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Jesuit Educational Quarterly

MARCH 1953

HUMANITIES IN THE *RATIO STUDIORUM*

JESUITS AND THE NATURAL SCIENCES

STATUS OF SPECIAL STUDIES 1952-1953

INDEX

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The Class of "Humanities" in the *Ratio Studiorum*

MIGUEL A. BERNAD, S.J.*

Three things are noteworthy in the Jesuit system of education: its plan, its content, and its spirit. Its content may be briefly summarized as the synthesis of classical humanism with Christian theology and philosophy. Its spirit may be described as the resultant of two forces: the *Spiritual Exercises* of St. Ignatius Loyola, and that magnificent spirit which was dominant in Europe when Jesuit schools were in their infancy and which produced the Renaissance and the Age of Baroque. But it is with the plan of Jesuit studies that we are here concerned.

Of that plan, or pattern, the fundamental structural principal was that of progression by graded stages. For want of a better term, let us call this principle "grading." Grammar came before rhetoric, rhetoric before philosophy, philosophy before theology and the other university faculties of medicine and law.¹ Even the study of grammar itself was arranged into graded stages: the student progressed from the class called *infima grammatica* through *media* to *suprema*. No one was to be promoted to a higher class who had not mastered the subject-matter of the lower, and on the other hand when he had mastered the subject-matter of the lower class, he was to be promoted to the upper class even at mid-year.² The "grade" (scope and objective) of each class was so sharply defined as to leave no room for doubt, and each succeeding class built on the work of the preceding.

Thus, the aim of *infima grammatica* was a "perfect mastery of the rudiments of language, and an initial knowledge of syntax." (*rudimen-*

*Adapted from the introductory chapter of a doctoral dissertation presented to the Graduate School of Yale University, 1951.

¹The principle of "grading" was part of the heritage which the first Jesuits, Masters of Arts of the University of Paris, inherited from their Alma Mater. St. Ignatius insisted that the "method of Paris" be followed in Jesuit schools. See Allan P. Farrell, *The Jesuit Code of Liberal Education*, (Milwaukee: Bruce, 1938), pp. 30-37 and elsewhere *passim*.

²"Generalis solemnisque promotio semel in anno post anniversarias vacationes facienda est. Si qui tamen longe excelant, atque in superiore schola magis quam in sua profecturi videantur . . . nequaquam detineantur, sed quocumque anni tempore post examen ascendant. Quamquam a suprema grammatica ad humanitatem, et ab humanitate ad rhetoricam vix patet ascensus." *Ratio Studiorum* (1832; cf 1599), Reg. praef. stud. *inf.* 13.

torum perfecta, syntaxis inchoata cognitio). The class of *media grammatica* aimed at "total, though not yet exhaustive, knowledge of grammar" (*totius quidem grammaticae, minus tamen plena cognitio*). Finally, the student in *suprema* was expected to strive after absolute mastery of grammar (*Gradus huius scholae est absoluta grammaticae cognitio*).³

It is in the light of this principle of "grading" that we should examine the nature of the class called "humanities" in the Jesuit pedagogical system. This class⁴ occupied a strategic position in the Jesuit plan of studies: midway between grammar and rhetoric, perfecting the one, preparing for the other.

The "grade" of the class of humanities is thus defined in the *Ratio Studiorum*:

Gradus huius scholae est, postquam ex grammaticis excesserint, praeparare veluti solum eloquentiae; quod tripliciter accidit, cognitione linguae, aliqua eruditione, et brevi informatione praeceptorum ad rhetoricam spectantium.⁵

Translated freely, this means that a student was expected to gain mastery of language, greater than that achieved in the grammar classes, and that in doing so, he was to prepare the "groundwork" for the study of eloquence to be undertaken in the next class, that of rhetoric. This twofold aim, furthermore, was to be achieved through a threefold means: *cognitio linguae, aliqua eruditio, brevis informatio praeceptorum ad rhetoricam spectantium*.

It is this writer's opinion that this three-fold means (just mentioned) is the key to the understanding, not only of the class of humanities, but also of the entire literary and linguistic phase of Jesuit studies—the so-called *studia inferiora*.⁶

It is therefore important to determine the precise meaning of each of these three phrases. Let us try to do so by a closer inspection of the text of the *Ratio Studiorum*,⁷ as well as of the wider context of Jesuit documents.

³Reg. prof. inf. gram. 1; med. gram. 1; sup. gram. 1. Unless otherwise indicated all references to the *Ratio Studiorum* will be to the 1599 edition, cited simply as R. S.

⁴"Class in American university language," says Professor Morison, "means the persons who enter college the same year, and presumably graduate at the same time." (*Development of Harvard University Since the Inauguration of President Eliot*, Cambridge, Mass. 1930, p. xl). In the Jesuit system of studies, "class" is equivalent to "grade" and refers primarily to the grade itself, not to the persons in it.

⁵R.S., Reg. prof. hum. 1.

⁶The Jesuit college had ordinarily two "faculties": the "lower" (grammar, humanities, rhetoric) and the "higher" (philosophy, theology).

⁷The term *Ratio Studiorum* is ambiguous. It refers both to the principles and methods of Jesuit pedagogy, and to the books in which these principles and methods have been

COGNITIO LINGUAE

This phrase could not have meant a mere "reading" (or even a "speaking") knowledge of a language (primarily Latin). This kind of knowledge was presupposed before a student was admitted to the class of humanities: *postquam ex grammaticis excesserint*. Perfect mastery of "grammar" was the aim of the *suprema grammatica* class—*absoluta grammaticae cognitio*—an ideal, incidentally, which implied much more than a ready knowledge of grammatical rules.⁸

Cognitio linguae in this context, therefore, must mean a deeper knowledge of a language, a penetrating insight into its genius. Such a knowledge implied familiarity with the peculiarities of idiom of a given tongue, its patterns of thought, its way of viewing the world, its nuances, its idiosyncracies, its elegances, its characteristic rhythms. Only he may be said to have mastered a language who has made these qualities his own.

This interpretation, based on the context of the rule, would seem, at first sight, to be contradicted by the text itself of the rule in which the phrase occurs, namely the first rule for the professor of humanities: for there, the phrase *cognitio linguae* is explained as *quae in proprietate maxime et copia consistit*. It would be possible, apart from the context, to understand *copia* as meaning merely a wide vocabulary, and *proprietas* as meaning merely the correct use of idioms. But the words must be understood in the light of the context; and the word *proprietas*, moreover, has been used by the best classical authors in a more refined sense than that just given.⁹

The term *cognitio linguae* invites comparison with a silver term in that

codified. There have been five such codifications: 1586, 1591, 1599, 1832, and the partial codification of 1941. Of these, only the codification of 1599 was definitive, and it enjoyed the force of law in the Society of Jesus from that date till the Society's suppression in 1773. The texts of the editions of 1586, 1599, and 1832 have been edited by G. M. Pachtler, *Ratio studiorum et institutiones scholasticae Societatis Iesu per Germaniam olim vigentes*, (4 vols., Berlin: 1887-1894), Vol. II. These four volumes are parts of the series, *Monumenta Germaniae Paedagogica*, ed. Karl Kehrbach. The *Ratio* of 1591 is reprinted in part in T. Corcoran's *Renatae litterae saeculo a Christo XVI in scholis Societatis Iesu stabilitae*, (Dublin 1927).

⁸The term "grammar" as used in the *Ratio Studiorum* should be understood in its classical sense. Cf. Cicero, *De oratore*, I. 42. 187; Quintilian, *Institutio oratoria*, II, 1. 4. See also the six "parts" of "grammar" according to Dionysius Thrax, *apud* J. E. Sandys, *A History of Classical Scholarship*, Vol. I (2nd. ed., Cambridge, 1906), pp. 7-8.

⁹Forcellini defines the *sensus proprius* of *proprietas* as: "propria vis et natura cuiusque rei, qualitas facultas, quae ab aliis differt." The term *proprietas verborum* he defines as "conjunctio illorum atque apta cum rebus ipsis, quas significant." He cites Quintilian, 8. 2. 1. (*Lexicon totius Latinitatis*, ed. Corradini et Perin, Patavii, 1864-1890, reprinted 1940, Vol. III, p. 923). Harper's Latin Dictionary cites a passage which is probably more to our point: Quintilian 5. 14. 33-35.

standard manual of Jesuit spirituality, the *Spiritual Exercises* of St. Ignatius, where the term *interna cognitio* never means any ordinary knowledge, but a profound insight which moves the soul to the depths of its being.¹⁰

Thus, considered in the light of its context (both the more immediate context of the *Ratio Studiorum* and the wider context of standard Jesuit usage), the term *cognitio linguae* would seem to mean the kind of linguistic mastery which involves penetrating insight into the very nature of a language, into its "inscape"—to borrow a word from a Jesuit poet.

How is this linguistic mastery to be obtained? The first rule for the professor of humanities gives the answer: it is to be obtained by the careful reading of the classical authors (orators, poets, and historians), and by that method of teaching the authors which is called "prelection."

The list of authors prescribed for study in the class of humanities was much longer than that prescribed for the ordinary (undergraduate) Latin classes of today. The list included, first, the "historians": Caesar, Sallust, Livy, and similar authors (*et si qui sunt similes*). Second, the "poets": Horace, the "elegies, epigrams, and other poems of the great poets of antiquity"—provided duly expurgated (*modo sint ab omni obscaenitate expurgati*), but principally Virgil, all of whose works were read except the Eclogues (which formed part of the subject-matter for *suprema grammatica*)¹¹ and the fourth book of the Aeneid (not considered proper class reading for a class of young adolescents).¹² Thirdly, there were the orators, but only one of these was to be "prelected" in class, namely Cicero. Since his *Letters* had been studied in the grammar classes and his *Orations* would form the bulk of the student's reading in the class of

¹⁰For instance, in the Third Exercise of the First Week: "para que sienta interno conocimiento de mis peccados y aborrescimiento dellos." This is translated by the *Versio Vulgata* as: "ut internam criminum nostrorum cognitionem ac detestationem sentiamus," by the *Versio Prima* as: "ut habeam sensum internum . . .," and by Father Roothaan: "ut internam cognitionem peccatorum . . ." (*Exercitia spiritualia sancti Ignatii de Loyola et eorum directoria*, "Monumenta Historica Societatis Iesu," Monumenta Ignatiana, series secunda, Madrid 1919, pp. 290-291). It is significant that the exercitant prays for this "interior knowledge" after he has presumably obtained a considerable amount of knowledge in the three previous Exercises.

¹¹Cf. R.S., Reg. prof. sup. gram. 1 and *passim*.

¹²In the European educational system, then as now, the student of humanities or rhetoric would be considerably younger than his modern American counterpart. Jose Rizal, the Filipino national hero, was a student of humanities at the age of thirteen, of rhetoric at fourteen, and of philosophy at fifteen, at the Jesuit *Ateneo Municipal de Manila* (now the *Ateneo de Manila*, at present under the direction of American and Filipino Jesuits). He attended that college from 1872 to 1877, graduating in the latter year with the B.A. degree before his sixteenth birthday. See J. Rizal, *Memorias de Un Estudiante de Manila*, Spanish text and English translation by Leon Ma. Guerrero, (Manila 1950), pp. 36-40.

rhetoric, his philosophical works were chosen for study in the class of humanities.¹³

In Greek, the list of authors was shorter as Greek always held a subordinate (though important) position to Latin in the Jesuit educational system. In the first semester, some "easier" (*ex facillioribus*) were read, v.g. St. John Chrysostom, St. Basil, Isocrates, Plato, Synesius, and selections from Plutarch, all prose works. In the second semester, Greek poetry was read: Phocylides, Theognis, Synesius, St. Gregory Nazianzen, *et horum similes*.¹⁴

The study of vernacular authors was naturally not as extensive, or as formal, as it is now. The importance accorded to the vernacular was one of the chief differences between the *Ratio Studiorum* of 1599 and that of 1832.¹⁵

So much for the authors studied. The method of teaching was of at least equal importance. It consisted principally of three elements: the prelection, the repetition, and the various exercises in linguistic composition both oral and written. We need here say only a word about the prelection.

Just as the classes were "graded," so the prelection was graded. The manner of prelecting an author in the class of *infima grammatica* was considerably different from the manner of prelecting a Ciceronian oration in the class of rhetoric.¹⁶ The difference stemmed not so much from the difference of subject-matter, as from the difference in objectives and in emphases: the professor of grammar was interested in getting across to his students the meaning of a passage and its idiomatic excellence; the professor of rhetoric was interested in the marshalling of ideas (*dispositio*), the adroitness of the arguments, their force, their relevance, etc.

The professor of humanities, in like manner, was to conduct his prelections in a manner suited to the scope and objectives of the class. In explaining a passage, he was to call attention to the niceties of language, the exact force of the words, their etymology—basing his observations on these points upon the practice of the best authors. He should note the

¹³" . . . in quotidianis praelectionibus explicetur ex Oratoribus unus Cicero, iis fere libris, qui philosophiam de moribus continent. . ."—Reg. prof. hum. 1 (1599). Compare however, the same rule in the 1832 edition.

¹⁴*Loc. cit.*

¹⁵"In lingua vernacula ediscenda, eadem fere methodo procedatur ac in linguae latinae studio." R.S. (1832), Reg. com. prof. class. inf. 12, sect. 2. Although no formal provision was made for the vernacular in the 1599 edition, it was sufficiently implied in those prescriptions concerning translation. On the vernacular in the *Ratio*, see R. Schwickerath, *Jesuit Education: Its History and Principles*, (2nd. ed., St. Louis 1904), pp. 351-360 and elsewhere *passim*.

¹⁶Cp. Reg. prof. inf. gram. with those for the professor of rhetoric.

elegant turns of phrase, and the versatility of expression which the author commands. He should compare the Latin with the original, drawing attention to the peculiar genius of each language. He should also show the student how to imitate the author's style. All this while, his explanation should be interspersed with interesting facts and comments and explaining the allusions which the passage contains. If the passage under study was an oration or part of one, he was to explain the rhetorical artistry, and cite the rhetorical rules exemplified in it. Finally, when all this explanation was completed, the professor might, if he so desired, translate the entire passage into the vernacular, taking care, however, to produce a flawless translation, the elegance of the latter rivaling that of the original.¹⁷

It was by these means—wide and careful reading in the classical authors, and the appropriate method of prelections (to say nothing of the frequent and varied exercises in oral and written composition)—that mastery of language was obtained, a necessary groundwork, certainly, to eloquence (*praeparare veluti solum eloquentiae*).

ALIQUA ERUDITIO

There are several ways of studying the classics. One way is to study them as historical, sociological, archaeological, or other scientific documents. Another way is to study them in search of biographical and psychological data regarding their authors. A third way is to study them merely as examples of grammatical or rhetorical precepts, or as sources for linguistics and philology. A fourth way is to study them as masterpieces of literature, to be understood, appreciated, evaluated, interpreted, and imitated.¹⁸ In the first two of the above-named approaches, the emphasis would naturally fall on factual information—what the *Ratio Studiorum* calls *eruditio*. Thus, the sentence "*Non in campo, non in foro, non in curia, non denique intra domesticos parietes, etc.,*" would be ex-

¹⁷"Praelectio eruditionis ornamentis leviter aspersa sit, quantum loci explicatio postulat: se totum potius Magister effundat in latinae et vernaculae linguae observationes, in vim etymologiamque verborum, quam ex probatis petet auctoribus; in locutionum usum ac varietatem, in collationem indolis utriusque linguae, in auctoris imitationem. Quando autem orationem explicat, praecepta artis exploret. Ad extremum licebit, si videatur, omnia patrio sermone, sed quam elegantissimo vertere."—R.S. (1832), Reg. prof. hum. 5.

¹⁸This is true not only of the study of the Greek and Latin classics, but of all literature. It is only recently that the study of English literature has veered away from the biographical and historical approaches, and has tended to concentrate on literary criticism proper. See for instance, Rene Wellek and Austin Warren, *Theory of Literature*, (New York 1949), chapters I, VII-XX. See also Cleanth Brooks and Robert Penn Warren, *Understanding Poetry*, revised ed., (New York 1950), pp. xi-xxvi.

plained in such a way as to bring forward as much archaeological and other information regarding Campus, Forum, Curia, and the Roman home. Since the approach of the *Ratio Studiorum* is a combination of the third and fourth approaches mentioned above, the emphasis naturally was placed on the literary qualities of the classics, rather than on the factual information to be gleaned from or about them.

The strictly subordinate position accorded to "erudition" by the *Ratio Studiorum* is easily understood when it is remembered that the students in the *studia inferiora* were boys in their teens preparing for philosophy and the "higher" (i.e. professional) faculties of theology, medicine, and law; they were not students in a modern graduate school, specializing in some branch of philology.

Like most things in the *studia inferiora*, the imparting of factual information was "graded." In the grammar classes, it was to be done sparingly, and only when necessary for the understanding of the text.¹⁹ In the class of humanities, a much greater place was to be accorded to "erudition"; not only what was needed for the understanding of the text, but also such as would enliven the class, excite intellectual curiosity, or (perhaps even) create a laugh.²⁰ In the class of rhetoric, finally, erudition comes into its own. The professor of rhetoric was to draw from every available source—*ex historia, ex moribus gentium, ex auctoritate scriptorum, et ex omni doctrina*—for material to illustrate and enliven his prelections.²¹

Thus, though held strictly subordinate, "erudition" was given its due importance. For erudition is important, not only for the understanding of literature, whether classic or modern (how much erudition, for instance, is needed to understand Milton or T. S. Eliot!), but also for the specific purpose of the class of humanities—*praeparare veluti solum eloquentiae*. And on the need that the orator has for vast stores of learning, none has spoken more emphatically than Cicero himself.²²

BREVIS INFORMATIO PRAECEPTORUM

The student of humanities was expected to read literature not only with an eye to language (*cognitio linguae*) and factual information (*aliqua eruditio*), but also with an eye to technique. Hence, the direction

¹⁹" . . . et quae ad eruditionem pertinent, si qui incidant, brevi expediatur." Reg. prof. sup. gram. 5.

²⁰"Praelectio eruditionis ornamentis leviter aspersa sit, quantum loci explicatio postulat. . . . Eruditio modice usurpetur, ut ingenium excitet ac recreet. . . ." Reg. prof. hum. 1.

²¹Reg. prof. rhet. 1.

²²*De oratore*, I. 4 and 5. Also *Brutus*, 93 and 94.

praecepta artis exploret: let the professor of humanities, in prelecting an author (particularly of oratorical prose), draw attention to the author's rhetorical technique.²³

To this end, (and also to serve as an introduction to the more detailed study of rhetorical art in the next class), the precepts of rhetoric were to be explained briefly in the class of humanities: *brevis informatio praeceptorum ad rhetoricam spectantium*. The textbook for this was that of Father Cyprian Soarez, based on Aristotle, Cicero, and Quintilian.²⁴ It should be noted that by *praecepta ad rhetoricam spectantia* were probably meant not only rhetorical precepts strictly so-called, but also other precepts *de arte dicendi*, for instance those concerning prosody and the genres of poetry.²⁵

Two things might be noted before we leave the subject. One was the emphasis, in the *Ratio Studiorum*, on prose rather than verse, on oratory rather than poetry. This had its practical as well as its historical reasons. From the practical standpoint, the Jesuit colleges were designed to educate not recluses but men of affairs, in both the clerical and the lay state, and in both the republic of affairs as in that of letters—and men of affairs, whether they be professors or politicians, diplomats or preachers, usually speak in prose and not in verse. From the historical standpoint, the emphasis on prose was a characteristic of the Renaissance, with its enthusiasm for Cicero—an enthusiasm, incidentally, which was shared in no small degree by the Jesuits.²⁶ There was also the spirit of the times—the *zeitgeist*—of the Renaissance and the Age of Baroque—the age of public buildings and public spectacles, the age not so much of ornateness as of exuberance, an exuberance (on the Continent at least) more conducive to the displays of oratory than to the quiet meditateness of poetry. Whatever the source, the emphasis was on prose rather than on verse; and in this respect (among others), the class of humanities of the *Ratio Studi-*

²³Reg. prof. hum. 1.

²⁴Cf. Reg. prof. hum. 8. Father Cyprian Soarez (also spelled Suarez) was born in Spain 1524 and died 1593. He taught Humanities and Rhetoric first, then, for twenty years Sacred Scripture. His book was entitled, *De Arte Rhetorica Libri III ex Aristotele, Cicerone et Quintiliano deprompti*. First published at Coimbra in 1560, it went through more than twenty editions. It was ordinarily printed in octavo, of some 200 pages. See A. Astrain, *Historia de la Compañia de Jesus en la Asistencia de España*, Vol. IV (Madrid 1913), pp. 112-113.

²⁵A standard Jesuit textbook of rhetoric is J. Kleutgen's *Ars dicendi priscorum potissimum praeceptis et exemplis illustrata*, 12th. ed., (Turin and Rome, 1935). This work was first published at Rome in 1847.

²⁶See, for instance, Blessed Edmund Campion's treatise, *De imitatione rhetorica*, written at Prague (1577 or 1578), and included in the posthumous collection of his works: *Beati Edmundi Campiani e Societate Iesu Martyris in Anglia Opuscula*, Barcinone: Excudebat Franciscus Rosalius, 1888, 333 pp. The *De imitatione* occupies pp. 264-282.

orum differed from its modern counterpart in present-day American Jesuit colleges, where the class of humanities is generally known as the "class of poetry."

The second thing to be noted was the emphasis, throughout the *Ratio Studiorum* on composition, both written and oral. The classes of humanities and of rhetoric were not theoretical courses in literary criticism. They were formative courses in which the student's powers of thought, emotion, imagination, memory, and expression were exercised and developed. In reading the authors, the student was expected not only to understand, appreciate, interpret, and judge, but also, as much as possible, to attempt to rival them.

CONCLUSION

The Jesuit system of studies was a system with a plan, a pattern, of which the fundamental structural principle was that of "grading." It was this principle that enabled the authors of the *Ratio Studiorum* to define with precision the level, scope, objectives (*gradus*) of every class. And it was this principle which enabled the student to advance in his studies, mastering one thing at a time in ordered progression.

In this pattern, the class of humanities occupied a strategic position, midway between the classes of grammar on the one hand, and that of rhetoric on the other. The class of humanities, therefore, had a twofold function to perform: on the one hand, to put the finishing touches to the work of the grammar classes; on the other, to prepare the soil for the class of rhetoric.

This twofold function was performed by placing before the student three objectives for his endeavors: *cognitio linguae, aliqua eruditio, brevis informatio praeceptorum ad rhetoricam spectantium*.

Whatever accusations might be hurled against Jesuit pedagogy (and there have been many), it cannot be accused of being vague in its aims, or of wanting system in its methods.

Role of the Jesuit University

EDWIN A. QUAIN, S.J.¹

I

As one who has been, for many more years devoted to the pursuit of scholarship and teaching, than to my present function of an educational administrator, I may perhaps be pardoned if I reveal my training and inclination by opening my address this afternoon, by going back to the original documents

The document in question is the four century old work, known as the *Constitutions* of the Society of Jesus. The passage that I have in mind, is in Part VII, Chapter 2, which is a general statement of the principles by which the Superiors of the Society are to be guided in their selection of the works and ministries to be undertaken by the Society of Jesus, wherever in the world it may happen to be established. It is there specified that the Father General is to seek for the guidance of the Holy Spirit and to take all reasonable human means, in determining which particular occupation is for "the greater service of God and the general good".

In the *Declarationes*, or further explicitations of the basic law which follow each chapter of the *Constitutions* and date from the lifetime of St. Ignatius, certain examples are given of works which might be for the greater service of God; and it is there explicitly stated that the Society of Jesus should undertake the direction of universities, in preference to a number of other works that might offer themselves. The reason given, why Jesuits should run Universities, is one, I am happy to report, that is based on a principle enunciated by Aristotle in the *Nichomachean Ethics* and expressed in the *Constitutions* as: *Bonum, quo universalius, eo divinius*. The more universal a good thing is, in its influence, the closer it approaches to the Divine. Therefore, it is concluded, one of the most desirable occupations for an Order, dedicated to the greater glory and service of God, is the direction of a university

"... where much greater influence can be exerted over a far wider field, not only in the particular disciplines of the curriculum, but also in the men who will come to study them and, especially,

¹Convocation address delivered at Fordham University, November 9, 1952 under the title "The Role of the Jesuit University Today."

since they, having acquired various academic degrees, will themselves go on, perhaps in other places and in other lands, to teach, as authorities in their fields what they have learned in our universities, to the glory of God.”

Const. S.J., Pt. IV, Chap. 11.

This unmistakably apostolic purpose of Jesuit institutions of learning was not left in general terms but successive chapters of the *Constitutions* of the Society have given explicit expression to the end and purpose of Jesuit education. The latest official pronouncement addressed to the Jesuit colleges and universities of the United States is largely made up of quotations from this basic and original law of the Society. It reads as follows:

“The end and purpose of Jesuit education is to lead men to the knowledge and love of God, our Lord. As a result, our first pre-occupation should be that our students receive along with instruction in their studies, sound training in Christian moral conduct; the moral and religious development of our students according to the principles and directions of the Church should be a primary objective in all our schools. In this way, we will prepare for the family, the State and the Church, men of true eminence who, whatever their walk of life, will stand out for the rectitude of their principles and the solidity of their Christian virtues.”

“*Instructio de ordinandis collegiis, etc.*”

A.R. XI.571

In this spiritual and apostolic activity, we Jesuits of Fordham are proud and happy to have as partners and associates the men and women, the lay members of the University faculty and administration. On this occasion of our annual Convocation, I would earnestly bespeak your continued cooperation in what we consider one of the most honorable tasks that can be accomplished for the good of our country today.

II

In the light of this aim and object, by which we explicitly and proudly proclaim that we have a religious purpose in our education, that moral and spiritual values are held in high esteem in every one of our classes and laboratories, it is interesting to notice two tendencies that animate the educational world in which we live, tendencies which should provide for us, strong motivation toward the fulfillment of our educational purpose.

There is, first of all, one attitude of mind which seems to fear any influence by religion, no matter in how adulterated a form, in the American school. This is allegedly the only way in which a school can be truly American, since the dogma has been officially revealed that the Founding Fathers were not so much in rebellion against the tyranny of George III, as really fighting to free the document we have all prized so highly of any suspicion that religion was thereafter to be tolerated in this land of Liberty. I cannot really believe that the vigilant watchdogs who rise so quickly for the protection of the Constitution can really any longer maintain the fiction that they are the sincere defenders against the threat of a National Established Church. It is not, I fear, love for the public school and the welfare of the children of America that caused the violent outburst, when a short time ago, it was suggested that the children of this State begin their school day with a prayer, a prayer, incidentally that did little more than acknowledge a Supreme Being, and, vaguely enough, one would think, adverted to the Fatherhood of God. Even more interesting was the sequel when in place of this daily prayer, a member of the Board suggested that the children sing each day, the first and fourth stanzas of the song "America".

Even though that hymn does credit "Our Fathers' God" with being the "Author of Liberty", still it has already proved unacceptable and this particular reaction shows, I believe, that this land of ours, which once could have been referred to as a basically Christian nation, has for some time and in some quarters, bowed down in idolatrous adoration of the new god democracy, whose temple is the public school. Just a few days ago, a spokesman of an allegedly religious group here in New York objected to this dastardly subterfuge and with an accurate and devastating zeal, he pinned down the question:

"If the Board were proposing that 'America' be sung as a matter of American patriotism, there could be no objection to the proposal. But, obviously, it is proposed to be sung as an alternative to prayer. In this sense, the words of the fourth stanza are nothing else but a prayer."

Since it really asks God, Our King, to protect us with his might, I would be inclined to agree, but I cannot help thinking that the gentleman so quoted in the *Times* is somewhat opposed to prayer as a human activity, whether it takes place inside the public school, or anywhere else.

There can be no doubt of the prevalence of this attitude and yet another and quite opposite trend has been noticeable for the last several years; thoughtful and serious minds in our American colleges and uni-

versities have begun to realize that our young people have been coming to college full of genuine idealism only to have their youthful naïvete blasted by the ridicule of irreligious if not atheistic pundits sitting in their well-endowed and well-upholstered chairs of philosophy, science, or literature. Barring such open attack, men have become convinced that the silence in the groves of Academe, as to the spiritual realities of man's existence, has created an intellectual and spiritual vacuum, too readily filled by the poisonous stream of Marxian and other forms of materialism.

In the past few years, to my knowledge, there have been published twenty-eight books, all focussed on this one topic: How can we get some religious and moral values into our college? To select but one of these books, called *Religious Perspectives in College Teaching*, we find fifteen college teachers each exploring how, in the normal process of teaching each his own special academic subject, he can bring to the attention of his students, the moral and religious ideas and ideals that are inherent in that academic subject. They clearly have no intention of "dragging in religion" or of neglecting their jobs as teachers, but they are determined that colleges can no longer act as if God, morality, religion were mere outworn relics of less enlightened times.

Nor are these men suggesting a weak and watery brand of good fellowship in the guise of religion; they clearly state what they mean, namely, God as Creator, Judge and Redeemer of mankind. They are firmly convinced that that fact has important implications for every discipline in our curriculum and by way of illustration, let me quote a few of their applications:

"If the existence of nature is grounded in and sustained by God's will and if its order is a product of His Wisdom, it cannot be a self-explanatory system as naturalistic philosophers think. Therefore, the laws of Physics, Chemistry and Biology must be interpreted, not as final explanations, but as descriptions of natural phenomena. Thus the natural scientist who is a Christian will see in nature all that his secular colleague sees, but he will look upon it with eyes filled with wonder and awe because he believes it to be the product of divine power and wisdom rather than blind chance and that it is a manifestation of the divine goodness. . . ."

And again:

"The Christian political scientist must describe the structures and functions of the different branches of the American government in the same way as his secular colleague. But his Christian belief that man is not merely an animal struggling to survive and ex-

ercise power, but also a spiritual being created in the image of God, will give deeper meaning and stronger conviction to his treatment of the dignity and rights of man in American Democracy."

I would not pretend, of course, that this tendency indicates the forthcoming conversion of the secular university into a monastic school; to be sure, a certain number of the contributors to this volume are explicitly careful to say that they are maintaining their freedom of intellectual inquiry and they would not consider "a Christian university on the mediæval or Puritan model" to be a good thing. We could hardly expect them to do so, but I think that their ideas with all their limitations, are a mightily significant step forward. Effectively, their view comes down to this: If we are to study and teach, each one of us his specialty in the college and university curriculum, we are bound to take cognizance of the religious implications of our subject; if we do not, we are purveying a defective version of the story we have to tell.

Putting aside for the moment, their fear of theological uniformity which we may well regret but surely can understand, it is heartening to hear a scholar telling us how saturated English literature is in the language and thought of the Scriptures, theological ideas, ecclesiastical history, liturgical imagery, the lives and opinions of religious leaders, technical theological terminology and the *realia* of the Catholic past of England.

III

Surely there is to be found in these two currents of ideas, the one that finds no place in the school for religion and the other which demands an increasing impact of religious perspectives in our teaching, a powerful lesson and stimulus for us in our educational labors. We come to the task of teaching our chosen subject with a realization of the fact of a universe intelligently ordered, of man as a creature of God and totally dependent upon Him, with a belief in the intrinsic value of the individual soul, redeemed by Christ and destined for an eternity in accordance with its deserts, of happiness or pain, burdened in this world with the weight of the inherited effects of Original Sin. Holding these principles, we must inevitably reflect in our teaching and guidance of students our total view of God, the world and morality. So also will our knowledge of the Incarnation of the Second Person of the Blessed Trinity and the historical consequences of that eternal act, cast light upon the temporal development of the historical process, and as a result, upon the literature and thought of all men since the beginning of the Christian Era.

At a time like this, when in other parts of the world there is no longer freedom for men to teach and work within the framework of such ideas as these, we ought with profoundly grateful hearts, thank Almighty God that we are still so free and unhindered. And, in that realization, see to it that the eternal principles of our Faith become the unifying and cohesive factor in the presence of the diverse elements of our total curriculum.

A second consequence of the present ferment of ideas set over against our apostolic aim and purpose would be the clear and pressing obligation imposed upon us, to attain to the highest possible competence in our field of academic labor. We are, to be sure, anxious and determined that our students will leave us with an adequate training in religion and morality but we cannot ever succumb to the temptation of thinking that that is doing the whole and complete job. Our graduates, endowed with solid moral principles, must also be first-class teachers, lawyers, scientists or historians. Our very apostolic purpose must cause us to think in terms of the ultimate influence of our students in their professions and careers. Our influence will not stop at the door of the classroom, but, in a sense, we are sending out missionaries who will carry on where we have left off. And further, it would seem that the apostolate demands that we endeavor to exert our influence on our peers and colleagues in other universities, in this country and throughout the world. *Bonum est diffusivum sui*, which might be translated as: If you've got something good, you're going to have to tell somebody else about it.

In a word, the ultimate and basic justification for Catholic scholarship is to be found in the obligation arising from the apostolic purpose of Catholic education.

In this connection, I should like to conclude as I began with a Jesuit document. It is taken from a letter written a few years ago by our Very Reverend Father General in the first year after his election to that office.

"Among all the works of the Society which are of prime importance and of the greatest necessity in our own day I would place scientific work properly so-called, whether it be in the sacred sciences or in those secular sciences which the traditional practice of the Church and of the Society has not regarded as alien to our calling. Manifold indeed is the apostolic value of such scientific work. You are all aware of the spiritual harm now being wrought among souls by the ideas which, developed by savants some hundred years ago, first penetrated only to the learned, then spread to all the educated and finally came to leaven the whole mass of the common people. The beginning of all this havoc was the

scientific work of a single individual or of a small group of men. What has such power for evil, can have the same power for good.

It is therefore desirable that our scholars from Jesuit universities should some day bring the men who enjoy great influence in the centers of learning, to an understanding of the Faith, and yet we all know that he will attempt this task in vain, who is not himself outstanding in the same branches in which they excel. These people may not respect a theologian, they may not esteem a philosopher, but they do look up to an historian, a mathematician, an astronomer who is their peer. . . .

We can go a step further: The Church herself will come to shine in the eyes of the more learned among men, as a light placed upon a candlestick *only then*, when *besides* the splendor of truth and charity, *the brilliance of science* commends her to them."

My dear friends, what the world today thinks it needs, it looks for in the factories and on the assembly lines of what has come to be the greatest industrial nation in the history of the world. I have little doubt that, what the world today really needs, it will have to look for to the Universities. It is only an idea, in the long run that can bring order out of chaos, harmony out of discord, peace out of war. The function of the University of today is to be a crucible of ideas; the function of a Catholic university is to provide the best that reason can assemble, place it within the framework of God's Revelation, and bring those ideas to bear upon a world that Christ died to redeem.

Character Formation in the *Ratio Studiorum*

EUGENE J. DEVLIN, S.J.

In the words of Fr. Martín the *Ratio's* distinction lies in its spirit and method.¹ If spirit may be taken in the sense of animating principles then a characteristic principle of the *Ratio* is that mind and will be trained in one relation. The *Ratio* considered development of intellectual capacity inadequate and unrealistic unless the will was at the same time strengthened in good. The end product of training in such a system was not only an educated man but a man of virtue and character as well. Hence, as Farrell states, "a theology of sanctification and salvation is intrinsic to the system."²

St. Ignatius no less pointedly expressed the purpose of the Society in the direction of schools.

Let these schools be conducted in such a way that the students are solidly formed in Christian doctrine . . . and let care be taken, that while learning literature they also learn to act in a way worthy of a Christian.³

And further on he writes:

Every effort should be made to ensure that those who frequent our schools in search of learning should at the same time acquire a knowledge of what is rightly expected of a gentleman and a Christian.⁴

It was clear that the framers of the *Ratio* did not intend to formulate a detailed and specific program for character development from the psychological viewpoint. Only in one edition, the *Ratio* of 1586, was particular mention made of the psychological content underlying its directives. Consequently, it was necessary to infer principles valid for a psychological approach to character formation from various rules covering organization, curriculum and method. The problem of the investigation

¹Luis Martín, S.J., "Adhortatio de Studendi Ratione, ad Scholasticos in Collegio Exaaten," *Woodstock Letters* 22:105-7, 1893.

²Allan P. Farrell, S.J., *The Jesuit Code of Liberal Education* (Milwaukee: The Bruce Publishing Company, 1938), p. 403.

³*Constitutiones Societatis Jesu Latinae et Hispanicae cum earum declarationibus* (Madrid: 1892), IV, c. 7, n. 2.

⁴*Ibid.*, c. 16, n. 1.

was, therefore, to discover whether there were in the *Ratio Studiorum* certain distinctive psychological principles which effectively contribute to a school program of character development.

Psychological principles were understood to be certain fundamental sources of human activity flowing from man's nature as a composite being. Such principles included imagination, memory, intellect, emotions, and will. Character formation was defined as a directed and purposeful training of a student's intellectual and volitional powers to assist him to acquire worthwhile ideals, self-control through a disciplined will, suitable moral habits, emotional control, and moral integrity. An objective character program is one which takes into account the demands of the student's psychological nature in its supernatural as well as natural aspects.

The procedure used in the present investigation was that of documentary analysis. The rules of the *Ratio* were analyzed in the light of fundamental psychological principles of Scholastic philosophy. The material for the analysis was taken principally from the official edition of the *Ratio Studiorum* of 1599. The editions of 1586, 1591, 1832, and the works of Jesuit educators of the past and present were used as supplementary guides for interpretation.

At the outset certain definite factors of a psychological nature were accepted as basic for an objective school character program. These factors were moral instruction; development of worthy ideals; will training; acquisition of correct moral habits; and constructive school discipline. The basis for accepting these particular elements was a survey of representative contributions of contemporary Catholic and secular authorities to the field of character education. These factors constituted the guiding norms for the investigation of the *Ratio's* character program.

Moral instruction. In the *Ratio* moral principles were taught primarily through the medium of the religion class. The aim of religious instruction was to awaken in Jesuit students a just pride in the heritage of their Faith and at the same time to equip them with the intellectual ability to solve for themselves the social, moral, and religious problems of life. Religious instruction was authoritative and practical. It sought to establish strong personal convictions about the teachings of Christian faith which would result in conscious and deliberate application to conduct. The aim of the program was, in short, to produce men who as a result of informed convictions would be able to contribute through influence, service and example to the upbuilding of God's kingdom on earth.⁵

Religion was meant to be a vital force cutting across every aspect of

⁵*Ratio of 1599*, Reg. Prov. 40; Rector 1; Comm. Cl. Inf. 1, 4: Edward A. Fitzpatrick, *St. Ignatius and the Ratio Studiorum* (New York: McGraw-Hill Book Company, Inc.), pp. 137; 195-6.

student activity. At his entrance into the school the student accepted a double responsibility, namely, to tend to intellectual and moral perfection. Ambition, desire, social prestige and material advancement were to be regulated by religious principles.⁶ Consequently, a systematic attempt was made to develop the spiritual side of the student's character. Religious practices included regular attendance at Mass, sermons, the reception of the Sacrament of the Eucharist and regular confession.⁷ The framers of the *Ratio* were conscious of the importance of the role of divine grace in building firm moral character and found these practices an effective means to secure it.

In addition to formal instruction the environment of the Jesuit school was a powerful indirect force for religious training. It was intended to create an encouraging background for transforming Catholic thought and culture into the practice of virtue and religious perfection. The example of teachers was enlisted to intensify the religious outlook of students by showing them a concrete and living expression of adherence to Christian moral principles. Care was taken to make the formation of religious habits natural and spontaneous rather than forced and artificial.⁸

Another characteristic of the *Ratio* was its insistence on the ancient classics as a medium for imparting abiding and universal values. The framers of the *Ratio* realized that one of the first steps in the Christianization of youth is to make it human and spiritual. From an intimate contact with the classical culture carried out under Christian auspices they hoped to give students a true appreciation of the spiritual values which are the foundation of realistic moral training.⁹

The study of the Latin and Greek classics was a practical means for providing students with a first-hand account of the virtues and failings of pagan culture. Teachers were encouraged to make every reasonable effort to compare the life, philosophy and morals of ancient civilization with the supernatural and eternal values of Christian teachings. Early Christian writers and selections from the Latin and Greek Fathers were recommended to express simply and forcefully the intrinsic nobility and superiority of Christian living.¹⁰ Contact with the classics was considered a practical method for developing in students the ability to evaluate on a sound moral basis the ways of men, to approve the punishment of the wicked, to appreciate the wisdom of the wise.¹¹

⁶Farrell, *op. cit.*, p. 422.

⁷*Ratio of 1599*, Comm. Cl. Inf., 3-9; Fitzpatrick, *op. cit.*, pp. 195-97.

⁸Josephus Juvencius, S.J., *De Ratione Discendi et Docendi* (Paris: Delalain, 1809), II, cap. 1, art. 1-2.

⁹Juvencius, *op. cit.*, I, cap. 2, art. ii.

¹⁰Juvencius, *op. cit.*, I, cap. 2, art. ii-iii.

¹¹*Loc. cit.*

Development of ideals. Training for character begins with knowledge of true and worthy ideals of conduct. These ideals are types of excellence, spiritual values, duties, obligations of life, incentives to moral conduct which are meant to be actualized through the activity of intellect and will. The *Ratio* provided the student with a picture of what he should be and how he should act. Its rules pictured for him a practical ideal type of gentleman and Christian.¹² The early Jesuit educators were convinced that religion was the richest source of compelling ideals and worthy moral examples. The religious ideal was considered essential. The rules mentioned it frequently as the primary source of all ideals and the guiding norm for the process of character formation.¹³

The teacher was given an important and direct role in the process of communicating worthy ideals. The *Ratio* expected him to find occasion, in the ordinary teaching process, to instill in his students love for God, respect for authority, devotion to the virtues of Christian life. Outside the classroom he was urged to find frequent opportunity to encourage a spirit of practical piety and a desire for religious ideals.¹⁴

In a variety of ways the Jesuit student was reminded that the practice of virtue was an integral part of his social life. School regulations were intended not only as a corrective but also to direct external actions according to a pattern which proved to be an accurate reflection of Christian moral and social ideals. Virtue and integrity in conduct was considered no less important than achievement in literature and learning.¹⁵

The communication of worthwhile ideals has a direct influence on the evolution of correct moral habits. The essential thing in forming habits of conduct is not the repetition of an act but the assimilation of an ideal value. This principle was recognized in the *Ratio*.¹⁶ The work recommended to the Jesuit teacher was to unveil those values which are basic to the concept of an educated, Christian gentleman. The curriculum itself was a practical medium for bringing students into contact with spiritual values such as the true, the good, the beautiful. The particular aspect under which these appear in a given subject need not prevent the teacher from linking them in the minds of his students with their supreme and perfect fulfillment, God. This is to make the aim of

¹²*Ratio of 1599*, Comm. Cl. Inf. 1, 5; Reg. externorum 1-7; Fitzpatrick, *op. cit.*, pp. 195-6; 240-42.

¹³*Ratio of 1599*, Comm. Cl. Inf. 1, 3, 5-6; Reg. Externorum 14-15; Fitzpatrick, *op. cit.*, pp. 195-96; p. 243.

¹⁴*Ratio of 1599*, Comm. Cl. Inf. 6, 8; Fitzpatrick, *op. cit.*, p. 196; Juvencius, *op. cit.*, II, cap. 1, art. i-iii.

¹⁵*Ratio of 1599*, Reg. Externorum 1-15; Fitzpatrick, *op. cit.*, pp. 241-43.

¹⁶Juvencius, *op. cit.*, II, cap. 1, art. i-iii.

learning to rethink the thoughts of God. In and out of the classroom the *Ratio* sought to provide the social-divine atmosphere in which such ideals could flourish.¹⁷

One of the chief values the *Ratio* strove to build up in students was a right sense of personal dignity. The framers of the *Ratio* realized that as self is at the core of human actions a balanced sense of personal dignity is an essential requirement for right conduct. In its disciplinary directives, in provision for emulation and rivalry in the classroom the *Ratio* kept the ideal of personal dignity before the student and expected him to make it a chief rule of conduct.¹⁸ Through the medium of the drama, from carefully staged pageants to informal class dialogs, the concept of personal dignity received forceful expression in the lives of worthy men and women of classical times, in the saints of the Christian era, and in the life of Jesus Christ the perfect model.¹⁹

Will training. To actualize high moral principles a necessary condition is a strengthened and developed will. The rules of the *Ratio* contained the essential elements for a systematic procedure of successful will training. As is clear from its directives for external conduct, study, and religious exercises, the *Ratio* took the realistic view that intelligent appreciation of moral principles and ideals must be reinforced by effective volitional practice.

Whatever is voluntary is done on account of some good to be derived from the action. The first motive of the will is its tendency to happiness. The special objective proposed by the *Ratio* was to train students to distinguish happiness from mere pleasure, to realize that utility and mere temporal happiness are by no means ultimate tests of what is good and honorable.²⁰ Consequently, the student was encouraged to act deliberately and in conformity with the moral principles which he had learned to accept.

Class and extra-curricular experiences, in particular, gave wide scope to the practice of virtue, responsibility, and self-control.²¹ In addition, the scholarship requirements of these early Jesuit schools made severe and exacting demands on student perseverance. Penalties for inaccuracy and lack of effort were made purposely severe to act as an effective deterrent to unscholarly attitudes. Recitations and class exercises were

¹⁷*Loc. cit.*

¹⁸*Ratio of 1599*, Reg. Externorum 1, 6-15; Comm. Cl. Inf. 31-4; Fitzpatrick, *op. cit.*, pp. 241-43; 203-4; Juvencius, *op. cit.*, II, cap. 2, art. iii, n. 3.

¹⁹Juvencius, *op. cit.*, I, cap. 2, art. ii.

²⁰Juvencius, *op. cit.*, I, cap. 2, art. i, no. x.

²¹*Ratio of 1599*, Comm. Cl. Inf. 31, 35-36; Acad. 7-11; Fitzpatrick, *op. cit.*, pp. 203-05; 241-46.

carried out in a high spirit of rivalry which provided a constant incentive to individual application and initiative.²²

An important element in the process of will training is motivation. Character motivation in the *Ratio* was both natural and supernatural. Normal healthy desire for success and reputation was used to good effect. Students were encouraged to observe school regulations from the motive of honor and hope of reward than from fear of punishment. Honor and praise were judged practical and proper means to encourage the practice of virtue. Such motives, however, were to be used in moderation and always in due subordination to the demands of justice and religion.²³

The most highly regarded motivation was centered on religion. Precept, example, suggestion and private conversations were some of the practical methods used to impress on the student the importance of religion as a realistic and central value for life conduct. The work of the classroom was consecrated to God by prayer. The class teacher was urged to follow up instruction in Christian doctrine by personal contact whose object was to instill practical piety and devotion. The religious motive was given prominence in ordinary school experiences wherever possible—in the practice of public and private devotion, in devoted reception of the Sacraments, in the exercise of virtue and the elimination of faults.²⁴ In this connection mention should be made of the practice of the daily examination of conscience which was recommended to all students. As a spiritual and psychological device for checking bad habits and building habits of virtue its worth has long been recognized.²⁵

Another realistic outlet for will training was the Sodality with its several academies. The Sodality was the principal extra-curricular activity recommended by the *Ratio*.²⁶ These honor societies in the Jesuit school served to effectively integrate intellectual and volitional aspects of student development by encouraging high spiritual ideals and by intensifying activity in intellectual and moral fields.²⁷ While satisfying the normal adolescent tendency for group activity they were at the same time a practical medium for translating religion into action.

Habits. The formation of worthwhile volitional habits is also basic to the psychological process of character formation. As Castiello has

²²*Ratio of 1599*, Comm. Cl. Inf. 41-43; Fitzpatrick, *op. cit.*, pp. 206-7; Juvencius, *op. cit.*, II, cap. 2, art. i-ii, v.

²³Juvencius, *op. cit.*, II, cap. 3, art. i-ii.

²⁴*Ratio of 1599*, Comm. Cl. Inf. 1-10; Fitzpatrick, *op. cit.*, pp. 195-7.

²⁵*Ratio of 1599*, Comm. Cl. Inf. 5; Fitzpatrick, *op. cit.*, p. 196;

²⁶Farrell, *op. cit.*, p. 357.

²⁷*Ratio of 1599*, Rector 23; Acad. 2; Fitzpatrick, *op. cit.*, pp. 142-3; 243-4.

confirmed experimentally, habits of this type will not be effectively reduced to action unless the student has assimilated appropriate intellectual or moral ideals.²⁸ The contribution of the *Ratio* with respect to such ideals has already been determined. The same experimenter adduced another important conclusion. Moral habits, as essentially interior forms, are greatly determined by the kind of environment in which they are evolved. An environment which is forced, artificial, and incapable of arousing the immanent powers of will and intellect will not prove a satisfactory milieu for the evolution of lasting moral habits. The whole spirit and atmosphere of the early Jesuit school was opposed to the formation of habits which were the result of mere repetition of externally imposed acts. Instead, it encouraged action which was the result of spontaneous, deliberate choice according to previously adopted ideals.²⁹

The regulations of the *Ratio* covering individual conduct were directed toward the cultivation of habits of responsibility and self-mastery. The principle behind these directives implied intelligent, free obedience from reasonable motives rather than mechanically or through fear.³⁰ Habits of devotion were formed by daily attendance at Mass, regular reception of the Sacraments, prescribed prayers and continual encouragement to the practice of virtue.³¹ The Jesuit classroom also had its role in forming intellectual and moral habits. Through exacting class regulations and teaching procedures students were trained to face problems and assignments in logical and orderly fashion. Teachers were admonished to promote good study habits and to provide opportunities to acquire habits of industry and perseverance.³²

The activity of the classroom was considered a practical outlet for exercising responsibility. Students were chosen to handle much of the routine work of the classroom. Individual responsibility was also exercised in the organization and conduct of scholastic contests. The spirit of rivalry which was promoted between classes and different sections of the same class was a dynamic and practical exercise for building habits of self-control and virtue.³³ The direction and government of the Sodality and the literary academies was left substantially to the control of student officers and members. These organizations had prescribed

²⁸Jaime Castiello, S.J., *Geistesformung, Beitrage zur experimentellen Erforschung der formalen Bildung* (Berlin, 1934).

²⁹Juvencius, *op. cit.*, II, cap. 1, art. ii; cap. 3, art. i-ii.

³⁰*Ratio of 1599*, Comm. Cl. Inf. 39-40; Praef. Stud. Inf. 11, 38, 41; Fitzpatrick, *op. cit.*, pp. 205-6; 181-88.

³¹*Ratio of 1599*, Comm. Cl. Inf. 1-9; Fitzpatrick, *op. cit.*, pp. 195-6.

³²Juvencius, *op. cit.*, I, cap. 3, art. 2.

³³*Ratio of 1599*, Comm. Cl. Inf. 19-22, 31, 36; Fitzpatrick, *op. cit.*, pp. 199-200, 203-5; Juvencius, *op. cit.*, II, cap. 2, art. iii.

objectives and their activity was regulated by a definite set of rules which revealed a realistic and well-balanced outlook toward the development of student self-mastery.³⁴

The role of the teacher in encouraging the development of habits received emphasis in the *Ratio*. Its directives to teachers take account of the natural tendency of adolescents to imitate the actions of their instructors. Jesuit teachers by profession and religious training were expected to furnish a high degree of the inspiration needed to make the practice of virtue appealing to adolescents. Their personal influence and the example of their religious life was meant to evoke in students a generous impulse to acquire the same habits and to practice the same virtues. The character of the Jesuit teacher was intended to reflect a well-balanced combination of natural and supernatural virtue and worthy social and moral habits.³⁵

Constructive discipline. The *Ratio* recognized the value of discipline as a constructive force in the formation of character. It found no justification for the theory that the student should be permitted to follow impulses and inclinations without restraint. Consequently, its disciplinary legislation was intended to exercise a moderate but realistic restraining force on student conduct.

It was characteristic of the *Ratio's* outlook on discipline to encourage a reasoned, deliberate response to school regulations. The advantages to be gained from external order and uniformity did not justify rigid and mechanical enforcement of rules. In discipline as in studies the *Ratio* sought to make emulation and hope of honor the practical corrective.³⁶ Teachers were admonished to avoid the use of fear as a motive for securing obedience. They were encouraged, instead, to become acquainted with their students in order to win their conformity from respect and devotion.³⁷ Where punishment had to be assigned for some offense the teacher was recommended to impose literary tasks. If such methods did not prove sufficient, and, as a last resort corporal punishment was judged necessary, he was never to administer it himself but send a boy to the Corrector, a non-religious officer appointed for the purpose.³⁸ By this moderate policy the *Ratio* sought to teach the naturally impulsive adolescent the need for restraint in the use of individual liberty without at the same time arousing resentment for all authority.

The *Ratio's* disciplinary legislation was entrusted to the principal, or,

³⁴Juvencius, *op. cit.*, II, cap. 1, art. i-iii.

³⁵*Ratio of 1599*, Acad. 1-12: Fitzpatrick, *op. cit.*, pp. 243-6.

³⁶*Ratio of 1599*, Comm. Cl. Inf. 39: Fitzpatrick, *op. cit.*, pp. 205-6.

³⁷*Loc. cit.*; Juvencius, *op. cit.*, II, cap. 3, art. i.

where necessary, to an administrative assistant, the prefect of discipline, and to the class teacher. The principal was charged with the obligation of governing the school in such a way that students might attain the Society's double education goal, intellectual and moral perfection. With respect to discipline this meant the general supervision of order and regularity in the school. He was to be especially vigilant for discipline during periods of recreation, time of Mass, confessions and public exercises. Teachers were also expected to be acquainted with the rules of the school and they shared in the responsibility for exact enforcement. Infractions of school and class order were to be referred daily to the proper authority.³⁹

The first of fifteen rules governing student conduct centers attention on the supernatural and natural aim of their school training. To reinforce this high aim, the third, fourth, fourteenth and fifteenth rules, which are corollaries of the first, provide for regular attendance at Mass, devout reception of the Sacraments, diligence and attention in learning Christian doctrine and faithful practice of Christian virtues. Other directives were concerned with external conduct in the classroom, study activity, the choice of reading material, and worthwhile use of leisure time.⁴⁰

In its informal aspect the discipline of these early Jesuit schools was intended to encourage in students an attitude of mature deliberation and a sense of responsibility toward the duties of school life. School experiences were not meant to be part of an artificial conditioning process for future life but a realistic participation in social and moral activity which is an integral part of all normal human living. The discipline of the *Ratio* with its multiple appeal to reason and worthy example was an effective and practical means toward the attainment of the ultimate goal—an educated Christian and gentleman.

CONCLUSIONS

The present study dealt with the provisions of the *Ratio Studiorum* with respect to development of character in the Jesuit student. A basic program for effective character structure was found to underlie a wide variety of regulations governing organization, curriculum, and method. As a result of the findings it was possible to draw certain general conclusions which indicate the attitude of the *Ratio* with respect to char-

³⁸*Ratio of 1599*, Comm. Cl. Inf. 40; Fitzpatrick, *op. cit.*, p. 206.

³⁹*Ratio of 1599*, Praef. Stud. Inf. 1-2, 43-46; Comm. Cl. Inf. 39, 41; Fitzpatrick, *op. cit.*, 176, 188-9; 205-6.

⁴⁰*Ratio of 1599*, Reg. Externorum 1-15; Fitzpatrick, *op. cit.*, pp. 241-3.

acter formation and the demands which its character program makes on teachers and students in the Jesuit school.

Despite the fact that the directives of the *Ratio* touched on a wide variety of elements which had a psychological bearing on the formation of character a definite unity of procedure was evident. This unity was an internal one which stemmed from a fundamental unity of purpose. Thus, to achieve the aims of its character program the *Ratio* insisted on close integration of intellectual and moral training. This integration of intellectual and moral elements was to be extended to all aspects of the school's instructional and disciplinary activities.

The second conclusion of this investigation was that in all its character forming activity the *Ratio* demanded a realistic and objective approach. The Jesuit school sought to provide an effective medium for the transition from the subjective and emotional instability of adolescence to the mature and responsible outlook of Christian manhood. The *Ratio* was not concerned with providing an easy or effortless way to character. It required of the student persevering effort and the sacrifice of subjective impulses to the objective claims of morality.

The *Ratio* placed exacting demands on the vocational *ethos* of the teacher. It presupposed a supernatural outlook combined with a deep sense of responsibility and a practical devotion to the profession of Christian educator. The teacher was in a real sense the center and spirit of the *Ratio* system since it was largely through his initiative and directive influence that the *Ratio* goal of formation rather than mere information would result.

The *Ratio* also made exacting demands on the student. He was expected to assume his share of responsibility for mental and moral growth. The natural and supernatural motivation of the *Ratio* presupposed a high degree of generous, unrestrained cooperation. Regularity and perseverance were required in the practice of supernatural obligations as in the performance of routine class work. Self-mastery was neither an effortless objective nor one to be accomplished over night. It was an essentially active process calling for sustained effort to keep conduct in conformity with a variety of directives covering individual and group action.

Finally, the *Ratio* made a distinctive contribution to the field of character education by the inherent and natural adaptability of its method. There was no need to make character training a formal subject of the curriculum. Through the medium of everyday teaching, disciplinary and organizational activity, the influence of the *Ratio's* program communicated itself naturally and without strain to the character of the Jesuit student.

The Role of Science in Jesuit Colleges

TIMOTHY J. O'LEARY, S.J.

According to the second rule of the Summary of our Constitutions, the end and object of the Society is to work not only for our own salvation and perfection, but also for the salvation of the souls of our neighbors. Any work which the Society undertakes must have for its ultimate object this purpose; otherwise it has no place within the framework of our Institute and we have no right to engage in it. Any work undertaken by any one of the members of the Society, with proper permission, is in itself legitimate, provided it is an aid to the salvation or perfection of our own souls or of those of our neighbors. When St. Ignatius founded the Society of Jesus he had in mind a religious order which would not be hampered by custom nor tied down to any one particular work. He wanted a body of men who could and would fit in wherever the need should arise.

It is not correct to say that we are a "teaching order" or a "missionary order" or a "preaching order". We are all these and more. We are whatever is needed at the time.

The use of so many of our men in the field of education can be justified only because in that field there is need to protect and strengthen the Faith of our Catholics, to shield them from falsehood, and to instill into their minds the fundamental Catholic philosophy of life. In the early days of our Society it was realized that one of the strongest weapons against the spread of Protestantism was the diffusion of knowledge. For that reason we entered the field of education.

There is no need to try to prove to you that the existence of Catholic universities is a vital need today. No thoughtful Catholic who is acquainted with the present situation in the field of education will even question that necessity.

If we wish to remain in the field of education, we must make our colleges and universities second to none in the country. Our schools must attract the youth of the country, and to do this they must offer those fundamental courses which are recognized by all as basic academic subjects. This means that they must offer courses in languages, philosophy, social sciences, mathematics, natural sciences—professional as well as cultural. These subjects must be placed on an equal basis—no one considered primary and all others secondary on the academic standard.

Since the object of this paper is to consider the place of the natural sciences in our universities, they will be treated in more detail. In the past century most of the accent in education has been put on the physical sciences. These have been developing more rapidly than any other subject; progress in them brought new discoveries; new discoveries brought new industries; new industries brought new opportunities for the young man or woman "to make good". But to make the most of these opportunities, training was needed. The school that could offer the training attracted the student. Thus it was the normal progress and the need of the times which stressed the study of the physical sciences. Progress in these had its effect on economics, on social life and obligations, on the whole philosophy of life, on the idea of supernatural life, on creation, on the very idea of a Creator.

As is inevitable, mountebanks, men who called themselves scientists, gained the public eye because they spoke of a fascinating subject in a very popular, pleasing style. From a few isolated facts they deduced most fantastic conclusions—knowing and making no distinction between facts, laws, theories and hypotheses. Such Sunday-supplement scientists captured the popular imagination and became the gods of the ignorant. But in the minds of others they sowed the seeds of doubt and mistrust of all science. The only acquaintance these latter men had with science was the handshake offered by these pseudo-scientists. Consequently, in their own ignorance they too condemned the study of science. Their idea of science is that it is an accumulation of unassociated facts and fancies, and their idea of a scientist is one who blindly mixes chemicals in a test tube with no idea of what may or may not happen. It is entirely understandable that such misinformed men should condemn all sciences to Satan's quarters and should oppose their entrance into our universities. In that, however, they are at fault, for they know neither the scope nor the content of true science, nor have they ever taken the trouble to find out. They may not be flattered by the comparison, but they are in the same position as those moderns who condemn the great medieval scholastic philosophers as a group who could offer the world nothing better than useless speculations such as the number of angels who could dance on the head of a pin.

In our course in logic we learned that there are two processes by which we increase our knowledge—deduction and induction. By the deductive process we arrive at conclusions which are already contained in the premises—we go from the universal to the particular case. By the inductive process we proceed from the particular cases and endeavor to arrive at universal conclusions. However, in both cases we must make use of certain rules of correct reasoning. We may not arrive at conclusions which are

not warranted by the facts. The man who is properly educated should know both methods, and should know how to make use of them.

Since the physical sciences are built on inductive reasoning, no one can go through a good course in them without being thoroughly exercised in this process. Therein lies the true value of science in the curricula of any real college or university. No other course offers as thorough a training in the inductive process of reasoning as the sciences do. Mathematics and philosophy are for the most part deductive. As far back as the time of Aristotle it was recognized that science had its place in the curriculum. Albertus Magnus was a man of no mean scientific ability. He even did laboratory experiments, but was handicapped by lack of suitable instruments and equipment. All the physical sciences were grouped under the general heading of "Physics", and had their place in the universities. In the training of our own men, from the earliest days the Society insisted on the study of physics. The Society has always fostered the study of science, as is abundantly evident to anyone acquainted with its history.

At the time of the founding of the Society the study of the humanities, of the Greek and Latin culture, was the vogue—the fad of the day. So much stress had been put on the humanities that man's mind was turned from the Divinity, and the field was plowed and harrowed in preparation for the seeds of Protestantism. The great literature of ancient times was also the deposit of paganism, and man's mind cannot feed on such an exclusive diet without imbibing also some of this paganism. When the Jesuits opened their first schools, the humanities were being stressed. Our schools stressed them too, for otherwise there would have been no pupils, and the professors would have lectured in empty halls. But those schools were not opened in order to teach the humanities. They were opened because our early Fathers realized that the youth had to be grounded in the real Catholic philosophy of life if, humanly speaking, the Church of Christ was to withstand the onslaught of Protestantism in Europe. The humanities were stressed in order to attract the students and were not taught for their own sakes. Surely St. Ignatius would turn over in his grave if any of his sons should think that the Company of Jesus was founded to keep alive the classics.

Today science holds a major position in education. If we do not offer it in our curricula and make our schools as strong in them as any other schools in the country, we cannot attract the youth of the nation. The curricula of the schools must be adapted to the needs of the times; the times do not adapt themselves to the schools. Education is to fit a man for the life of today, not for the life of 300 years ago.

It is often said by some of Ours that we should operate liberal arts

colleges, drop all professional schools, and devote our efforts to the education and formation of leaders. The answer to that is: according to the calendar we are living in 1953, not in 1537, and our country is the United States of America, not some little city-state in Gaul. Such a suggestion implies that our nation is divided into two groups—the privileged ruling classes who are permanently in the saddle, untouchable, and absolutely sure of their position as the dominating group, and the inferior peasant class which has been born to serve and to do only what is dictated by the rulers. Who can pick out any individual group of young men today and say that they will be the leaders 20 years from now? Tomorrow's leader may be the son of today's janitor. From the masses come the leaders. The nation is what the individuals are.

We have to keep our professional schools. Physicians and surgeons must be taught regard for human life, the sacredness of the human body, and the rights of the unborn child; lawyers must be convinced that there is a law above human law and a Judge who knows all the evidence; business men must know that there is justice; union leaders must know that they can do wrong and that injury suffered does not justify an injury inflicted. Where will they get these principles?—only from a Catholic philosophy of life, taught in a Catholic university.

Others claim that our men should teach only the classics and philosophy, that we should hire men to teach mathematics and the sciences. They say that it is not proper for a priest to teach the latter. True, some courses should be taught by laymen. Such are those which are strictly professional, such as strength of materials, structural design, and medical courses, etc. That would be for the good of the student. The professor of structural design should have actual experience in the field, should have contact with engineers in the vicinity so as to help place his graduates. The teacher of a strictly professional subject should be a respected member of the profession. But this is not necessary for the teacher of mathematics or of the fundamental science courses. These can be handled excellently by our own men.

It is difficult to see how it is less becoming for a priest to teach science than to teach the Classics. In fact, in itself it seems to be the more noble work. In science we are dealing with God's handiwork; in the classics we are dealing with the work of another human being—all too commonly a depraved human being at that. It is never necessary to expurgate or hide what God has made—and a study of God's handiwork will lead to Himself.

Speaking of those pagans who set up the wind and the sun and the moon, that is created things, as their gods because of their beauty and

power, the Holy Ghost in the Book of Wisdom XIII says, "If they admired their power and effects, let them understand by them that he who made them is mightier than they: for by the greatness of the beauty and of the creature, the creator of them may be seen, so as to be known thereby." Who would say that it is beneath the dignity of a priest to search for the laws of nature, for they are the Laws of God and show forth the Wisdom and Providence of God. One of the proofs you have learned for the existence of God has come down to us from Aristotle. It is based on the order and beauty of nature. It is a convincing proof, one that can be understood by anyone with normal intelligence. Yet if Aristotle or St. Thomas knew the facts that science has given us about our own human body, what a beautiful proof they would have worked out! The beauty of the universe, the marvellous regularity of the stars and the planets are as nothing when compared with the marvel of your own human body. Dr. Otto Loewi, in a talk on the chemical transmission of nerve impulses, (a work for which he received the Nobel Prize in 1936), stated that there are reactions in the human body which cannot be explained by the laws of chemistry and physics. He then added, "Science is wedded to theology, even though at times he has been ashamed to be seen with her in public."

In our universities we endeavor to make our teachers something more than lecturers who are seen and heard for an hour and are then inaccessible to the student. We teach more than a textbook. There is a certain atmosphere in the class-room and an influence over the student which is had, no matter what the subject matter may be. In the science laboratory the teacher gets to know the student much better than in any class-room. There he has personal contact through individual help and conversation. A year ago a man applied for the position of professor of biology at Gonzaga. Although a non-Catholic, as he had done his undergraduate work at a Catholic College, he was acquainted with our system and our ideals. After a personal interview with the rector, the dean and a couple of members of the faculty, he was hired by the University. There was no fault to be found with the subject matter he presented in his lectures. However, in discussions after class and with groups in the laboratory he aired his own opinions—among which were the absolute certainty of evolution, the absurdity of the principle of causality, etc. He was undoing much of the work of our own men and making our school a traitor to the cause of the Church. That is an example from the field of biology. The danger is just as great in the other sciences.

Cosmology is supposed to treat of the material world and its ultimate constituents, to give an explanation for physical and chemical changes. How can a teacher of cosmology give an explanation for changes about

which he is completely ignorant? How can a man be a real cosmologist without first acquiring a thorough knowledge of the laws and modern theory of sciences. A superficial acquaintance is far from sufficient.

Today no man can be expected to have a thorough training in every field of knowledge. Hence the need of specialization. But the specialist—whether in science, in education, in the classics, in philosophy—who can see nothing but his own specialty, who denies the value of any other training than his own, has made himself a specialized ignoramus, an intellectual bigot. A man must see beyond his own field, recognize that there is need and room for all.

The university is a unit, and must have absolute unity among all its parts. No course is the university; all courses are parts of it. The university is the faculty—not the president, nor the dean, nor the professor of chemistry—but all the members of the faculty.

It may not be out of place to apply to the university a thought taken from St. Paul, I Cor. XII, 14ff. He is rebuking the Corinthians for allowing a dissention to arise among them. It seems that they had been arguing about which of them had the greater gift,—that of prophecy, or of healing, or of working miracles, etc. He reminded them that all these gifts were necessary, no one more important than the other. He made clear his point by making a comparison with our own body. "But now you are many members indeed, yet one body. And the eye cannot say to the hand: I need not thy help; nor again the head to the feet: I have no need of you. . . . If the whole body were the eye, where would be the hearing? If the whole were hearing, where would be the smelling? . . . If one member suffers anything, all the members suffer with it; or if one member glories, all the members glory with it."

We must always look at our university as a unit. The unifying principle is the purpose: the salvation of souls. We do not think for one moment that any man will ever get to heaven because he knows chemistry, or mathematics, or philosophy, or religion. His own actions must get him there, with God's grace of course. But his actions will be ruled by his attitudes, his principles, his philosophy of life. These principles and attitudes he can get in our colleges and universities, principally in classes of religion, Catholic philosophy, and social sciences. But in order to get him into those classes we must first get him into the school; to get him into the school we must offer the courses which are necessary, always keeping in mind that we are living in the United States of America in 1953.

Preparation in Natural Sciences and Jesuit Colleges

JOSEPH F. MULLIGAN, S.J.

In 1947 when Reverend Father General wrote his letter on the ministries of the Society, he again stressed the training of Catholic leaders as the aim of our colleges:

“The training we give in the liberal arts (a name which covers various subjects in the different countries) should be such that those who are educated in our colleges are not inferior to those in other schools, but rather surpass them. For the objective of our college is to form Catholic men who by example and influence can be guides to others in any art or any office. This must be so in order that unbelievers may not have the whole field to themselves; for in that event their influence would be tremendous for the harm of souls. I am afraid that sometimes the importance of the influence which Catholic men ought to have upon public life is all too little in the minds of Ours. . . . It is absolutely necessary that they be so outstanding also in learning, practicality and other human endowments that their cooperation is rated very highly by everybody, even by non-Catholics, and so men have recourse by preference to them when something, even of a public character, needs doing.”¹

In recent years scientists have risen to a position of new importance on the American scene. This radical change has come about because of the outstanding contributions scientists made to the war effort in World War II, and because they have become more conscious of their political and social responsibilities. As a result scientists are now consultants to the government and to the military on matters of great political and social importance. The decision as to war or peace is in some measure in their hands. The public listens to scientists with attention and credence even when they speak of things which are completely outside their competence. We may regret that men whose training is often quite narrow should assume such an important role in public affairs, but we must accept it

¹*Acta Romana Societatis Jesu*, 11, 320 (1947). See also Paul C. Reinert, S.J., “The Intellectual Apostolate,” *JESUIT EDUCATIONAL QUARTERLY*, 13, 69 (1950).

as a fact. This is a field in which there is great need for the leaders Father General spoke of in his letter—for Catholic scientists who will bring the voice of a sound philosophy and theology into the councils of state. A prime requisite for such work, however, is outstanding technical competence and an established reputation in some field of science; and such Catholic scientists “are today lamentably few and and regrettably inarticulate.”²

As a result of the increased importance of science in the life of the country there is also a growing tendency to judge educational institutions almost solely on their science departments, and even more particularly on the products of these science departments. This has been pointed out quite recently by Father Edward Rooney in a special bulletin of the Jesuit Educational Association.³ The scientific products of an undergraduate college are usually judged by the number who go on to graduate school and meet with success there, for these are the ones who can be expected to attain scientific eminence in their future work. A number of studies have been made in recent years of the backgrounds of American scientists, and the results are not at all complimentary to Catholic colleges in general, and to our Jesuit colleges in particular.

SURVEYS OF GRADUATES IN THE NATURAL SCIENCES

In 1948 the National Research Council published a study of the baccalaureate origins of the science doctorates awarded in the United States in the decade 1936 to 1945, inclusive.⁴ In those ten years 187 alumni of twenty-five Jesuit colleges obtained their Ph.D. degrees in some field of natural science, 8 of these being in mathematics, 16 in physics, 39 in biology, 93 in chemistry, 13 in psychology, and 18 in other natural sciences. This is an average of less than one graduate per Jesuit college per year. All Catholic colleges which had more than fifteen alumni receiving doctorates in science in the ten-year period 1936 to 1945 are listed in Table I. The rank given to the colleges is based on the total number of graduates who went on to the doctorate in science, and no attempt has been made to ascertain what percentages of their graduating classes these

²F. Sherwood Taylor, “The Substitution of Science for Religion,” *Blackfriars*, 31, 172 (1950).

³Edward B. Rooney, S.J., *Special Bulletin No. 150 of Jesuit Educational Association* (May 15, 1952).

⁴*Baccalaureate Origins of the Science Doctorates Awarded in the United States 1936-1945*. Washington, D. C., National Research Council, 1948. The complete data for the Jesuit colleges appearing in this study have been published by Bernard A. Fiekers, S.J., “Doctorates in the Natural Sciences Earned by Jesuit Alumni 1936-1945,” *Bulletin of the American Association of Jesuit Scientists (Eastern Section)*, 26, 116 (1949).

TABLE I: CATHOLIC COLLEGES HAVING MORE THAN 15 ALUMNI RECEIVING DOCTORATES IN THE NATURAL SCIENCES IN THE YEARS 1936-1945.

Rank ^a	College	Total Alumni Receiving Doctorates in Science
47.....	Notre Dame.....	55
69.....	Catholic University.....	29
69.....	Fordham.....	29
77.....	Marquette.....	20
78.....	St. Louis.....	19
81.....	College of St. Thomas.....	16

^aAll colleges having the same number of graduates receiving science doctorates have been given the same rank. Hence though St. Louis, for example, has a rank of 78, there are over 150 colleges ahead of it on the list.

graduates represent. It can be seen from the table that Notre Dame produced almost twice as many Ph.D.'s in science as any Jesuit school during these ten years. Though of course the leaders in the total number of doctorates produced were the big technical schools and state universities, still many small liberal arts colleges like Oberlin (121 alumni getting doctorates in science) and Kalamazoo (34 doctorates) produced more who went on to the doctorate level than our largest Jesuit colleges. In mathematics and physics the situation was especially bad, the only one of our schools producing three or more doctorates being St. Louis, with three in physics. It may be noted that over the ten-year period only eight of the 695 who received doctorates in mathematics were graduates of our colleges. This seems to indicate that inadequate laboratory facilities caused by financial difficulties are not the complete explanation of our poor showing.

Recently a committee of science teachers at Wesleyan College made a very exhaustive study of the undergraduate backgrounds of scientists listed in *American Men of Science*.⁵ The survey considered only male scientists, since so few women go on to the doctorate level in the natural sciences. The index used in this study was the number per thousand male graduates of the institution between 1924 and 1934 who continued on to the doctorate level, and were listed in the 1944 edition of *American Men*

⁵Knapp and Goodrich, "Origins of American Scientists," *Science*, 113, 543 (1951); Goodrich, Knapp, and Boehm, "The Origins of U. S. Scientists," *Scientific American*, 185, no. 1, p. 15 (July, 1951).

of Science. The institutions were broken down into five major classes: liberal arts colleges (graduating 30 to 200 annually, privately endowed, not devoted to technology, and not Catholic); universities (graduating over 250 annually, possessing graduate schools, and not Catholic); agricultural schools; engineering schools; Catholic institutions (regardless of size or type). The average index for each of these groups is given in Table II.

TABLE II: NUMBER OF GRADUATES OUT OF 1,000 DURING YEARS 1924-1934 WHO LATER OBTAINED DOCTORATES IN SCIENCE AND WERE LISTED IN 1944 *American Men of Science*.

Type of Undergraduate Institution	Index
Agricultural Schools	19.8
Liberal Arts Colleges	17.8
Universities	13.8
Engineering Schools	6.4
Catholic Institutions	2.8

The authors were forced to separate Catholic colleges and universities from all others because a preliminary study revealed how poor a showing Catholic schools made compared to non-Catholic institutions of the same type. No Catholic colleges were to be found in the first fifty on the list, despite the fact that the survey showed that small liberal arts colleges are far and away the most productive sources of future scientists among U. S. institutions. Of the fifty leading institutions in this respect (i.e., those who turn out the largest proportion of graduates who become scientists), thirty-nine are small liberal arts colleges. Only three large universities appear on this list of leaders, and only two technological institutions; the others among the fifty are three state agricultural schools and three small universities that lean toward technology. Of the thirty-nine small liberal arts colleges, many were in difficult financial straits in the years 1924-1934, and did not have particularly well-equipped laboratories. Still they produced many good scientists.

It is true that such statistical studies are not completely fair to our Catholic colleges, and that many extenuating circumstances and excusing causes could be mentioned. These surveys clearly indicate, however, that many liberal arts colleges with smaller enrollments and smaller budgets for equipment than our colleges, are far more productive of competent scientists. Though the main purpose of our colleges is certainly not to

produce scientists, these statistics should make us ponder the factors that keep us from producing the Catholic scientific leaders that are so badly needed today.

One objection that may justly be raised is that the surveys considered here dealt with students who graduated from our colleges at least ten years ago, and that many of our colleges have only come into their own in a scientific way since then. It does seem that there has been a definite improvement in recent years and that more recent statistics might be more encouraging. That the situation is still far from perfect, however, is clear from the record our colleges made in the recent fellowship grants of the National Science Foundation. Of the 569 grants made to college seniors for graduate work, only eight went to students of Catholic colleges: three to students of Notre Dame, and one each to students of the U. of San Francisco, U. of Detroit, Boston College, Fordham U., and St. Louis U. Hence less than one percent of these grants went to students of our colleges, though in 1950-51 our colleges contained about six percent of the country's male undergraduates in engineering and the liberal arts.⁶ Further evidence of our need of improvement is the fact that in the National Academy of Sciences and the National Research Council, Catholics are now represented by less than one-tenth the number which would be consistent with the fraction of the population which is Catholic. Still further cause for concern is to be found in the paucity of articles in scientific journals from Catholic institutions, and in the small use made by our colleges of the vast facilities for research open to our faculties and students at national laboratories like Brookhaven and Oak Ridge.

The conclusion drawn from these facts by many men of good will among the scientists and educators of the country is the one reached by Lehman and Witty in 1931 after finding only three Catholics among the 1,189 outstanding scientists starred in *American Men of Science*: "The conspicuous dearth of scientists among the Catholics suggests that the tenets of that Church are not consonant with scientific endeavor."⁷ Such a statement in a scientific journal does more to damage the Church in the eyes of scientists and educators than the Galileo affair or any similar event.

It is clearly evident that Catholics and especially we Jesuits, who lead in higher education, must do some sincere soul searching to seek out the causes and try to apply some remedies.

⁶This estimate is based on the data given in the 1952 *World Almanac and Book of Facts* and by William J. Mehok, S.J., "An Analysis of National Statistics 1950-1951," *JESUIT EDUCATIONAL QUARTERLY*, 13, 157 (1951).

⁷Lehman and Witty, "Scientific Eminence and Church Membership," *Scientific Monthly*, 33, 549 (1931).

CONCLUSIONS

The solution to the problem outlined in this paper will ultimately depend on more effective, and more inspiration, teaching by our college professors. If these teachers realize the importance of scientific work in itself and appreciate its place in the Christian scheme of life, they will impart their own respect for a life devoted to such work to their students. The Wesleyan study points clearly to the influence of individual teachers in producing scientists. Many cases were found in the survey of colleges which were poor both financially and scholastically in other fields, but were fortunate enough to have one good teacher in a particular branch of science, a man devoted to his subject and to the teaching of it. The index for these colleges in that one branch of science was as a result unusually high, indicating that one teacher can do a great deal in producing competent scientists.

Such teachers of science are needed to open the minds of our students to the possibility of intellectually-satisfying, and truly apostolic, careers in the field of science. The facts quoted in this article seems to suggest that the minds of the ablest of our students have been turned in some way from the further study of mathematics and science after leaving our colleges. Part of this is traceable to a vague mistrust which seems to permeate the average Catholic's attitude toward science. We seem to be afraid that science will some day upset our most sacred beliefs, whereas we should know from our faith that such is impossible. This attitude can be seen in the willingness of our Catholic newspapers to take to task scientists who say something in passing that is philosophically or theologically unsound, and in the same papers' reluctance to praise scientists for their many worthwhile statements and their valuable contributions to the life of the nation. The same attitude is reflected in the unfortunate praise lavished on Anthony Standen's book, *Science is a Sacred Cow*, by many Catholic periodicals, and in the pre-publication printing of what was perhaps the worst chapter of the book by a leading Catholic monthly. There seemed to be no consideration of the fact that the tone of the book was offensive to very many sincere and well-intentioned scientists, and that such favorable publicity in Catholic publications would hurt the Catholic Church in their eyes. Unfortunately such incidents often give the impression that the prevalent Catholic attitude in such matters is: "If this is against science, it must be good."

The true Catholic attitude toward science, and the attitude that must be communicated not only by our teachers of the natural sciences but by

all our teachers, is the respect and reverence for true knowledge which Father Joseph Fitzpatrick has stressed in a somewhat broader context:

Of all people in the world, Catholics should have the calm conviction that genuine knowledge need never be feared. It would not be an indication of strong faith but of weak faith to think that the advance of science may displace the providence of God, or our own determination of our lives. "For one who loves God, all things work together unto good." It is the Catholic above all who should view the advance of science with the greatest calm and peace of mind. . . . It can do nothing but teach us the nature of ourselves and of the world. And knowing this, we will have the sure insight into that which is not to be called common or unclean because not only has God cleansed it; God has actually made it.⁸

Such a truly Catholic attitude towards the natural sciences must prevail in our colleges if the situation described above is to be remedied. The maintaining of a healthy atmosphere for the development of Catholic scientists is the responsibility not only of science teachers but of the other members of the faculty who can too easily divert students from the sciences by their own attitudes. This is not the place to discuss the worthwhileness of the study of science in itself, its value as a background for historical and philosophical studies, and its humanizing influence—though all of these aspects are receiving attention from educators at the present time. We have been content with pointing out the apostolic value of having graduates of our colleges in the natural sciences, men who will be outstanding for both their knowledge of science and their truly Catholic outlook on life. Such men can do much good for the Church and for the world today.

In conclusion, a word may be said about the need of sending Ours on for advanced degrees in the natural sciences. Because of the dearth of Catholic scientists described above, and because of the severe competition offered by industry and the government laboratories for the service of competent scientists, many of our colleges are finding it difficult to staff their science faculties adequately. Any dean or department head who has tried to hire a Catholic Ph.D. in physics in recent years knows how acute the problem is. Recent doctors in chemistry and physics can obtain as

⁸Joseph P. Fitzpatrick, S.J., "Catholic Responsibilities in Sociology," *Thought*, 26, 384 (1951). This excellent article is really much broader in scope than its title implies. Much of it concerns the responsibilities of the Catholic scholar as such, and can be applied, with but slight changes, to the problem of the Catholic natural scientist.

much as \$7,000 a year as a starting salary in industry. The average starting salary for the 1952 crop of Ph.D.'s in chemistry from the California Institute of Technology was \$5,700 a year. It promises to become increasingly difficult for our colleges to compete with such resources. Hence, we seem to be faced with the alternatives of having inadequately staffed science departments (which will perpetuate the situation outlined in this paper), or of sending Ours on for advanced degrees which will enable them to take their places on the scientific faculties of our colleges. Having more Jesuits in our science departments will have many advantages. Ours may be expected to see more clearly the place of science in a full Catholic life, neither exaggerating nor underestimating its importance, and to inspire their students with a high regard for such life. They will also take more interest in their students, prepare them well for their future work, and help them to obtain scholarships and fellowships for graduate study. One Jesuit scientist, well-equipped in his particular branch of science and conscious of the needs of the Church in the natural sciences, can do much to relieve the situation outlined in this paper.

Westinghouse Fellowships for Science Teachers

BERNARD M. SCULLY, S.J.

In the summer of 1948 the Westinghouse Educational Foundation initiated a generous plan of 50 fellowships for high school science teachers at the Summer Session of Massachusetts Institute of Technology. During the summer of 1952 I was awarded one of these fellowships and I derived so much benefit from the course that I would like to tell other Jesuits about these fellowships.

The Westinghouse Fellowships are open to any high school science teacher in the country. Information and application blanks may be obtained from Professor Francis W. Sears, Summer Program for Science Teachers, Room 4-356, Massachusetts Institute of Technology, Cambridge 39, Massachusetts. There is no entrance examination given. The application blank contains spaces for education and experience. A letter of recommendation from the high school principal is required. April first is the last date that applications will be received.

In the group of fifty this summer there were included four religious, two Jesuit scholastics, a Benedictine priest, and a Xavierian brother.

In general, the aim of this course is to acquaint teachers with two things. The latest advances in chemistry, physics, biology and engineering are presented by experts of the Institute's staff to bring the teacher up to date in his field. (The extent that these may be taught to high school students and the most feasible methods are largely developed by after-class discussions among the particular teachers interested in each field). Great emphasis is placed on the type of science discipline that the Institute finds to have been most helpful for high school students. Demonstrations and lectures similar to those given in some of the M.I.T. freshman and sophomore classes are given as examples of the way that the Institute teachers educe the concepts that have already been given in a rudimentary way in the student's high school class. Here a very important notice is made of the great necessity for the high school teacher to give clear, solid, fundamental ideas of the basic *principles* of chemistry and physics. For example, several high school teachers who had taught their pupils a rather pragmatic and somewhat non-realistic approach to mechanics (the D'Alembert system) came to see the great advantage of a simple yet thorough disciplining in the simple Newtonian Laws of Mechanics.

Through experience, the Institute has found that, although D'Alembert's methods may be used to solve some simpler problems, the Newtonian concepts are much more intelligently understood and used because they are based on a more realistic observation.

Another example to illustrate the high school preparation that the Institute has found to be the most solid for incoming students is found in the use of the so-called M K S (meter, kilogram, second) system of units in physics. Teachers at the Institute have found that this is the practical and intelligent system to use in their freshman classes. They have found that freshmen who have been instructed in the fundamentals of this system are not prey to the inevitable confusion that has arisen in the mind of the student who has had to rack his brain over the difference between a pound of force and a pound of mass. After a very telling lecture-demonstration on this point one of my fellow students told me "Now I can see why my students found units so hard to use. This year I'm going to teach that meter, kilogram, second system if I have to write my own text-book."

In chemistry, too, the need and benefit of stressing fundamentals was insisted upon. Professor Arthur Davis showed himself to be not only a master teacher but also a penetrating diagnostician of the cerebral aches of first year chemistry students. From his own inimitable way of teaching equilibrium concepts, the Westinghouse Fellowship students grew to appreciate the feasibility of his recommendation to insist on teaching the fundamentals of equilibrium in high school chemistry. It was very apparent to all of us that our high school students can receive a better *chemical* way of looking at reactions if we can teach them that most reactions are really reversible reactions.

These examples have been given merely to illustrate some of the ways that Professor Francis W. Sears, a veteran freshman physics teacher at the Institute, and Professor Arthur Davis, freshman chemistry teacher, impress on the teacher-students the type of science education that the Institute has found best to prepare students for their courses.

In the six weeks of instruction there were many interesting lectures and demonstrations that stand out in memory. Mention has already been made of the basic physics lectures by Professor Sears. In the first three weeks there was one daily lecture and demonstration by Professor Sears in some of the important branches of Physics. Clear demonstrations showed that color is really made up of different wave lengths. An interesting experiment to determine wave length by diffraction was performed before the class. The theory came to life when the class was taken through the huge underground spectroscopy laboratory. Professor Sears taught the funda-

mentals of wave theory as a background for interesting trips to the radar and acoustics laboratories. Other lectures on electronics increased our interest and understanding of the apparatus and demonstrations in the Van der Graff Laboratory and at the cyclotron and the synchrotron. There were other fields of physics covered, and sixteen laboratory tours concretized the concepts of the lectures.

In the last three weeks there was one daily lecture and demonstration in chemistry by Professor Arthur Davis. In addition to the explanation of equilibrium *per se*, Professor Davis illustrated how many types of chemical reactions may be explained by equilibrium ideas. Hydrolysis, neutralization, use of indicators, and electrolytic reactions were explained and illustrated by equilibrium concepts. Professor Davis' innumerable asides and "obiter dicta" enlivened his classes for everyone. His ready mind seemed to have a card index of the mistakes that freshmen will be expected to make at any demonstration. Great was his delight when he could trap the teachers of our group into the same pitfall—as I for one can blushing recall. Laboratory tours showed exemplifications of chemical theory in industries such as mining and rubber.

These are only a few of the very interesting highlights that memory recalls of the actual classes. Outside of class there were many discussions of individual teaching problems, syllabi, text-books, aims, standards, techniques, and salaries. Despite the fact that members of this class numbered fifty-one teachers from almost every state in the Union, there was a very close degree of understanding and friendship between all. It was an education in itself to learn first-hand the varying standards and attitudes represented by teachers from all over the country. The very obvious interest of the Technology staff in the members of the group brought about a most friendly and co-operative atmosphere. The kindness and respect shown by the Institute staff and the science teachers to the four religious in the group was heart-warming. From the very beginning the other religious and I knew that we were among friends who wanted to help us and to receive whatever we could contribute to the class. We were given a typewritten list of the names and addresses of the group and I am sure that many of the teachers will strengthen the friendships that they made in this most helpful summer course.

Graduate credit of four semester hours may be obtained either in chemistry or physics. To receive this the student may choose a subject in his field on which he writes an original paper. For example, I wrote on "The Chemistry of the Carbon Cycle in Nature". The professor in charge hands out a set of problems in chemistry or physics which are to be turned in by the end of the program. The process of solving these prob-

lems, in chemistry I know, and in physics, I was told, is a real help toward understanding the matter of the lectures and demonstrations.

The amount of the grant from Westinghouse is two hundred and fifty dollars of which fifty dollars is given for the cost of tuition. Students may live in the Institute's dormitories for seventy-two dollars for the six weeks or they may live in any other place of their own choosing. No textbooks are required for the classes since the professor's notes are specially given only to members of this Westinghouse group. It is a great advantage to have the use of the copious Institute libraries. Science teachers will find the members of the library staff most courteous and helpful.

The keynote of courtesy and interest in the members of the group was given to us on the very first night at a pleasant banquet in the Tech faculty club where we were addressed by President James R. Killian and by Mr. Louis M. Stark, "Manager of School Service, Westinghouse Electric Corp."

A great debt of gratitude is owed to Westinghouse Corporation and to Massachusetts Institute of Technology for their generous spirit of civic interest and their sincere desire to help in the education of America's science teachers and future scientists.

I most heartily recommend this Westinghouse Summer Fellowship to any Jesuit high school science teacher. He will find that he can gain benefits from it to help him in his work of teaching the children whom God has entrusted to him.

Status of Special Studies 1952-1953

EDWARD B. ROONEY, S.J.*

In the article accompanying the report on the status of special studies for 1951-1952, the editor of the *Quarterly* expressed the hope that the 1952-1953 report might show a substantial increase in the total number of full-time graduate students in the provinces of the American assistancy. With an eye on reality, however, he also uttered a cautious prediction that the record might get worse before it got better. If his pious hope has not been realized, surely his cautious prediction has. For the record this year is definitely at the ebb. We have gone from a total of 254 full-time graduate students in 1949-1950 to a low of 173 for 1952-1953. Actually this figure is the lowest since 1945-1946.

The downward trend in our special studies program was a source of concern to the Editor in his capacity of Executive Director of the Jesuit Educational Association. Knowing that it would be of interest to readers of the *Quarterly*, he decided to take a closer look for causes that might explain this trend.

That there is a growing demand for manpower resources to meet the immediate needs of our colleges and high schools is, of course, obvious. This itself might be an explanation of the downward trend in the assignment of priests and scholastics to special studies. But it is too facile an explanation; moreover it is not too complimentary to superiors who by their very office are bound to take a long-view of province needs. A more adequate and truer explanation might be found in the manpower pool

(Continued on page 245)

I. COMPARATIVE STATISTICS 1948-1953

	1948-49	1949-50	1950-51	1951-52	1952-53
Full-time Graduate Students...	243	254	207	191	173
Priest Graduate Students.....	186	198	162	152	140
Scholastic Graduate Students...	57	56	45	39	33
Candidates for the Ph.D.....	153	161	129	131	119
Candidates for other Doctor...	—	—	—	—	16
Candidates for the M.A.....	43	45	37	33	23
Candidates for the M.S.....	21	17	15	10	8
Candidates for other Masters...	—	—	—	—	3
Candidates for other Degrees..	22	23	17	13	2
Special Studies but no degree..	4	8	9	4	2

*Tabular material throughout this article compiled under the direction of William J. Mehok, S.J.

II. MAJOR FIELDS

	Calif.	Chicago	Maryld.	Missouri	N. Eng.	N. Orl.	N. York	Oregon	Total
Biology (7).....	1 Ph. D.	3 Ph. D.	1 Ph. D.	.....	1 Ph. D.	.....	1 Ph. D.	.....	7 Ph. D.
Business Administration (3).....	.....	.....	.....	.....	1 Ph. D.	.....	.....	.....	1 Ph. D.
	.....	.....	.....	.....	.....	.....	1 M. A.	.....	1 M. A.
	.....	1 M.B.A.	.....	.....	.....	.....	.....	.....	1 M. B. A.
Chemistry (9).....	1 Ph. D.	.....	.....	.....	1 Ph. D.	.....	2 Ph. D.	1 Ph. D.	5 Ph. D.
	.....	.....	.....	.....	.....	.....	4 M. S.	.....	4 M. S.
Economics (7).....	1 Ph. D.	1 Ph. D.	1 Ph. D.	1 Ph. D.	.....	.....	1 Ph. D.	.....	5 Ph. D.
	.....	.....	.....	.....	1 M. A.	.....	1 M. A.	.....	2 M. A.
Education (10).....	.....	3 Ph. D.	1 Ph. D.	2 Ph. D.	.....	.....	1 Ph. D.	2 Ph. D.	9 Ph. D.
	.....	.....	.....	.....	1 M. A.	.....	.....	.....	1 M. A.
Educational Psychology (1).....	.....	.....	.....	.....	.....	.....	1 Ph. D.	.....	1 Ph. D.
English (14).....	.....	2 Ph. D.	.....	4 Ph. D.	1 Ph. D.	.....	2 Ph. D.	.....	9 Ph. D.
	1 M. A.	1 M. A.	.....	1 M. A.	1 M. A.	1 M. A.	.....	.....	5 M. A.
History (7).....	1 Ph. D.	2 Ph. D.	2 Ph. D.	1 Ph. D.	.....	.....	.....	.....	6 Ph. D.
	.....	.....	.....	1 M. A.	.....	.....	.....	.....	1 M. A.
—Latin American (2).....	1 Ph. D.	.....	.....	.....	.....	.....	1 Ph. D.	.....	2 Ph. D.
—Medieval (1).....	1 Ph. D.	.....	.....	.....	.....	.....	.....	.....	1 Ph. D.
—United States (1).....	.....	.....	.....	.....	1 Ph. D.	.....	.....	.....	1 Ph. D.
Languages Classical (8).....	.....	2 Ph. D.	1 Ph. D.	.....	.....	.....	3 Ph. D.	.....	6 Ph. D.
	.....	1 M. A.	.....	.....	1 M. A.	.....	.....	.....	2 M. A.
Languages Modern, French (1).	.....	.....	.....	.....	1 Lit. D.	.....	.....	.....	1 Lit. D.
—Oriental (1).....	.....	.....	.....	.....	1 Ph. D.	.....	.....	.....	1 Ph. D.
—Russian (3).....	.....	1 Ph. D.	.....	.....	.....	.....	1 Ph. D.	.....	2 Ph. D.
	.....	.....	.....	.....	.....	.....	1 M. A.	.....	1 M. A.
—Spanish (1).....	.....	.....	.....	1 Ph. D.	.....	.....	.....	.....	1 Ph. D.
—Semitic (2).....	1 Ph. D.	1 Ph. D.	.....	.....	.....	.....	.....	.....	2 Ph. D.
—Arabic (1).....	.....	.....	.....	.....	1 Ph. D.	.....	.....	.....	1 Ph. D.

Law (3).....	.....	1 J. D.	.....	.....	.....	.....	1 J. D.
Library Science (1).....	.....	.....	.....	.....	.....	.....	1 L. L. M.
Mathematics (8).....	.....	1 L. L. B.	.....	.....	.....	.....	1 L. L. B.
Philosophy (28).....	.....	1 M. L. S.	.....	.....	.....	.....	1 M. L. S.
Physics (9).....	1 Ph. D.	.....	.....	2 Ph. D.	.....	.....	7 Ph. D.
Political Science (6).....	.....	1 M. A.	.....	.....	.....	.....	1 M. A.
Political Philosophy (2).....	2 Ph. D.	6 Ph. D.	1 Ph. D.	4 Ph. D.	.....	3 Ph. D.	26 Ph. D.	
Psychiatry (1).....	.....	.....	.....	2 M. A.	.....	.....	2 M. A.
Psychology (7).....	1 Ph. D.	1 Ph. D.	.....	1 Ph. D.	.....	.....	6 Ph. D.
Seismology (1).....	.....	.....	.....	.....	.....	.....	3 M. S.
Social Work (1).....	.....	.....	.....	.....	.....	.....	6 Ph. D.
Sociology (7).....	1 Ph. D.	.....	.....	.....	.....	.....	1 M. S.
Social Sciences, Other (1).....	.....	.....	.....	.....	.....	.....	6 Ph. D.
Speech (2).....	.....	.....	.....	.....	.....	.....	2 Ph. D.
Theology: Canon Law (2).....	.....	.....	.....	.....	.....	.....	1 No Degree
—Dogmatic (11).....	.....	.....	.....	.....	.....	.....	6 Ph. D.
—Ecclesiastical History (1).....	.....	.....	.....	.....	.....	.....	1 M. A.
—Scripture (3).....	.....	.....	.....	.....	.....	.....	1 M. S.
Total	17	41	9	24	27	5	42	8	173

III. SCHOOLS*

	California	Chicago	Maryland	Missouri	New England	New Orleans	New York	Oregon	Total
Biblical Institute .....	.	.	.	.	.	.	2	.	2
Boston College .....	.	.	.	.	4	.	.	.	4
Brown .....	.	.	.	.	2	.	1	.	3
California	1	.	.	.	.	.	1	.	2
Cambridge .....	.	1	.	.	.	.	.	.	1
Catholic U. ....	.	4	1	.	3	1	2	.	11
Chicago .....	.	.	.	1	.	.	1	.	2
Clark U. ....	.	.	.	.	.	.	1	.	1
Columbia .....	.	1	.	.	.	.	1	.	2
Duke .....	.	.	.	.	.	.	1	.	1
Florida .....	.	1	.	.	.	.	.	.	1
Fordham	2	3	.	1	4	1	12	1	24
Geneva .....	.	.	.	.	1	.	.	.	1
Georgetown	1	1	2	.	1	.	2	1	8
Gregorian	2	2	.	3	4	1	5	.	17
Harvard	1	1	2	1	1	.	1	.	7
Holy Cross .....	.	.	.	.	.	.	1	.	1
Illinois Neuro- psychiatric Institute...	.	1	.	.	.	.	.	.	1
Johns Hopkins	1	1	.	.	1	.	.	.	3
Louvain .....	.	1	1	.	.	.	1	1	4
Loyola Chi. ....	.	3	.	.	.	.	.	.	3
Mexico	1	.	.	.	.	.	.	.	1
Michigan .....	.	.	.	1	.	1	.	.	2
Minnesota .....	.	1	.	.	.	.	.	1	2
New Mexico .....	.	.	.	1	.	.	.	.	1
New York .....	.	.	1	.	1	.	2	.	4
Notre Dame .....	.	.	.	1	.	.	.	1	2
Not Specified .....	.	1	.	.	.	.	.	.	1
Ohio State .....	.	1	.	.	.	.	.	.	1
Oxford	1	1	.	.	.	.	.	.	2
Paris-Sorbonne .....	.	.	.	.	1	.	.	.	1
Patton State Hospital ..	.	1	.	.	.	.	.	.	1
Pennsylvania .....	.	1	.	.	.	.	.	.	1
Princeton .....	.	1	.	1	.	.	2	.	4
St. Louis	6	7	1	9	4	.	2	1	30
Sorbonne .....	.	.	.	.	.	.	1	.	1
Stanford .....	.	2	.	.	.	.	.	.	2
Texas .....	.	1	.	1	.	1	.	.	3
Toronto	1	1	.	2	.	.	.	1	5
Washington, U. of .....	.	.	.	.	.	.	.	1	1
Western Reserve .....	.	1	.	.	.	.	.	.	1
Xavier U. ....	.	1	.	.	.	.	.	.	1
Yale .....	.	1	1	2	.	.	3	.	7
Total	17	41	9	24	27	5	42	8	173

**Biology* at Brown, Cambridge, Catholic University (2), Loyola—Chicago, Ohio State, St. Louis; *Business Administration* at Harvard, New York U. (2); *Chemistry* at Catholic U, Clark U., Fordham (3), Holy Cross, Notre Dame, Princeton, St. Louis; *Economics* at Boston C., Fordham, Georgetown (2), New York U., Pennsylvania, St. Louis; *Education* at Boston C., Chicago U., Fordham (2), Minnesota, St. Louis, Washington, Yale (3); *Educational Psychology* at Chicago U.; *English* at Boston C., Catholic U.,

IV. DEGREE SOUGHT

	California	Chicago	Maryland	Missouri	New England	New Orleans	New York	Oregon	Total
Ph.D., new	3	4	2	2	4	0	6	0	21
Ph.D., cont.	12	24	5	16	13	1	19	8	98
Other Doctor new . .	1 ²	2 ¹¹	0	2 ^{1, 11}	1 ⁴	1 ¹¹	3 ¹¹	0	10
Other Doctor cont. .	0	0	1 ³	0	2 ¹¹	0	3 ^{2, 9, 11}	0	6
M.A., new	0	4	0	3	6	1	2	0	16
M.A., cont.	1	3	0	0	0	0	3	0	7
M.S., new	0	0	0	1	1	1	3	0	6
M.S., cont.	0	0	1	0	0	0	1	0	2
Other Master new . .	0	2 ^{7, 8}	0	0	0	0	0	0	2
Other Master cont. .	0	0	0	0	0	0	1 ⁶	0	1
Other new	0	0	0	0	0	0	0	0	0
Other cont.	0	1 ⁵	0	0	0	0	1 ¹⁰	0	2
No Degree	0	1	0	0	0	1	0	0	2
Total	17	41	9	24	27	5	42	8	173

¹D.S.Sc.

⁴Lit.D.

⁷M.B.A.

¹⁰S.S.L.

²J.C.D.

⁵L.L.B.

⁸M.L.S.

¹¹S.T.D.

³J.D.

⁶L.L.M.

⁹S.S.D.

(Continued from page 241)

from which we draw our supply of special students. Even the best of long-range plans cannot overcome manpower shortages.

In the back of all province catalogues there is an interesting summary published each year entitled *Prospectus Societatis Jesu Universae*. Two columns of this report list the annual increase in priests and scholastics. While it is clear that no exact information on the number of priests or scholastics available for special studies can be derived from these statistics, it was felt that they might very well give some indication of the trend in manpower supply. For this reason, we made a study of the section of

Fordham (3), Harvard (2), Oxford, St. Louis, Stanford, Xavier, Yale (3); *History* at California, Georgetown (2), Loyola—Chicago, St. Louis, Texas (2); *Latin American History* at California, Mexico; *Medieval History* at Toronto; *American History* at Georgetown; *Classics* at Boston C., Fordham (2), Harvard, Oxford, Princeton (2), Stanford; *French* at Paris-Sorbonne; *Oriental Languages* at Johns Hopkins; *Russian* at Columbia (2), Fordham; *Spanish* at New Mexico; *Semitic Languages* at Johns Hopkins (2); *Arabic* at Harvard; *Law* at Georgetown (2), Harvard; *Library Science* at Western Reserve; *Mathematics* at Brown, Catholic U. (3), Michigan, New York U., Notre Dame, St. Louis; *Philosophy* at Fordham (5), Gregorian U. (3), Louvain (4), Princeton, St. Louis (10), Sorbonne, Toronto (4); *Physics* at Brown, Catholic U., Fordham (2), St. Louis (4), Texas; *Political Science* at Fordham, Geneva, Georgetown, St. Louis (3); *Political Philosophy* at Duke, Yale; *Psychiatry* at Illinois Neuropsychiatric Institute; *Psychology* at Fordham (3), Minnesota, Not Specified, Patton State Hospital, St. Louis; *Seismology* at St. Louis; *Social Work* at Catholic U.; *Sociology* at Catholic U., Fordham, Harvard, Michigan, St. Louis (3); *Social Sciences* at Loyola—Chicago; *Speech* at Florida, St. Louis; *Canon Law* at Gregorian (2); *Dogmatic Theology* at Gregorian U. (11); *Ecclesiastical History* at Catholic U.; *Scripture* at Biblical Institute (2), Gregorian.

the *Prospectus* dealing with the American assistancy for the past twenty years. Incidentally, no *Prospectus* was published in the 1943 catalogue. Adjustments were made for the fact that the *Prospectus* always gives the figures for the beginning of the previous calendar year. For the American assistancy, this means that the *incrementum* of priests and scholastics is the result of the classes entering or being ordained the summer or fall previous to the year for which the figures are given. We also kept in mind that, generally speaking, scholastics begin regency or special studies seven years after their date of entrance, while priests are generally ready to begin special studies fifteen years from the date of their entrance into the Society.

A close look at the figures reveals that the increase in the total number of priests in the American assistancy dropped steadily from 144 reported in 1947 to 60 in 1951. The scholastics finishing philosophy during those same years had come from groups which had entered the Society between 1940 and 1945. All of those years were war years or immediate post-war years and must have been lean ones as far as vocations were concerned. The *Prospectus* for those years shows minus quantities in the column on increment of scholastics. Actually the minus quantities continued until 1946 which was the leanest of all with a minus 92. This, of course, indicated there would be a very meager supply of scholastics to enter regency or special studies upon their completion of philosophy, between 1947 and 1952.

But there are some signs of hope in regard to our manpower supply. The 1953 classes finishing philosophy should begin to show the effects of the positive increments in scholastics recorded for the years 1946 and thereafter. It is true that the numbers of priests completing theology and tertianship will continue for some years to show the effects of the smaller entering years between 1936 and 1945.

While I feel that this analysis is generally valid and indicates the chief cause for the constant drop in the number of special students since 1948, I find special reason for hope in the example of the Chicago province, which has shown a steady increase in Jesuits assigned to special studies since 1950 and this in spite of the manpower shortage which our analysis of statistics seemed to show. In fact, excepting the year 1950, in which its record dropped three from the previous year, the Chicago province has shown a continuous increase in special students since 1943.

With a break beginning to appear on the statistical horizon and with the deep realization that we all have of the need for trained men to staff our schools, we have grounds to hope that the 1953-1954 report on special students may once again begin to climb toward the high of 1948-1949 and even beyond.

The Opening Prayer

FREDERICK E. WELFLE, S.J.

Surely, every Jesuit President has had my experience. He finds in the mail a very formal, polished invitation to deliver the "Opening Prayer" at the Bank Presidents' Banquet in the city's swanky hotel. Or, it may be only a request from a friend over the phone. But invitations to deliver the "Opening Prayer" at luncheons and dinners will pour in. Your first reaction is one of refusal: "I just can't work it into my schedule." Your reflex is better. For the sake of sound public relations you do work it in.

Acceptance is only the beginning of woe. What to say? The standard "Bless us, O Lord" will not do for every occasion. The effort to say something appropriate to the occasion can be a real struggle.

So it was with me, until I made a discovery. I found a framework which rendered the task of composition easy. Believe it or not, that framework was nothing more than the standard form for orations used in the liturgy—the good, old "Deus qui . . . praesta quaesumus. . . ." To me at least, the ease with which one can accommodate that formula to almost any situation was a delightful discovery. In the hope that others may find it as helpful as I have, I hereby broadcast the discovery and append a few examples of how the formula works.

Junior Chamber of Commerce Banquet

Almighty and eternal God,
Bless all who are gathered here tonight around this
table of fellowship,
And, as Thou didst provide leaders for Thy chosen
people in the prophets of old,
Grant to us, too,
Men who by conduct, character, and achievement will lead
Thy people today;
Men who by their virtues will compel others to recognize
their leadership
And who will draw others to be like them,
In character, conduct, and achievement.
Amen.

Fruit and Vegetable Growers' Dinner

Almighty and eternal God,
 Bless all of us gathered here tonight, united as we
 are in the handling of Thy fruits and green things.
 And, as in Thine infinite Providence, Thou didst give us
 these wondrous gifts for our health and enjoyment,
 So, too, in that same bountiful Providence
 Give us Thy grace always to recognize Thee as the source
 of these gifts
 And out of gratitude for the same always to do Thy Divine
 Will.
 Amen.

National Transportation Association

Almighty and eternal God!
 Look down with favor upon all of us gathered here today.
 Bless the food we eat.
 Bless the work we do.
 And grant that our work
 Which leads us along the visible steel and concrete
 highways of earth
 May speed us along the invisible highway of faith,
 hope, and love
 And bring us to the ultimate destination
 You have set for every one of us.
 Amen.

United World Federalists' Dinner

Almighty and eternal God,
 Bless all of us gathered about this table of fellowship.
 And, as Thou didst in Thy creation, implant law and
 order in the physical universe
 So, too, in Thine infinite mercy,
 Bless our deliberations
 So that we may do our part to produce this same law
 and order
 In the universe of intelligence and free will.
 Amen.

My hope is that this discovery will prove an unmixed blessing to every busy President. If these prayers will add to the blessing, you may have them too.

News from the Field

CENTRAL OFFICE

ANNUAL MEETING: The 1953 Annual Meeting of the Jesuit Educational Association will be held at Fordham University, New York 58, N. Y., Easter Sunday and Monday. The General Meeting for all Delegates will be pushed forward to 4:30 P.M., Easter Sunday April 5th, First Floor Lecture Room, Keating Hall, Fordham University. The Dinner Meeting of all Delegates will follow at 6:00 P.M. Meetings of high school and college and university delegates have been scheduled for 10:00 A.M. to 12:30 P.M. and 2:00-4:30 P.M. Monday April 6th on the Fordham Campus.

CORRECTION: A few errors crept into the January 1953 issue of the **QUARTERLY** which are indicated here for the record. On the tip-in chart "College and University Enrollment, 1952-1953" footnotes (C) and (D) "Low" should read "Law". On the chart "Freshmen 1951-1952, 1952-1953" the "1951-1952" in the second column of "Commerce" should be interchanged with the "1952-1953" in the first column of "Total".

HIGH SCHOOLS

PLAY FESTIVAL: The Eighth Annual One Act Play festival sponsored by Loyola Academy gathered together what it believed to be the largest such group in the country. Twenty-one schools participated. At a special banquet held on the third and last evening, thirteen scholarships and thirty medals were awarded.

PROSE AND POETRY: According to Father Julian Maline, a slight revision of the St. Thomas More series of the Prose and Poetry high-school anthologies is to be undertaken in the near future. Salesmen of the Singer Company are canvassing selected schools for suggestions for improving the series. Jesuits using the volumes are invited to send to Father Maline general or specific suggestions for improving the volumes. Address correspondence to: Rev. Julian L. Maline, S.J., West Baden College, West Baden Springs, Indiana. According to the publisher, the series has been giving general satisfaction, but experience shows that unless copyrights are kept reasonably recent, competitors talk down a series as being out of date.

"MR. CHIPS": Coach William Hoffman of Campion retired from active coaching after continuous service since 1911. His record in four sports, college and prep, reads 685 victories, 312 defeats, 18 ties, for a percentage of .694. His best team was his 1928 football "Victory Team" which played a nine game undefeated, untied season with 276 points to the opponents' six.

CIVIC CEREMONY commemorating the centenary of Loyola College and High School (Baltimore) was climaxed by the unveiling of a bronze memorial tablet on the site of the original buildings in front of the city hall bearing the partial inscription: "Founded on this site and Dedicated to the Greater Glory of God Loyola College and High School."

ONE OF TWELVE annuals named to the distinguished class by the Catholic School Press Association was the *Junior Jay* of Creighton University High School.

MIKE ROACH of Bellarmine College Preparatory, San Jose, placed second in the country for high schools in the backstroke.

TEACHER RATING: All students at Rockhurst High School were asked to fill out the North Central Association Student Opinion Questionnaire giving frank opinions of each of their classes and teachers. The opinions were anonymous.

GOLDEN JUBILEE: St. John's High School celebrated its golden jubilee November 23rd.

NEW HIGH SCHOOL: At the height of the new outbreak of controversy over the position of the Catholic school system in American education, the Catholic people of Rochester, New York fashioned a practical answer to the attacks on the Catholic school system. The Bishop of the Diocese of Rochester, Most Reverend James E. Kearney, D.D., announced a plan for the construction of four new Catholic high schools. One of these high schools is to be the Jesuit school for 1,000 boys, McQuaid High School, for the construction of which Bishop Kearney offered \$1,500,000. Although there had been several campaigns for diocesan building projects in recent years, Bishop Kearney appealed to his people to contribute \$3,045,000 for the high-school fund.

The actual drive for funds, which was not engineered by professionals, began on the twentieth anniversary of Bishop Kearney's consecration and ended two weeks later on the fifteenth anniversary of his installation in Rochester. The total subscribed was \$4,505,185—148 per cent of the goal! The largest single gift, \$85,000, and the second largest, \$20,000, came from industry. The ordinary people, the rank-and-file of the parishes, contributed more than 80 per cent of the total. By this most dependable test of their sincerity did the Catholic people demonstrate their faith in Catholic education.

COLLEGES AND UNIVERSITIES

FACULTY NEWS BULLETINS: Among the more notable of the house organs that reach our desk regularly are *Fax* (Xavier University); *John Carroll University Faculty Notes*, *U. of D. Faculty Newsletter*; and *Billikenews* (St. Louis University). *Fordorama* (Fordham University) and *Faculty Bulletin* (Loyola University, Los Angeles) are the latest comers, having started this Fall. Others publishing such newsletters are asked to put us on their mailing lists.

CORPORATE GIVING: The three Jesuit New England colleges are charter members of the New England College Fund, Incorporated together with 20 other institutions. The purpose of the group is to seek financial support from business and industry.

SCHOLARSHIPS: One thousand three hundred and thirteen of Boston College's students this year have received grants, scholarships and awards from the college totaling \$241,983. Last year 1165 students received such aid from the college. In addition to these grants from the college, 107 of their students have borrowed amounts of from \$40 to \$500 on minimum terms of interest from the Student Loan Fund of \$20,000.

Also, 38 students at the Social Work School have received a total of approximately \$40,000 in grants and awards of various kinds for the current year from sources other than Boston College.

The College has approximately 50 students working part-time on the campus who will receive approximately \$25,000 in salaries to aid them in their expenses for the school year.

As a final statistical note, their libraries now contain 413,860 volumes apart from pamphlets and reports.

PAGEANT FILMED: The Ford Educational Fund co-sponsored the filming of Detroit University's 75th anniversary pageant, *Light Up The Land*. The picture in full color and sound will appear in two versions. The first version will be a full length motion picture of almost all the show and the second will be a series of highlights with Father Lord commenting. The films will be circulated to exemplify American ideals in education and democracy.

NATIONAL ACADEMY OF SCIENCES: St. Louis University in cooperation with Washington University were hosts to the National Academy of Sciences. Father James B. Macelwane and Dr. E. A. Doisy are members of the organization. Over thirty members of the faculty contributed to papers read at the program

THE MARQUETTE PLAYERS have been invited to represent the United States at the Delphiad, international play festival to be held in Lyons, France, in the Spring of 1953.

DENTAL RESEARCH is required of all D.D.S. candidates at Georgetown University Dental School. Each third year student selects a topic for investigation and will devote, in conjunction with regular classes and clinical duties, a year to this research.

LAW SCHOOL DORMITORIES on the Georgetown University Law School campus mark the first time living quarters have been provided exclusively for its law school students.

INSTITUTE FOR LAY CATECHISTS began its third year at Georgetown University with 82 seeking certificates of qualification. In the past two years it graduated 33 certified catechists.

ALUMNI DIRECTORY: Loyola University, Los Angeles, is to be commended on its 1952-53 Directory. In addition to the usual information expected in such a volume, it also gives the names and addresses of former Jesuit faculty members. Especially noteworthy is the entire section which classifies alumni under their occupations. Judging from the amount of tastefully selected advertising, the volume appears to have been self-liquidating.

OFFICIAL TEACHER TRAINING INSTITUTION for the Archdiocese of New York has been selected as Fordham University School of Education. The archdiocese defrays part of the expenses of religious. At present some 425 are registered for courses.

PROVINCE RELIGION INSTITUTE conducted by the California Province discussed objectives, personnel and administrative problems, current curriculum problems, problems of student-teacher relationship, and outlined a four year syllabus of college religion.

METAPHYSICS NOTES: Your attention is directed to an experimental text, *Notes for a Course in Metaphysics*, by Messrs. James M. Demske, Avery R. Dulles, John G. Milhaven and Robert J. O'Connell, an outline combining matter treated in ontology, cosmology and natural theology. The notes intend to sketch a unified course which transgresses the accustomed boundries of these subjects. Further information may be obtained from the authors or Rev. Joseph C. Glose, S.J., 154 East 23rd St., New York 10, N. Y.

SOCIOLOGY TEXT: *Democratic Living* by Fathers William A. Nolan, Albert A. Foley and Philip S. Land just came in from Loyola University Press. It is the answer to a demand for an integrated course in the social sciences which would serve as part of a "general education" program for college sophomores. Aiming at an intensive treatment of a few key problems, the book treats communism, minorities, making a living, and government and citizenship. The first printing is done as an experimental edition, in offset, but bound in book form.

GIFT: A gift of \$10,000 to the Medical School of Marquette University, Milwaukee, Wis. will be used to establish a Kurtis R. Froedtert professorship in the school's department of surgery.

"HERE IS CHICAGO," Loyola University's (Chicago) new documentary, is heard weekly over a local radio station.

GRANT: St. Louis University, Department of Psychology, received a further grant of \$40,000 from the Office of Naval Research to extend research on the selection of enlisted men for commissions.

VOCATIONS: Marquette University survey for Jan. 1, 1952 to Dec. 1, 1952 shows that 36 students entered preparation for the priesthood or the religious life.

VOCATION INSTITUTE: Fordham University's Second Annual Institute on Religious and Sacerdotal Vocations attracted over a thousand persons.

EXPANSION: Two new buildings to be erected at Rockhurst College, a three story faculty building and a student union building.

Thirty new classrooms will be added to Loyola University, Chicago, Lewis Towers division when the newly acquired three story building is occupied.

RELIGIOUS PERSPECTIVES IN COLLEGE TEACHING has been published in book form by the Ronald Press, and is listed at \$4.50. Besides the twelve papers discussed in the October 1952 issue of the *QUARTERLY*, Talcott Parsons of Harvard University contributes one on the perspectives in sociology and Social Psychology, and George F. Thomas of Princeton writes a summation or appraisal.

ALL TIME RECORD in basketball scoring at Madison Square Garden was set when Seattle University defeated N. Y. U. 102-101 December 23, 1952.

NURSING EDUCATION: The Seattle University School of Nursing has become the second Washington State Accredited School of Nursing approved by the National Nursing Accrediting Service.

MEETINGS, OFFICERS, AWARDS

FATHER HENRY WIRTENBERGER of the University of Detroit was elected President of the Association of University Evening Colleges, the first Catholic priest to hold the position. The Association represents 85 evening divisions with an enrollment of 285,000.

FATHER JOHN HIGGINS of Parks College of Aeronautical Technology was elected for a six year term to the National Executive Board of the Alpha Phi Omega Fraternity.

FATHER ALBERT F. McGUINN of Boston College was recently chosen Chairman of the Committee on Chemical Education of the American Chemical Society.

FATHER CARLO ROSSI, University of San Francisco, received the Medal of the Order of the Southern Cross from the Brazilian government. This is Father Rossi's second award for outstanding service in the cause of cultural relations between the United States and Latin America.

RESEARCH GRANT: Father Joseph M. Becker of Saint Louis University's Institute of Social Order, has been awarded a \$4,000 grant by the Rockefeller Foundation, Social Sciences Division, effective February 1, for research in the field covered under the States' Employment Security Acts.

MISCELLANEOUS

DOCUMENTARY FILM, *The Greater Glory*, depicting in 33 minutes the Jesuit course of training, and giving brief flashes of many of the Jesuit ministries, is now being used in the "General" drive of the Jesuit Seminary Building Fund but can be adapted for vocation promotional work. Several critics have acclaimed it as the best religious picture they had seen. All of the 10 television stations in the Province have presented it on their programs.

AN ABSOLUTE CHARTER was granted Bellarmine College last July by the Board of Regents of the State of New York as a senior college and a teacher training college.

PHILIPPINE ENROLLMENT: The *Philippine Clipper* for October 1952 gives the latest enrollment figures as: high school 6,541; college 2,681.

BAGHDAD COLLEGE ENROLLMENT, according to latest figures, reached a new peak of 683.

AMATEUR RADIO: Several West Baden scholastics recently canvassed the houses of the Assistancy to find that thirty of them are equipped with short wave transmitters and receivers. A total of 55 Jesuits hold amateur licenses.

ALMA MATER TO 2000: The 82 year old portals of Woodstock College, Woodstock, Maryland have closed behind the 2000th Jesuit to finish his theological studies there, Rev. Joseph D. Riordan, S.J.

NEW HOME: At this publication philosophers of Spring Hill shall have moved into their new philosophate building.

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