnings of this method of teaching in the *Posterior Analytics*, and his attacks on Aristotle and his followers were generally based on supposed violations of the precepts contained in that text. Ramus borrowed from the *Posterior Analytics* his three 'laws of method"—*kaia pantos, kat' auto*, and *kath holou prōton*— which required that all material taught should be in the form of propositions that are universally true, demonstrable within the strict confines of the subject, and as general as possible. Although trivial in content, the "laws" became a touchstone for Ramists.[8]

Thus "method" was for Ramus primarily a pedagogical concept; accordingly, his contributions to the sciences were essentially pedagogical and propagandistic in nature. In seeking a return to the curriculum of the seven liberal arts, he sought in particular to retrieve arithmetic, geometry, astronomy, and physics (the quadrivium[9]) from the neglect into which they had fallen. As taught (when they were taught at all) they suffered from a form of intellectual detachment that made them appear more abstruse, and hence less important, than they were. Ramus' solution to this problem was twofold: first, to make clear in a series of commentaries *(scholae)* where the teaching of the sciences had gone astray and, second, to reorganize the subjects according to his own method. The result was a series of textbooks which, together with his texts on grammar, rhetoric, and dialectic, circulated widely for the next hundred years.

Ramus' twofold approach emerges most clearly from his *Scholae mathematicae* (1569) and his texts on arithmetic (1555) and geometry (1569). In the first three books of the *Scholae*, which appeared separately in 1567 under the title *Prooemium mathematicum*, he sought first to defend mathematics against charges of its lack of utility and its obscurity. Surveying the history of Greek mathematics (largely on the basis of Proclus' summary), Ramus insisted on the practical origins of the subject and on the use to which the ancients had put it, both as a theoretical foundation for natural philosophy and as a practical tool in areas like astronomy and mechanics. A mere look at the contemporary scene, he argued, revealed the continuing utility of mathematics in commerce and industry; moreover, recent developments in astronomy and mechanics showed by contrast the sterility of a scholastic natural philosophy devoid of mathematics. The blame for the neglect of mathematics lay first with Plato for having shunned its practical application (a fault Archimedes shared for not having written about his engineering feats and mechanical inventions) and then with Euclid for having severed the precepts of geometry from their use and for having written the *Elements* in an obscure syllogistic form, ostensibly following Aristotle's precepts. The remaining books of the *Scholae* are devoted to analyzing in exhaustive detail the methodological faults of the *Elements*.

The cure for obscurity lay in a return to teaching mathematics on the basis of its application to practical problems. Arithmetic should deal with computational problems occurring in the market place and in the law courts; geometry should be concerned with measurement of distances, areas, volumes, and angles, and with the types of mechanical problems to which Aristotle had applied the properties of the circle in his treatise on mechanics; the theory of proportion should be rooted in pricing and exchange problems and in applications of the law of the lever. Ramus' textbooks on arithmetic and geometry sought to effect this cure by rearranging the content of traditional arithmetical texts and of Euclid's *Elements* (together with scraps from Archimedes, Apollonius, and Pappus) in terms of the bodies of related problems that the theorems helped to solve. Apparently Ramus was perplexed about the proper role of algebra, and a text attributed to him was published only some years after his death. At one point in the *Scholae mathematicae,* however, he did suggest a link between algebra and Greek geometrical analysis, a notion that was picked up and developed by Viète and Descartes.[10]

The same separation of theory and practice led Ramus to discard completely Aristotle's *Physics* as a suitable text for natural philosophy. In terms that Bacon would later echo, Ramus argued that the *Physics* dealt not with natural phenomena but with logical analysis addressed to concepts rooted in the mind alone. Far more revealing of Aristotle's philosophy of nature were his *Mechanical Problems*, his *Meteorologica*, and his biological texts. Beyond Aristotle, Hippocrates, Plato, Theophrastus, Virgil,

Pliny, Witelo, Copernicus, and Georgius Agricola all belonged in the physics curriculum; in particular, despite Aristotle's strictures, astronomy, optics, and mechanics formed an integral part of physics, even if it was more convenient to teach them separately or as subtopics of geometry. Ramus' broad view of this subject remained largely programmatic. His *Scholae physicae* appeared in 1565; but he never did write a textbook, and his lectures suggest that he lacked the technical command necessary to do so.[11] As presented to his students, Ramus' physics consisted primarily of agricultural maxims and natural history culled from Virgil and Pliny.

Ramus turned to astronomy late in his career, and apparently the subject perplexed him. Filled with admiration for this most obviously useful and practical application of mathematics, he nonetheless felt that both Ptolemy and Copernicus had succumbed to the lure of Aristotelian metaphysics in their reliance on such "hypotheses" as the principle of uniform motion on circles. In a letter written to Rheticus in 1563[12] Ramus urged a return to the observational astronomy of the Babylonians and Egyptians in an attempt to determine the nonhypothetical, directly observable regularities of the heavens and to build astronomy on them. It is unclear from his letter and from other statements whether Ramus would have accepted as "nonhypothetical" a system based on sun-centered measurements (that is, the Copernican system), although Kepler did later claim to have met Ramus' demands.[13]

Although the problem of Ramus' influence, especially in the sciences, still requires much study, it is clear that he and his works enjoyed widespread popularity both during his lifetime and in the century following his death. If that popularity was concentrated in the Protestant areas of the Rhineland, the Low Countries, England, and New England, it also filtered back to France, particularly after the accession of Henry IV. The Latin and French editions of Ramus' *Dialectics* went through a hundred printings in as many years, and his other texts seem to have been only slightly less well known. For example, through Rudolph Snellius and his son Willebrord, Ramus' mathematical works became part of the Dutch curriculum by the early 1600's, and Ramist texts in mathematics and physics spread rapidly.[14]

In particular, however, Ramus and Ramism became almost synonymous with the term "method," and all writers who dealt with the subject in the early seventeenth century, including Bacon and Descartes, felt it necessary to come to terms with Ramus' ideas. Indeed, as Ong[15] points out, the lack of reference to Ramus in the seventeenth century often means not that he had been forgotten but, rather, that the content of his thought was so well known as to obviate the need of naming the source. By emphasizing the central importance of mathematics and by insisting on the application of scientific theory to practical problem-solving, Ramus helped to formulate the quest for operational knowledge of nature that marks the Scientific Revolution.

NOTES

1. Ong, *Ramus, Method, and the Decay of Dialogue*, 45–47.

2. Cf. Waddington, *Ramus*, 141.

3.*Ibid*., 144 ff.

4. Waddington, in *Ramus*, ch. 10, lays the blame squarely on Charpentier; but Ong (*Ramus*, 29) feels the evidence is insufficient.

5. Ong, *Ramus, passim* but esp. ch. **VII** , emphasizes as a main theme the continuity of pedagogical concerns within the scholastic tradition and sees many of Ramus' ideas as new solutions to old problems.

6. Here Ramus contributed decisively to a Renaissance concept that largely erased Aristotle's careful distinction between scientific logic and rhetorical dialectic. For a careful analysis of the concept, see Ong, *Ramus*, ch. IV, esp. 59–63.

7. Cf. Hooykaas, *Humanisme, science et réforme*, ch. 5.

8. Cf. Ong, *Ramus*, 258–262.

9. The traditional quadrivium made music the fourth subject, but Ramus believed music, like astronomy and optics, belonged to the wider subject of physics.

10. Cf. M. S. Mahoney, "Die Anfänge der algebraischen Denkweise im 17. Jahrhundert," in *Rete*, **1** (1971), 15–30.

11. Apparently Ramus relied heavily on the work of his students, notably Henri de Monantheuil and Risner.

12. First published in the preface to *Professio regia* (1576).

13. Cf. Hooykaas, *op cit*., ch. 9.

14. Viète clearly knew Ramus' works, and Descartes almost certainly learned of them through Beeckman, who had studied with Rudolph Snellius.

15. Ong, *Ramus*, 9.

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Subsequent writings are *Scholarum physicarum libri octo, in totidem acroamaticos libros Aristotelis* (Paris, 1565); *Scholarum metaphysicarum libri quatuordecim, in totidem metaphysicos libros Aristotelis* (Paris, 1566); *Actiones duae habitae in senatu, pro regia mathematicae professionis cathedra* (Paris, 1566);*Prooemium mathematicum* (Paris, 1567), which is bks. I-III of *Scholae mathematicae; Geometriae libri septem et viginti* (Basel, 1569); and *Scholarum mathematicarum libri unus et triginta* (Basel, 1569).

Three important writings appeared posthumously: *Testamentum* (Paris, 1576),and which endowed a chair of mathematics at the Collège Royal; *Professio regia. Hoc est, Septem artes liberales, in Regia cathedra, per [Ramum] Parisiis apodictico docendi genere propositae …* (Basel, 1576); and *Collectaneae Praefationes, Epistolae, Orationes*(Paris, 1577). A work on optics is also attributed to Ramus, both by its title and by references in his letters, although his precise role in it is not clear: *Opticae libri quatuor ex voto Petri Rami novissimo per Fridericum Risnerum ejusdem in mathematicis adjutorem olim conscripti* (Cassel, 1606). Similarly, Lazarus Schoner published in Frankfurt in 1586 an *Algebrae libri duo,* which he attributed to Ramus. Ramus also appears to have had some hand in Henri de Monantheuil's edition of Aristotle's *Mechanical problems* (Paris, 1557).

II. Secondary Literature. Two major nineteenth-century studies, Charles Desmazes' *P. Ramus: Sa vie, ses ecrits, sa mort (1515–1572)* (Paris, 1864) and Charles Waddington's *Ramus (Pierre de la Ramée), sa vie, ses écrits et ses opinions* (Paris, 1855), have been updated, but not entirely superseded, by Walter J. Ong's *Ramus' Method, and the Decay of Dialogue: From the Art of Discourse to the Art of Reason* (Cambridge, Mass., 1958), which contains the best scholarly account of Ramus' theories of logic and method.

For Ramus' influence in England, see Wilbur S. Howell, *Logic and Rhetoric in England, 1500–1700* (Princeton, 1956); for his influence in New England, see Perry Miller, *The New England Mind: The Seventeenth Century*(New York, 1939); for his influence in the Low Countries, see Paul Dibon, "L'influence de Ramus aux universités neerlandaises du **XVII** siècle," *Actes du **XI**^e^ Congrès international de philosophie*, **XIV** (Louvain, 1953), 307–311.

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