

GREAT BOOKS
OF THE WESTERN WORLD

ROBERT MAYNARD HUTCHINS, *EDITOR IN CHIEF*

THE
GREAT-
CONVERSATION

MORTIMER J. ADLER, *Associate Editor*

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1923

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❧ PREFACE ❧

The Great Conversation

❧ UNTIL recently the Western world regarded it as self-evident that the road to education lay through great books. No man was considered educated unless he was acquainted with the masterpieces of Western literature.

There was never much doubt about which the masterpieces were; they were the books which had stood the test of time and had continued to be acclaimed as the finest creations, in writing, of the Western mind.

That is not to say that the list remained static. In the course of history, from epoch to epoch, new books have been written which have won their place in it, and books formerly thought entitled to belong to it have been superseded; and this process of selection will continue as long as men can think and write. It is the task of every generation to reassess the tradition in

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which it lives, to discard what it cannot use, and to bring into context with the distant and intermediate past the most recent contributions to the Great Conversation which has gone on from age to age in these creative writings.

This set of books is the result of an attempt to re-appraise and re-embody the tradition of the West for the present generation.

The Editors do not believe that any of the social and political changes which have taken place during the past half century, or any that now seem imminent, have invalidated, or can invalidate, the tradition, or render it irrelevant for modern man. On the contrary, we are convinced that the West needs to recapture and re-emphasize and bring to bear upon its present problems the wisdom that lies in the works of its greatest thinkers and in the discussion which conjointly they have carried on.

Consequently, this set of books is offered in no antiquarian spirit. We have not seen our task as that of taking tourists on a visit to ancient ruins or to the quaint productions of primitive peoples. Nor have we thought of providing our readers merely with a means to hours of relaxation or of escape from the dreadful load of cares that is the lot of man in the second half of the twentieth century. We are as concerned as anyone at the headlong plunge into the abyss which Western civilization seems to be taking. We believe that the voices that have taken part in the Great Conversation can do much to recall the West to sanity. That is why we want them to be heard again: not because we want to go back to antiquity, to the Middle Ages, the Renaissance or the Eighteenth Century, but because we believe they may help us to learn to live better now. We believe that progress, in the best sense of the term, depends on the incorporation of the ideas and images to be found in these

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books in the daily lives of all of us, from childhood onwards to old age.

We do not suggest, of course, that these books will solve our problems for us, but we do suggest that they shed light on all our basic problems—and that it is folly to do without any light we can get. We believe that these books show the origins of many of our most serious difficulties. We believe that the spirit they represent and the habit of mind they teach are more necessary today than ever before.

We believe that the reduction of the citizen to an object of propaganda, private and public, is one of the greatest dangers threatening democracy. The notion is prevalent that the great mass of people cannot be expected to understand and to form an independent judgment upon any serious matter, and that they cannot be educated to do so; hence the reiteration of slogans, the distortion of news, the great storm of propaganda that beats upon the citizen twenty-four hours a day.

The alternatives are clear. Democracy will fall a prey to the loudest and most persistent propagandists unless the people save themselves from this fate by so strengthening their minds that they can appraise the issues for themselves.

As we have said, the reading of great books such as those in this set will not alone suffice; people must have the information on which to base a judgment as well as the ability to make one. But we believe that these books are a help to that grasp of history, politics, morals and economics, and to that habit of mind necessary to form valid judgments. They may even help us to know what information we should demand. The reader who does his best to understand these books will find himself led to read and helped to understand other books; and the reading and understanding of great books will give him a standard by which to judge all other books and printed material.

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The Tradition of the West

The tradition of the West is embodied in the Great Conversation that began in the dawn of history and that continues to the present day. Whatever the merits of other civilizations in other respects, no civilization is like that of the West in this respect. No other civilization can claim that its defining characteristic is a dialogue of this sort. No dialogue in any other civilization can compare with that of the West in the number of great works of the mind that have contributed to this dialogue. The goal toward which Western society moves is the Civilization of the Dialogue. The spirit of Western civilization is the spirit of inquiry. Its dominant element is the LOGOS. Nothing is to remain undiscussed. Everybody is to speak his mind. No proposition is to be left unexamined. The exchange of ideas is held to be the path to the realization of the potentialities of the race.

At a time when the West is most often represented by its friends as the source of that technology for which the whole world yearns and by its enemies as the fountainhead of selfishness and greed, it is worth remarking that, though both elements can be found in the Great Conversation, the Western ideal is not one or the other strand in the Conversation, but the Conversation itself. It would be an exaggeration to say that Western civilization means these books. The exaggeration would lie in the omission of the plastic arts and music, which have quite as important a part in Western civilization as the great productions included in this set. But to the extent to which books can present the idea of a civilization, the idea of Western civilization is here presented.

These books are the means of understanding our society and ourselves. They contain the great ideas that dominate us without our knowing it. There is no comparable repository of our tradition.

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To put an end to the spirit of inquiry that has characterized the West it is not necessary to burn the books. All we have to do is to leave them unread for a few generations. On the other hand, the revival of interest in these books from time to time throughout history has provided the West with new drive and creativeness. Great books have salvaged, preserved and transmitted the tradition on many occasions similar to our own.

The books contain not merely the tradition, but also the great exponents of the tradition. Their writings are models of the fine and liberal arts. They hold before us what A. N. Whitehead called "the habitual vision of greatness." These books have endured because men in every era have been lifted beyond themselves by the inspiration of their examples. Sir Richard Livingstone said: "We are tied down, all our days and for the greater part of our days, to the commonplace. That is where contact with great thinkers, great literature helps. In their company we are still in the ordinary world, but it is the ordinary world transfigured and seen through the eyes of wisdom and genius. And some of their vision becomes our own."

Until very recently these books have been central in education in the West. They were the principal instruments of liberal education, the education that men acquired as an end in itself, for no other purpose than that it would help them to be men, to lead human lives, and better lives than they would otherwise be able to lead.

The aim of liberal education is human excellence, both private and public (for man is a political animal). Its object is the excellence of man as man and man as citizen. It regards man as an end, not as a means; and it regards the ends of life, and not the means to it. For this reason it is the education of free men. Other types of education or training treat men as

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means to some other end, or at best concerned with the means of life, with earning a living, and not with its ends.

The substance of liberal education appears to consist in the recognition of basic problems, in knowledge of distinctions and interrelations in subject matter, and in the comprehension of ideas.

Liberal education seeks to clarify the basic problems and to understand the way in which one problem bears upon another. It strives for a grasp of the methods by which solutions can be reached and the formulation of standards for testing solutions proposed. The liberally educated man understands, for example, the relation between the problem of the immortality of the soul and the problem of the best form of government; he understands that the one problem cannot be solved by the same method as the other, and that the test that he will have to bring to bear upon solutions proposed differs from one problem to the other.

The liberally educated man understands, by understanding the distinctions and interrelations of the basic fields of subject matter, the differences and connections between poetry and history, science and philosophy, theoretical and practical science; he understands that the same methods cannot be applied in all these fields; he knows the methods appropriate to each.

The liberally educated man comprehends the ideas that are relevant to the basic problems and that operate in the basic fields of subject matter. He knows what is meant by soul, state, God, beauty, and by the other terms that are basic to the discussion of fundamental issues. He has some notion of the insights that these ideas, singly or in combination, provide concerning human experience.

The liberally educated man has a mind that can operate

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well in all fields. He may be a specialist in one field. But he can understand anything important that is said in any field and can see and use the light that it sheds upon his own. The liberally educated man is at home in the world of ideas and in the world of practical affairs, too, because he understands the relation of the two. He may not be at home in the world of practical affairs in the sense of liking the life he finds about him; but he will be at home in that world in the sense that he understands it. He may even derive from his liberal education some conception of the difference between a bad world and a good one and some notion of the ways in which one might be turned into the other.

The method of liberal education is the liberal arts, and the result of liberal education is discipline in those arts. The liberal artist learns to read, write, speak, listen, understand and think. He learns to reckon, measure and manipulate matter, quantity and motion in order to predict, produce and exchange. As we live in the tradition, whether we know it or not, so we are all liberal artists, whether we know it or not. We all practise the liberal arts, well or badly, all the time every day. As we should understand the tradition as well as we can in order to understand ourselves, so we should be as good liberal artists as we can in order to become as fully human as we can.

The liberal arts are not merely indispensable; they are unavoidable. Nobody can decide for himself whether he is going to be a human being. The only question open to him is whether he will be an ignorant, undeveloped one or one who has sought to reach the highest point he is capable of attaining. The question, in short, is whether he will be a poor liberal artist or a good one.

The tradition of the West in education is the tradition of the liberal arts. Until very recently nobody took seriously the

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suggestion that there could be any other ideal. The educational ideas of John Locke, for example, which were directed to the preparation of the pupil to fit conveniently into the social and economic environment in which he found himself, made no impression on Locke's contemporaries. And so it will be found that other voices raised in criticism of liberal education fell upon deaf ears until about a half-century ago.

This Western devotion to the liberal arts and liberal education must have been largely responsible for the emergence of democracy as an ideal. The democratic ideal is equal opportunity for full human development, and, since the liberal arts are the basic means of such development, devotion to democracy naturally results from devotion to them. On the other hand, if acquisition of the liberal arts is an intrinsic part of human dignity, then the democratic ideal demands that we should strive to see to it that all have the opportunity to attain to the fullest measure of the liberal arts that is possible to each.

The present crisis in the world has been precipitated by the vision of the range of practical and productive art offered by the West. All over the world men are on the move, expressing their determination to share in the technology in which the West has excelled. This movement is one of the most spectacular in history, and everybody is agreed upon one thing about it: we do not know how to deal with it. It would be tragic if in our preoccupation with the crisis we failed to hold up as a thing of value for the world, even as that which might show us a way in which to deal with the crisis, our vision of the best that the West has to offer. That vision is the range of the liberal arts and liberal education. Our determination about the distribution of the fullest measure of these arts and this education will measure our loyalty to the best in our own past and our total service to the future of the world.

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Economics and the Decline of Liberal Education

Most writers on education hold that, though education through great books and the liberal arts is still the best education for the few, it cannot be the best education for the many, because the many have not the capacity to acquire it. It would seem, however, that this education is the best for everybody, if it is the best for the best, provided everybody can get it. The question then, is: Can everybody get it? This is the most important question in education. Perhaps it is the most important question in the world.

The poverty of a country may seem to prevent it from the rapid attainment of its educational ideal. In the past the education of the few rested on the labour of the many. It was assumed, perhaps rightly, that the few could not have education unless the many were deprived of it.

The economic question can arise in another way. It can be suggested that liberal education is no good to a man who is starving, that the first duty of man is to earn a living, and that learning to earn a living and then earning it will absorb the time that might be devoted to liberal education in youth and maturity.

This argument is persuasive in countries where people are actually starving and where the economic system is at so rudimentary a stage that all a man's waking hours must be dedicated to extracting a meagre livelihood from the soil. Millions of men throughout the world are living in economic slavery. They are condemned to subhuman lives. We should do everything we can to strike the shackles from them. But even while we are doing so we must remember that economic independence is not an end in itself; it is only a means, though an absolutely necessary one, to leading a human life.

No one can question the desirability of technical training in

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under-developed countries. No one can be satisfied with technical training as an ideal. The ideal is liberal education, and technical training can be justified only because it may help to supply the economic base that will make universal liberal education possible.

In developed countries technical training is also necessary, just as work is necessary in such countries. But the West has already achieved such a standard of living that it cannot use economic backwardness as an excuse for failing to face the task of making liberal education available to all. As the business of earning a living has become easier and simpler, it has also become less interesting and significant; and all personal problems have become more perplexing. This fact, plus the fact of the disappearance of any education adequate to deal with it, has led to the extension on an unprecedented scale of the most trivial recreations, through which the baffled individual may hope to forget that his human problems are unsolved.

✓ Adam Smith stated the case long ago: "A man without the proper use of the intellectual faculties of a man, is, if possible, more contemptible than even a coward, and seems to be mutilated and deformed in a still more essential part of the character of human nature." He points out that this is the condition of "the great body of people," who, by the division of the labour are confined in their employment "to a few very simple operations" in which the worker "has no occasion to exert his understanding, or to exercise his invention in finding out expedients for removing difficulties which never occur."

I do not believe that industrialization and democracy are inherently opposed. But they are in actual practice opposed unless the gap between them is bridged by liberal education for all. That mechanization which tends to reduce a man to

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a robot also supplies the economic base and the leisure that will enable him to get a liberal education and to become truly a man.

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The countries of the West are committed to universal, free, compulsory education but the West has not accepted the proposition that the democratic ideal demands liberal education for all. Indeed, where the United States is concerned, it seems that the results of universal, free, compulsory education can be acceptable only on the theory that the object of the schools is something other than education; that it is, for example, to keep the young from cluttering up homes and factories during a difficult period of their lives, or that it is to bring them together for social or recreational purposes.

Since this does not take any greater effort than is required to pass compulsory school laws and build buildings, the accomplishment of this purpose would not at first blush seem to be a matter for boasting. Yet we often hear of it as something that should suggest to us the main line of a sound educational policy. We often hear that bringing young people together, having them work and play together, and having them organize themselves "democratically" are the great contributions to democracy that the educational system can make.

No one can deny the value of getting together, of learning to get along with others, of coming to appreciate the methods of organization and the duties of membership in an organization any more than one can deny the importance of physical health and sportsmanship. It seems on the face of it a trifle absurd, however, to go to the trouble of training and engaging teachers, of erecting laboratories and libraries, and of laying out a programme of instruction and learning if, in effect, the

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curriculum is extra and the extra-curriculum is the heart of the matter.

It seems doubtful whether the purposes of the educational system can be found in the pursuit of objects that the Boy Scouts and the Y.M.C.A., to say nothing of the family and the church, purport to be pursuing. The unique function of the educational system would appear to have something to do with the mind. No other agency in the community sets itself up, or is set up, to train the mind. To the extent to which the educational system is diverted to other objects, to that extent the mind of the community is neglected.

This is not to say that the educational system should not contribute to the physical, social, and moral development of those committed to its charge. But the method of its contribution, apart from the facilities for extra-curriculum activities that it provides, is through the mind. The educational system seeks to establish the rational foundations for good physical, moral and social behaviour. These rational foundations are the result of liberal education, education through great books and the liberal arts.

However, the triumphs of industrialization, which made educational expansion possible, resulted from triumphs of technology, which rested on triumphs of science, which in turn were promoted by specialization. Specialization, experimental science, technology, and industrialization were new. Great books and the liberal arts were identified in the public mind with dead languages, arid routines and an archaic, prescientific past. The march of progress could be speeded by getting rid of them, the public thought, and using scientific method and specialization for the double purpose of promoting technological advance and curing the social maladjustments that industrialization brought with it.

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The revolt against the classical dissectors and arid routines was justified. So was the new interest in experimental science. The revolt against liberal education was not justified. Neither was the belief that the method of experimental science could replace the methods of history, philosophy and the arts.

Do science, technology, industrialization and specialization render the Great Conversation irrelevant? On the contrary, it is clear that industrialization makes liberal education more necessary than ever, and that the leisure it provides makes liberal education possible, for the first time, for everybody.

Must the specialist, on the other hand, be excluded from the community? If so, there can hardly be one; for increasingly in the West everybody is a specialist. The task is to have a community nevertheless, and this can be done through the Great Conversation. Through it the expert can discover the great common principles that underlie the activities of the specialists. Through it he can bring ideas to bear upon his experience. In the light of the Great Conversation, his special brand of knowledge loses its particularistic vices and becomes a means of penetrating the great books. The mathematical specialist, for example, can get farther faster into the great mathematicians than a reader who is without his specialized training. With the help of great books, specialized knowledge can radiate out into a genuine interfiltration of common learning and common life.

Experimental Science

The Great Conversation began before the beginnings of experimental science. But the birth of the Conversation and the birth of science were simultaneous. The earliest of the pre-Socratics were investigating and seeking to understand the natural phenomena; among them were men who used

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mathematical notions for this purpose. Even experimentation is not new; it has been going on for hundreds of years. But faith in the experiment as an exclusive method is a modern manifestation. The experimental method has won such clear and convincing victories that it is now regarded in some quarters not only as the sole method of building up scientific knowledge, but also as the sole method of obtaining knowledge of any kind.

Thus we are often told that any question that is not answerable by the empirical methods of science is not really answerable at all, or at least not by significant and verifiable statements. Exceptions may be made with regard to the kinds of questions mathematicians or logicians answer by their methods. But all other questions must be submitted to the methods of experimental research or empirical inquiry.

If they are not answerable by these methods, they are the sort of questions that should never have been asked in the first place. At best they are questions we can answer only by guesswork or conjecture; at worst they are meaningless or, as the saying goes, nonsensical questions. Genuinely significant problems, in contrast, get their meaning in large part from the scientific operations of observation, experiment, and measurement by which they can be solved; and the solutions, when discovered by these methods, are better than guesswork or opinion. They are supported by fact. They have been tested and are subject to further verification.

We are told furthermore that the best answers we can obtain by the scientific method are never more than probable. We must free ourselves, therefore, from the illusion that, outside mathematics and logic, we can attain necessary and certain truth. Statements that are not mathematical or logical formulae may look as if they were necessarily or certainly true,

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but they only look like that. They cannot really be either necessary or certain. In addition, if they have not been subjected to empirical verification, they are, far from being necessarily true, not even established as probable. Such statements can be accepted provisionally, as working assumptions or hypotheses, if they are acceptable at all. Perhaps it is better, unless circumstances compel us to take another course, to accept such statements at all.

Consider, for example, statements about God's existence or the immortality of the soul. These are answers to questions that cannot be answered—one way or the other—by the experimental method. If that is the only method by which probable and verifiable knowledge is attainable, we are debarred from having knowledge about God's existence or the immortality of the soul. If modern man, accepting the view that he can claim to know only what can be demonstrated by experiment or verified by empirical research, still wishes to believe in these things, he must acknowledge that he does so by religious faith or by the exercise of his will to believe; and he must be prepared to be regarded in certain quarters as hopelessly superstitious.

It is sometimes admitted that many propositions that are affirmed by intelligent people, such as that democracy is the best form of government or that world peace depends upon world government, cannot be tested by the method of experimental science. But it is suggested that this is simply because the method is still not fully developed. When our use of the method matures, we shall find out how to employ it in answering every genuine question.

Since many propositions in the Great Conversation have not been arrived at by experiment or have not been submitted to empirical verification, we often hear that the Conversation, though perhaps interesting to the antiquarian as setting forth

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the bizarre superstitions entertained by "thinkers" before the dawn of experimental science, can have no relevance for us now, when experimental science and its methods have at last revealed these superstitions for what they are. We are urged to abandon the reactionary notion that the earlier voices in the Conversation are even now saying something worth listening to. We are urged to place our trust in the experimental method as the only source of valid or verifiable answers to questions of every sort.

One voice in the Great Conversation itself announces this modern point of view. In the closing paragraph of his *Enquiry Concerning Human Understanding*, David Hume writes: "When we run over libraries, persuaded of these principles, what havoc must we make? If we take in our hand any volume . . . let us ask, *Does it contain any abstract reasoning concerning quantity or number?* No. *Does it contain any experimental reasoning concerning matter of fact existence?* No. Commit it then to the flames: for it can contain nothing but sophistry and illusion."

The books that Hume and his followers, the positivists of our own day, would commit to burning or, what is the same, to dismissal from serious consideration, do not reflect ignorance or neglect of Hume's principles. Those books, written after as well as before Hume, argue the case against the kind of positivism that asserts that everything except mathematics and experimental science is sophistry and illusion. They state and defend propositions quite opposite to those of Hume.

The Great Conversation, in short, contains both sides of the issue that in modern times is thought to have a most critical bearing on the significance of the Great Conversation itself. Only an unashamed dogmatist would dare to assert that the issue has been finally resolved now in favour of the view that, outside logic or mathematics, the method of modern science is

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the *only* method to employ in seeking knowledge. The dogmatist who made this assertion would have to be more than unashamed. He would have to blind himself to the fact that his own assertion was not established by the experimental method, nor made as an indisputable conclusion of mathematical reasoning or of purely logical analysis.

With regard to this issue about the scientific method, which has become central in our own day, the contrary claim is not made for the Great Conversation. It would be equally dogmatic to assert that the issue has been resolved in favour of the opposite point of view. What can be justly claimed however, is that the great books ably present both sides of the issue and throw light on aspects of it that are darkly as well as dogmatically treated in contemporary discussion.

They raise the question for us of what is meant by science and the scientific method. If all that is meant is that a scientist is honest and careful and precise, and that he weighs all the evidence with discrimination before he pronounces judgment, then we can agree that the scientific method is the only method of reaching and testing the truth in any field. But this conception of the scientific method is so broad as to include the methods used by competent historians, philosophers, and theologians since the beginning of time; and it is not helpful, indeed it is seriously misleading, to name a method used in all fields after one of them.

Sometimes the scientific method seems to mean that we must pay attention to the facts, which carries with it the suggestion that those who do not believe that the method of experimental science is appropriate to every other field of inquiry do not pay attention to the facts and are therefore remote from reality. The great books show, on the contrary, that even those thinkers of the past who are now often looked upon as the most reactionary, the medieval theologians, insisted, as Aristotle

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had before them, that the truth of any statement is its conformity to reality or fact, and that sense-experience is required to discover the particular matters of fact that test the truth of general statements about the nature of things.

"In the knowledge of nature," Aristotle writes, the test of principles "is the unimpeachable evidence of the senses as to each fact." He holds that "lack of experience diminishes our power of taking a comprehensive view of the admitted facts. Hence those who dwell in intimate association with nature and its phenomena grow more and more able to formulate, as the foundation of their theories, principles such as to admit of a wide and coherent development; while those whom devotion to abstract discussions has rendered unobservant of the facts are too ready to dogmatize on the basis of a few observations." Theories should be credited, Aristotle insists, "only if what they affirm agrees with the observed facts." Centuries later, an experimental physiologist such as William Harvey says neither more nor less when he declares that "to test whether anything has been well or ill advanced, to ascertain whether some falsehood does not lurk under a proposition, it is imperative on us to bring it to the proof of sense, and to admit or reject it on the decision of sense."

To proclaim the necessity of observing the facts, and all the facts, is not to say, however, that merely collecting facts will solve a problem of any kind. The facts are indispensable; they are not sufficient. To solve a problem it is necessary to think. It is necessary to think even to decide what facts to collect. Even the experimental scientist cannot avoid being a liberal artist, and the best of them, as the great books show, are men of imagination and of theory as well as patient observers of particular facts. Those who have condemned thinkers who have insisted on the importance of ideas have often overlooked the equal insistence of these writers on obtaining the facts.

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These critics have themselves frequently misunderstood the scientific method and have confused it with the aimless accumulation of data.

When the various meanings of science and the scientific method are distinguished and clarified, the issue remains whether the method associated with the experimental science, as that has developed in modern times, is the only method of seeking the truth about what really exists or about what men and societies should do. As already pointed out, both sides of this issue are taken and argued in the Great Conversation. But the great books do more than that. They afford us the best examples of man's efforts to seek the truth, both about the nature of things and about human conduct, by methods other than those of experimental science; and because these examples are presented in the context of equally striking examples of man's efforts to learn by experiment or the method of empirical science, the great books provide us with the best materials for judging whether the experimental method is or is not the only acceptable method of inquiry, into all things.

Certainly the rise of experimental science has not made the Great Conversation irrelevant. Experimental science is a part of the Conversation. As Etienne Gilson has remarked, "our science is a part of our humanism" as "the science of Pericles' time was a part of Greek humanism." Science is itself part of the Great Conversation. In the Conversation we find science raising issues about knowledge and reality. In the light of the Conversation we can reach a judgment about the question in dispute: How many valid methods of inquiry are there?

Because of experimental science we now know a very large number of things about the natural world of which our predecessors were ignorant. In this set of books we can observe the birth of science, applaud the development of the experimental technique, and celebrate the triumphs it has won.

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But we can also note the limitation of the method and mourn the errors that its misapplication has caused. We can distinguish the outline of those great persistent problems that the method of experimental natural science may never solve and find the clues to their solutions offered by other disciplines and other methods.

Choosing the Great Books

In preparing this set of books the Editors had principally in mind the needs of adults, who have today, thanks to the social changes of the past fifty years, the leisure to make themselves educated men and women. We do not underrate the possibilities of these books as a means of educating young people: on the contrary, we think the sooner the young are introduced to the Great Conversation the better. They will not be able to understand it very well: to do that demands maturity of mind and experience. They should be introduced to it in the hope that they will eventually come to understand it, and even to take part in it. But our primary aim in putting together this set was to enable adults to understand themselves through understanding of their cultural heritage.

The members of the Advisory Board, in addition to long experience as teachers of young people, had all devoted a large part of their lives to the education of adults. They had all sought to use great books for the purpose of educating adults. They determined to try to offer this means of liberal education in a coherent programme. This set of books was the result.

In making the selection the Board asked of each book considered whether it had contributed in an important way to the Great Conversation. They do not, of course, suggest that their judgment was unerring. They do not claim that all the great books of the West are included. They would not be

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embarrassed by the suggestion that they had omitted a book, or several books, greater than any found here. But they would be perturbed at the thought that they had omitted books essential to a liberal education or included any that had little bearing upon it.

In point of fact the Board's discussions revealed few differences of opinion about the overwhelming majority of the books in the list. There was not much doubt in their minds about which are the most important voices in the Great Conversation. Of marginal cases there were a few. Many readers will no doubt be disappointed to find one, if not more, of their favourite authors of works missing. One reason for this is that there are writers—Leibnitz, Voltaire and Balzac are notable examples—who, while they have undoubtedly made an important contribution to the Great Conversation, have done so through the total volume of their writings, rather than in a few great works, and whose total volume is too large to be included in a set like this, or whose single works do not come up to the standard of the other books in the set. Other readers will be surprised to discover some author, or authors, included of whom they had a low opinion. As Editor in Chief, I accept the responsibility; the final decision on the list was made by me. I do not pretend that my prejudices played no part: I do claim that I sought, obtained, and usually accepted, excellent advice.

Readers who are startled to find the Bible omitted are assured that this was done solely because the Bible is so widely distributed that it was felt unnecessary to include it. References to the Bible, in both the Authorised and the Douai versions, are included under appropriate topics in the *Syntopicon*.

The omission of twentieth-century works may surprise some people. This is not to be taken to imply that the Editors imagine that the Great Conversation came to an end before

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the twentieth century began. On the contrary, we are well aware that it has been going on vigorously during this century, and we feel confident that great books have been written since 1900. But we simply did not feel that we, or anyone else, could accurately judge the merits of contemporary writings. During the editorial deliberations about the contents of the set more difficult problems were encountered with nineteenth-century authors and titles than with those of any preceding century. The cause of these difficulties—the proximity of the authors and works to our own day, and our consequent lack of perspective with regard to them—would render it far more difficult to make a just selection of twentieth-century authors. Readers interested in knowing some of the possible candidates for inclusion will find their names in the Bibliography of Additional Readings appended to the *Syntopicon* (vol. 3, pp. 1143-1217). The Additional Readings listed at the end of each of the *Syntopicon's* chapters on the great ideas try to provide an adequate representation of work written in the twentieth century. In so doing, they name books that may prove themselves great, as other great books have done, by submission with the passage of time to the general judgment of mankind.

The Editors did not seek to assemble a set of books representative of particular periods, countries, or points of view. Antiquity, the Middle Ages and modern times are included in proportion as the great writers of these epochs were judged to have contributed to the deepening, extension or enrichment of the tradition of the West. It is worth noting, however, that though the period from 1500 to 1900 represents less than one-sixth of the total extent of the literary record, these four hundred years are represented by more than one-half of the volumes of *Great Books of the Western World*.

We thought it no part of our duty to emphasize national

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contributions. Since the set was conceived of as a great conversation, the books could not be chosen with any dogma or point of view in mind; in a conversation that has gone on for twenty-five centuries all dogmas and all points of view appear.

We attached importance to making whole works, not excerpts, available. In all but three cases—Aquinas, Kepler and Fourier—the 443 works of the 74 authors in the set are printed complete. The Advisory Board insisted most strongly that the great writers should be allowed to speak for themselves, with their full voice, and not be digested or mutilated by editorial decisions.

Finally, as indicated by the title, the set is confined to authors and books of the Western world; it includes none of the wisdom of the East. The omission from this collection of the great books of the Eastern world implies no depreciation of them. But the conversation presented in this set is peculiar to the West. We believe that everybody, Westerners and Easterners, should understand it: not because it is better than anything the East can show, but because it is a means of understanding the West. We hope that editors who understand the tradition of the East will do for that part of the world what we have attempted to do for our own tradition in *Great Books of the Western World* and the *Syntopicon*. With that task accomplished for both the West and the East, it should be possible to put together the common elements in the two traditions and to present Great Books of the World. Few enterprises could do so much to advance the unity of mankind.

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The Editors felt that the chronological order was the most appropriate organizing principle for the volumes of this set. As we conceived of the collection as reproducing a conversation among its authors, it was a natural decision to make the

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successive volumes of the set present, so far as possible, the authors in the temporal sequence in which they took part in the conversation. We believe that readers may derive much benefit from this arrangement, for they will find that one book leads to another which amplifies, modifies, or contradicts its views.

The *Syntopicon* began as an index and developed into a means of helping the reader find paths through the books: it ended by becoming, as well as a tool for reference, research and study, a preliminary summation of the issues around which the Great Conversation has revolved, together with indications of the contemporary course of the debate. Like the set, the *Syntopicon* argues no case, presents no point of view. It will not interpret any book to the reader; it will not tell him which author is right and which wrong on any question. It simply supplies him with suggestions as to how he may conveniently pursue the study of any important topic through the range of the intellectual history of the West. It shows him how to find what great men have said about the greatest issues and what is being said about these issues today.

Robert Maynard Hutchins

EDITOR-IN-CHIEF

❧ INTRODUCTION ❧

❧ **T**HE claim that the West has produced a larger number of “great works of the mind” than any other civilization is a breathtaking one. Nevertheless, I imagine that it would be generally accepted. Certainly, the imposing array of authors assembled in this magnificent collection of books suggests that there is substantial evidence in support of it.

Here are to be found theologians and philosophers, historians, poets, dramatists and novelists, scientists, mathematicians and physicians, statesmen and social reformers. They come from many countries, and are representative of every age from the 5th century B.C. to the 19th century A.D. And the seventy or more authors included in this collection are but a few of the brightest stars in a vast and brilliant constellation. In every sphere of knowledge, of thought and of imagination which they illuminate scores, if not hundreds, of other illustrious names could be added to theirs.

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It may be asked, however, what connection there is between the works of the philosophers who figure so prominently in this set and expression in, say, architecture, music, painting or sculpture. It is easy enough to see the connection between the works of the early mathematicians and scientists and today's immense and far-reaching efflorescence of science and technology; but surely Plato, Aristotle, and even more St. Augustine and St. Thomas Aquinas are utterly remote from the present-day world? Nothing could be farther from the truth; it was they who fashioned the fundamental ideas of beauty, of truth and of goodness which have set the standards of excellence at which creators in every medium have aimed ever since. They were the fundamental research workers in the field of ideas; and the applications of their researches are evident in every field. The result of this has been to produce in the West an all-round civilization, one that has reached great heights in the realms of both thought and action.

We who belong to, and believe in, this civilization must have the courage to see it as a whole, to acknowledge and deplore the crimes, the errors and the short-comings of Western civilization as well as to laud its virtues and its high achievements. In order to be able to see the picture as a whole we must know not only the West of today but its historical record; and not only the record of its actions but also the record of the ideas and the ideals which have inspired and determined those actions. That record is to be found, in full, in these books. The "Conversation" omits nothing; it lays bare the depths as well as the heights.

In seeking thus to inform ourselves about the dynamics of our civilization we shall be following a tradition which has persisted throughout the entire history of the West. "The spirit of Western civilization", declares Mr. Robert Maynard Hutchins, the Editor-in-Chief of this set of books, "is the spirit

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of inquiry." No words could be more true. If the defining characteristic of the West is to be compressed within a single phrase, it might be suggested that the urge to inquire would come as near as any to describing it.

In the long course of Western history the spirit of inquiry has at times burned brightly, at others with but a dim and flickering light. It has never been extinguished. Despotic rulers and tyrannical organizations have again and again endeavoured to stamp it out. All have failed. They have put men to death or to torture, they have driven them oversea or underground, they have even imposed their will upon them temporarily, but, however terrifying the means they have used, they have never finally succeeded in eliminating the fundamental urge of Western man to find out the truth, to probe with his mind every proposition that thought can produce, and to inquire critically into the purpose, the validity, and the results of every human action.

The present century has afforded striking illustration of this. Attempts have been made, and are still being made, to repress the spirit of inquiry (except along lines prescribed by the State) and to wrest from man the right—and even the capacity—to think as an individual, for his own purposes and his own satisfaction. Already, however, such attempts made by Hitler and Mussolini can be seen to have been failures: in the countries they savaged the spirit of inquiry is already—after not much more than a decade—as vigorous and lively as though the two dictators had never been. And farther East, where repression has been much longer maintained, the questing spirit of man nevertheless remains alive, and gives tongue—as witness the two great novels which have recently come out of Soviet Russia: Dudintsev's *Not by Bread Alone* and Pasternak's *Dr. Zhivago*.

If we are to be able to discuss intelligently the affairs of our

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civilization, and still more if we aspire to exercise our rights to intervene in them, it is essential that we know and understand that civilization. And not merely, I would submit, its contemporary institutions, conventions and practices, but also their evolution and the ideas and the convictions which brought them into being and have shaped their development.

This set of books offers invaluable, indeed unique, assistance towards attaining that knowledge and understanding. It presents the quintessence of Western thought and wisdom, distilled over many centuries, about the fundamental problems of life and society. It lays bare the ideas and emotions, the beliefs and convictions which have shaped the course of Western civilization and determined the character of its culture. It shows how those ideas and faiths emerged, and traces the long record of their refinement. It is a guide to the mind of the West.

Nevertheless, I would not have any of you who read these words imagine that I am urging you to study the *Great Books* out of a sense of civic duty alone. That is an extremely important reason—in the final analysis probably the most important one—but it is far from being the only one. First and foremost among the others is the unending personal enjoyment and satisfaction one should derive from the books.

Far more should accrue, however, for anyone from study of these great books than intellectual stimulus and mental exhilaration. Provided, that is, that the reader approaches the books with confidence. Many readers will do so: they will already be familiar with some, perhaps many, of the authors, and will have experience of serious and systematic reading. They will need no encouragement, and probably little guidance.

But I feel sure that there will be many more people who, though immensely attracted by the idea of possession of this

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noble library, will doubt whether they can read with enjoyment and master the contents of its volumes. Are these books, they will ask, really within the capacity of the ordinary man or woman? Are they not too difficult? Are they not too highbrow, too "Third Programme"? To such people I would venture to give a few words of advice, and I hope of encouragement.

First let me say that you cannot tell how much you will get out of a book until you have tried, and secondly, that the chances are that you will probably get a very great deal more than you expected. It is quite wrong to imagine that because a book has become a "classic" it must therefore be difficult to read. Countless people have, unhappily, been prevented from reading countless books because of this fear, whereas had they but tried they would have found that they both understood and enjoyed them. Actually, "classics" are often easier to read than many so-called "popular" works, if only because they are better written. This fact has never been more strikingly demonstrated than during the past few years in the new secondary schools, the Secondary Modern schools. Teachers in these schools have been courageous enough to introduce their pupils to books previously considered beyond the capacity of children of moderate intellectual ability. They have found that in numerous cases the children have taken them in their stride, and have come back and eagerly asked for more. There is no reason why the same should not happen with adults.

Thirdly—and at the risk of seeming to contradict my second point—just as any other skill has to be learned before it can be practised with ease and surety, so has the skill of reading books which deal with ideas or specialized topics. Of course one cannot expect to understand such books all at once. Every branch of knowledge has its particular vocabulary and its own modes of expression; and one must learn these in order to gain

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understanding, just as certainly as one must learn French in order to read a book written in that language.

As for the books in this set, no simple answers can be given to the questions of the doubters. To begin with—and this I hope will be at once encouraging—the contents of the different works range, as reading material, from the extremely easy to the extremely difficult. A reader coming fresh to them all could confidently embark upon a number of these books whose titles at first sight appear forbidding—for example, Thucydides' *The History of the Peloponnesian War*, Plutarch's *The Lives of the Noble Grecians and Romans*, Rabelais' *Gargantua and Pantagruel*, or Gibbon's *The Decline and Fall of the Roman Empire*—with every expectation of thoroughly enjoying them. He would be far from completely understanding them, but that need be no bar to enjoyment of them. If however, the same reader began with, say, Aristotle's *Categories*, the *Summa Theologica* of St. Thomas Aquinas, Spinoza's *Ethics*, or even Freud's *Selected Papers on Hysteria*, he would be likely to find himself in such deep, not to say unfathomable, waters that he would quickly give up in despair.

So my first piece of practical advice to the reader who doubts his capacity to master the contents of *The Great Books* is don't, please don't, attempt to begin at Volume 4 and to plod your way stolidly through to Volume 54. You will almost certainly never get anywhere near Volume 54 if you do. You will probably have given up before you reach Volume 10; you may love Homer, enjoy the Greek dramatists and be enthralled by Herodotus and Thucydides, but you will be a very able or an extremely pertinacious reader if you do not flounder helplessly in Plato and Aristotle. Stern training is needed for grappling with them or at any rate with their more abstruse works.

Secondly, do not at first feel bound to read whole works, or

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to follow any chronological order. That can come later. For the present, browse through the volumes until you come across a work which really grips you, which compels you to read it.

You will probably not have to go far before you discover such a work. There are many in this collection which any reader endowed with average intelligence and reasonably broad interests should be able, without previous training, to read easily and with pleasure. I have already mentioned a few books which I think might appeal to readers without previous experience of classics. When selecting those examples I deliberately did not choose any of the works of fiction. But for many—may I call you novice readers?—entry into the *Great Books* by way of the works of fiction they include may be the easiest and most enjoyable way. And what a choice there is: Cervantes' *Don Quixote*, Fielding's *The History of Tom Jones*, Tolstoy's *War and Peace*, Melville's *Moby Dick*, to give but four examples.

The fact that each one of these stories is much more than a work of fiction, that *Don Quixote* is an elaborate burlesque of mediaeval chivalry, and that *War and Peace* is history told in the guise of fiction, should not be allowed to trouble the reader coming to them for the first time. Nor should the fact that inevitably the meaning of countless references to the life of the period in which the tale is set escapes him. For the beginner, let enjoyment be all; it is of the first importance that he discover that great books can be *enjoyed*, that they are not wearisome tasks to be undertaken out of a sense of duty or in a conscious effort at self-education.

Approach by way of works of fiction is far from being the only means of effecting an enjoyable entry into the *Great Books*. Many readers will find themselves drawn to particular authors or books by interests they have already developed. Those with a taste of modern history, for example, may

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welcome the chance to extend their knowledge, to learn something about the ancient world, and so will be attracted to Herodotus or Thucydides, Plutarch or Tacitus.

Similarly, the reader who has hitherto lived in the world of science fiction may think it worth while to see what Galileo or Newton had to say, and if he can bear in mind that they were in their day as bold adventurers into space as are the Sputnik engineers of our day he may well find their works enthralling.

So one might go on indefinitely. There is, I would maintain, an agreeable route into the *Great Books* for anyone who can discover a taste for serious reading. My advice to all who are unpractised in such reading—and most of us are—is to defer any attempt at systematizing their reading until they have acquired a genuine feeling of enjoyment through the reading of those books which are to them immediately attractive. Read what you are certain you like until you find yourself compelled — as you will—to explore further, to take on works which demand more of you.

As you thus gradually extend your range, you will probably be surprised and delighted to find how easily and eagerly you make this extension. The lines along which you do so will of course be a matter for your own choice. If you began with works of fiction, you may find yourself moving over into biography—Boswell's *The Life of Dr. Johnson* could prove an admirable introduction to this form of literature—or to drama, beginning perhaps with Shakespeare, and thus reviving memories of school days, or poetical narrative—of which Chaucer is a superb exponent—or *belles lettres*, or history or science or philosophy: in short, into whatever field attracts you.

As you thus make your way from one author to another, and from one literary form to another, you will begin to realize that you are meeting the same ideas again and again, though

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approached from different standpoints and treated in different ways—and with varying degrees of respect! This is a crucial discovery, and it is at this point that you may wish to consider making use of the *Syntopicon*, which enables you, first, to follow through the history of any idea from its first mention up to almost the present day, and secondly, to discover to the full how the *Great Books* are bound together by the community and continuity of the ideas they embody.

I could write at great length about the *Syntopicon*, which impresses me the more I study it. But Mr. Mortimer J. Adler, the Editor-in-Chief, and his colleagues have, I think, in their Preface (to be found in Volume 2) made good their claim that this remarkable instrument which they have created does indeed “show that the 443 works which comprise Volumes 4 to 54 can be seen and used as something more than a collection of books”.

That is the ultimate justification for the selection and publication as a set of these books: that they are very much more than just a collection of books. They are, as the Editors of the *Syntopicon* say: —

. . . pre-eminently those [books] which have given the Western tradition its life and light. The unity of this set of books does not consist merely in the fact that each member of it is a great book worth reading. A deeper unity exists in the relation of all the books to one tradition of common themes and problems. It is claimed for this set of books that all the works in it are significantly related to one another and that, taken together, they adequately present the ideas and issues, the terms and topics, that have made the western tradition what it is.

Reading selectively with the aid of the *Syntopicon* may well be for many readers without previous experience of philosophical writings the best mode of approach to the great philosophers. Whether you adopt this or any other method

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you should as you progress in your reading begin to find yourself moving more easily in the world of ideas. But it would be dishonest not to warn you that quite early in your exploration of these books—and this does not by any means apply to the works of the philosophers alone—you may expect to come across passages which are incomprehensible to you. Do not let these daunt you. There are passages in many of these books which still baffle scholars who have given a lifetime of study to them.

There are many reasons why it is inevitable that this should be so. In the first place, and most important, these books have all been written by men with abnormally profound, acute, sensitive and perceptive minds. Such minds are capable on the one hand of perceiving steps in, and objections to, an argument which the ordinary mind fails to notice, and on the other, because of their acuity of perception, of omitting or leaping lightly over steps in an argument up which the ordinary mind must plod laboriously if it is to climb successfully to the conclusion. Similarly, just as the artist who paints discovers colours and forms in a landscape which are unperceived by the eye of the ordinary man, so these artists in the use of thought discover shades of meaning in abstract concepts beyond the vision of ordinary folk.

This breadth and subtlety of mind means that frequently a great writer will escape from the confines of a single literary medium, or will so write that he can be read at more than one level of understanding. To take a very obvious example of the former, Shakespeare is at one and the same time dramatist, poet, sociologist, and philosopher. He is supremely skilled in engineering dramatic situations, he enchants with the beauty and power of his poetry, he is inimitable in his deft and accurate portraiture of the whole range of Elizabethan characters, and he is continually compelling the reader or

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viewer of his plays to ponder the profoundest problems of human living.

A famous example of the work written at more than one level is afforded by Swift's *Gulliver's Travels*. These fables have been read with huge enjoyment by many generations of young children, who delight in the hero's strange and grotesque adventures in the lands of the Lilliputians, the Brobdingnagians, the Laputans, and the Houyhnhnms. But they never even begin to realize that there is anything more than a good story in these lively narratives; it never dawns on them in their immaturity that these enthralling tales are but a vehicle for one of the most savage satires on the follies and vices of the human race ever written.

Secondly—and this is a point which is often ignored—these writers have all done their thinking and composed their works within a very different social and intellectual atmosphere from that in which we of today live and do our thinking. No thinker, however great, can quite escape from his age. He may be “ahead of his time”—that is a characteristic of greatness—but he will in the main express himself not only in the language of his time but in the thought patterns of that time. He will be bounded by the limits of contemporary knowledge—how naive seem to us some of the beliefs of even the greatest scientists of even a few generations ago!—but he will be kept at a greater distance from us by the fact that even the words and phrases most familiar to us which he uses evoked in his mind images and emotions different from those they evoke in our minds.

May I illustrate this point very simply? In Shakespeare's *As You Like It* there is a scene in which the banished Duke is told by one of his courtiers how the eccentric Jacques moralized over the sufferings of a deer wounded in the chase. In the courtier's description are the following lines:

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... and thus the hairy *fool*,
Much marked of the *melancholy* Jacques,
Stood on the extremest verge of the swift brook,
Augmenting it with tears.

The different shades of meaning which the word "fool" has carried during its long history are almost innumerable. The Latin word from which it derives, *follis*, meant in classical times "a pair of bellows". It is easy to see how, in the colloquial Latin of later days, the word came to mean a "wind-bag", in the sense that we use this word today to describe an empty-headed braggart. As *follis* had also meant a boxer's punch bag, it is equally easy to see how it came to mean "dupe", and thus any half-witted or silly person. But by the time the word reached, via mediaeval French, the English language, it had also acquired two more dissimilar, and contrasting, meanings: "simple", in the sense of "innocent" or "naive", with no implication of silliness—it is in this sense that it is used by Shakespeare in the words quoted above—and "impious", the meaning it carries in the famous sentence with which Psalm XIV begins: "The fool hath said in his heart, 'There is no God' ". And the word had also become a technical term, signifying the professional jester whose business it was to amuse mediaeval monarchs.

In whichever of these senses it was used, the word "fool" conveyed to the Elizabethans a meaning more or less different from any we understand when we hear or read the word today. The word "melancholy" conveyed to their minds meanings even more markedly different. To them it meant primarily a depressing physiological condition resulting from having in the body too much "black bile", a substance long ago discovered by medical science to be non-existent.

One other important consideration must be mentioned. These illustrations of the changing meanings of words are all

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selected from a single language—our own. But the majority of the authors included in this collection of great books wrote in other languages, and their works have consequently to be presented here in translation. Now translation is one of the most difficult of arts, because it is not a matter of rendering one set of words into another (that would be easy enough), but of rendering one mode of thinking, expressed in the idiom of one language, into another mode of thinking, expressed in the idiom of another language. Frequently the transfer of exact meaning is impossible, because either the mode of thought, or the form of verbal expression which conveys it, does not exist in the language into which the work is being translated. An approximation is all that is possible.

Sometimes, owing to misunderstanding, much less than approximation is reached. I shall not easily forget the late Sir Alfred Zimmern, a lifelong student of international affairs, declaring that the greatest source of misunderstanding between Englishmen and Frenchmen was the different meanings they attached in conversation to the words *oui* and *yes*. "When a Frenchman replies '*Oui*,'" he said, "he means 'I have heard what you say and I agree with it'. But when an Englishman replies, 'Yes' all he means is 'I have heard what you say, and I understand it'. He implied no agreement. It was this different use of the two words", declared Sir Alfred, "which was largely responsible for the growth of the belief in France that the English were a perfidious people, never to be relied on because they were always prone to go back on their word".

Such gross misunderstanding should not, of course, occur in written translation. But even the ablest translators are up against the stubborn fact that some words—often highly significant ones—cannot be exactly translated into any other language, because no other language has words which exactly describe the ideas they convey. An example of this is the Greek

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word ἀρετή used by Plato and Aristotle to describe the quality which above all others enables men to live the good life. This word is normally translated into English as "virtue", but its meaning is much fuller and more positive than that. Similar examples of "untranslatable" words are the German words *Weltanschauung* and *Zeitgeist*.

Third among the reasons which make great works difficult is the fact that there is always the possibility, especially when complex or profound ideas are concerned, either that the writer has not fully comprehended an idea with which he has been struggling, or that he has not been able to find appropriate words in which to express himself. The human mind, even at its finest, is not a perfect instrument, and language, being a creation of the human mind, is similarly imperfect. Every great thinker has had the experience, many times repeated, of wrestling with ideas which baffled and defeated him. Every writer knows the frustration of being unable to express in words an idea which is perfectly clear in his mind.

Every reader, then, who sets out seriously to master the contents of this set of books must be prepared not only for strenuous mental exercise but also for moments of defeat. Apart from all the reasons I have given, no really great book, no matter how simple it may appear to be, gives up its total meaning at a single reading. It would not be a great book if it did. Nor does it surrender it to the immature mind: it takes an adult mind, reinforced with adult knowledge and fortified by adult experience, to get the most out of great works of the mind.

This is not said with any intention of discouraging young people from reading the books. On the contrary, there is every reason for encouraging them to do so. At the very least they will thereby know that the books exist; and far too many young people have not even this knowledge. And there is no

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knowing where that knowledge may lead. I heard the other day the story of a girl in her late 'teens, a shop assistant, who went into a public library to borrow a novel, strayed by error into the non-fiction section, was attracted by an unknown name on a book, asked "Who is this Plato?", took home the *Republic* and had the whole course of her life changed. Within a few years she had won brilliant academic successes and had begun a career in a learned profession. An exceptional case, no doubt, but such cases do happen.

A second very good reason for encouraging young people to read the *Great Books* is that they will by doing so amass a vast quantity of miscellaneous information which, because they are young, they will acquire more easily and retain more surely than most older people. They will meet, too, ideas outside their experience, many of which it is to be hoped they will find exciting and stimulating.

But most of all, young people should be encouraged to read such works as these in the hope that, as Plato said* 2,300 years ago, "beauty, the effluence of fair works, shall flow into the eye and ear, like a health-giving breeze from a purer region, and insensibly draw the soul from earliest years into likeness and sympathy with the beauty of reason".

He who has received this true education of the inner being, continued Plato, will most shrewdly perceive omissions or faults in art and nature and with a true taste, while he praises and rejoices over and receives into his soul the good, and becomes noble and good, he will justly blame and hate the bad, now in the days of his youth, even before he is able to know the reason why; and when reason comes he will recognize and salute the friend with whom his education has made him long familiar.

The sceptic will say that Plato was over-optimistic, that nobility and goodness do not necessarily ensue from the reading of works that are noble and good. Nevertheless, they

* In the *Republic*, Book III, Great Books, Vol. 7, p. 333.

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may; and other things being equal, the earlier the influence of great works of literature and philosophy can be brought to bear the greater the chance that they will. But one must be quite realistic about the matter, and acknowledge that much of the wisdom to be found in the *Great Books* can only be appreciated when it is fertilized with experience gained by living and by personal contacts with life's problems. And such experience is the one advantage which, save in rare cases, youth cannot possess.

Twenty - three centuries ago Aristotle recognized this truth:—*

. . . while young men become geometers and mathematicians and wise in matters like these, it is thought that a young man of practical wisdom cannot be found. The cause is that such wisdom is concerned not only with universals but with particulars, which become familiar from experience, but a young man has no experience, for it is length of time that gives experience; indeed one might ask this question too, why a boy may become a mathematician but not a philosopher or a physicist.† It is because the objects of mathematics exist by abstraction, while the first principles of these other subjects come from experience, and because young men have no conviction about the latter but merely use the proper language, while the essence of mathematical objects is plain enough to them.

In our own day this profound truth remains as inescapable as ever, despite the tremendous advances we have made in the education of the young. As Sir Charles Morris, Vice-Chancellor of Leeds University, recently said in a public address:—

If the study of history or of literature has some deep value for us all, how much of this value can be acquired as a result of reading which is done before the age of 18? Let us be honest with ourselves. What did we make of Hamlet or Othello, or of

* In *Nicomachean Ethics*, Book VI Chapter 8. *Great Books*, Vol. 9, p. 391.

† This word has a very different meaning today.

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Prometheus or of *Paradise Lost* when we were 18? What were we able to make of the French, still less of the Industrial Revolution? What could we take from the great philosophers? Humanistic studies if they have a part to play in full education can hardly begin to play that part at all until we begin to come to some intellectual maturity and to some fullness of experience.

If the young have not experience, they certainly have time on their side; and that is an immense advantage. As will be obvious to everyone, merely to read one's way through this large collection of books must be a lengthy undertaking, one to be reckoned in terms of years rather than of weeks or months. And a single cursory reading, though certainly not without value, will not bring a tithe of the full benefits to be reaped from them. That can be gained only by prolonged study, by reading and re-reading the books, or at least parts of them, by living with the books until they have become incorporated into one's very being.

I wrote in the preceding paragraph "the full benefit". But of course that can be gained by no one. A lifetime is too short, and the human mind too finite, to absorb the accumulated wisdom of a great and many-sided civilization. What one can hope to reap from living with these books for many years is a continuous and increasingly rich intellectual and emotional satisfaction, a broad and deep knowledge of what Western civilization is and of the ideals to which it has aspired, and the right to act as an interpreter of that civilization, and thus to facilitate—if only to the most modest extent—that understanding between our civilization and others which must be established if ever the world is to be truly at peace.

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VOLUME 4

HOMER

The Iliad · The Odyssey

BIOGRAPHICAL NOTE

HOMER

HOMER is not a man known to have existed to whom the authorship of the *Iliad* and *Odyssey* is imputed. Homer is the author of the Homeric poems, a hypothesis constructed to account for their existence and quality.

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There were several "Lives of Homer" in antiquity. Their date is uncertain, but the Homer they present is certainly a figure of romance and conjecture. Seven cities, though not always the same seven, are recorded as claiming to be the birth-place of Homer; six centuries are proposed as containing his birth-date.

Homeric scholarship turns around the facts known about the existence of a written text of the *Iliad* and *Odyssey*. It is established that the works of Homer, "and no other poet," were recited at the Panathenaic festivals and that there was a fixed order for these recitations. It is accordingly inferred that there was some standard Athenian text by the second half of the sixth century B.C. If there was such a text, it did not maintain itself, because the quotations from Homer made in the fourth and third centuries B.C. show the texts then current to have been widely divergent. This disagreement in the texts does not appear to have been resolved until about 150 B.C., when the Alexandrian librarian, Aristarchus of Samothrace, published editions which were afterwards regarded as authoritative. It is not known whether Aristarchus prepared his edition from many, widely differing manuscripts or whether he had recourse to an impressive single text from earlier times. The modern vulgate text is thought to be derived from that of Aristarchus.

Extrinsic evidence, then, does not reveal an *Iliad* or *Odyssey*, written poems, in anything like their present form, before 500 B.C. However, intrinsic evidence convinces scholars that such a date was a late stage in the history of "Homeric" poetry. To reconstruct that history has always been the Homeric problem. This reconstruction, when made by argument from the text of the present poems, has sometimes seemed to involve a denial of their artistic unity. Certain scholars have seen the epics as only imperfectly unified, resulting from accretion to an imagined short original or from a joining of several remembered songs. Further, the poems have been held to be neither of the same period nor by the same author; Samuel Butler contended on this last point that the *Odyssey* was written by a woman.

In recent times, although the inclusion of traditional material and the probability of later interpolation are admitted, most scholars seem to believe in one *Iliad*, one *Odyssey*, undated, and in one Homer, unknown, as author of them both.

Both the *Iliad* and the *Odyssey* belong to the series of legends told by the Greeks about the Trojan War and the people who took part in it. In

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this war the armies of the Greek princes besieged the City of Troy for ten years before they could capture and destroy it. The events described in the *Iliad* happened in the tenth year of the siege, but the story of the *Odyssey* came later, when the Greek heroes were all returning to their homes after the long war was over.

The *Iliad* is so-called because Iliom, or Ilium, was another name for Troy, and the part of the Trojan legend described in the poem is known as the Wrath of Achilles. Indeed, Wrath is the very first word of the *Iliad*. The poem is in the kind of verse known as hexameters and it contains more than 15,000 lines, divided into 24 books.

The *Odyssey* is a very different kind of poem. Whereas the *Iliad* is about battles at the City of Troy, with many important warlike and heroic characters, in the *Odyssey* there is only one hero, Odysseus, and the action is comprised not of battles but of his adventures during his eight-year voyage home to Ithaca where his wife Penelope and his son Telemachus were waiting for him. The *Odyssey* is more than 4,000 lines shorter than the *Iliad* and many readers think that it comes second to the *Iliad* in greatness. Even if this is true the *Odyssey* is still one of the most magnificent poems in any language.



VOLUME 5

AESCHYLUS

The Suppliant Maidens · *The Persians*
The Seven Against Thebes · *Prometheus Bound*
Agamemnon · *Choephoroe*
Eumenides

SOPHOCLES

Oedipus the King · *Oedipus at Colonus*
Antigone · *Ajax* · *Electra*
Trachiniae · *Philoctetes*

AESCHYLUS

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<i>Rhesus</i>	<i>Andromache</i>
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<i>Heracleidae</i>	<i>Heracles Mad</i>
<i>The Suppliants</i>	<i>The Phoenician Maidens</i>
<i>The Trojan Women</i>	<i>Orestes</i>
<i>Ion</i>	<i>Iphigenia among the Tauri</i>
<i>Helen</i>	<i>Iphigenia at Aulis</i>
	<i>The Cyclops</i>

ARISTOPHANES

The Acharnians · *The Knights* · *The Clouds*
The Wasps · *The Peace* · *The Birds* · *The Frogs*
The Lysistrata · *The Thesmophoriazusae*
The Ecclesiazusae · *The Plutus*

BIOGRAPHICAL NOTE

AESCHYLUS, c. 525-456 B.C.

AESCHYLUS was a Greek poet who was in a very real sense the founder of Greek drama. His plays are serious and are about the power the gods have over men and of the mysterious way in which fate works in their lives.

He was born at Eleusis around the year 525 B.C. His father, Euphorion, belonged to the "Eupatridae," or old nobility, of Athens. Whether Aeschylus was actually initiated into the Eleusinian Mysteries is not known. The accusation that he divulged the secrets of Demeter has been interpreted both as supporting and as refuting the view that he was an initiate.

Aeschylus fought against the Persian invader at Marathon in 490, and he may also have been with the Athenians seven years later at Salamis, and even at Artemisium and Plataea. Some scholars have found in the

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poet's knowledge of Thracian geography and customs an indication that he took part in one or more of the northern expeditions in the years following the Persian War.

The first of Aeschylus' plays was exhibited in 499, only thirty years after the establishment by Peisistratus of the annual contest in tragedy at the festival of the City Dionysia. Thespis, who won the prize at that competition, was called by the ancients the earliest tragic poet. But Aeschylus himself would seem to be the true founder of tragedy, since, according to Aristotle, he first introduced a second actor, diminished the importance of the chorus, and assigned the leading part to the dialogue.

Aeschylus' first recorded victory was in 484, when he had been competing for fifteen years. Between that date and the performance of his last work, the Oresteian trilogy and the satyr play *Proteus*, in 458, he won the prize at least twelve times. He wrote more than ninety plays, of which seven survive. The oldest of these, the *Suppliant Maidens*, cannot be much later than 490. The *Persians*, which is the only extant Greek tragedy on an historical subject, was exhibited in 472, the *Seven against Thebes* in 467, the *Prometheus* probably not long before 458, the date of the trilogy made up of the *Agamemnon*, the *Choephoroe*, and the *Eumenides*. The plays were exhibited in groups of four — three tragedies and a satyr play. Sometimes, as in the case of the surviving trilogy, but not always, the tragedies formed a dramatic cycle, integrated in fable and in theme. The poet acted in his own plays.

According to Aristotle, Aeschylus was charged with impiety for revealing certain parts of the Eleusinian ritual, and defended himself by saying that he was not aware the matter was a secret. But the ancients knew neither the name of the offending play nor the precise nature of what was revealed. A later tradition adds to the fact of the accusation, the doubtful details that Aeschylus escaped the fury of the audience by clasping the altar of Dionysus in the theatre, and that he was later acquitted by the Court of the Areopagus because he had fought bravely at Marathon.

The first of Aeschylus' several trips to Sicily appears to have been made some time between 476 and 473. Like Pindar and Simonides he was invited to visit the court of King Hiero of Syracuse. After the eruption of Etna, Hiero had re-established the town of the same name at the base of the mountain. To celebrate the new city and to honour his patron, Aeschylus wrote and produced the *Women of Etna*. On a second visit

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to Sicily around 472 the poet is said to have repeated for Hiero the *Persians*, which had just been crowned with the first prize at Athens. Some time after 458 he was yet a third time in Sicily.

There is little reason to believe the various explanations offered in antiquity for Aeschylus' leaving Athens. Most of them are based upon his supposed envy of the popularity of Sophocles and Simonides, and are made improbable, if not impossible, by known facts and dates. The fable that he met his death from an eagle letting fall a tortoise upon his bald head, presumably mistaking it for a stone upon which to break the animal's shell, may have had its origin in an attempt to interpret the allegorical representation of an apotheosis.

Aeschylus died and was buried at Gela in 456. The epitaph inscribed on his tomb is attributed by some to Aeschylus himself: *This memorial stone covers Aeschylus the Athenian, Euphorion's son, who died in wheat-bearing Gela. His famed valour the precinct of Marathon could tell and the long-haired Mede, who knows it well.*

Shortly after the death of Aeschylus the Athenians passed a decree that his plays should be exhibited at public expense, and that whoever desired to produce one of his plays should "receive a chorus." His tomb became a place of pilgrimage, and in the middle of the fourth century, at the proposal of the orator Lycurgus, his statue was set up in the Theatre of Dionysus at Athens.

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SOPHOCLES, c. 495-406 B.C.

SOPHOCLES followed Aeschylus as the favourite writer of tragedies for the Athenian stage. He gave to tragedy its absolute dramatic form. Every action and every speech in a tragedy of Sophocles' leads towards the climax. When the climax is reached the situation is unfolded with restraint and power that have never been surpassed.

He was born at Colonus in Attica around 495 B.C. His father, Sophillus was a maker of munitions. That Sophillus himself worked as a smith or carpenter, as has sometimes been said, seems unlikely, in view of his son's social position and civic offices. According to Pliny, Sophocles was born in the highest station. This tradition gains support from the story that at the age of fifteen or sixteen he led the Boys' Chorus, which celebrated with song and the music of the lyre the victory of Salamis.

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As a schoolboy Sophocles was already famous for his beauty and won prizes in athletics and in literature. He was taught music by Lamprus, whom Plutarch praised for sobriety and preferred to the more impassioned and "realistic" Timotheus, who influenced Euripides in his later choruses.

From the ancient *Life*, which is probably of Alexandrian origin, and from references in other authors it is evident that Sophocles both as poet and as citizen played a prominent and varied role in the life of Athens. His own life was co-extensive with the rise and fall of the city. Between his birth a few years before Marathon and his death on the eve of the defeat of Athens in the Peloponnesian War, the greatest events of Athenian history took place. During that time Sophocles wrote and produced over one hundred and twenty plays. In 443, as president of the imperial treasury, he was in charge of collecting the tribute of the allies. In 440 he was elected general and served with Pericles in the Samian War. He went on embassies, and he was probably the Sophocles referred to by Aristotle in the *Rhetoric* as one of the ten elders chosen to manage the affairs of the city after the Sicilian disaster. He was a friend of Cimon and a member of his social circle, which included such distinguished foreigners as Ion of Chios, the tragic poet, and the painter, Polygnotus. Among other friends of Sophocles were Archelaus and Herodotus, to whom he wrote elegiac poems.

Plutarch, in his *Life of Cimon*, says that Sophocles won his first victory with the first play he produced. His first victory came in 468 when he defeated Aeschylus with the *Triptolemus*, which is now lost. He was thus twenty-seven when he began his public dramatic career. In the remaining sixty-two years of his life he wrote on an average two plays a year and competed for the tragic prize thirty-one times. He won at least eighteen victories and was never placed third.

Of the seven plays that survive, the *Ajax* is probably the earliest. The *Antigone* belongs to 443 or 441. The chronological order of the *Trachiniae* and the *Oedipus the King* is uncertain, the *Electra* is later, and all three are assigned to the years between 435 and 410. The *Philoctetes* is known to have been produced in 408 when Sophocles was eighty-seven years old. The *Oedipus at Colonus*, according to the story made famous by the *De Senectute* of Cicero, was Sophocles' last play. Sophocles is supposed to have been accused by his son of being unable to manage his property, and to have convinced his judges of his competence by reciting a chorus from this play, which he had just completed.

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Aristotle says in the *Poetics* that Sophocles raised the number of actors to three and added scene-painting. Sophocles is also said to have written his plays with certain actors in mind and not to have acted in them himself because of the weakness of his voice. That he was interested in the theory as well as the practice of dramatic art is evident from his having written a book "on the chorus," and having formed a "company of the educated" in honour of the Muses. "Chorus" was the official name for tragedy, and a book on the chorus would have dealt, presumably, with all aspects of the tragic poet's art. The "company of the educated" was probably a society of cultivated Athenians who met to discuss poetry and music, though it has also been suggested that its members were actors who had been trained by Sophocles.

Sophocles died in 406 B.C., as we know from the *Frogs* of Aristophanes, brought out in the following year. His epitaph, attributed to Simmias, the friend of Socrates, honours his learning and wisdom and calls him "the favourite of the Graces and the Muses." While Aeschylus and Euripides visited the courts of foreign kings and died abroad, Sophocles never left home, except in the service of the city, and died where he had lived, in Athens.

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EURIPIDES, c. 480-406 B.C.

EURIPIDES was the third of the three great writers of tragedy in ancient Greece. He was called by the ancients "the philosopher of the stage" because of the wide variety and great number of philosophic statements in his work. Although his language and composition were perhaps more formal than those of Aeschylus and Sophocles, the characters in Euripides' plays were more natural and true to life than those of his two great contemporaries. Instead of showing heroes acting out their great and terrible destiny as if they were superhuman, his sincerity gave them human weaknesses and feelings.

He was born of Athenian parents on the island of Salamis. The year of his birth seems to have been a matter of conjecture. One tradition groups the three tragedians round the battle of Salamis in 480 B.C.: Aeschylus fought in the ranks, Sophocles danced in the Boys' Chorus, Euripides was born. Another source associates his birth with Aeschylus' first victory in 484.

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Euripides' father, Mnesarchus, was a merchant; his mother, Cleito, is known to have been "of very high family." Yet for some reason it was a recognized joke to say she was a greengrocer and sold inferior greens. Despite the gibes of the comedians, he was probably neither poor nor of humble origin. As a boy he poured wine for the dancers and carried a torch in religious festivals, which he could not have done had he not enjoyed a certain social position. Since he was called upon for costly public duties, such as equipping, in whole or in part, a warship and acting as consul for Magnesia, he must have had independent means. He also possessed a large library, which was a rare thing in Greece for a private citizen.

In accordance with a prophecy that the boy would win victories, the poet's father is said to have had him trained as a professional athlete. He may have thought at one time of turning from boxing to painting as a career, for paintings attributed to him were shown at Megara in later times. He is also known to have been friendly with the philosophers. He is said to have been a pupil of Anaxagoras and a close friend of Protagoras, and we are told that Socrates never went to the theatre unless there was a play by Euripides, when he would walk as far as the Piraeus to see it.

Euripides early discovered his dramatic gift. He began to write at the age of eighteen, and in 455 B.C. he was "granted a chorus," that is, he was permitted to compete for the tragic prize. In the fifty years of his dramatic career he wrote between eighty and ninety plays, but he did not win a victory until 442, thirteen years after his first appearance before the public. His fifth and last victory was for plays exhibited after his death, in 405, by his son, the younger Euripides. He was incessantly assailed by the comedians, especially by Aristophanes, and was frequently defeated by lesser poets, but long before his death he had acquired a great reputation throughout the Greek world. Plutarch, in his *Life of Nicias*, says that Athenian prisoners in Syracuse escaped death and even received their freedom if they could recite passages from the works of Euripides, and that some of them, upon returning home, expressed their gratitude directly to the poet. Aristotle, in spite of specific strictures, calls Euripides "the most tragic" of the poets, and Euripides is more often quoted by him and by Plato than are Aeschylus and Sophocles.

Of the nineteen plays that survive under the name of Euripides, one, the *Cyclops*, is a satyr play, and the *Rhesus* is frequently, though not

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always, considered spurious. The oldest of the extant plays is the *Alcestis*, which appeared in 438. The *Bacchantes* and the *Iphigenia at Aulis* were posthumously presented. The other plays that can be approximately dated are the *Medea*, 431, the *Hippolytus*, 428, the *Trojan Women*, 415, the *Helen*, 412, the *Orestes*, 408.

Unlike Aeschylus and Sophocles, Euripides seems to have taken little part in politics and war, although there is an allusion to him in Aristotle which seems to imply that he had on one occasion a diplomatic post. The ancients thought of Euripides as a gloomy recluse who never laughed. According to these stories, he wore a long beard, lived much alone and hated society; he had crowds of books and did not like women; he lived in Salamis, in a cave with two openings and a beautiful sea view, and there he could be seen "all day long, thinking to himself and writing, for he despised anything that was not great and high."

Towards the end of his life Euripides received honours and distinctions in Macedonia, where, like other men of letters, he went at the invitation of King Archelaus. He spent his last years at the Macedonian court, high in the favour and confidence of the king, and when he died, the king cut off his hair as an expression of his grief.

Euripides died in 406 B.C., a few months before Sophocles, who wore mourning for him in the tragic competition of that year. The Athenians sent an embassy to Macedonia to bring back his body, but King Archelaus refused to give it up. A cenotaph to the memory of Euripides was then erected on the road between Athens and Piræus. The poet's lyre, stylus, and tablets were bought for a talent of gold by Dionysius of Syracuse, who enshrined them in the temple of the Muses.

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ARISTOPHANES, c. 445–c. 380 B.C.

ARISTOPHANES was the great comic poet and dramatist of Athens. He was a national conservative, his ideal being the Athens of the Persian Wars. He had a warm love for the traditional glories of Athens; a horror of what was ugly or ignoble; a keen perception for the absurd. His rooted antipathy to intellectual progress must lower his intellectual rank, but as a mocker — to use the word which seems most closely to describe him — he is incomparable in his plays for the union of subtlety with riot of the comic imagination.

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The son of Philippus of the tribe Pandionis in the deme Cydathene, Aristophanes was almost certainly a full Athenian citizen by birth. The exact year of his birth is not known. However, his first play, the *Banqueters*, won the second prize in 427 B.C., and he must then have been less than eighteen years of age, since, as he notes in the *Clouds*, he was too young to produce it in his own name.

It is inferred from his comedies that Aristophanes passed much of his boyhood in the country. His family owned land on Aegina, which may have been acquired when that island was expropriated by Athens in 431. His political sympathies, as revealed in the plays, seem to be conservative and to favour the "ancestral democracy" of the landowning class.

The character of the "Old Comedy," to which most of Aristophanes' plays belong, made it almost inevitable for him to enter into political disputes. Comedy then served something of the function of a satirical censorship and was expected to deal with the issues and personalities before the public. Aristophanes' first play was concerned with the contrast between the old and the new systems of education. His second, the *Babylonians*, although like the first no longer extant, is known to have involved Aristophanes in his conflict with Cleon, which lasted until the demagogue's death in 422. In this play Aristophanes attacked the policy towards the allies of Athens in the Peloponnesian War as one that made slaves, or "Babylonians," of them. Cleon responded by subjecting Aristophanes to prosecution, and accused him among other things of falsely claiming the privileges of citizenship. The poet was acquitted, but only after, as he charged in the *Acharnians*, Cleon had "slanged, and lied, and slandered, and betongued me . . . till I well nigh was done to death." The treatment failed to silence Aristophanes. Two years later in the *Knights* (424) he made his sharpest attack upon Cleon, who then enjoyed his greatest popularity, and the play won the first prize in the contest of that year.

The dramatic career of Aristophanes lasted for forty years or more, extending from the time when Athens was at the height of its power in the first years of the Peloponnesian War, through its fall in 404, and into the period when the city had begun to recover its fortunes after the Athenian league of 395. The various attempts made during that time to restrict the freedom of comedy are reflected to some extent in the character of Aristophanes' work. He wrote somewhere between forty and sixty plays, eleven of which have survived. The oldest surviving play is

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the *Acharnians*, which won first place in 425. The *Knights* was victorious the following year; the *Clouds*, produced in 423, although much admired by its author, failed to win a prize. With the *Wasps*, Aristophanes again took first place in 422. The *Peace* (421) and the *Birds*, produced seven years later, were awarded second prize. The *Lysistrata* and the *Thesmophoriazusaë* belong to 411. The *Frogs* (405) was produced when Athens was making her last effort in the Peloponnesian War. The *Ecclesiazusaë* was presented around 392, and the *Plutus* (388), which is the last of the extant plays, already belongs to the so-called "Middle Comedy."

Despite his frequent and bitter attacks upon such idols of the Athenian populace as Cleon and Euripides, Aristophanes appears to have been widely appreciated throughout his long career. Plato is known to have been particularly fond of his plays. He included the comic poet in his *Symposium*, and a copy of Aristophanes is said to have been found on his death bed. The story is also told that when asked by Dionysius of Syracuse for an analysis of the Athenian constitution, Plato sent an edition of Aristophanes' plays.

Aristophanes produced a play for the last time in 388. The following year, his son, Araros, won the first prize with one of his father's plays. Since Araros was producing his own plays by 375, it has been inferred that Aristophanes died somewhere between 385 and 375 B.C.



VOLUME 6

HERODOTUS

The History

THUCYDIDES

The History of the Peloponnesian War

BIOGRAPHICAL NOTE

HERODOTUS, c. 484–c. 425 B.C.

THE Greek historian Herodotus is often known as the Father of History. However, in describing his great work it is important to understand what that work was intended to be. It has been called "a universal history,"

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“a history of the wars between the Greeks and the barbarians” and “a history of the struggle between Greece and Persia.” But these titles are, all of them, too comprehensive. His intention was not to give an account of the entire long contest between Greece and Persia, but to write the history of a particular war — the Great Persian War of invasion. Only Herodotus determined to treat his subject in a certain way. Every partial history requires an “introduction”; Herodotus, untrammelled by examples, resolved to give his history a magnificent introduction. Thucydides is content with a single introductory book, forming little more than one-eighth of his work; Herodotus has six such books, forming two-thirds of the entire composition.

By this arrangement he is enabled to treat his subject in the *grand* way, which is so characteristic of him. Making it his main object in his “introduction” to set before his readers the previous history of the two nations who were the actors in the great war, he is able in tracing their history to bring into his narrative some account of almost all the nations of the known world, and has room to expatiate freely upon their geography, antiquities, manners and customs.

Herodotus was born about four years after the battle of Salamis in Halicarnassus in Asia Minor. Although a Greek colony, the city had been subject to Persia for some time, and it remained so for half of Herodotus’ life. He came from a Greek family which enjoyed a position of respect in Halicarnassus, and his uncle, or cousin, Panyasis, was famous in antiquity as an epic poet.

The Persian tyranny made any free political life impossible, and Herodotus after his elementary education appears to have devoted himself to reading and travelling. In addition to his unusually thorough knowledge of Homer, he had an intimate acquaintance with the whole range of Greek literature. In his *History* he quotes or shows familiarity with, among others, Hesiod, Hecataeus, Sappho, Solon, Aesop, Simonides of Ceos, Aeschylus, and Pindar. Whether or not the plan of his *History* governed or grew out of his travels is not known. All the dates of his travels are uncertain; it is thought that most of them were made between his twentieth and thirty-seventh year. The *History* reveals the elaborateness of his observation and inquiry. He traversed Asia Minor and European Greece probably more than once, visited all the most important islands of the Archipelago — Rhodes, Cyprus, Delos, Paros, Thasos, Samothrace, Crete, Samos, Cythera, and Aegina —, made the long

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journey from Sardis to the Persian capital of Susa, saw Babylon, Colchis, and the western shores of the Euxine as far as the Dnieper, travelled in Scythia, Thrace, and Greater Greece, explored the antiquities of Tyre, coasted along the shores of Palestine, saw Gaza, and made a long stay in Egypt.

Apart from the travels undertaken in his professional capacity, political developments involved Herodotus in many shifts of residence. About 454 B.C. his relative, Panyasis, was executed by Lygdamis, the tyrant of Halicarnassus. Herodotus left his native city for Samos, which was then an important member of the Athenian Confederacy. He was there for seven or eight years and perhaps took part in the preparations for the overthrow of Lygdamis. After the expulsion of the tyrant, in which the Athenian fleet may have been a decisive factor, he returned to Halicarnassus, which then became a member of the Confederacy. He remained there less than a year. It is surmised that an unfavourable reception to parts of his *History* and the ascendancy of the anti-Athenian party caused Herodotus to leave Halicarnassus for Athens.

At Athens, Herodotus seems to have been admitted into the brilliant Periclean society. He was particularly intimate with Sophocles, who is said to have written a poem in his honour. Plutarch records that the public readings he gave from his *History* won such approval that in 445 B.C., on the proposal of Anytus, the Athenian people voted to award him a large sum of money. At one of his recitations, the story is told that the young Thucydides was present with his father and was so moved that he burst into tears, whereupon Herodotus remarked: "Olorus, your son has a natural enthusiasm for letters."

Despite his fame in Athens, Herodotus may not have been reconciled to his status as a foreigner without citizenship. He was either unwilling or unable to return to his native land. When in 443 B.C. Pericles sent out a colony to settle Thurii in southern Italy, Herodotus was one of its members. He was then forty years old.

From this point in his career Herodotus disappears completely. He may have undertaken some of his travels after this time, and there is evidence of his returning to Athens, but it is inconclusive. He was undoubtedly occupied with completing and perfecting his *History*. He may also have composed at Thurii the special work on the history of Assyria to which he refers and which Aristotle quotes.

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From the indications afforded by his work it is inferred that he did not live later than 425 B.C. Presumably he died at Thurii; it was there that his tomb was shown in later ages.

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THUCYDIDES, *c.* 460-*c.* 400 B.C.

THUCYDIDES records that he began writing his *History of the Peloponnesian War* "at the moment that it broke out" and that he was then "of an age to comprehend events." From this it is inferred he was somewhere between twenty-five and forty years of age at that time, which would place his birth between 471 and 455 B.C.

His father, Olorus, was an Athenian citizen and perhaps related to the Thracian prince, Cimon, son of Miltiades. He derived considerable wealth from the possession of the gold mines on the coast opposite Thasos. Thucydides by birth thus enjoyed two homes, one in Athens and the other in Thrace, and a position in society which gave him access to the leading figures of his time.

It is uncertain how much of his youth was passed in Athens, but, according to the ancient biographers, he studied philosophy with Anaxagoras and rhetoric with Antiphon, the oligarch famous for his oratory, whom Thucydides praised as "one of the best men of his day in Athens." During his youth Athenian power was at its height, and he was presumably a member of the brilliant circle about Pericles.

Thucydides was in Athens when the Peloponnesian War broke out in 431 B.C. and also the following year during the great plague, when, as he records, "I had the disease myself and watched its operation in the case of others." The turning-point in his career came six years later, in 424. He had attained a position of sufficient importance to have been appointed one of the two generals assigned to guard the Athenian interests in "the regions towards Thrace." His colleague, Eucles, commanded the land forces while he had charge of the navy. The town of Amphipolis was the Athenian stronghold in that region, and to guard it was then a matter of particular urgency since the ablest of the Spartan leaders, Brasidas, was then making rapid gains in the vicinity. Thucydides with the seven ships under his command was anchored at the isle of Thasos, half a day's sail away. He records that "Brasidas, afraid of help

THUCYDIDES

arriving by sea from Thasos, and learning that Thucydides possessed the right of working the gold mines in that part of Thrace, and had thus great influence with the inhabitants of the continent, hastened to gain the town." By the offer of generous terms and the aid of the disaffected part of the population, he succeeded in his object before Thucydides could bring relief. "The news that Amphipolis was in the hands of the enemy caused great alarm at Athens," and Thucydides for his share in the disaster was relieved of his command and exiled.

His exile from Athens lasted for twenty years and is supposed to have been passed for the most part at his property in Thrace. He probably took advantage of his position as an Athenian exile to visit the countries of the Peloponnesian allies, including Sparta and perhaps Sicily. The main purpose of such travels was undoubtedly to gather material for his *History*, for, as he noted, "being present with both parties, and more especially with the Peloponnesians by reason of my exile, I had leisure to observe affairs somewhat particularly."

His own words make it clear that he returned to Athens, at least for a time, in 404. The general amnesty of that year would have made it possible if he had not already received a special pardon, as is sometimes claimed. According to ancient testimony, he soon afterwards met his death at the hands of an assassin. Plutarch declares that he was killed at his home in Thrace and buried at Athens in the vault of Cimon's family.

At the outset of the *History of the Peloponnesian War* Thucydides indicates his general conception of his work and states the principles which governed its composition. His purpose had been formed at the very beginning of the war, in the conviction that it would prove more important than any event of which the Greeks had record. The leading belligerents, Athens and Sparta, were both in the highest condition of effective equipment. The whole Hellenic world (including Greek settlements outside of Greece proper) was divided into two parties, either actively helping one of the two combatants or meditating such action. The aim of Thucydides was to preserve an accurate record of this war, not only in view of the intrinsic interest and importance of the facts, but also in order that these facts might be permanent sources of political teaching to prosperity.

Thucydides conceived his Greek predecessors in the recording of facts to have been of two classes. First there were the epic poets, with Homer at their head, whose characteristic tendency, in the eyes of Thucydides,

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is to exaggerate the splendour of things past. Secondly, there were the Ionian prose writers whom he calls "Chroniclers", whose general object was to diffuse a knowledge of legends, preserved by oral tradition, and of written documents (usually lists of officials or genealogies) preserved in public archives; and they published their materials as they found them, without criticism. The vice of the Chroniclers, in his view, is that they cared only for popularity, and took no pains to make their narrative trustworthy. Herodotus was presumably regarded by Thucydides as in the same general category.

In contrast with these predecessors, Thucydides has subjected his materials to the most searching scrutiny. The ruling principle of his work has been strict adherence to carefully verified facts.



VOLUME 7

PLATO

Charmides · *Lysis* · *Laches* · *Protagoras*
Euthydemus · *Cratylus* · *Phaedrus*
Ion · *Timæus* · *Critias* · *Parmenides*
Theaetetus · *Symposium* · *Meno*
Euthyphro · *Apology* · *Crito* · *Phaedo*
Gorgias · *The Republic* · *Sophist*
Statesman · *Philebus* · *Laws* · *The Seventh Letter*

BIOGRAPHICAL NOTE

PLATO, c. 428 B.C.—c. 348 B.C.

PLATO, son of Ariston and Perictione, was born in 428 or 427 B.C. His family was, on both sides, one of the most distinguished of Athens. Ariston is said to have traced his descent through Codrus to the god Poseidon; on the mother's side, the family, which was related to Solon, goes back to Dropides, archon of the year 644 B.C. His mother apparently married as her second husband her uncle Pyrilampes, a prominent

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supporter of Pericles, and Plato was probably chiefly brought up in his house.

Plato's early life coincides with the disastrous years of the Peloponnesian War, the shattering of the Athenian Empire, and the fierce civil strife of oligarchs and democrats in the year of anarchy 404-403 B.C. He was too young to have learned anything by experience of the imperial democracy of Pericles, or of the full tide of the "sophistic" movement. He must have known Socrates from boyhood, for his relatives, Critias and Charmides, were old friends of the philosopher. Aristotle also ascribes to him an early familiarity with the Heraclitean, Cratylus. But Plato himself tells us in *The Seventh Letter* that his early ambitions were political. Following the establishment of the Tyranny of the Thirty in 404, in which his relatives were leaders, Plato was "invited to share in their doings as something to which I had a claim." He held back until their policy was revealed and then was repelled by their violence, particularly by their attempt to implicate Socrates in an illegal execution. He hoped for better things from the restored democracy until the condemnation of Socrates convinced him that he could no more collaborate with the democrats than with the oligarchs. Concluding that "public affairs at Athens were not carried on in accordance with the manners and practices of our fathers, nor was there any ready method by which I could make new friends," Plato abandoned his intention of devoting himself to politics.

After the execution of Socrates in 399 B.C., Plato went on a series of travels. It would seem that he then discovered his vocation to philosophy as he reflected on the life and teaching of Socrates. Hermodorus, an immediate disciple, is the authority for the statement that Plato and other Socratic men took temporary refuge at Megara with the philosopher Euclides, who is said to have taught the doctrines of Socrates and of Parmenides. The *Alexandrian Lives* represent the next few years as spent in extensive travels in Greece, Egypt, and Italy. Plato's one statement is only that he visited Italy and Sicily at the age of forty, was disgusted by the gross sensuality of life there, but found a kindred spirit in Dion, brother-in-law of Dionysius I of Syracuse, who was to involve him again in politics twenty years later.

On his return to Athens about 387, Plato founded the Academy. He had presumably already completed some of his dialogues, in particular those celebrating the memory of Socrates. For the rest of his life he presided over the Academy, making it the intellectual centre of Greek

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life; its only rival was the school of Isocrates. From the allusions of Aristotle it appears that Plato lectured without manuscript, and "problems" were propounded for solution by the joint researches of the students. In addition to philosophy, particular attention was given to science and law. The most important mathematical work of the fourth century was done by friends or pupils of Plato. Theatetus, the founder of solid geometry, was a member of the Academy, and Eudoxus of Cnidus is said to have removed his school from Cyzicus to Athens for the purpose of co-operation with Plato. The Academy was frequently called upon by various cities and colonies to furnish advisers on legislative matters; Plutarch records that among others "Plato sent Aristonymus to the Arcadians, Phormiun to Elis, Menedemus to Pyrrha."

In 367, when Plato was in his sixtieth year and renowned as the head of the Academy, he was invited to intervene in the politics of Syracuse. Dionysius II had just assumed power, and Plato's friend, Dion, urged the philosopher to come and undertake the education of the younger king and to strengthen him against the encroachment of Carthage in Sicily. Plato's reluctance to make such an attempt was overcome only by his friendship for Dion and "a feeling of shame . . . lest I might some day appear to myself wholly and solely a mere man of words." Plato started Dionysius on a programme of philosophical education, but in a few months found himself involved in the intrigues of the court against Dion, and when Dion was finally forced into virtual banishment, Plato returned to Athens. Dionysius, who prided himself on his philosophical accomplishments, kept in correspondence with Plato and prevailed upon him to visit Syracuse again in 361. Plato renewed his attempt to persuade Dionysius "not to enslave Sicily nor any other State to despots . . . but to put it under the rule of laws." But he again found that the tyrant refused "to act righteously" and allowed no opportunity for a rule in which "philosophy and power really met together." It was only after considerable personal danger that Plato reached Athens. He never again attempted direct intervention in political affairs, although several members of the Academy joined Dion's expedition against Syracuse in 357, which resulted in the overthrow of the tyranny.

The Sicilian voyages are considered to mark a distinct break in Plato's literary activity. The work of his last years is now usually held to consist of a group of seven dialogues: *Theatetus*, *Parmenides*, *Sophist*, *Statesman*, *Timaeus*, *Philebus*, and *Laws*. The Academy was presumably

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well organized by that time and made fewer administrative demands upon Plato. But we know from Aristotle, who became a student there in 367, that Plato still continued to lecture and to take a leading part in the research "problems". Legislation seems to have been given particular concern, and the *Laws* is said to have been in the process of publication when Plato died in 348 or 347 B.C.

To us Plato is important primarily as the greatest of the ancient Greek philosophical writers, but to himself the foundation and organization of the Academy must have appeared as his chief "work". In *The Seventh Letter* he utters on his own account the same comparatively unfavourable verdict on written works, in contrast with the contact of living minds, as a vehicle of "philosophy", which he ascribes to Socrates in the *Phaedrus*. It can hardly be doubted that he regarded his dialogues as intended in the main to interest an educated outside world in the more serious and arduous labours of his "school".

The great initial difficulty which besets the modern student of Plato's philosophy is that created by the dramatic form of Plato's writings. Since Plato never introduces himself into his own dialogues he is not formally committed to anything which is taught in them. The speakers who are formally bound by the utterance are their protagonists Socrates, Parmenides, the Pythagorean Timaeus, and all these are real historical persons. The question thus arises, with what right do we assume that Plato means us to accept as his own the doctrines, put into the mouths of these characters? Is his purpose dogmatic and didactic, or may it be that it is mainly dramatic? Are we more at liberty to hold Plato responsible for what is said by *dramatis personae* than we should be to treat a poet like Browning in the same fashion?

It is tempting to evade this formidable issue in one of two ways. One is to hold that Plato allows himself freely to develop in a dialogue any view which interests him for the moment, without pledging himself to its truth or considering its compatibility with other positions assumed elsewhere in its writings. The most common assumption of the nineteenth century was that some of Plato's characters, notably Socrates and Timaeus, are "mouth pieces" through which he inculcates tenets of his own without concern for dramatic or historical propriety. Careful study of the dialogue should satisfy us that neither of these two extreme views is tenable.



ARISTOTLE

VOLUME 8

ARISTOTLE

Categories · *On Interpretation*
Prior Analytics · *Posterior Analytics* · *Topics*
On Sophistical Refutations · *Physics*
On the Heavens · *On Generation and Corruption*
Meteorology · *Metaphysics* · *On the Soul*
On Sense and the Sensible
On Memory and Reminiscence
On Sleep and Sleeplessness
On Dreams · *On Prophesying by Dreams*
On Longevity and Shortness of Life
On Youth and Old Age · *On Life and Death*
On Breathing

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VOLUME 9

ARISTOTLE

History of Animals · *On the Parts of Animals*
On the Motion of Animals · *On the Gait of Animals*
On the Generation of Animals
Nicomachean Ethics · *Politics*
The Athenian Constitution
Rhetoric · *On Poetics*

BIOGRAPHICAL NOTE

ARISTOTLE, 384-322 B.C.

ARISTOTLE was a philosopher, a psychologist, a logician, a moralist, a political thinker, a biologist and the founder of literary criticism. His writings fall into three main kinds. There are literary essays intended for

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publication, such as the early dialogues (now lost except for fragments); there are the set works of his later years, such as the *Constitution of Athens*; and above all there are what we may call treatises, intended for use in lectures and for the reading of the students of the Lycaeum, of which we possess a large variety. They include the *Organon*, *Physics*, *Metaphysics*, *Eudemian Ethics* and the *Nicomachean Ethics*, *Politics*, *Poetics* and *Rhetoric*.

Aristotle was born in 384 at Stagira, a Greek colonial town on the Aegean near the Macedonian border and somewhat east of the modern city of Salonica. Both of his parents were Ionian in origin. His mother was a native of Chalcis, from which Stagira had been colonized. His father, Nicomachus, belonged to the guild of the "sons of Aesculapius" and was court physician to Amyntas II, the father of Philip of Macedon. Aristotle, who seems to have remained with his parents during his first seventeen years, may have studied medicine with his father, and it was sometimes claimed in antiquity that he practised medicine when he first went to Athens.

In 367 Aristotle entered the Academy at Athens. Plato was then sixty-one and just entering upon his intervention in the politics of Syracuse. The Academy was giving particular attention to the problems of politics and legislation and, in addition to its more general philosophic interests, was increasingly preoccupied with mathematics and astronomy. Few details have survived of the life Aristotle led at the Academy for twenty years. He is said to have been called by Plato the intellect of the school. There is also a tradition that he taught rhetoric. He is known to have written numerous dialogues modelled on those of his master, which were famed in antiquity for their lucidity and the easy flow of their style. There is little evidence of any serious disagreement between master and pupil during these years, and on Plato's death in 347 Aristotle wrote an elegy for an altar of friendship to Plato in which he praised him as "the man whom it is not lawful for bad men even to praise, who alone or first of mortals clearly revealed, by his own life and by the methods of his words, how to be happy is to be good."

When Speusippus became head of the Academy in 347, Aristotle and another of Plato's pupils, Xenocrates, left Athens for Assus, in the Troiad, where two former members of the Academy were teaching. The "tyrant", or ruler, of the territory, Hermias, had become their pupil and, out of gratitude, had bestowed upon them the town of Assus. The four

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set up something like a colonial Academy. Through his teaching Aristotle apparently became the intimate friend of Hermias, and he married the ruler's adopted daughter. Theophrastus from the neighbouring island of Lesbos was also among his pupils, and it may have been on his suggestion that Aristotle moved about 344 to Mytilene on Lesbos, where for two years he was engaged largely in the study of natural history, particularly marine biology.

In 342 Aristotle returned to Macedonia to act as tutor to the young Alexander. Although he had been in early youth close to the Macedonian court and already enjoyed some reputation for his dialogues, the deciding factor in the appointment may have been Aristotle's connection with Hermias, who at this time was apparently negotiating with Philip regarding an expedition against Persia. Aristotle stayed in Macedonia for seven years. The tradition is that he taught politics and rhetoric, and he is said to have prepared an edition of Homer for the use of Alexander, who was thirteen at the time of his coming. In 340, after Philip went to war, Alexander directed political affairs at home as regent, and it is likely that Aristotle set up a school and gave the greater part of his time to his own studies. He induced Alexander to restore Stagira, which had been destroyed a few years before, and is said to have provided it with a constitution. Perhaps at Alexander's request, he wrote the two political treatises or pamphlets, no longer extant, *On Kingship* and *On Colonies*. Although Aristotle could have seen but little of his royal pupil during the latter years of his Macedonian sojourn, there is evidence that Alexander did not forget his master. When he made his expedition to the East, he took Aristotle's nephew, Callisthenes, as his historian, and to further Aristotle's scientific researches, he appointed men to collect materials and specimens.

After the accession of Alexander in 336, Aristotle returned to Athens, where his friend, Xenocrates, had become head of the Academy. He established the Lycaean, which came to be known as the Peripatetic School from the path in its garden where he walked and talked with his pupils. The Lycaean was an organized institution for the "cult of the Muses." It possessed extensive equipment, including maps and the largest library then collected in Europe. It had its regular dinners and even its plate, and Aristotle himself wrote rules for holding *symposia*. The staff of lecturers included Theophrastus and Eudemus, and there was a fixed schedule for the lectures. Aristotle, according to tradition, devoted the

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mornings to the more difficult parts of philosophy and in the afternoon addressed a wide audience on rhetoric and dialectic.

The great body of the extant Aristotelian treatises probably represents the lectures which Aristotle delivered at the Lycaeum. It is not likely that all were written at this time; they had probably been growing since he first began teaching. His various works of compilation almost certainly belong to these last years. He drew up lists of the victors in the Pythian and Olympic games and a chronology of the Athenian drama, later the basis for dating the Greek plays. He organized the collection of one hundred and fifty-eight Greek constitutions, and his work *On the Athenian Constitution*, the only extant treatise of this collection, is thought to have provided the model for this research. He also drew up an account of the "customs of the barbarians" and a treatise on "cases of constitutional law." The results of his investigations in natural history are evident in his biological works, particularly the *History of Animals*.

With the death of Alexander in 323, Aristotle's life at the Lycaeum came to an abrupt end. Although Aristotle apparently had little relation with Alexander, especially after his nephew had been put to death for refusing to render oriental obeisance to him, the philosopher enjoyed the friendship and protection of Antipater, who governed Alexander's Greek affairs from Athens. The revolt of the Athenian party, following the news of Alexander's death, was directed against Antipater and through him it involved Aristotle. Charged with impiety for the elegy he had written to Hermias twenty years before, Aristotle recalled the fate of Socrates and fled to his mother's property in Chalcis, declaring, "I will not let the Athenians offend twice against philosophy."

Aristotle lived in Chalcis for only a few months. Writing to Antipater, he noted, "The more I am by myself, and alone, the fonder I have become of myths." He died in 322. His will discloses the care with which he put his affairs in order; he provided for his children and the disposition of his property in Stagira and Chalcis, left bequests for his household servants and directions for their freedom, directed that his body should be buried with that of his wife, as she had desired, and, as one of the arrangements for the observance of familial piety, ordered his executors to "set up in Stagira statues of life-size to Zeus and Athena the Saviours."



HIPPOCRATES

VOLUME 10

HIPPOCRATES

The Oath · *On Ancient Medicine*
On Airs, Waters, and Places · *The Book of Prognostics*
On Regimen in Acute Diseases · *Of the Epidemics*
On Injuries of the Head · *On the Surgery*
On Fractures · *On the Articulations*
Instrument of Reduction · *Aphorisms* · *The Law*
On Ulcers · *On Fistulae* · *On Haemorrhoids*
On the Sacred Disease

GALEN

On the Natural Faculties

BIOGRAPHICAL NOTE

HIPPOCRATES, fl. 400 B.C.

THE character and abilities of the Greek physician Hippocrates have been held in almost universal veneration by medical men since ancient times. He it was who, according to tradition, first separated medicine from philosophy. That is, in the language of the present day, he observed his patients and inferred their condition without allowing his judgment to be biased by preconceived ideas.

Nevertheless, our knowledge of the historical Hippocrates is almost completely dependent upon Plato. From the *Protagoras* and the *Phaedrus* we learn that Hippocrates was a contemporary of Socrates, that he was a native of Cos, and an Asclepiad, a member, that is, of a family or guild that traced its origin to the God of Healing. He was well known both as a practitioner and a teacher of medicine, and he held that knowledge of the body depends upon the knowledge of the whole man. There is also the implication in Plato's words that Hippocrates travelled from city to city and that, like the great sophists and rhetoricians, he came to Athens to practise and to teach his art.

The figure of the legendary Father of Medicine soon replaced the historical Hippocrates. Although there is no evidence from his own time

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that he left any writings, within a century medical works were being attributed to him, especially those emanating from the famous medical school of Cos. The writings which now go by the name of the Hippocratic Collection consist for the most part of the early Greek medical treatises which were brought together by the Alexandrian scholars of the third century. The Collection is large and heterogeneous and although all were attributed to Hippocrates, the genuineness of some of them was questioned even in antiquity.

The Alexandrian accounts of the life of Hippocrates are rich in detail. He was born in the year 460 B.C., descended from Hercules as well as from Aesculapius. He studied medicine and philosophy from famous teachers and travelled over the whole Greek world, curing a Macedonian tyrant of the malady of love, driving out the plague from Athens by lighting fires in the public squares, refusing to go to Persia to treat the King, and dying at a great age — the dates range from 375 to 351 B.C. — at Larissa in Thessaly, where his tomb could still be seen in the second century A.D. The honey of the bees that swarmed there was said to be healing to the mouth, a tribute to the man who, according to Celsus, was as eminent for eloquence as for knowledge.

For succeeding generations Hippocrates has been, as he was for Galen, the legislator of medicine, the ideal physician "who with purity and with holiness lived his life and practised his art."

BIOGRAPHICAL NOTE

GALEN, c. A.D. 130-c. 200

GALEN may be regarded as the founder of experimental physiology, and, after Hippocrates, as the most distinguished physician of antiquity. To Hippocrates he acknowledges his deep obligations in practical medicine, and he is equally frank about his indebtedness to the Alexandrian anatomists.

His anatomical investigations were unrivalled in antiquity for their fullness and accuracy. He was an indefatigable dissector, describing mainly what he actually saw. He dissected apes and lower animals, though much that is relevant to the human body is incorporated in his works.

Galen was born at Pergamum, the capital of Mysia in Asia Minor, which had once been a centre of art and learning and which still possessed at the time of Galen's birth the second greatest library in the

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ancient world and a temple of Aesculapius. His father was an architect or engineer, "amiable, just, worthy, and benevolent"; his mother "had a very bad temper, at times used to bite her serving-maids, and was forever shouting at my father and quarrelling with him — worse than Xanthippe with Socrates." "When I compared the excellence of my father's disposition with the disgraceful passions of my mother," Galen wrote, "I resolved to love and imitate the former qualities and to hate and avoid the latter."

The father provided a liberal education for his son, and by the age of seventeen or eighteen Galen was familiar with the Platonic, Aristotelian, Stoic, and Epicurean philosophies. About this time, in obedience to a dream of his father, he began the study of medicine in his native city. When he fell ill from overwork, he kept a careful record of his symptoms. After his father's death, he left Pergamum for Smyrna in order to study with Pelops the physician and Albinus the peripatetic. In search of more knowledge he roamed through Greece, Cilicia, Phoenicia, Palestine, Crete, Cyprus, and finally visited the famous medical school at Alexandria, which was still the best place to learn anatomy, although the dissection of the human body was no longer allowed.

On his return to Pergamum in 157-158, Galen was appointed physician and surgeon to the gladiators; he supervised their diet and treated their wounds. He also had a private practice, continued the study of philosophy, and wrote the first of his many treatises.

In the first years of the reign of Marcus Aurelius, Galen went to Rome, where he soon acquired fame as a physician and as a philosopher. He healed the celebrated Aristotelian, Eudemus, and other persons of distinction, and by his learning attracted to his lectures many of the most eminent people of Rome, including the consul Flavius Boethus. His success earned for him the titles of "Paradoxologus", the wonder-speaker, and "Paradoxopoeus", the wonder-worker.

Despite his name, meaning "gentle" or "peaceful", and his disapproval of his mother's temper, Galen was an incessant critic of the contemporary medical sects then flourishing in Rome. He opposed all fads and cults, the tyranny of theory and the contempt of theory, and every doctor who lost sight of what he held to be the Hippocratic teaching on the unity of the living organisms and the force of "what nature does." The enmities he incurred by polemical activity may have caused his sudden departure from Rome in 168 and retirement to Pergamum. He was soon recalled

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by imperial command. Marcus Aurelius, who was one of his patients, desired his attendance for the campaigns against the Germans. But Galen did not wish to go and in the end was allowed to remain at Rome as physician to Commodus, the young heir to the throne.

Little is known of Galen after this appointment. He certainly devoted much of his time to writing. He left five hundred treatises written in clear Attic Greek. One of them argued : "That the best Physician is also a Philosopher," and many of his own works dealt with philosophical problems. In his *De Libris propriis* he mentions one hundred and twenty-four philosophical treatises, which include commentaries on the *Categories* and *Analytics* of Aristotle, and on the *Timaeus* and *Philebus* of Plato. He also wrote five treatises on Ancient Comedy. Only fragments remain of his non-medical writings. Of the surviving medical works some eighty or ninety are believed to have been written by him; sixty-five are of doubtful authorship or certainly spurious. Fifteen of his commentaries on the Hippocratic works are extant.

Galen was apparently in Rome during the fire of 191, when his library burned, and he was still lecturing and practising during the reign of Pertinax. He may have spent his last years as physician-in-ordinary to the emperor. He died at the turn of the century.



VOLUME 11

EUCLID

The Thirteen Books of Euclid's Elements

ARCHIMEDES

On the Sphere and Cylinder

Measurement of a Circle · On Conoids and Spheroids

On Spirals · On the Equilibrium of Planes

The Sand-Reckoner · Quadrature of the Parabola

On Floating Bodies · Book of Lemmas

The Method Treating of Mechanical Problems

APOLLONIUS OF PERGA

On Conic Sections

EUCLID

NICOMACHUS OF GERASA

Introduction to Arithmetic

BIOGRAPHICAL NOTE

EUCLID, fl. c. 300 B.C.

THE chief work of the Greek mathematician Euclid is *The Elements*. It is safe to say that no other scientific textbook in the world has remained in use practically unchanged for more than 2,000 years. In Great Britain it was not until the middle of the nineteenth century that a so-called "away from Euclid" movement began, which led to the appearance of a multitude of rival textbooks giving the substance of Euclid's early books in so many different forms as to produce a state of chaos in geometrical teaching. But the textbook that shall really replace Euclid has not yet been written and probably never will be.

Euclid is said to have been younger than the first pupils of Plato but older than Archimedes, which would place the time of his flourishing about 300 B.C. He probably received his early mathematical education in Athens from the pupils of Plato, since most of the geometers and mathematicians on whom he depended were of that school. Proclus, the Neo-Platonist of the fifth century, asserts that Euclid was of the school of Plato and "intimate with that philosophy." His opinion, however, may have been based only on his view that the treatment of the five regular ("Platonic") solids in Book XIII is the "end of the whole *Elements*."

The only other fact concerning Euclid is that he taught and founded a school at Alexandria in the time of Ptolemy I, who reigned from 306 to 283 B.C. The evidence for the place comes from Pappus (fourth century A.D.), who notes that Apollonius "spent a very long time with the pupils of Euclid at Alexandria, and it was thus that he acquired such a scientific habit of thought." Proclus claims that it was Ptolemy I who asked Euclid if there was no shorter way to geometry than the *Elements* and received as answer: "There is no royal road to geometry." The other story about Euclid that has come down from antiquity concerns his answer to a pupil who at the end of his first lesson in geometry asked what he would get by learning such things, whereupon Euclid called his slave and said: "Give him a coin since he must needs make gain by what he learns."

ARCHIMEDES

Something of Euclid's character would seem to be disclosed in the remark of Pappus regarding Euclid's "scrupulous fairness and his exemplary kindness towards all who advance mathematical science to however small an extent." The context of the remark seems to indicate, however, that Pappus is not giving a traditional account of Euclid but offering an explanation of his own of Euclid's failure to go further than he did with his investigation of a certain problem in conics.

Euclid's great work, the thirteen books of the *Elements*, must have become a classic soon after publication. From the time of Archimedes they are constantly referred to and used as a basic textbook. It was recognized in antiquity that Euclid had drawn upon all his predecessors. According to Proclus, he "collected many of the theorems of Eudoxus, perfected many of those of Theatetus, and also brought to incontrovertible demonstration the things which were only loosely proved by his predecessors." The other extant works of Euclid include: the *Data*, for use in the solution of problems by geometrical analysis, *On Divisions* (of figures), the *Optics*, and the *Phenomena*, a treatise on the geometry of the sphere for use in astronomy. His lost *Elements of Music* may have provided the basis for the extant *Sectio Canonis* on the Pythagorean theory of music. Of lost geometrical works all except one belonged to higher geometry.

Since the later Greeks knew nothing about the life of Euclid, the mediaeval translators and editors were left to their own devices. He was usually called *Megarensis*, through confusion with the philosopher Eucleides of Megara, Plato's contemporary. The Arabs found that the name of Euclid, which they took to be compounded from *ucli* (key) and *dis* (measure) revealed the "key of geometry." They claimed that the Greek philosophers used to post upon the doors of their schools the well-known notice: "Let no one come to our school who has not learned the *Elements* of Euclid," thus transferring the inscription over Plato's Academy to all scholastic doors and substituting the *Elements* for geometry.

BIOGRAPHICAL NOTE ARCHIMEDES, c. 287-212 B.C.

THE range of the scientific labours of the Greek mathematician Archimedes can be seen from the list of works printed here. It need only be added that his greatest achievement was in geometry, where he

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so extended the method of exhaustion as originated by Eudoxus, and followed by Euclid, that it became in his hands, though purely geometrical in form, actually equivalent in several cases to *integration*, as expounded in the first chapters of our textbooks on the integral calculus.

Archimedes was a citizen of Syracuse, in Sicily, where he was born around the year 287 B.C. He was intimate with Hiero, King of Syracuse, and with his son, Gelo, and Plutarch says that he was related to them. In his *Sand-Reckoner*, which was dedicated to Gelo, Archimedes speaks of his father, Pheidias, as an astronomer who investigated the sizes and distance of the sun and moon.

As a young man Archimedes seems to have spent some time in Egypt, where he invented the water-screw as a means of drawing water out of the Nile for irrigating the fields, though it is also said that he invented this machine to drain bilge water from a huge ship built for King Hiero. He may have studied with the pupils of Euclid in Alexandria. It was probably there that he made the friendship of Conon of Samos and Eratosthenes. To Conon he was in the habit of communicating his discoveries before their publication, and it was for Eratosthenes that he wrote the *Method* and through him that he addressed the famous *Cattle-Problem* to the mathematicians of Alexandria—if the tradition is to be credited that associates Archimedes with this problem. After the death of Conon, Archimedes sent his discoveries to Conon's friend and pupil, Dositheus of Pelusium, to whom four of the extant treatises are dedicated.

His mechanical inventions won great fame for Archimedes and figure largely in the traditions about him. After discovering the solution of the problem *To move a given weight by a given force*, he boasted to King Hiero: "Give me a place to stand on and I can move the earth." Asked for a practical demonstration, he contrived a machine by which with the use of only one arm he drew out of the dock a large ship, laden with passengers and goods, which the combined strength of the Syracusans could scarcely move. From that day Hiero ordered that "Archimedes was to be believed in everything he might say." At the king's request Archimedes then made for him catapults, battering rams, cranes, and many other engines of war, which were later used with such success in the defence of Syracuse against the Romans that they were unable to take the city except by treachery. There is also a story in Lucian that Archimedes set fire to the Roman ships by an arrangement of burning glasses.

Although Archimedes acquired by his mechanical inventions "the

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renown of more than human sagacity," according to Plutarch, he "would not deign to leave behind him any commentary or writing on such subjects" since he considered that "sordid and ignoble." He did, however, write a description, now lost, of an apparatus composed of concentric glass spheres moved by water power, representing the Eudoxian system of the world. This astronomical machine, which survived to be seen and described by Cicero in his *Republic*, was sufficiently accurate to show the eclipses of the sun and the moon. Except for this lost work *On Spheremaking*, Archimedes wrote only on strictly mathematical subjects. He took all the mathematical sciences for his province: arithmetic, geometry, astronomy, mechanics, and hydrostatics. Unlike Euclid and Apollonius he wrote no textbooks. Of his writings, although some have been lost the most important have survived.

The absorption of Archimedes in his mathematical investigations was so great that he forgot his food and neglected his person, and when carried by force to the bath, Plutarch records, "he used to trace geometrical figures in the ashes of the fire and diagrams in the oil on his body." Asked by Hiero to discover whether a goldsmith had alloyed with silver the gold of his crown, Archimedes found the answer while bathing by considering the water displaced by his body, whereupon he is reported to have run home in his excitement without his clothes, shouting "Eureka" (I have found it).

Archimedes' preoccupation with mathematics is even said to have been the cause of his death. In the general massacre which followed the capture of Syracuse by Marcellus in 212 B.C., Archimedes was so intent upon a mathematical diagram that he took no notice, and when ordered by a soldier to attend the victorious general, he refused until he should have solved his problem, whereupon he was slain by the enraged soldier. No blame attaches to the Roman general, Marcellus, since he had given orders to spare the house and person of the mathematician, and in the midst of his triumph he lamented the death of Archimedes, provided him with an honourable burial, and befriended his surviving relatives. In accordance with the expressed desire of Archimedes, his family and friends inscribed on his tomb the figure of his favourite theorem, on the sphere and the circumscribed cylinder, and the ratio of the containing solid to the contained. When Cicero was in Sicily as quaestor in 75 B.C. he discovered the neglected and forgotten tomb of Archimedes near the Agrigentine Gate and piously restored it.

APOLLONIUS

BIOGRAPHICAL NOTE

APOLLONIUS, *c.* 262–*c.* 200 B.C.

THE treatise on *Conics* of the Greek mathematician Apollonius of Perga gained him the title of the Great Geometer, and it is that by which his fame has been transmitted to modern times.

Apollonius was born at Perga in Pamphylia, Asia Minor, some twenty-five years after the birth of Archimedes, which would place his birth around the year 262 B.C. He seems to have gone when quite young to Alexandria, where, according to Pappus, the fourth-century mathematician, he was attracted by the reputation of the astronomer, Aristarchus of Samos. Apollonius studied under the successors of Euclid at Alexandria and continued to reside there during the reigns of Ptolemy Euergetes and of Ptolemy Philopator (247–203 B.C.). He was also for some time in Pergamum, where he made the acquaintance of the mathematician, Eudemus, to whom he dedicated the first three books of his *Conics*, and of King Attalus I (269–197 B.C.), to whom the remaining five books of the *Conics* were dedicated.

Apollonius appears to have been associated with the leading mathematicians of his day. In the dedicatory epistles of the *Conics* he records that he met Philonides while on a trip to Ephesus and that he undertook the composition of this work in the first instance for Naucrates, who was staying in Alexandria. Speaking in the same place for the preceding writers on conics, Apollonius points out their limitations and inadequacies in such a way that some of his readers, such as Pappus, have considered him boastful and envious, but it would seem that Apollonius is only trying to explain the appearance of a new textbook on the elements of conics (Books I–IV) and the publication of his own original and more advanced investigations (Books V–VIII).

The *Conics* were at once recognized as the authoritative treatise on the subject. They are regularly cited by later writers. Pappus added a group of lemmas, and Eutocius (*fl.* A.D. 500) edited and commented on the first four books. These books are extant in the original Greek; the fifth, sixth, and seventh books exist in an Arabic translation; the eighth book is known only indirectly.

Although the titles and a general indication of the contents of other works by Apollonius are given by later writers, especially by Pappus, only one, the *Cutting of a Ratio*, has survived, and that, like parts of

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the *Conics*, only in an Arabic version. All of the original work, with the exception of the second half of the *Conics*, has perished. Books not extant but known through Pappus are: *Cutting of an Area*, *Determinate Section*, *Tangencies*, *Inclinations*, and *Plane Loci*. He wrote on irrationals and, like Archimedes, devised a system of multiplication for counting large numbers and calculated an approximate value for the ratio of the circumference of a circle to the diameter. The ancient writers also record that Apollonius wrote *On the Burning-Glass*, in which he probably treated the properties of the parabola, a work comparing the dodecahedron and the icosahedron inscribed in the same sphere, and a book, perhaps on the general principles of mathematics, in which he criticized and suggested improvements for Euclid's *Elements*. Lastly, in astronomy he is credited by Ptolemy with an explanation of the motion of the planets by means of epicycles and eccentric circles. He seems to have been especially interested in the theory of the moon, and the Alexandrians are said to have called him Epsilon from the resemblance of that Greek letter to the lunar crescent.

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NICOMACHUS, fl. c. A.D. 100

THE *Introduction to Arithmetic* of the mathematician Nicomachus of Gerasa is important because it sets out the elementary theory and properties of numbers. Numbers are no longer denoted by lines as in Euclid, but are written in the ordinary notation; hence general principles can be stated with reference only to particular numbers taken as illustrations.

Nicomachus of Gerasa flourished around the end of the first century of our era. In one of his surviving books, the *Introduction to Harmonics*, he mentions a certain Thrasyllus, presumably Thrasyllus of Mendes, a writer on music, who lived in the reign of Tiberius. Another book by Nicomachus, the *Introduction to Arithmetic*, was translated into Latin by Apuleius under the Antonines. This places the life of Nicomachus somewhere between the middle of the first century and the middle of the second century. Perhaps the fact that Ptolemy, whose recorded astronomical observations were made between A.D. 127 and 151, is not mentioned in the *Introduction to Harmonics* makes it probable that he was not yet famous at the time Nicomachus was writing.

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The manuscripts of Nicomachus' books and the scholia call him "of Gerasa." The best known city of that name was in Palestine and was primarily Greek. However, it can hardly be supposed that Nicomachus received all of his philosophical and mathematical education at Gerasa. He probably studied at Alexandria, at this time the centre of mathematical studies and of Neo-Pythagoreanism. Jamblichus says of Nicomachus, "The man is great in mathematics, and has as instructors those that were most skilled in the subject."

Nothing is known of the personal life of Nicomachus except what is said or implied in the dedication of the *Introduction to Harmonics* to an unknown lady: "But I must spur on all my zeal, most noble and august lady, since it is you that bid me . . . And, if the gods are willing, just as soon as I shall have leisure and a rest from my journeyings, I will compile for you a better and more detailed *Introduction* dealing with this very subject . . . and, so that you may the more easily follow the argument, I will take my beginning, say, from the same point as that at which I began your instruction when I was expounding the subject to you."

Nicomachus appears to have been an important member of the Neo-Pythagorean group, though his extant writings would seem to indicate that he was a popularizer and a compiler of manuals and not the head of a school. Besides the *Introduction to Arithmetic* and the *Introduction to Harmonics*, he also wrote a book on the mystical doctrine of number called *Theologoumena Arithmeticae*, which is one of the best sources on Neo-Pythagoreanism; extracts and paraphrases of this work survive in a later anonymous work of the same name and in the *Bibliotheca*, a collection of extracts from ancient works made in the ninth century by Photius, patriarch of Constantinople. Nicomachus also wrote an *Introduction to Geometry* and a *Life of Pythagoras*, which have not survived, and a larger work on music, possibly that promised in the dedication to the *Introduction to Harmonics*, of which we have only fragments. He may have written a book on the interpretation of Plato, though the evidence for it is slight, and also an *Introduction to Astronomy*, thereby completing the quadrivial series.

The success of the *Introduction to Arithmetic* must have been immediate. It was used in a textbook throughout later antiquity and, in the Latin paraphrase of Boethius, throughout the Middle Ages. It has a host of commentators. In the *Philopatris*, attributed to Lucian, a

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character says: "You reckon like Nicomachus." This remark lends itself to more than one interpretation, but in any case it is evidence of his fame. Nicomachus also appears to have been considered one of the "golden chain", or succession, of true philosophers; for Proclus, the fifth-century Neo-Platonist, who belonged to that "chain", claimed, on the basis of a dream, that he had within him the soul of Nicomachus.



VOLUME 12

LUCRETIUS

On the Nature of Things

EPICTETUS

The Discourses

MARCUS AURELIUS

The Meditations

BIOGRAPHICAL NOTE

LUCRETIUS, c. 98-c. 55 B.C.

TITUS LUCRETIUS CARUS, generally known as Lucretius, was one of the greatest of Roman poets. Apart from its philosophic and poetical interest, his great didactic epic *De Rerum Natura* (On the Nature of Things) presents several striking features, one of the most notable being the general archaic nature of the language. Indeed the truest analogue to Lucretius' poems would probably be Milton's *Paradise Lost*, which is similarly characterized by an archaic poetic diction. Milton is in general more alike perhaps in genius to Lucretius than any other poet that could be named. If the sheer poetic gift of Milton is the higher, as no doubt it is, yet he has a singular affinity with Lucretius in his combination of moral earnestness with a lively sense of the beauty of external nature, animate and inanimate. And in Lucretius, as in *Paradise Lost*, the sublimest passages of pure poetry are strictly germane to the argument of which they are the crown and complement. In his greatest passages

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Lucretius reaches heights hardly attained by any other Roman poet. If we seek further to enquire what is the secret of his power, we would find it not in any gift of memorable phrase — although he has memorable phrases enough — but in the vivid imagination and consequent power of sympathy.

Titus Lucretius Carus was born somewhere between 99 and 95 B.C., probably at Rome. The Lucretian *gens* to which he belonged was one of the oldest of the great Roman houses, and it is likely that he was a member of either a senatorial or an equestrian family. In his poem he speaks to the aristocratic Gaius Memmius, to whom he dedicated his work, as to an equal.

Nothing is known of the poet's education except what might be inferred from the presence in Rome during his youth of eminent Greek teachers of the Epicurean sect who lived on terms of intimacy with members of the governing class. Lucretius' reading is evident from his poem. In addition to the works of his master, Epicurus, he shows knowledge of the philosophical poem of Empedocles and at least an acquaintance with the works of Democritus, Anaxagoras, Heraclitus, Plato, and the Stoics. Of the other Greek prose writers he knew Thucydides and Hippocrates. Among the poets he expresses highest admiration for Homer, frequently reproduces Euripides, and shows a close study of Ennius.

The only account of Lucretius' life is a short note by St. Jerome written more than four centuries after the poet's death. St. Jerome in his *Chronicle* under the year 94 B.C. has the entry: "Titus Lucretius the poet is born. He was rendered insane by a love-philtre and, after writing during intervals of lucidity, some books, which Cicero emended, he died by his own hand in the forty-third year of his life."

The account of St. Jerome, though perhaps based on a lost work of Suetonius, has not been traced to any earlier source and has been found incapable of either proof or disproof. Historians have pointed out that love potions, which occasionally caused madness, were sufficiently common at the time of Lucretius to necessitate a legal penalty against their use. Some critics have argued that the supposed mental ailment is compatible with the impression the poem makes and have pointed to the evidence of its not having received a final revision. Other critics have inferred that the whole story is a fiction invented by the enemies of Epicureanism to discredit the work of its greatest expositor.

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Cicero's relation to the poem as emender or editor rests on no other authority than that of St. Jerome. A letter of Cicero's to his brother does reveal that the poem, probably published posthumously, was being read in 54 B.C.

Donatus, in his *Life of Virgil*, states that Lucretius died on the same day in 55 B.C. that Virgil assumed the *toga virilis*.

BIOGRAPHICAL NOTE

EPICTETUS, c. A.D. 60–c. 138

THE philosophy of the Greek teacher Epictetus, as contained in the four books of his *Discourses*, exhibits a high idealistic type of morality. The all important problem is how life is to be carried out well. True education lies in our recognizing that there is only one thing which is fully our own—that is, our will, or purpose. God, acting as a good king and father, has given us a will which cannot be compelled or thwarted by anything external. We are not responsible for the ideas which present themselves to our consciousness, but we are absolutely responsible for the way in which we use them. "Two maxims," he says, "we must ever bear in mind—that apart from the will there is nothing good or bad, and that we must not try to anticipate or direct events, but merely to accept them with intelligence." We must in short believe that there is a God whose thought directs the universe.

Epictetus was born sometime in the reign of Nero and lived through the greater part, if not all, of the reign of Hadrian. He was a native of Phrygia, and his language was Greek. His original name is unknown. The name Epictetus ("acquired") refers to his servitude; as a boy he was a slave in Rome of Epaphroditus, a freedman and courtier of Nero.

While still a slave, Epictetus attended the lectures of the Stoic philosopher, Musonius Rufus, who, he records, "spoke in such fashion that each of us as he sat there thought he was himself accused." The slave apparently came to appreciate Musonius' teaching that "the gifted soul is all the more inclined towards its natural object, the more you try to beat it off." According to Celsus, as quoted by Origen, Epictetus was permanently lamed by his master. "When his master was twisting his leg," it is said, "Epictetus only smiled and noted calmly, 'You will break it', and when it was broken, 'I told you so'."

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Sometime before the year 89, Epictetus obtained his freedom and became a teacher of philosophy in Rome. But along with other philosophers suspected of republicanism he was expelled from Rome and Italy by Domitian around the year 90. Epictetus withdrew to northern Greece, to the city of Nicopolis, which had been founded by Augustine to celebrate the victory of Actium. There he spent the rest of his long life, expounding Stoic doctrine. He lived in poverty, having only, as he said, earth, sky and a cloak.

Epictetus wrote nothing, but he acquired renown as a teacher. When he was speaking, "his hearers," we learn from one of them, "were forced to feel just what he would have them feel." Their reverence for him is attested by Lucian's story that after his death an admirer paid three thousand drachmas for an earthenware lamp he had used.

Among his pupils, who came from all parts of the Empire, was a certain Flavius Arrian, later consul under Hadrian and the historian of Alexander. Arrian took careful notes of the lectures and teaching of Epictetus and published them in the eight books of the *Discourses*, of which the first four have survived. Arrian says in his preface that the *Discourses* are "in the very language Epictetus used, so far as possible," and preserve "the directness of his speech." Arrian also compiled out of his lecture notes a compendium of the main tenets of Epictetus, the *Encheiridion*, or *Manual*.

BIOGRAPHICAL NOTE

MARCUS AURELIUS, A.D. 121-180

THE book which contains the philosophy of the Roman emperor Marcus Aurelius is known as the *Reflections*, or *Meditations*. Throughout his life he was a practising Stoic, although in his hands Stoicism is a practical rule of life, not a philosophy of Quietism. In the *Meditations* are no speculations on the absolute nature of the deity, and no clear expression of opinion as to a future state. He is, above all things, a practical moralist. The goal in life to be aimed at, according to him, is not happiness, but tranquillity, or equanimity.

What give the sentences of Marcus Aurelius their enduring value and fascination, and makes them superior to the utterances of Epictetus or Seneca, is that they are the gospel of his life. His precepts are simply

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the records of his practice. To the saintliness of the cloister he added the wisdom of the man of the world.

Marcus Annius Verus, known to history as the Emperor Marcus Aurelius, was born at Rome in the year 121. His father's family, like that of Trajan, was Spanish, but had been resident in Rome for many years and had received patrician rank from Vespasian. He lost his father in infancy and was brought up by his mother and his paternal grandfather, who not only gave him the example of their own virtue and piety, but secured for him the best of teachers in Greek and Latin literature, rhetoric, philosophy, law, and even painting. In the first book of his *Meditations* Marcus Aurelius makes grateful and precise acknowledgment of what he learned from the members of his family and from his teachers. "To the gods I am indebted for having good grandfathers, good parents, a good sister, good teachers, good associates, good kinsmen and friends, nearly everything good."

Among the teachers of Marcus Aurelius were Sextus of Chaeronea, a grandson of Plutarch, Junius Rusticus, to whom he owed his acquaintance with the discourses of Epictetus, and the rhetorician Marcus Cornelius Fronto, with whom between the years 143 and 161 he carried on a correspondence. From Diognetus the Stoic he learned what it meant "to have become intimate with philosophy . . . and to have desired a plank bed and skin and whatever else of the kind belongs to the Grecian discipline." For a time he assumed the dress of the Stoic sect and lived so abstemious and laborious a life that he injured his health.

As a child Marcus Aurelius had gained the favour of Hadrian by the frankness of his character. Hadrian called him *Verissimus* (most true or sincere) from his family name Verus, gave him equestrian honours at the age of six, and made him a priest of the Salian brotherhood at the age of eight. After the death of Aelius Caesar, Hadrian adopted as his heir Marcus Antoninus Pius, the uncle of Marcus, on condition that he in turn adopt Marcus Aurelius and Lucius Ceionius Commodus, son of Aelius Caesar.

Hadrian died in 138. In 139 the title of Caesar was conferred upon Marcus Aurelius; in 140 he was consul and from 147, when he was invested with the tribunician power, to the death of Antoninus Pius in 161, Marcus Aurelius shared the burdens, if not the honours, of imperial rule. At the age of fifteen he had been betrothed to a daughter of Aelius Caesar, but after his adoption this engagement was broken and he married Faustina, the daughter of Antoninus Pius.

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When the Emperor Antoninus was dying he had the Statue of Victory carried into the rooms of Marcus Aurelius as the material sign of the transfer of imperial power, and he recommended Marcus Aurelius to the senate as his successor without any mention of Commodus. Marcus Aurelius, however, at once conferred upon his adoptive brother the tribunician and proconsular powers and the titles of Caesar and Augustus. For the first time Rome had two emperors. But Lucius Verus, as Commodus was henceforth known, was more interested in his pleasures than in his imperial duties. He deferred to Marcus Aurelius and was content to play the second role until his death in 169.

The reign of Antoninus Pius had been a time of peace and prosperity; that of Marcus Aurelius was filled with every kind of calamity. The wisdom and firmness of the emperor could not prevent the beginning of decline. In the first year of his reign there were floods and famine in Italy, earthquakes in Asia, eruptions of barbarians across the northern frontier, riots and seditions of the legionaries in Britain. But there were even more serious preoccupations for Marcus Aurelius. Hadrian and Antoninus had kept the kingdom of Armenia under Roman influence, but as soon as Antoninus died the Parthians drove out the Armenian king, friendly to Rome, and put in a king of their own choice. The province of Syria was at once attacked. At the same time the Goths, coming down from the Baltic, were driving other German tribes before them, some of whom overflowed into the Roman provinces on the right bank of the Danube. Marcus Aurelius spent most of his reign fighting the Parthians, in the East and the Quadi, the Marcomanni, and other barbarian nations in the north. The last ten years of his life he was almost continuously absent from Rome. The *Meditations*, "Thoughts addressed to himself" and not, presumably, intended for publication, were written down, in part at least, during the time Marcus Aurelius was campaigning against the Germans.

In 175, after a series of victories, Marcus Aurelius left the Danube to restore order in Syria, where the brilliant general, Avidius Cassius, had revolted and declared himself emperor. Before the arrival of Marcus Aurelius, Cassius was assassinated by one of his officers, thereby depriving the emperor "of the pleasure of pardoning him." Marcus Aurelius showed remarkable clemency toward the family and friends of Cassius and is said to have burned his correspondence without reading it.

While he was returning from the pacification of the East, Marcus

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Aurelius lost his wife, who died in a village of Asia Minor. Faustina's name has become a symbol for infidelity and debauchery, though all that is known of her is that she bore eleven children, that her husband trusted her and mourned her death. On his way home Marcus Aurelius visited Athens where he endowed chairs of philosophy and rhetoric and was initiated into the Eleusinian mysteries. In 176 he entered Rome with his son Commodus, and celebrated a triumph for his German victories, after which he took the title of Germanicus Maximus.

The role played by Marcus Aurelius in the persecution of the Christians in 177 has been the subject of much controversy. He was undoubtedly unsympathetic to Christianity as he knew it. His attitude as emperor was perhaps the same as that of Trajan, that the Christians should not be "pursued", but if, when asked to sacrifice to the gods, they refused, they should be punished on the ground that they were opposing the order and authority of the state.

The German war soon broke out again and Marcus Aurelius had to return to the Danube, where he died, probably from natural causes, on the 17th of March, 180, toward the close of his fifty-ninth year. His ensuing deification met with widespread response, and for a long time his statue held a prominent place among the penates of the Romans.



VOLUME 13

VIRGIL

The Eclogues · *The Georgics* · *The Aeneid*

BIOGRAPHICAL NOTE

VIRGIL, 70-19 B.C.

VIRGIL'S fame as a poet rests on the three acknowledged works of his early and mature manhood—the pastoral poems or *Eclogues*, the *Georgics* and the *Aeneid*. As a vehicle for the expression of feeling, the *Eclogues*, in which the poet's expressed aim is to pay tribute to the Italian countryside, hold an undefined place between the objectivity of the Greek idyll and the subjectivity of the Latin elegy. The supreme

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charm of their diction and rhythm is universally recognized. The *Georgics* is not only the most perfect, but the most native of all the works of the ancient Italian genius. Even where he borrows from Greek originals, Virgil makes the Greek mind tributary to his national design. The *Georgics*, the poem of the land, is as essentially Italian as the *Odyssey*, the poem of the sea, is essentially Greek.

The work which yet remained for Virgil to accomplish was the addition of a Great Roman epic to literature. The problem before him was to compose a work of art on a large scale, which should represent a great action of the heroic age, and should at the same time embody the most vital ideas and sentiments of the hour — which in substance, should glorify Rome and the present ruler of Rome while in form it should follow closely the great models of epic poetry. A new type of epic poetry had to be created. It was desirable to select a single heroic action which should belong to the legendary events celebrated in the Homeric poems and which could be associated with Rome. The only subject which in any way satisfied these conditions was that of the wanderings of Aeneas and of his final settlement in Latium. The story, though not of Roman origin, had long been familiar to the Romans. The subject enabled Virgil to tell again of the fall of Troy, and to weave a tale of sea-adventure similar to that of the wanderings of Odysseus.

The idea which underlies the whole action of the *Aeneid* is that of the great part played by Rome in the history of the world, that part being from of old determined by divine decree, and carried out through the virtue of her sons. Virgil's true and yet idealizing interpretation of the important idea of Rome is the basis of the greatness of the *Aeneid* as a representative poem. It is on this representative character and on the excellence of its artistic execution that the claim of the *Aeneid* to rank as one of the great poems of the world mainly rests.

Publius Vergilius Maro was born on October 15, 70 B.C., on a farm on the banks of the Mincio, near Mantua in the region north of the Po. Although the province did not obtain the rights of Roman citizenship until 51 B.C. Virgil's father was of old Latin stock and already a citizen. The owner of a farm and pottery-works, he had acquired sufficient wealth to provide Virgil with the best available education.

Somewhere between the ages of ten and twelve he was sent to school at Cremona, which was then serving as winter headquarters for Caesar's armies; and Virgil was probably there when the *Gallic Wars* first

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appeared. After he had received the *toga virilis*, he continued his studies briefly at Milan before proceeding to Rome for the study of rhetoric, the traditional preparation for political life. He entered the school of Epiidius, who also had as pupils the young Octavian and Mark Antony. But Virgil did not find rhetoric congenial, and, after pleading one case before the courts, he abandoned the forensic life for philosophy.

Virgil left Rome and became associated with "the Garden", a school of philosophy at Naples directed by Siron the Epicurean. He remained under his tutelage until the philosopher's death and is said to have inherited his villa. Poetry as well as philosophy was discussed at "the Garden", and many of the rising generation of poets gathered there to read Catullus and Lucretius and to write verses modelled upon the Alexandrians. A number of Virgil's minor poems, included in the *Appendix Vergiliana*, are thought to have been written during his student days.

There is little evidence of Virgil's activities during the tumultuous years of the Civil War. His health was never robust, and, if he was conscripted into Caesar's army, it was for a very brief period. In 42 B.C., the year of the battle of Philippi, it is known that he was "cultivating his woodland Muse." The year following, his father's land and his home were involved in the confiscations made for the benefit of the soldiers of the triumvirs. He is thought to have used his influence with powerful friends to obtain their restitution, although it is not known whether he succeeded. The event figures prominently in Virgil's first published work, the *Eclogues*.

These pastoral poems, which had been commenced at his home in the country, were completed and published in Rome when he was about thirty. They immediately established him as the most celebrated poet of the day, and Tacitus records that on one occasion when Virgil was present at a theatre where the *Eclogues* were recited, the audience arose and acclaimed him as they did the Emperor. He enjoyed the friendship and protection of powerful patrons and in addition to an income was given a house on the Esquiline near the garden of Maecenas. Here he made the acquaintance of Horace, Varius, the epic poet, and other men of letters and became the head of the group, which, under the patronage of Octavian and Maecenas, functioned as a kind of semi-official committee on literature for promoting the peace and well-being of the Empire.

The life of the city did not appeal to Virgil, and he soon withdrew to

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the seclusion of Campania, where he continued his writing. He may have begun the *Georgics* at the suggestion of Maccenas, who in his official capacity was interested in reviving agriculture and commending to the soldiers newly settled on the land the traditional virtues associated with the farm. Virgil worked for seven years on the 2,188 lines that compose the *Georgics*. He completed them in 30 B.C. and in the following year read the poem to Augustus on his return from Asia. The remaining years of his life were spent on the composition of the *Aeneid*.

In the *Eclogues* there is already a hint that Virgil was thinking of writing an epic: "When I tried to make a poem of warring kings, Apollo twitched my ear . . ." Even earlier, if the poems in the *Appendix Vergiliana* are his work, he had handled epic material and pondered the pre-eminence of the Julian line. And in the *Georgics* he tells of the temple he will build with Caesar "in the middle", and how he will sing of Caesar's battles and bring him lasting fame. By 25 B.C. he was at work upon his epic poem, for in that year Augustus, although involved with the campaign in Spain, wrote to Virgil requesting to see selections from it. Virgil replied: "Regarding my *Aeneas*, if I had anything worth your hearing, I would gladly send it, but the thing is so inchoate that it almost seems to me that I must have been out of my mind to have started such a work." The selections were provided two or three years later when Virgil read from the *Aeneid* to Augustus and Octavia; he was famed for his beautiful reading voice, and Octavia fainted when he recited the passage from the Sixth Book relating the death of her son, Marcellus.

In 19 B.C. the *Aeneid* was finished although not corrected, and Virgil set out for Athens, intending to pass three years in Greece and Asia, to visit the places described in the poem, and to perfect his work. At Athens he met Augustus and was persuaded to accompany him back to Italy. While visiting Megara under a burning sun, he was seized with illness, which grew rapidly worse as he continued his voyage. Realizing that death was imminent, he asked for his manuscripts which he wished to destroy. The poem was saved, it is said, only by the intervention and command of Augustus; it was published within a year of his death by Varius and Tucca, the two friends he had designated as his literary executors.

On September 21, a few days after landing at Brindisi, in Calabria, Virgil died, being then in his fifty-first year. He was buried at his own

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request near his villa in Naples, beneath the epitaph: *Mantua me genuit; Calabria rapuere; tenet nunc Parthenope; cecini pascua, rura, duces* — “Mantua gave me birth, Calabria took me away, and now Naples holds me; I sang of pastures, farms, leaders.”



VOLUME 14

PLUTARCH

The Lives of the Noble Grecians and Romans

<i>Theseus</i>	<i>Marcus Cato</i>
<i>Romulus</i>	<i>Aristides and Marcus Cato</i>
<i>Romulus and Theseus Compared</i>	<i>Compared</i>
<i>Lycurgus</i>	<i>Philopoemen</i>
<i>Numa Pompilius</i>	<i>Flaminius</i>
<i>Lycurgus and Numa Compared</i>	<i>Flaminius and Philopoemen</i>
<i>Solon</i>	<i>Compared</i>
<i>Poplicola</i>	<i>Pyrrhus</i>
<i>Poplicola and Solon Compared</i>	<i>Caius Marius</i>
<i>Themistocles</i>	<i>Lysander</i>
<i>Camillus</i>	<i>Sulla</i>
<i>Pericles</i>	<i>Lysander and Sulla Compared</i>
<i>Fabius</i>	<i>Cimon</i>
<i>Fabius and Pericles Compared</i>	<i>Lucullus</i>
<i>Alcibiades</i>	<i>Cimon and Lucullus Compared</i>
<i>Coriolanus</i>	<i>Nicias</i>
<i>Alcibiades and Coriolanus Compared</i>	<i>Crassus</i>
<i>Timoleon</i>	<i>Crassus and Nicias Compared</i>
<i>Aemilius Paulus</i>	<i>Sertorius</i>
<i>Aemilius Paulus and Timoleon Compared</i>	<i>Eumenes</i>
<i>Pelopidas</i>	<i>Eumenes and Sertorius Compared</i>
<i>Marcellus</i>	<i>pared</i>
	<i>Agésilau</i>
	<i>Pompey</i>
	<i>Agésilau and Pompey Compared</i>
	<i>pared</i>

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<i>Marcellus and Pelopidas Compared</i>	<i>Alexander</i>
<i>Aristides</i>	<i>Caesar</i>
<i>Cato the Younger</i>	<i>Phocion</i>
<i>Agis</i>	<i>Demetrius</i>
<i>Cleomenes</i>	<i>Antony</i>
<i>Tiberius Gracchus</i>	<i>Antony and Demetrius Compared</i>
<i>Caius Gracchus</i>	<i>Dion</i>
<i>Caius and Tiberius Gracchus and Agis and Cleomenes Compared</i>	<i>Marcus Brutus</i>
<i>Demosthenes</i>	<i>Brutus and Dion Compared</i>
<i>Cicero</i>	<i>Aratus</i>
<i>Demosthenes and Cicero Compared</i>	<i>Artaxerxes</i>
	<i>Galba</i>
	<i>Otho</i>

BIOGRAPHICAL NOTE PLUTARCH, c. 46 c. 120

THE celebrity of Plutarch, or at least his popularity, is mainly founded on his *Parallel Lives*. His design in writing the *Parallel Lives* — for this is the title which he gives them in dedicating *Theseus* and *Romulus* to Sosius Senecio — appears to have been the publication, in successive books, of authentic biographies in pairs, taking together a Greek and a Roman. Nearly all the lives are in pairs; but the series concluded with single biographies of Artaxerxes, Aratus (of Sicyon), Galba and Otho. In the life of Aratus, not Sosius Senecius, but one Polycrates, is addressed.

The *Lives* are works of great learning and research, long lists of authorities are given, and they must for this reason, as well as from their considerable length, have taken many years to complete. His vast acquaintance with the literature of his time is everywhere apparent.

Plutarch lived in the time of the emperors Nerva, Trajan, and Hadrian, a time usually thought of as the beginning of the best age of the Roman imperial period and as the last great era of Greek and Roman literature. He is not quoted nor even mentioned by his celebrated contemporaries, Juvenal, Quintilian, Martial, Tacitus, and the younger Pliny. He never wrote directly of himself, and the sources for his life are the many scattered passages where some reminiscence appears incidentally.

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Later, when his fame became widespread, legends grew up to supplement the little extant knowledge. The legends tended to confirm the impression made by his works that he was to an exceptional degree representative of his time. Plutarch was pictured as tutor to Trajan, to whom he was supposed to have dedicated a treatise on the good of a prince after the manner of Plato's epistle to Dion. He was supposed to have lived for a long period in Rome, where he was held in great esteem, honoured with consular rank, and later appointed governor of Greece by the Emperor, who had been his pupil.

These legendary titles and distinctions apparently have no basis in fact. The truth seems to be that the man who wrote of the fall of Athens, of the growth of Roman dominion over the East, of the overthrow of the Roman republic, was a Theban provincial, fortunate in his ancestors and in his education, contented with his family and his friends, and loyal in a spirited way to his town. He did go to Rome on several occasions. His visits were short. He himself records that he had "no leisure while there to study and exercise the Latin tongue, as well for the business I had then to do, as also to satisfy them that came to learn philosophy of me." He adds, however, that he had familiar conversation with many of the highest men in Rome; his lack of Latin would not prevent that in the "Greek city", as Juvenal indignantly called it. From this "great place, containing plenty of all sorts of books" he returned to "his poor little town and remained there willingly, being loath to make it less by the withdrawal of even one."

The place of his birth was Chaeronea in Boeotia. It was a town not incapable of stirring the imagination by the contrast of its memories with its present obscurity. Plutarch relates that long ago Epaminondas had called it "the playfield of Mars." Not as long ago as that, Macedon and the allied armies of Thebes and Athens had fought on its plains a battle "fatal to Greek liberty." Chaeronea appears in Plutarch's life of Antony, where he recalls the story he had from his great-grandfather Nicarchus. The citizens of the town, Nicarchus among them, had been forced by Antony's supply officers to carry corn like beasts of burden. They were starting out in file on their second trip to the sea when news came of Antony's defeat at Actium. "Antony's purveyors and soldiers fled upon the news, and the citizens of Chaeronea divided the corn among themselves."

Among the sons of Nicarchus was Lamprias, Plutarch's grandfather.

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Plutarch remembers him with joy as a man whose wit was affected by wine as incense by fire. Lamprias too figures in the life of Antony as able to pass on, from a friend who had lived in Alexandria, tales of the luxurious revels of Antony and Cleopatra. Plutarch's father is mentioned by him a number of times, once with vivid gratitude for the way in which he taught his son to share honour and avoid envy.

As a young man, Plutarch studied at Athens with Ammonius, reputedly an Egyptian who taught at Alexandria before settling in Athens. Plutarch boarded in his teacher's house and records that one of his fellow-students was a descendent of Themistocles.

It is not known when he wrote the series of treatises collected under the title *Moralia*. Many of them, he tells us, were expansions of his notes for lectures at Rome. It was after his return to Chaeronea that he compiled his *Symposiacs*, or *Table Talk*, wherein a variety of personages are depicted in discussion of a wide variety of lively, often trivial, problems. According to most opinion, he began work on the *Parallel Lives* towards the end of his life. He states that his original intention had been to instruct others, but in the course of writing he discovered that more and more it was he himself who was deriving profit and stimulation from "lodging these men one after the other in his house."

In his native Chaeronea, Plutarch seems to have held many municipal offices. When he was ridiculed on one occasion for his patience in discharging trivial duties, he said: "You remember what Antisthenes said, when someone was surprised that he carried some pickled fish home from the market: 'But it is for myself.' When you reproach me for watching tiles measured out and stone and mortar brought up, I give you the converse answer: 'It is not for myself, but for the city.'" He filled the position of Archon a number of times and served as a priest of Apollo at Delphi. His term in this last office seems to have lasted to the end of his life, for in one of his *Symposiacs* he argues on the question *Whether an Old Man should continue in Public Life* by submitting that no one would say to him: "You have served for many pythiads, you have taken part enough in the sacrifices, processions, and dances, and it is high time, Plutarch, now you are an old man, to lay aside your garland and retire as superannuated from the oracle."

There is much testimony in his writing of the tenderness and warmth in the smaller circle of his family. Plutarch wrote affectionate descriptions of his little girl, Timoxena, and a famous letter of consolation to his wife

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at the time of this child's death. In another letter to his wife he writes that he finds "scarcely an erasure, as in a book well-written" in the happiness of his long life. Legend reports that the people of Rome requested after his death that a statue be erected to honour his virtue



VOLUME 15

P. CORNELIUS TACITUS

The Annals · The Histories

BIOGRAPHICAL NOTE

TACITUS, c. 55–c. 117

THE *Annals* of Tacitus record the histories of the emperors of the *Julian* line, from Tiberius to Nero, comprising thus a period from A.D. 14 to 68. The *Histories*, as originally composed in 12 books, brought the history of the Roman Empire from Galba in 69 down to the close of Domitian's reign in 97. The first four books and a small fragment of the fifth, giving us a very minute account of the eventful year of revolution, 69, and the brief reigns of Galba, Otho and Vitellius are all that remain to us. Tacitus has given us a startling, and on the whole doubtless a true, picture of the empire in the last century. He is convinced of the degeneracy of the age, although it be relieved by the existence of trading noble virtues; and he connects this degeneracy more or less directly with the imperial régime.

Whatever judgment may be passed on Tacitus' style, it is certainly that of a man of genius, and cannot fail to make a deep impression on the careful reader. Tacitean brevity has become proverbial, and with this are closely allied an occasional obscurity and a rhetorical affection which even his warmest admirers must admit.

The little that is known about the life of Tacitus is provided by allusions in his own writings and the letters addressed to him by his intimate friend, Pliny the Younger. When Tacitus began his *Histories*, somewhere about his forty-fifth year, he related his life to the empire that was to be the burden of his narrative: "I myself knew nothing of Galba, of Otho, or of Vitellius, either from benefits or from injuries. I

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would not deny that my elevation was begun by Vespasian, augmented by Titus, and still further advanced by Domitian . . . I have reserved as an employment for my old age, should my life be long enough, a subject at once more fruitful and less anxious in the reign of the Divine Nerva and the empire of Trajan, enjoying the rare happiness of times, when we may think what we please, and express what we think."

The influential part of Tacitus' education took place during the early part of Vespasian's reign. It is possible, that, like his friend, Pliny, he was trained in rhetoric by Quintillian, for whom Vespasian had founded the first public chair of eloquence at Rome. Tacitus himself records how zealous he was for achievement and how diligently he pursued and studied the leading orators. It is not known on what occasion he began his own political career, but he won renown quickly. Pliny, only a few years his junior, recalls in a famous letter that in his youth Tacitus seemed of all the eminent men then active the most worthy of imitation.

Tacitus' success as an orator was followed by marriage to the daughter of Julius Agricola, Governor of Britain, whose biography he later wrote, and by rapid attainment under successive emperors of the offices of quaestor, aedile, and praetor. During the four years from 89 to 93 he was absent from Rome in some administrative capacity, possibly a provincial governorship in Belgic Gaul, where he could have acquired the knowledge of German manners and customs he later used in his *Germany*.

By the time Tacitus returned to Rome the full force of Domitian's tyranny had developed. He later declared his father-in-law fortunate in death since he thereby escaped the sight of these last three years during which Domitian "leaving now no interval or breathing space but, as it were, with one continuous blow, drained the life-blood of the Commonwealth." Tacitus was at the height of his powers and a consulship was due him in the normal course of advancement. Yet, unless he would risk his life, he could not abandon his office, seek advancement, or absent himself. The orator chose silence, broken only when Domitian demanded flattery as an accompaniment to his acts of terror. The Emperor enforced full attendance in the Senate when honourable men were being judicially murdered, so that he could "see plainly whether you have any affection for me." Tacitus wrote of this experience: "Even Nero turned his eyes away, and did not gaze upon the atrocities which he ordered: with Domitian it was the chief part of our miseries to see and to be seen, to know that our sighs were being recorded."

TACITUS

The assassination of Domitian in 96 brought unexpected release from this tyranny, which Tacitus said left some of the living no more than "survivors of themselves". There can be no doubt of the effect upon him: "We witnessed the extreme of servitude when the informer robbed us of the interchange of speech and hearing. We should have lost memory as well as voice, had it been as easy to forget as to keep silence." That he vowed to maintain memory during that period of unnatural silence seems probable, since the opening pages of his *Life of Agricola* (98) refer to his *Histories* as having been begun shortly after the death of Domitian. It would hold, he said, the memory of past servitude and then give testimony to present happiness. As he worked on this book, and later on the *Annals*, he extended his memory past the emperors of his childhood, the four who succeeded one another within fourteen months after the death of Nero, to the death of Augustus.

Tacitus was not out of public office during the rule of Nerva and Trajan. He advanced to the consulship in 97. With Pliny he conducted, in 99, a famous trial before the Senate. He is known, from a recently discovered inscription, to have held, in 112, the important office of Proconsul of Asia. It is not known whether he survived the emperor Trajan, in whose reign his histories were brought out. He did not fulfil his intention of celebrating Nerva and Trajan and the happiness of their times.



VOLUME 16

PTOLEMY

The Almagest

NICOLAUS COPERNICUS

On the Revolutions of the Heavenly Spheres

JOHANNES KEPLER

Epitome of Copernican Astronomy [Book IV-V]

The Harmonies of the World [Book V]

PTOLEMY

BIOGRAPHICAL NOTE

PTOLEMY, A.D. c. 100-c. 178

PTOLEMY realized that the sciences of mathematics, geography and astronomy are closely related. He used his mathematical knowledge to prove that the Earth was round and studied the revolving movements of the heavenly bodies. The geocentric theory, that the Earth is the centre of the universe, was developed by him and was generally accepted until replaced by the Copernican system. His greatest work was the *Almagest*, in which he developed and explained plane and spherical geometry. Many ideas in it were not developed further for 1,400 years. It is the only completely comprehensive treatise of Greek astronomy to come down to us. Indeed, for detail, completeness and perfection, the *Almagest* might be said to contain all those treatises which preceded it. Its perfection is such that it often covers up the modes of discovery, and its geocentric theory is propounded with the barest reference to its heliocentric opponents.

The life of Claudius Ptolemaeus is almost entirely unknown despite his fame as an astronomer and geographer. What little can be said of his personal history has to be pieced together from indications in his writings, two ancient scholia, and brief notices by much later writers, some of them Arabian. From these it appears that Ptolemy was born at Ptolemais Hermii, a Grecian city of the Egyptian Thebaid; even this is not certain, since another early source gives his birth-place as Pelusium. His work is traditionally associated with Alexandria, but according to one scholium, he devoted his life to astronomy and lived for forty years at Canopus, about fifteen miles east of the capital. Ptolemy himself notes that he made his observations "in the parallel of Alexandria." The dates of his birth and death are also uncertain. His observations recorded in the *Almagest* extend from A.D. 127 to 151; the Arabic writers claim that he lived to the age of seventy-eight; from this evidence it is inferred that Ptolemy's life covered the first three quarters of the second century and the reigns of Trajan, Hadrian, Antoninus Pius, and Marcus Aurelius. There seems to be no basis for the claim once made that he was related to the royal house of the Ptolemics.

From his writings it is evident that Ptolemy knew well the work of his predecessors, and most of what is now known about ancient astronomy owes its preservation to him. He was particularly indebted to Hipparchus

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(c. 130 B.C.), "that enthusiastic worker and lover of truth," whom Ptolemy considered his master. From his own observation he was able to add to the records compiled by prior astronomers; he increased by several hundred stars the list drawn up by Hipparchus. His discoveries are said to have been inscribed on pillars erected in the temple of Serapis at Canopus.

Ptolemy's fame as an astronomer rests chiefly upon the *Almagest*. This work was originally known as *The Mathematical Composition*, but after it had come to be used as a text in astronomy, it was called *The Great Astronomer* to distinguish it from a collection known as *The Little Astronomer*. The Arabs called it "The Greatest", prefixing the article *al* to the Greek *megiste*, and ever since it has been known as the *Almagest*.

In addition to his great work, Ptolemy composed many shorter books dealing with the heavens. In his *Hypothesis on the Planets* he provided a summary of part of the *Almagest* and a brief statement of the principal theories explaining the motion of the heavenly bodies. He drew up a list of annual sidereal phenomena and also a chronological table of Assyrian, Persian, Greek, and Roman kings for use in reckoning the lapse of time between an event and a given fixed date. The two astrological writings, the *Tetrabiblon* (or *Quadripartitum*) and the *Centiloquium*, are usually attributed to Ptolemy, although their authenticity has sometimes been doubted. Of his other mathematical works, the most important are the *Harmonica*, a treatise on music, and the *Optics*, which is apparently the first recorded attempt at a theory of refraction of luminous rays through media of different densities.

After the *Almagest*, Ptolemy's most important work is his *Guide to Geography*, the most comprehensive and scientific work of antiquity on the subject. It consists largely of a tabulation of places with their latitude and longitude, but it also contains an estimate of the size and extent of the "inhabited world" and a discussion of map-making. The *Guide* came to be for geography what the *Almagest* was for astronomy, and until well into the Renaissance, Ptolemy was hardly less celebrated as a geographer than as an astronomer.

BIOGRAPHICAL NOTE

NICOLAUS COPERNICUS, 1473-1543

COPERNICUS made a great advance in the study of astronomy by stating that the Earth revolves on its own axis once every 24 hours, that it travels round the Sun once a year and that it and the other planets

NICOLAUS COPERNICUS

form what is now known as the Solar System. His view of the universe was therefore heliocentric, in contrast with that of the second-century astronomer Ptolemy, who propounded a geocentric theory of the universe. The book in which Copernicus sets out in detail his views on astronomy is called *Concerning the Revolutions of the Heavenly Spheres*.

Copernicus was born on February 19, 1473, at Torun, Poland, the youngest of the four children of a prosperous merchant. Upon the father's death in 1484, the children were adopted by their maternal uncle, Lucas Watzelrode, a priest of some scholarly attainments who became Bishop of Ermland in 1489; it was decided that Nicolaus should be trained for the Church.

At the University of Cracow, which he entered in 1491, Copernicus first became seriously interested in mathematics. He studied particularly with Albert Brudzewski, the author of a commentary on Peurbach's textbook of Ptolemaic astronomy, and the leader of the humanist faction at the university. From him Copernicus not only learned mathematics and astronomy, but also acquired an attraction for the new humanistic studies. He left Cracow in 1494, without taking his examinations for a degree.

After it had become apparent that his uncle would provide him with a sinecure, Copernicus went to Italy. He remained there from 1496 to 1506 perfecting his education in many different fields. He first attended the University of Bologna, where he followed the course in canon law as a preparation for administrative work in the Church. But mathematics and astronomy continued to be his particular interest, and he became closely associated with Domenico Maria de Novara, a Platonist who had detected the diminution in the obliquity of the ecliptic and the variation in latitude. Although he obtained his appointment as canon of the cathedral of Frauenburg in 1497, he immediately obtained a leave of absence to continue his studies. In the jubilee year of 1500 he visited Rome and lectured on mathematics. The following year he returned to Ermland and obtained an extension of his leave of absence so that he might study medicine at Padua. Except for the interval in 1503 when he completed his doctorate in canon law at Ferrara, Copernicus studied from 1501 to 1505 in the medical school at Padua. When he returned to Poland the following year, he was not only a humanist learned in Greek, mathematics, and astronomy, but also a jurist and a physician.

Copernicus did not actively assume his duties as a canon until six years after his departure from Italy. Until 1512 he resided at the episcopal

NICOLAUS COPERNICUS

palace of Heilsberg as physician to his uncle, the bishop. Upon the death of his uncle in that year he took up residence as a canon of the rich cathedral of Frauenburg on the Baltic. Although he never took holy orders, and only those vows necessary for his office as a canon, he was the official representative of the cathedral chapter in the many disputes in which it was involved. After the war between Poland and the Teutonic Knights from 1519 to 1521, he planned and aided the reconstruction of Ermland. He served as commissary for the diocese of Ermland and his medical skill was always at the service of the poor and frequently in demand by the rich. In 1522 he presented a scheme for the reform of the currency before the Diet of Graudenz. He never became personally involved in the conflict of the Reformation.

While engaged in many practical duties, Copernicus continued his intellectual pursuits. His first work, published in 1509, was a Latin translation of the fictitious correspondence of famous men written by Theophylact Simocatta, a seventh-century Byzantine historian. The introductory poem written by a college friend provided the first public praise of Copernicus as an astronomer, who "explores the rapid course of the moon and the changing movements of the fraternal star and the whole firmament with the planets." Copernicus himself said that it was in 1506, immediately after his return from Italy, that he began to develop his astronomical system and to write it down. The astronomical observations, which he had begun in Italy, were continued in Poland, particularly at Frauenburg, where he established an observatory. By 1514 his reputation as an astronomer led to his being invited by the Lateran Council to give his opinion on the proposed reform of the calendar. He declined on the ground that the movements of the Sun and the Moon had not yet been determined with sufficient accuracy. Although continually making observations and elaborating his own doctrine, Copernicus showed great reluctance to publish the result of his work. His *Letter Against Werner*, which appeared in 1524, tried to demolish the old explanation of the alleged variation in the precession of the equinoxes but revealed nothing of his new theory.

It was not until 1530 that Copernicus provided in the *Commentariolus* a preliminary outline of his heliocentric theory. It immediately attracted great attention. At Rome, Johann Albrecht Widmanstadt lectured upon the new doctrine; Pope Clement VII gave his approval; Cardinal Schonberg entreated the author to make public his full thought upon the

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subject. In the spring of 1539 Copernicus was visited by Joachim Rheticus, a protégé of Melanchthon and at the age of twenty-five professor of mathematics at the University of Wittenberg. Rheticus stayed for some time, studied the details of Copernicus' planetary system, and in 1540 composed and published, with Copernicus' approval, a general account of it entitled *Narratio Prima*. At length Copernicus was prevailed upon by his friends to allow Rheticus to publish the *De revolutionibus orbium coelestium*. Copernicus lived only long enough to witness its appearance. Towards the close of 1542 he was seized with apoplexy and paralysis; on May 24, 1543, an advance copy of his work was presented to him, and on the same day he died. He was buried in the Frauenburg Cathedral.

BIOGRAPHICAL NOTE JOHANNES KEPLER, 1571-1630

KEPLER was one of the founders of modern astronomy. His *Epitome of Copernican Astronomy*, a lucid and attractive textbook of Copernican science, was remarkable for the prominence given to "physical astronomy" as well as for the extension to the system of laws recently discovered to regulate the motions of the planets. Using the observations of Tycho Brahe, Kepler worked out three important facts relating to the motion of the planets. These facts are often known as Kepler's Laws. The first states that the planets move round the Sun in ellipses not circles; the second describes the rate of motion of a planet at any point in its ellipse; and the third describes the length of time taken by a planet to travel along an ellipse of any particular size. The knowledge of these three laws helped Newton to discover the Law of Gravitation.

Kepler was born on December 27, 1571, at Weil in the Duchy of Wurttemberg. He came from a noble but poverty-stricken family, and, as he later noted, was himself a premature and sickly son such as the planets had foretold. His father was a soldier of fortune and frequently away from home until he acquired a tavern in 1577. Kepler, in the periods when he was not working in the tavern, attended a German elementary school at Leonberg, but domestic bankruptcy after three years led to his being withdrawn and sent to labour in the fields.

Kepler's intellectual gifts were considered to indicate that he had a theological vocation, and in 1584 he was sent as a charity student to the

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Protestant seminary at Adelberg. Two years later he transferred to the college at Maulbronn. A brilliant examination for the bachelor's degree in 1588 enabled Kepler to go to the University of Tübingen, where he prepared for the master's degree in philosophy. As a part of the regular course of studies, he learned astronomy with Mastlin, who introduced him to the work of Copernicus. He wrote a paper on the reconciliation of the Copernican view with Sacred Scripture, but his principal desire was to enter the ministry. It was with considerable reluctance that he was finally persuaded in 1594 to accept the first post offered to him, the chair of astronomy at the Lutheran School of Graz.

While filling his office as astronomer at Graz, Kepler began to speculate on the order and distances of the planets. On July 19, 1595, he carefully noted down his "discovery" that "God in creating the universe and regulating the order of the cosmos had in view the five regular bodies of geometry as known since the days of Pythagoras and Plato." He embodied his theory on these relations in his first published work on astronomy, entitled the *Precursor of Cosmographic Dissertations or the Cosmographic Mystery*, which appeared late in 1596. The book brought its author much fame and a friendly correspondence with the two most eminent astronomers of the time, Tycho Brahe and Galileo.

In 1598 the Catholic Archduke of Styria issued an edict of banishment against Protestant preachers and professors, and Kepler fled to the Hungarian border. Although reinstated in his post by the favour of the Jesuits, Kepler gladly accepted an offer from Tycho Brahe in 1600 to serve as his assistant at the observatory near Prague. A year later, upon the death of Tycho, Kepler was appointed his successor as imperial mathematician.

In his new post Kepler inherited the records of Tycho's observations. Utilizing these records and the results of his own observations at the Prague observatory, Kepler published a series of works which soon gained him a European reputation. To satisfy the astrological proclivities of the emperor, he first wrote a treatise *On the More Certain Foundations of Astrology* (1602). His prognostications were highly successful; commenting on this fact, he remarked that "Nature, which has conferred upon every animal the means of subsistence, has given astrology as an adjunct and ally to astronomy." A preliminary study of optics resulted in the publication of his *Optical Part of Astronomy* (1604), which, as completed by the *Dioptrics* (1611), contained important discoveries in the theory of

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vision. But Kepler's great work during these years was the elaboration of a new theory of the planets. Inspired by Gilbert's book on the magnet and his own investigations of the orbit of Mars, which he had been studying since his first meeting with Tycho, Kepler published in 1609 his *New Aetiological Astronomy or Celestial Physics together with Commentaries on the Movements of the Planet Mars*, in which he enunciated the laws of elliptical orbits and of equal areas.

Meanwhile in his personal life Kepler was harassed upon every side. His salary was continually in arrears; his wife "fell a prey to despondent melancholy . . . became seriously ill with Hungarian fever, epilepsy, and fits," and finally died; his three children succumbed to smallpox; and Prague itself became a battlefield. After "the terrible year of 1611", Kepler, while still retaining the position of court astronomer, gratefully accepted the offer to become mathematician to Upper Austria. He moved to Linz, re-married in 1613, and resumed his astronomical investigations; but his personal fortunes showed little improvement.

The twelve years of Kepler's residence at Linz saw the publication of many of his most important astronomical works. The *Harmonics of the World* appeared in 1619. Its dedication to James I of England was acknowledged with an invitation to that country, but Kepler, despite his distraught circumstances, refused to leave, as two years previously he had declined the chair of mathematics at Bologna. For some time he had been working upon the project of comprehending the whole scheme of the heavens in one great treatise to be called *Hipparchus*. The difficulties presented by the lunar theory finally compelled him to abandon his intention, and he recast a portion of his materials in the form of a dialogue intended for the general public, which was published as the *Epitome of Astronomy* (1618-21). In addition to these works and many essays dealing with chronology, Kepler devoted years to preparing for publication the astronomical tables compiled from his own observations and those of Tycho. In spite of financial difficulties and civil and religious conflict, they finally appeared in 1627 under the title of the *Rudolphine Tables*.

By this time Kepler's claims upon the insolvent imperial treasury amounted to twelve thousand florins. In 1628, under an arrangement with the emperor, the debt was transferred to Duke Wallenstein of Friedland, and Kepler moved with his family to Sagan in Silesia. Wallenstein's promises were only partially fulfilled, and in 1630 Kepler

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went to Ratisbon to present his case to the Diet. Shortly after his arrival he was taken ill with a fever and died on November 15. He was buried at Ratisbon. The epitaph, of his own composition, reads: "I had measured the heavens; now I measure earth's shadows. Mind came from the heavens, Body's shadow has fallen."



VOLUME 17

PLOTINUS

The Six Enneads

BIOGRAPHICAL NOTE

PLOTINUS, 205-270

THE importance of Plotinus in the history of thought can hardly be exaggerated. Among the philosophers of mysticism he holds an undisputed pre-eminence, since no other writer unites in the same measure metaphysical genius with intimate personal experience. In Plotinus philosophy and personal religion were closely connected; the apex of the dialectical pyramid was also the beatific vision in which the mystical life culminated.

On the theoretical side he draws mainly from Plato, but on Plato as interpreted by a long series of scholars and buttressed by Aristotle. The rival schools of Greek philosophy were in fact beginning to coalesce into a theocentric system, at once universal and individual, of religious discipline. Plotinus gave an impetus to this fusion; for the victory of his philosophy was so rapid and overwhelming that it absorbed the other schools, and when Neoplatonism captured the Platonic academy at Athens, it reigned almost without a rival until Justinian closed the Athenian schools in 529.

Plotinus, according to his biographer and disciple, Porphyry, "seemed to be ashamed of being in a body and hence refused to tell anything about his parents, his ancestry, or his country." He is known, however, to have come from Egypt, and one ancient source claims that he was born at Lycopolis, now Asyut, in Upper Egypt. His parents evidently

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possessed some means, for at the age of eight Plotinus was attending a school of grammar.

At Alexandria when he was twenty-eight Plotinus discovered his vocation as a philosopher. He had evidently been attending the schools and listening to the famous men of the city, then the intellectual capital of the world. But he failed to find any satisfaction until a friend, to whom he had unburdened himself, took him to hear the philosopher, Ammonius Saccas, known as the "God-taught". Porphyry records that as soon as he had entered and heard Ammonius, Plotinus exclaimed to his friend: "That is the man I have been seeking."

For eleven years Plotinus was the disciple of Ammonius. It is possible that the master and his students led a kind of common life. Plotinus and two more of the group are known to have entered a compact to keep secret the doctrine of their master. Ammonius himself left no writings, and his teaching was probably concerned more with establishing a way of life than in pursuing intellectual knowledge for its own sake. When Plotinus at the age of thirty-nine left Ammonius, it was with the decision to "obtain direct knowledge of the philosophy practised among the Persians and honoured among the Indians." The emperor, Gordian, was then preparing to lead an expedition into Persia, and Plotinus arranged to travel with the army. He reached Mesopotamia, but his plans for study were cut short when the emperor was assassinated, and Plotinus with difficulty escaped to Antioch and then to Rome, where he arrived in 245.

For the next twenty-five years Plotinus was a teacher of philosophy in Rome and something like a director of conscience. Among his followers, besides professional philosophers, such as Porphyry, there were several physicians, senators, a poet, a former rhetorician who had turned banker, and many distinguished women. One senator, as the result of his association with Plotinus, "reached such a state of detachment that he abandoned all his goods, dismissed his servants, and gave up all his offices." Plotinus was approached for advice on all kinds of questions; several wealthy people at their death confided the material and spiritual care of their children to him, and he took them into his house. The emperor, Gallienus, and his wife, Salonina, held him in particular esteem. Plotinus attempted to persuade them to establish a city in Campania modelled after Plato's Republic and to be known as Platonopolis; only the opposition of the emperor's advisers is supposed to have prevented the realization of the project.

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During the first ten years that Plotinus was in Rome, he imitated his master, Ammonius, and committed none of his teaching to writing. This may have been partly due to his pledge to keep secret his master's teaching, for after that pledge had been broken by others, he began to write. When Porphyry became his follower in 263 Plotinus had completed twenty-one of his fifty-four treatises, but their circulation was very restricted. Plotinus is supposed to have been indifferent to his writing. Much of it was done while he was in the midst of other tasks; he paid little attention to the niceties of Greek style, and because of the weakness of his sight, he did not re-read his compositions. He produced most of his work during the six years that Porphyry was with him; the questioning and urging of Porphyry and another philosopher led him to write twenty-four treatises. The final nine were written in the last two years of his life while he was seriously failing in health. His writings were collected after his death by Porphyry; his arrangement of them in groups of nine has given them the name *Enneads*.

The mode of life followed by Plotinus was austere; he abstained completely from meat and paid little attention to elementary hygienic precautions. Much of his time was given to meditation. Porphyry declared that "his end and aim was intimate union with the God who is above all things" and testified that during the time he knew him Plotinus "attained this end four times."

The school that Plotinus conducted in Rome depended almost entirely upon him, and it began to fail soon after the health of Plotinus prevented him from giving it his usual attention.

Almost blind and suffering from a complication of disorders, Plotinus finally retired to the estate of a friend and disciple in Campania, where he died in 270. At the moment of death he is reported to have declared to his friend: "Now I shall endeavour to make that which is divine in me rise up to that which is divine in the universe."



VOLUME 18

SAINT AUGUSTINE

The Confessions · The City of God
On Christian Doctrine

SAINT AUGUSTINE

BIOGRAPHICAL NOTE SAINT AUGUSTINE, 354-430

ST. AUGUSTINE'S ideas were of the greatest importance to the Christian Church — more so, perhaps, than those of anyone else except St. Paul. They are based on his own experiences of God, which he reveals most fully in the prayers he wrote in his *Confessions*. Indeed it was not only his learning which made Augustine great, but also his understanding of the inward struggle which all men have against evil. In the *Confessions* he explains how he could never have overcome evil by himself, but had been able to do so only with God's help.

The period during which Augustine was Bishop of Hippo was not an easy one because the barbarians were sweeping over the Roman Empire and people were unable to understand why God allowed this to happen. To help them in their difficulties Augustine wrote *The City of God*, in which he showed that, although the Empire might come to an end, the Church would remain and God's purpose would be fulfilled. Augustine defended the Church against various heresies, and the views that he expressed on different occasions are not always easy to reconcile. Roman Catholics, Lutherans, Calvinists and Jansenists may all claim his support in their disagreements on such questions as guilt, human nature and free will.

Augustine was born on November 13, 354, at Tagaste, a small town in the Roman province of Numidia, near what is now the eastern borders of Algeria. His father, although not wealthy, was an official in the Roman administration of the village and was then still a pagan. His mother, Monica, was already known as a fervent Christian. Both were probably of Roman stock, although they may have had some Numidian ancestry, and Augustine himself shows an acquaintance with the Punic language.

While still a child, Augustine was enrolled by his mother as a catechumen in the Catholic Church, and although not baptized he learned something about Christianity from her. At the age of eleven or twelve, he was sent to Madaura, some twenty miles south of Tagaste, to study grammar and literature. He did so well that his father aspired to make a lawyer of him. Augustine spent a year of idleness while his father sought the necessary funds, and it was finally through the generosity of a citizen of Tagaste, who continued for some time as his patron, that in

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370 he was able to go to Carthage for the course in rhetoric. Shortly after his arrival he began living with a woman with whom he remained for the next ten years and who bore him a son named Adeodatus. At the schools he had the reputation of being a quiet and studious young man. His reading of Cicero's *Hortensius*, he tells us, made him in love with philosophy. He also fell under the influence of the Manicheans and became an auditor, or beginner, in their sect, which claimed to reconcile philosophy and religion.

On completing his studies in 373, Augustine chose to follow letters rather than law as a career. After a year of teaching grammar at Tagaste, he established himself as a rhetorician at Carthage. In 377 he entered the poetry contest and won the prize with a dramatic poem. Not long afterwards, he wrote his first book, *On the Beautiful and the Fit*, which he later considered not worth preserving. In 383, motivated in part by his ambition as a rhetorician, Augustine went to Rome. His expectations were not realized, and a year later he accepted the municipal chair of rhetoric at Milan.

While at Rome, Augustine had abandoned Manicheism. At Milan he came under the influence of St. Ambrose and also began reading the Neo-Platonists. His ensuing development, recorded in the *Confessions*, culminated in the decision in 386 to become a Christian. That autumn he retired to the estate of a friend at Cassiciacum to prepare for entering the Catholic Church. Accompanying him were his mother, his son, and several friends and pupils — at least eight in all. Under the leadership of Augustine the group spent some time in philosophical discussion. The results were taken down, edited by Augustine, and published as the philosophical dialogues, *Against the Academics*, *On the Happy Life*, and *On Order*. The following spring he returned to Milan and on Holy Saturday was baptized by St. Ambrose.

Having become a Christian, Augustine decided to return to Africa and to lead a kind of monastic life with a few of his friends and pupils. While waiting for his departure, he worked at several books he had planned, including a series on the liberal arts, of which only one, *On Music*, has survived. The death of his mother, which occurred after they had reached Rome and were at the embarkation port of Ostia, delayed his return. For more than a year he remained in Rome, continued to work on his philosophical dialogues, and furthered his knowledge of Christian doctrine and practice. His first controversial work, *On the*

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Morals of the Catholic Church and of the Manicheans, was written at this time. It was not until 388 that Augustine with his son and two friends reached Tagaste. He sold his property, gave the proceeds to the poor, and with his few followers set up a kind of monastery devoted to a life of prayer and study. His son, Adeodatus, who was one of the group and whose education had been a particular care of Augustine's, died in 389.

In 391 Augustine's quiet monastic life was brought suddenly to an end. He happened to be on a visit to Hippo and was attending church when the aged bishop was urging his congregation to find a candidate for the priesthood. Augustine, despite his protestations, was immediately chosen, and the bishop ordained him as a priest. Later that year he moved his monastery to Hippo and began his sacerdotal duties. Although it was then customary for preaching to be reserved for the bishop, Augustine even as a priest was assigned that task. He began his sermons on the Scriptures, which, transcribed as they were delivered, constitute his many books of commentary on the Bible. He also began the public disputes with the African heretics which were to engage him for the rest of his life.

In 395 or 396 Augustine was called upon to assume what he called the "burden of the episcopate." For thirty-five years as the Bishop of Hippo nearly all of his energies were given to the defence and promotion of the Catholic Church in northern Africa. He took an influential part in the many councils and conferences called to deal with various heresies and wrote many works against them, in particular against Manicheism, Donatism, and Pelagianism. His diocese was large by African standards and in governing it he also had to preside over the episcopal court which, as was customary at the time, heard civil as well as ecclesiastical cases. The administrative and financial duties of his office made constant demands. Wherever he was, he was called upon to preach, at times for periods of five consecutive days. His fame and position brought requests for advice from Christians and non-Christians alike, which involved him in voluminous correspondence. Augustine also never lost concern for his monastic community. Besides providing a rule for a common life, he made his monastery into something of a theological seminary, and many of its members later became bishops and saints, spreading wherever they went the influence of Augustine's teaching and zeal.

However onerous and varied his duties, Augustine always found time to write. In 397 he wrote the first three books, *On Christian Doctrine*;

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the final book was not completed until thirty years later. At the same time he also began his *Confessions*, and the completed work seems to have been published by 400. He had no sooner finished that than he began one of his greatest doctrinal treatises, *On the Trinity*. Following the sack of Rome in 410, he was drawn into the controversy regarding the responsibility of Christianity for the fall of the "eternal city", and into a correspondence with two Roman officials on the relation of the Church and the Empire. Out of such reflections he seems to have conceived the *City of God*, which was begun in 413 and appeared serially for thirteen years.

In 426 Augustine arranged for his successor as Bishop of Hippo. Considering it useful "to compile and point out all those things which displease me in my works," he read through all his writings and in his *Retractions* noted down what revision he would make in their doctrine. In the work as he left it, he comments on two hundred and thirty-two separate titles, not including his letters and sermons, which were to have been considered in a separate account.

While Augustine was engaged in this task, North Africa was becoming involved in what amounted to civil war. Vandals from Spain had been invited to Africa, to help in the fight against the imperial forces, but it was soon evident that they came not to aid but in their own interest. In 430 the imperial forces were defeated and sought refuge in Hippo, where they were besieged by the Vandal army. There, when the siege was in its third month, Augustine died, on August 28, 430.



VOLUME 19

SAINT THOMAS AQUINAS

Summa Theologica

Treatise on God (Part I, QQ 1-26)

Treatise on the Trinity (Part I, QQ 27-43)

Treatise on the Creation (Part I, QQ 44-49)

Treatise on the Angels (Part I, QQ 50-64)

Treatise on the Work of the Six Days (Part I, QQ 65-74)

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Treatise on Man (Part I, qq 75–102)

Treatise on the Divine Government (Part I, qq 103–119)

Treatise on the Last End (Part I–II, qq 1–5)

Treatise on Human Acts (Part I–II, qq 6–48)



VOLUME 20

SAINT THOMAS AQUINAS

Summa Theologica (cont.)

Treatise on Habits (Part I–II, qq 49–89)

Treatise on Law (Part I–II, qq 90–108)

Treatise on Grace (Part I–II, qq 109–114)

Treatise on Faith, Hope and Charity (Part I–II, qq 1–46)

Treatise on Active and Contemplative Life (Part II–II, qq 179–182)

Treatise on the States of Life (Part II–II, qq 183–189)

Treatise on the Incarnation (Part III, qq 1–26)

Treatise on the Sacraments (Part III, qq 60–65)

Treatise on the Resurrection (Part III Supplement, qq 69–86)

Treatise on the Last Things (Part III Supplement, qq 87–99)

BIOGRAPHICAL NOTE

ST. THOMAS AQUINAS, c. 1225–1274

ST. THOMAS AQUINAS, the prince of scholastic philosophers, was known as *Doctor Angelicus* (the Angelic Doctor). No theologian, save Augustine, has had an equal influence on the thought of the Western Church, a fact strongly emphasized by Pope Leo XIII in his *Encyclical* of August 4, 1879, which directed that the teachings of St. Thomas should be taken as the basis of theology. At least three further justifications for bestowing this honour upon him could be suggested. First, St. Thomas was a many-sided nature, as keenly interested in politics or mysticisms as in metaphysics or theology. Secondly, he was the ideal scholar, persuading instead of denouncing his opponents, critical within reason,

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sober in judgment, and proving all things while holding fast to that which is good. Thirdly, he was the producer of a most astounding synthesis of past theological thought — scholasticism.

St. Thomas intended the *Summa Theologica* to be the sum of all known learning. It is divided into three parts, which may be said to treat of God, Man and the God-Man. Part I, after a short introduction upon the nature of theology, proceeds to treat of the existence of God, of His nature and attributes, of the Trinity, of the Creation, of problems pertaining to the angels and to man, and lastly, of the divine government of the world. Part II includes the *Prima Secundae* and the *Secunda Secundae*, the former embracing general morality as founded on the ethics of Aristotle, the latter dealing with special morality, including the theological and cardinal virtues which raise numerous practical issues and the contemplative life. In Part III of the *Summa*, St. Thomas discusses the Person, office and work of Christ, and had begun to discuss the sacraments when death ended his labours.

At the end of 1224 or the beginning of 1225 Thomas was born at Roccasecca, near Naples, in the ancestral castle of the counts of Aquino. He was the seventh and youngest son of Landulfo, the head of one of the most illustrious families of Southern Italy and nephew to Frederick Barbarossa. His mother, Countess Teodora Carracciolo, was a descendant of the Normans who wrested Sicily from the Saracens. Landulfo and his sons were closely involved in the struggle between Frederick II and the Pope, and in 1229 they besieged and plundered the papal stronghold of Monte Cassino. In connection with the peace settlement of the following year, Thomas, who was then in his fifth year, was sent to the Abbey as an oblate with the hope that he would one day become its abbot. His stay there lasted for nine years, during which he received his preliminary education. In 1239 the emperor again attacked Monte Cassino, and Thomas returned to his family.

To continue his education Thomas attended the University of Naples, where he followed the course in liberal arts. While there he became acquainted with the Dominicans, who had opened a school of theology as part of the university. In 1244 Thomas, against the wishes of his family, took the habit of the Dominicans and set out for Paris with the master-general to study theology. His father had recently died, and his mother, in an effort to alter Thomas' decision, sent her two elder sons from the imperial army to seize him and hold him prisoner. He did not

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obtain his release until the following year after the Dominicans had appealed to both the pope and the emperor and his family had discovered that nothing could shake his determination.

Arriving in Paris in 1245, Thomas began his theology at the Dominican convent. His master there was Albert the Great, who was beginning to be known as the champion of Aristotle, whose complete works, recovered from Arabic sources, were coming into general use at the University of Paris. When Albert was appointed to organize a Dominican house of studies at Cologne in 1248, he took Thomas with him as his particular student. After four years more of study, Thomas received his baccalaureate and, on the recommendation of his master, was sent back to Paris to teach and to prepare for becoming a master in theology.

In 1252 Thomas entered upon the teaching career to which he was to devote the rest of his life and which was to involve him in every great intellectual conflict of the time. Beginning as a bachelor, he lectured upon the Scriptures and the basic theological textbook of the day, the *Sentences* of Peter Lombard. He enjoyed great popularity as a teacher. One of his students later recorded that "he introduced new articles into his lectures, founded a new and clear method of scientific investigation and synthesis, and developed new proofs in his argumentation." Although the university required that a master in theology be at least thirty-four years old, Thomas, after a papal dispensation, was given his degree in 1256, when little more than thirty-one, and appointed to fill one of the two chairs allowed the Dominicans at the university.

Almost immediately after entering upon his university career, Thomas was called upon to defend the right of the new religious orders to teach at the university. Thomas and his friend Bonaventure became respectively the spokesmen for the Dominicans and the Franciscans against the charges made by the secular clerics of the university. Besides providing written refutation of their accusations, Thomas showed by his own teaching that the religious orders had all the necessary qualifications. As part of his work at this period he held during the three academic years between 1256 and 1259 the two hundred and fifty-three scholastic disputations which constitute his treatise *De veritate*. It was also at this time that he began, perhaps at the request of the famous missionary, Raymond of Penafort, the *Summa contra Gentiles*.

In 1259, after three years of theological teaching as a master at Paris, Thomas returned to Italy. He remained there nine years, residing first at

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the papal curia at Anagni and Orvieto, then at the Dominican convent in Rome, and again with the pope at Viterbo. Offers to make him archbishop of Naples or abbot of Monte Cassino were turned down so that he might continue his teaching. He commented on the Scriptures, lectured on canon law, at the request of the pope compiled the *Catena Aurea* of the glosses on the Gospels, and wrote a work aiming at the reconciliation of the Greek Church with Rome. On the institution of the feast of Corpus Christi, he was chosen to provide its liturgical office, for which he wrote the hymns, *Pange lingua gloriosi corporis mysterium*, *Sacris solemniis juncta sint gaudia*, and the *Verbum supernum prodiens*. Also with papal encouragement Thomas then began his exposition of the works of Aristotle. At the papal curia he met his confrère, William of Moerbeke, who at the suggestion of Thomas began a new translation of Aristotle direct from the Greek. Aided by a good text, free of the corruptions that characterized the versions taken from the Arabic, Thomas between 1265 and 1269 commented on the *Physics*, *Metaphysics*, *On the Soul*, *Ethics*, *Politics*, and the *Posterior Analytics*.

At the beginning of 1269 Thomas was suddenly called back to Paris, where the conflict over Aristotle was coming to a climax. His activity in large part consisted, on the one hand, in refuting the Latin Averroists of the Faculty of Arts who were presenting an Aristotelianism seemingly incompatible with Christianity, and, on the other, in combating the Augustinians of the Theological Faculty who tended to look with disfavour upon the use of Aristotle in theology. Against the Averroists, Thomas wrote two treatises, *De aeternitate mundi* and *De unitate intellectus*, to prove that their work was not sound philosophically. He also continued his exposition of the text of Aristotle. He had occasion to answer both Augustinians and Averroists while expounding his theological doctrine through Scriptural commentaries, the many disputations he held at this time, and particularly the *Summa Theologica*, which he had begun in Italy in 1267.

Thomas was recalled to Italy by his superiors in 1272 and charged with reorganizing all the theological courses of his order. Allowed the choice of location for his work, he returned to Naples. There at the university he lectured on the Psalms and St. Paul, commented on Aristotle's *On the Heavens* and *On Generation and Corruption*, and worked on the third part of the *Summa*. He also continued to write special treatises at the requests of his friends, as he had done throughout his life. At the very

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beginning of his career he had written for his fellow-students the *De ente et essentia*; for the king of Cyprus he composed the *De regimine principum*; in the Platonic tradition he had commented on treatises of Boethius and the *Liber de causis*, which he showed was not a work of Aristotle; as his life drew to its close he composed numerous minor works on theology, including the *Compendium theologiae*.

The writing career of Thomas came suddenly to an end on December 6, 1273. While saying mass that morning a great change came over him, and afterwards he ceased to write or dictate. Urged by his companion to complete the *Summa*, he replied: "I can do no more; such things have been revealed to me that all I have written seems as straw, and I now await the end of my life." Early the following year he was appointed by Pope Gregory X to attend the General Council of Lyons. Overcome by illness shortly after his departure from Naples, he retired to the Cistercian monastery of Fossanova. There he commented on the *Song of Solomon* at the request of the monks, and died on March 7, 1274.



VOLUME 21

DANTE ALIGHIERI

The Divine Comedy

BIOGRAPHICAL NOTE

DANTE, 1265-1321

OF Dante's works, that by which he is known to all the educated world, and in virtue of which he holds his place as one of the half-dozen greatest writers of all ages, is of course the *Divine Comedy*. The poem is unique in literature; it may safely be said that at no other epoch of the world's history could such a work have been produced. Dante was steeped in all the learning, which in a way was considerable, of his time; he had read the *Summa Theologica* of Aquinas, the *Tresor* of his Master Brunetto, and other encyclopaedic works available in that age; he was familiar with most of what was then known of the Latin classical and post-classical authors. Further, he was a deep and original political thinker, who had himself borne a prominent part in practical politics.

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The *Divine Comedy*, though often classed for want of better description among epic poems, is totally different in method and construction from all other poems of that kind. Its "hero" is the narrator himself; the incidents do not modify the course of the story; the place of episodes is taken by theological or metaphysical disquisitions; the world through which the poet faces his readers is peopled, not with characters of heroic story, but with men and women known personally or by repute to him and those for whom he wrote. Its aim is not to delight but to reprove, to rebuke, to exhort; to form men's characters by teaching them what courses of life will meet with reward, what with penalty, hereafter; "to put into verse," as the poet says, "things difficult to think."

Dante Alighieri was born in Florence about the middle of May, 1265. The city, then under its first democratic constitution, was sharply divided between the Papal party of the Guelphs and the Imperial party of the Ghibellines. Dante's family were adherents of the Guelph faction, and when Dante was only a few months old, the Guelphs obtained decisive victory at the Battle of Benevento. Although of noble ancestry, the Alighieri family was neither wealthy nor particularly prominent.

It seems probable that Dante received his early education at the Franciscan school of Santa Croce. He evidently owed much to the influence of Brunetto Latini, the philosopher and scholar who figured largely in the councils of the Florentine commune. Before twenty, he began writing poetry and became associated with the Italian poets of the "sweet new style", who exalted their love and their ladies in philosophical verse. Dante's "lady", whom he celebrated with singular devotion, was a certain Beatrice. According to Boccaccio's life of Dante, she was Beatrice Portinari, daughter of a Florentine citizen, who married a wealthy banker, and died when she was but twenty-four. Dante first sang of Beatrice in the *Vita Nuova* (1292), a sequence of poems with prose comment in which he recounts the story of his love, of the first meeting when they were both nine years of age, the exchange of greetings which passed between them on May Day, 1283, and of Beatrice's death in 1290.

Upon turning thirty, Dante became actively involved in Florentine politics. The constitution of the city was based upon the guilds, and Dante, upon his enrolment in the guild of physicians and apothecaries, which also included book dealers, became eligible for office. He participated in the deliberations of the councils, served on a special embassy, and in 1300 was elected one of the six priors that governed the city. The

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former struggle between the Guelphs and Ghibellines had appeared in new form in the conflict between the Whites and the Blacks. As one of the priors, Dante seems to have been influential in the move to lessen factionalism by banishing from Florence the rival leaders, including among the Blacks his wife's relative, Corso Donati, and among the Whites his "first friend", the poet, Guido Cavalcanti. Despite the opposition of Dante and the White leaders to Papal interference in Florentine affairs, Pope Boniface VIII in 1301 invited Charles of Valois, brother of King Philip of France, to enter Florence to settle the differences between the two factions. Actually he assisted the Blacks to seize power, and more than six hundred Whites were condemned to exile. In 1302 Dante, with four others of the White party, was charged with corruption in office. He was condemned to pay a fine of five thousand florins within three days or lose his property, exiled for two years, and denied the right ever again to hold public office. Three months later, upon his refusal to pay the fine, Dante was condemned to be burned alive if he should come within the power of the republic.

"After it was the pleasure of the citizens of the most beautiful and most famous daughter of Rome, Florence, to chase me forth from her sweet bosom," Dante writes of his exile in the *Convivio*, "I have gone through almost every region to which this tongue of ours extends, showing against my will the wound of fortune." It is recorded that Dante attended a meeting at San Godenzo, where an alliance was formed between the Whites in exile and the Ghibellines, but he does not seem to have been present in 1304 when the combined forces were defeated at Lastra. Perhaps he had already separated himself from the "evil and foolish company" of his fellow-exiles, "formed a party by himself," and found his "first refuge and hostelry" at the court of the Della Scalas in Verona. Probably during the following years he spent time at Bologna and later at Padua, where Giotto is said to have entertained him. Towards the end of 1306 he was the guest of the Malaspinas in Lunigiana and acted as their ambassador in making peace with the Bishop of Luni. Some time after this date he may have visited Paris and attended the university there.

During the early years of his exile Dante appears to have studied in those subjects which gained him the title of philosopher and theologian as well as poet. In the *Convivio*, probably written between 1305 and 1308, he tells how, after the death of Beatrice, he turned to Cicero's *De Amicitia* and the *Consolatio Philosophiae* of Boethius, which awoke

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in him the love of philosophy. To sing its praises he began his *Convivio*, which he intended to be a kind of treasury of universal knowledge in the form of poems connected by lengthy prose commentaries. At the same time he worked upon the *De Vulgari Eloquentia*, a Latin treatise in which he defended the use of Italian as a literary language.

The election of Henry of Luxemburg as emperor in 1308 stirred Dante's political hopes. When Henry entered Italy in 1310 at the head of an army, Dante in an epistle to the princes and people of Italy hailed the coming of a deliverer. At Milan he paid personal homage to Henry as his sovereign. When Florence, in alliance with King Robert of Naples, prepared to resist the emperor, Dante in a second epistle denounced them for their obstinacy and prophesied their doom. In a third epistle he upbraided the Emperor himself for his delay and urged him on against Florence. It was probably during this period that he wrote his *De Monarchia*, an intellectual defence of the emperor as the sovereign of the temporal order. The death of Henry in 1313, after a year or so of ineffectual fighting, brought an end to the political aspirations of Dante and his party. The city of Florence in 1311 and again in 1315 renewed his condemnation.

After Henry's death, Dante passed the rest of his life under the protection of various lords of Lombardy, Tuscany, and the Romagna. According to one tradition, he retired for a time to the monastery of Santa Croce di Fonte Avellana in the Appenines, where he worked on the *Divine Comedy*, which may have been planned as early as 1292. He was almost certainly for a time at the court of Can Grande della Scala, to whom he dedicated the *Paradiso*. In 1315 Florence issued a general recall of exiles. Dante refused to pay the required fine and to "bear the brand of oblation", feeling that such a return would derogate from his fame and honour. To the end of his life he appears to have hoped that his *Comedy* would finally open the gates of the city to him.

The last few years of the poet's life were spent at Ravenna, under the patronage of Guido da Polenta, a nephew of Francesca da Rimini. Dante's daughter, Beatrice, was a nun in that city, and one of his sons held a benefice there; his wife seems to have resided in Florence throughout his exile. Dante was greatly esteemed at Ravenna and enjoyed a congenial circle of friends. Here he completed the *Divine Comedy* and wrote two eclogues in Latin which indicate that a certain contentment surrounded his closing days. Returning from a diplomatic mission to

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Venice on behalf of his patron, he caught a fever and died on September 14, 1321. He was buried at Ravenna before the door of the principal church, with the highest honours, and "in the habit of a poet and a great philosopher."



VOLUME 22

GEOFFREY CHAUCER

Troilus and Cressida · *The Canterbury Tales*

<i>The Prologue</i>	<i>The Cook's Prologue</i>
<i>The Knight's Tale</i>	<i>The Cook's Tale</i>
<i>The Miller's Prologue</i>	<i>Introduction to the Man of</i>
<i>The Miller's Tale</i>	<i>Law's Prologue</i>
<i>The Reeve's Prologue</i>	<i>The Shipman's Prologue</i>
<i>The Prologue of the Man of</i>	<i>The Shipman's Tale</i>
<i>Law's Tale</i>	<i>The Prioress's Prologue</i>
<i>The Tale of the Man of Law</i>	<i>The Prioress's Tale</i>
<i>The Wife of Bath's Prologue</i>	<i>Prologue to Sir Thopas</i>
<i>The Tale of the Wife of Bath</i>	<i>Sir Thopas</i>
<i>The Friar's Prologue</i>	<i>Prologue to Melibeus</i>
<i>The Finar's Tale</i>	<i>The Tale of Melibeus</i>
<i>The Summoner's Prologue</i>	<i>The Monk's Prologue</i>
<i>The Summoner's Tale</i>	<i>The Monk's Tale</i>
<i>The Clerk's Prologue</i>	<i>The Prologue of the Nun's</i>
<i>The Clerk's Tale</i>	<i>Priest's Tale</i>
<i>The Merchant's Prologue</i>	<i>The Nun's Priest's Tale</i>
<i>The Merchant's Tale</i>	<i>Epilogue to the Nun's Priest's</i>
<i>Epilogue to the Merchant's Tale</i>	<i>Tale</i>
<i>The Squire's Tale</i>	<i>The Second Nun's Prologue</i>
<i>The Words of the Franklin</i>	<i>The Second Nun's Tale</i>
<i>The Franklin's Prologue</i>	<i>The Canon's Yeoman's Pro-</i>
<i>The Franklin's Tale</i>	<i>logue</i>
<i>The Physician's Tale</i>	<i>The Canon's Yeoman's Tale</i>
<i>The Words of the Host</i>	<i>The Manciple's Prologue</i>
<i>The Prologue of the Pardoner's</i>	<i>The Manciple's Tale</i>
<i>Tale</i>	<i>The Parson's Prologue</i>
<i>The Pardoner's Tale</i>	<i>The Parson's Tale</i>
<i>The Reeve's Tale</i>	<i>L'Envoi</i>

GEOFFREY CHAUCER

BIOGRAPHICAL NOTE

GEOFFREY CHAUCER, c. 1340-1400

CHAUCER is the greatest medieval English poet and *Troilus and Cressida* and *The Canterbury Tales* are his greatest works. Yet although Chaucer lived in the later part of the Middle Ages, it may reasonably be said that, with him, modern English poetry begins. It is true that he took over much from the Middle Ages, both in setting and method, but there is something in the tone and the scope of his work that is at once recognized as new and as full of promise for the future. The most striking quality is his variety, both in range of narrative and in liveliness of character drawing. Chaucer's characters, like those of his great successors, are at once types and individuals, lifelike and larger than life. He is a keen observer of human nature and has a sharp eye for the significant details of dress and appearance which reveal personality. In his breadth of outlook, his tolerance, has racy humour, and in his dislike of pretence and hypocrisy Chaucer belongs to that central English tradition which leads on to Shakespeare, Fielding and Dickens.

Chaucer was born when Edward III was achieving his first victories in the Hundred Years' War against France. The history of the Chaucer family to some extent mirrors the rise of the burgher class during these years. His father and grandfather were prosperous wine-merchants who had obtained some standing at court and were beginning to engage in public service. The poet for most of his life held government offices, and Thomas Chaucer, who was almost certainly the poet's son, rose to wealth and influence in the fifteenth century.

The extant records of Chaucer's life show that he was a busy and versatile man of affairs, but they disclose almost nothing of his personal life or of his literary career. Even the exact date of his birth is a matter of conjecture. From evidence he gave in a law-suit in 1386 it is known that he was then "forty years old and more and had borne arms for twenty-seven years." From an early age he evidently had intimate knowledge of the court; he served successively in the households of Lionel, Duke of Clarence, Edward III, and John of Gaunt, Duke of Lancaster. In 1359 he was a member of Lionel's division in the largest army which Edward III had so far led into France. Chaucer was taken prisoner and ransomed by the King. The following year he seems to have acted as diplomatic courtier in the negotiations resulting in the Peace of

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Calais. He may then have been chosen to receive special training for government service, perhaps education at the Inns of Court, for by 1367 he had become a servant to the King with a pension for life.

Chaucer's social position was advanced by his marriage, perhaps in 1366, to Philippa de Roet, a lady-in-waiting on the Queen and sister of Katherine Swynford, afterwards the third wife of John of Gaunt, from whose issue the Tudors traced their descent. Chaucer had already begun to win some reputation as a poet and on the death of Gaunt's first wife in 1369, he wrote, supposedly at the Duke's request, the *Book of the Duchess*, in which he shows an intimate knowledge of the French court poetry.

During the first ten years of his service as a King's esquire Chaucer was frequently employed for diplomatic missions to the continent, "on the King's secret affairs." He went several times to France and the Low Countries, but perhaps the most important for his literary development were the two missions that he made to Italy in 1372 and 1378. The first of these took him to Genoa on a commercial assignment, but he also visited Florence and was there when the city was arranging for Boccaccio's lectures on Dante. On his second journey to Italy, regarding "certain affairs touching the expedition of the King's war," he visited Milan, where Petrarch lived and worked the last twenty years of his life.

Even before his second Italian mission Chaucer had begun to receive offices at home. In 1374 he had been appointed Comptroller of Customs and Subsidy of Wools, Skins, and Hides. That same year he obtained rent-free the house above the city gate of Aldgate and was awarded by the King a daily pitcher of wine. A few years later he was also given charge of the customs on wines. In his position in the Custom House, which he held for almost twelve years, Chaucer came into close association with the great merchants who were then beginning to come into prominence, and seems to have been particularly intimate with the merchants who actually controlled the city government of London. Yet there is little indication that he ever became strongly partisan in politics. He received his first appointment under Edward II, when John of Gaunt was the power behind the throne; it was confirmed by Richard II, and Chaucer received several preferments from him; yet he also continued to receive favours from Henry IV after Richard's deposition.

The twelve years passed in the tower above Aldgate were among the most productive for Chaucer as a writer. Besides the two court poems,

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the *House of Fame* and the *Parliament of Fowls*, Chaucer, as the result of his Italian journeys and reading of Boccaccio and Petrarch, was inspired to work upon "the storye of Palamon and Arcyte" and the *Troilus and Cressida*. The dedication of the *Troilus* to "moral Gower" and "philosophical Strode" disclose something of his intellectual friendships. He seems to have been rather intimate with Gower, for that poet acted as his deputy at the Custom House during one of his missions. Strode, who was known for his work in logic at Oxford, was also associated with Chaucer in a business transaction. Chaucer's interest in philosophy is particularly shown in his translation of the *De Consolatione Philosophiae* of Boethius, which provided the inspiration for several of his shorter poems. In the *Legend of Good Women* Chaucer proposed to atone to Love for his portrayal of the "false Cressida" by celebrating the lives of nineteen of "Cupid's saints", nine of which he completed.

In 1385, having obtained deputies for his comptrollerships, Chaucer appears to have retired to the country, perhaps to Greenwich. He became justice of the peace for Kent and the following year was elected to Parliament as one of the knights of the shire. By the end of that year, however, Chaucer had ceased to work at the customs, perhaps because of the hostility of the Duke of Gloucester to the King's appointments, and for three years he was without employment. During this period of leisure it is probable that he began the *Canterbury Tales*.

Chaucer entered upon a new series of governmental posts in 1389 when Richard II assumed direct control of the government. As Clerk of the King's Works, he supervised the maintenance and repair of the royal buildings and parks, including the construction of scaffolds for the tournaments at Smithfield. In this office he was obliged to travel constantly and was twice robbed by highwaymen on the same day. His clerkship ceased in 1391, and he became administrative director of North Petherton forest in Somerset. This was his last regular office, and although he spent some time in Somerset, he was frequently in London, where he continued to enjoy royal favour. His pensions were somewhat irregular, for as was common at the time it was difficult to exact payment from the Exchequer, but there is little evidence that he suffered any real want. During his last years he presumably continued to work on the *Canterbury Tales*, and wrote a few minor poems and the *Treatise on the Astrolabe*, written for "litel Lowis my son".

In 1399, shortly after the coronation of Henry IV, Chaucer leased for

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fifty-three years a house in the garden of Westminster Abbey. He had previously received several gifts from Henry, and his pensions were approved and increased by the new King. Chaucer lived for less than a year in the Abbey garden. He died on October 25, 1400, and as a tenant of the grounds, was buried in Westminster Abbey in the place now known as the Poet's Corner.



VOLUME 23

NICOLO MACHIAVELLI

The Prince

THOMAS HOBBS

Leviathan, or, Matter, Form, and Power of a Commonwealth, Ecclesiastical and Civil

BIOGRAPHICAL NOTE

NICOLO MACHIAVELLI, 1369–1527

“THE PRINCE”, by the Italian statesman Machiavelli, is one of the outstanding works in the history of political theory. An analysis of the methods whereby an ambitious man may rise to power, it sets forth his views at large and in detail upon the nature of principalities, the method of cementing them and the qualities of a successful aristocrat. However, the author of *The Prince* had more than a speculative aim in view and brought it forth to serve a special crisis. Machiavelli judged the case of Italy so desperate that salvation could only be expected from the intervention of a powerful despot. The unification of Italy in a state protected by a national army was the cherished dream of his life; and the peroration of *The Prince* showed that he meant this treatise to have a direct bearing upon the problem.

Practically nothing is known of Machiavelli before he became a minor official in the Florentine Government. His youth, however, was passed during some of the most tumultuous years in the history of Florence. He was born the year that Lorenzo the Magnificent came to power,

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subverting the traditional civil liberty of Florence while inaugurating a reign of unrivalled luxury and of great brilliance for the arts. He was twenty-five at the time of Savonarola's attempt to establish a theocratic democracy, although, from the available evidence, he himself took no part in it. Yet through his family he was closer to these events than many Florentine citizens. The Machiavellis for generations had held public office, and his father was a jurist and a minor official. Machiavelli himself, shortly after the execution of Savonarola, became Secretary of the Second Chancery, which was to make him widely known among his contemporaries as the "Florentine Secretary".

By virtue of his position Machiavelli served the "Ten of Liberty and Peace", who sent their own ambassadors to foreign powers, transacted business with the cities of the Florentine domain, and controlled the military establishment of Florence. During the fourteen years he held office, Machiavelli was placed in charge of the diplomatic correspondence of his bureau, served as Florentine representative on nearly thirty foreign missions, and attempted to organize a citizen militia to replace the mercenary troops.

In his diplomatic capacity, which absorbed most of his energies, he dealt for the most part with the various principalities into which Italy was divided. His more important missions, however, gave him an insight into the politics of Europe as well as of Italy. In 1500 he was sent to the court of the King of France, where he met the mightiest minister in Europe, Cardinal d'Amboise. On this occasion he began the observation and analysis of national political forces which were to find expression in his diplomatic reports. His *Report on France* was written after he had completed three assignments for his office in that country; the *Report on Germany* was prepared as a result of a mission to the court of Emperor Maximilian.

The most important mission, in view of his later development as a political writer, was that, in 1502, to the camp of Cesare Borgia, Duke Valentino. Under the aegis of his father, Pope Alexander VI, Cesare was engaged in consolidating the Papal States, and Machiavelli was in attendance upon him at the time of his greatest triumph. Machiavelli had several audiences with Cesare and witnessed the intrigues culminating in the murder of his disaffected captains, which he carefully described in the *Method Adopted by Duke Valentino to murder Vitellozzo Vitelli*. As the "Florentine Secretary", he was also present a few months later

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at Rome when Cesare came to ruin and disgrace upon the death of Alexander VI.

During his diplomatic career Machiavelli enjoyed one outstanding success. Largely through his efforts, Florence obtained the surrender of Pisa, which had revolted from Florentine rule and maintained its independence for years. Although he did not achieve any other diplomatic triumphs, he was esteemed for the excellence of his reports and is known to have had the confidence of the president of Florence, the Gonfalonier, Piero Soderini. But with the restoration of the Medicis to power, in 1512, Machiavelli's public career came abruptly to an end. His efforts to ingratiate himself with the new masters proved ineffectual. Looked upon with disfavour as the ex-gonfalonier's man, he was deprived of his office and exiled from the city for a year. He then fell under suspicion, although unjustly, of being implicated in a conspiracy against the new government. He was imprisoned and tortured on the rack and was released only when Giovanni de Medici became Pope.

On release from his dungeon, Machiavelli with his wife and children retired to a small farm not far from Florence. Dividing his time between farming and petty dissipations, he lamented that, possessing nothing but "knowledge of the State", he had no occasion for using it. The only remaining link with the official world was his friend, the Florentine ambassador to the Pope, to whom he wrote of public affairs and of his private amorous adventures. His letters reveal, however, that he led a hidden life by night in his study. "At the threshold," he wrote, "I take off my work-day clothes, filled with dust and mud, and don royal and curial garments. Worthily dressed, I enter into the ancient courts of the men of antiquity, where, warmly received, I feed on that which is my only food and which was meant for me. I am not ashamed to speak with them and ask them the reasons of their actions, and they, because of their humanity, answer me. Four hours can pass, and I feel no weariness; my troubles forgotten, I neither fear poverty nor dread death, I give myself over entirely to them. And since Dante says that there can be no science without retaining what has been understood, I have noted down the chief things in their conversation."

He "conversed" most frequently with Livy, Aristotle and Polybius, and composed his principal works upon politics: the *Discourses upon the First Decade of Livy*, and the *Prince* (1513). He intrigued to bring his work to the attention of the Medici rulers. He did not succeed in this,

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however, until he returned from politics to drama. The comedies he wrote during these years of retirement were acclaimed by the Florentine gentility. The *Mandragola* was so successful that it was performed before Pope Leo X in 1520.

Largely because of the fame he had acquired as a writer, Machiavelli was asked by the Medici rulers to give advice on the government of Florence. He used the occasion to re-state and defend republican principles in his *Discourse on Reforming the State of Florence*. He was also commissioned to write a history of the city and produced his *Florentine History*. However, it was not until the last years of his life that he was recalled to an active role in public work. He was appointed by Pope Clement VII to organize a national militia, such as he had defended in his *Art of War*. But he received little help from the men with whom he had to work, and his efforts came to nothing when the troops of Emperor Charles V sacked Rome and put an end to all of Clement's plans.

Shortly before Machiavelli's death the Republic was re-established in Florence. Although he had never been able to regain public office in Florence under the Medicis, he still seemed too close to them to be acceptable to the new republican government. His request to be reinstated in his old position as Florentine Secretary was refused. Machiavelli died a few days later on June 20, 1527.

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THE fear of the Spanish Armada was so acute in England during April, 1588, that the wife of the vicar of Westport gave birth prematurely. Hobbes later commented that he was thus born "a twin with fear" and ever after "abominated his country's enemies and loved peace."

From an early age Hobbes was reared by an uncle, his father having fled from home and disappeared, as the result of a brawl at the church door. He entered Oxford at fourteen or fifteen, but found little to please him in the scholastic programme based upon Aristotle. As he later declared in his *Autobiography*, instead of studying, he "fed his mind on maps and charts of earth and sky, tracked the sun in its path . . . and followed Drake and Cavendish as they girdled the main." His opportunity to travel came upon graduation when he was appointed tutor to the

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Cavendish family, thus beginning his lifelong connection with the great and powerful house of Devonshire.

Hobbes made his first trip to the continent as the companion and tutor to his young patron. He travelled through France and Italy, becoming acquainted with the customs and languages, and learning for the first time of the growing revolt against scholasticism. Upon his return he studied the ancient classical authors with a new zeal. Although he claimed that he read the Greek and Latin writers in order to polish his Latin and English style, the first result of his studies reveals an interest in political problems. For his translations of Thucydides, which he submitted to his friend, Ben Jonson, for criticism of its style, was published "to show his countrymen the weakness of democracy." It first appeared in 1628-29, shortly after the Petition of Right.

On the death of his patron, he accepted a position with Sir Gervase Clifton, and, again as a tutor, made his second voyage to the continent. It was during this sojourn, spent chiefly in Paris, that he was awakened to mathematics. His friend and first biographer, John Aubrey, describes the event as follows: "He was forty years old before he looked upon geometry, which happened accidentally: being in a gentleman's library, . . . Euclid's Elements lay open, and it was the 47th Prop., Lib. I. So he reads the proposition. 'By G—,' says he, 'this is impossible.' So he reads the demonstration, which referred him back to another, which he also read, and *sic deinceps*, that at last he was demonstratively convinced of that truth. That made him in love with geometry." The object of his love, as he later declared, was "not the theorems but the method of geometry, its art of reasoning." From that moment he never lost his interest in mathematics.

Recalled to the Cavendish family to tutor the new Earl of Devonshire, Hobbes devoted the next few years to training his young pupil in the classics, rhetoric, logic, astronomy, and the principles of law. In 1634 he accompanied him on an extensive tour of France and Italy. During this voyage he began his inquiries into natural philosophy, "seeking out the secrets of matter and motion, whether on horseback, afloat, or on the road." He made the acquaintance of Mersenne in Paris and became a member of the intellectual circle of which the Minim father was the centre. In Italy he visited Galileo, who, according to one rumour, suggested to him that ethics might be treated in the method of geometry. It was from the time of this voyage, Hobbes claimed, that he "began to

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be numbered among the philosophers", and he returned home in 1637 prepared to expound his philosophical system in a tripartite treatise on body, on man, and on society.

The rumblings of Civil War interrupted his plans for the orderly exposition of his ideas, and, instead of his contemplated work, he produced the "little treatise" on the *Elements of Law Naturall and Politique*, in which he defended the royal prerogative. Although it was only circulated privately, Hobbes felt, after the failure of the king's cause, that he was a marked man, and, in 1640, he hastened to Paris, "the first of all that fled". This was his fourth and last sojourn abroad, and it lasted for eleven years, spent mostly in or about Paris. Welcomed back to Mersenne's scientific circle, he was included among those chosen to make pre-publication criticism of Descartes' *Meditations*. His criticism, however, proved to be rather a cause of separation than of friendship. He continued his scientific inquiries, and a short treatise on optics, and a condensed statement of his doctrine on motion as applied to psychological phenomena were included among the tracts published by Mersenne. But it was above all to political problems that he devoted his attention. He formulated the first detailed statement of his political theory in the *De Cive*, published by Elzever in 1647. At the same time he was appointed tutor in mathematics to the young Prince of Wales, later Charles II.

To reach a wider public than was possible for his treatise in Latin, Hobbes prepared to give a definitive expression to his political thought in English. He published in two volumes the "little treatise" which had led to his flight in 1640 (*Human Nature* and *De Corpore Politico*), and issued his translation of the *De Cive* under the title of *Philosophical Rudiments concerning Government and Society*. Finally, in 1651, he published his *magnum opus*, the *Leviathan*. Its publication cost him the support of the royalist refugees, even though he presented the Prince of Wales with a special copy. Its doctrine angered the royalist Anglican divines and at the same time made him fear the action the Catholic authorities in France might take against him. He was, as he later wrote, "forced to fly to England for refuge", where, having made his submission to the Council of State, he was allowed to retire to private life.

Renewing his ties with the Earl of Devonshire, who had continued to send him his yearly pension, Hobbes fitted the final pieces into his philosophical system with the publication of the *De Corpore* (1655) and *De Homine* (1658). The adverse reception of his works immediately

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plunged him into a series of controversies, which occupied him almost continuously from his seventieth year until his death at the age of ninety-one. He was particularly sensitive to attacks on his "solutions" of mathematical problems, such as the squaring of the circle, and was involved in a long quarrel with Ward and Wallis, the leading mathematicians of Oxford. The controversy led to the exclusion of Hobbes from the Royal Society, which was founded at the time by Boyle and other friends of Wallis.

Although Hobbes regained royal favour after the accession of his former pupil as Charles II, his alleged atheism brought him under suspicion, and, after 1666, when Parliament threatened action against the *Leviathan*, he was never able to get permission to print anything on ethical subjects. His Latin works, published after this time, were brought out in Amsterdam and many of his writings were not made public until after his death.

In his last years Hobbes returned to the literary pursuits of his youth, composing his autobiography in Latin verse at the age of eighty-four and, the year following, translating both the *Iliad* and the *Odyssey*. He died at the country-house of his lifelong patron, on December 4, 1679.

Hobbes was the one English thinker of the first rank in the long period of two generations separating Locke from Bacon. His *Leviathan; or the Matter, Forms and Power of a Commonwealth, Ecclesiastical and Civil* is a comprehensive statement of his doctrine of sovereignty. The state might be regarded as great artificial man or monster, with its life traceable through human reason under pressure of human needs to its dissolution through civil strife. He was concerned not so much with the power of the sovereign as with the power of the state and its claim on man's allegiance. Hobbes represented the reaction against the Renaissance and the Reformation. Freedom of conscience had brought anarchy. Men must submit to the ruling of the state so that peace and order might be restored.



VOLUME 24

FRANCOIS RABELAIS

Gargantua and Pantagruel

FRANCOIS RABELAIS

BIOGRAPHICAL NOTE

FRANCOIS RABELAIS, *c.* 1495–1553

GREAT as is the importance of the sixteenth century in the history of French poetry, its importance in the history of French prose is greater still. There can be no doubt of the precedence, in every sense of the word, of François Rabelais, with *Gargantua and Pantagruel*. With an immense erudition representing almost the whole of the knowledge of his time, with an untiring faculty of invention, with the judgment of a philosopher and the common sense of a man of the world, with an observation that let no characteristic of the time pass unobserved and with a tenfold portion of the special Gallic gift of good-humoured satire, Rabelais reached a height of speculation and a depth of insight and a vein of poetical imagination rarely found in any writer, but altogether portentous when taken in conjunction with his other characteristics. *Gargantua and Pantagruel* may perhaps be called the exposition and commentary of all the thoughts, feelings, aspirations and knowledge of a particular time and nation put forth by a man who for once combined the practical and literary spirit, the power of knowledge and the power of expression.

Rabelais was born at Chinon in Touraine somewhere between 1483 and 1500; 1495 is the year most frequently given. His father is thought to have owned a small estate called La Devinière and to have been a vine-grower, and an apothecary, or a tavern-keeper, or a lawyer.

An indistinct allusion in his work has been interpreted to mean that Rabelais, when about nine, was sent to the convent of Seully to be made a monk. He is supposed to have been educated at La Baumette, near Angers, where he was at school with the brothers Du Bellay and Geoffrey d'Estissac, who were his influential friends in later life. He was ordained a priest at the Franciscan monastery of Fontenay-le-Comte, and by 1519 had attained a position of sufficient importance to sign deeds for the community. He also continued his studies, especially Greek, for he was soon in correspondence with the famous Humanist, Guillaume Bude. One of these letters reveals that his ardour for the new studies caused trouble with his superiors, and for a brief period his library of Greek books was confiscated. In 1524, through the influence of D'Estissac, who had become Bishop of Maillezais, Rabelais obtained permission to transfer from the Franciscan to the Benedictine order, and he moved to Maillezais,

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a learned and hospitable retreat, where he lived and studied for the next six years.

In 1530 Rabelais exchanged his Benedictine robes for those of a secular priest and, as he put it, "wandered for some time about the world." For a time the Du Bellays provided him with an abode near their own château of Langey. Later that same year he went to the University of Montpellier, where he entered the faculty of medicine. In less than two months he received a bachelor's degree and in 1531 was lecturing publicly on Galen and Hippocrates. With this period at Montpellier are associated his appearance as an actor in the farce, *The Man Who Married a Dumb Wife*, and the composition of a fish sauce in imitation of the ancient *garum*, which he sent to the famous scholar, Etienne Dolet.

In 1532 Rabelais moved to Lyons, then the centre of an unusually enlightened society. Although acting as physician to the Hôtel Dieu, he appeared to have devoted most of his time to literature. During the year of his arrival he edited the medical *Epistles* of Giovannia Manardi, the *Aphorisms* of Hippocrates and the *Ars Parva* of Galen. It was also probably at this time that he first began to think of writing about Gargantua and Pantagruel. Both seem to have been names of popular giants in the Middle Ages, and in 1532 at Lyons a short burlesque was published entitled, *Les Grandes et inestimables chroniques du grand et enorme géant Gargantua*, which Rabelais may have edited. Within a year he wrote and published his first *Pantagruel*, which constitutes the second book of the completed work. In 1533, as well, Rabelais issued the *Pantagrueline Prognostication* and the first of the series of *Almanacs* he compiled annually until 1550. The *Pantagruel* literature he signed with the anagrammatic pseudonym of "Alcofribas Nasier".

Rabelais resumed his wanderings in 1534 when his friend, Jean du Bellay, who had become Bishop of Paris, passed through Lyons on an embassy to Rome and engaged him as physician. Although this first visit to Rome was of short duration, Rabelais edited Marliani's *Topographia Antiquae Romae* and dedicated it to his patron upon his return to Lyons. The following year he brought out *Gargantua* and again joined Du Bellay, who was travelling to Rome to be made a cardinal. While in Rome, Rabelais filed a petition for absolution from violation of his monastic vows. There had been some irregularity in his leaving the Benedictines to become a secular priest, and, furthermore, both *Pantagruel* and *Gargantua* had been condemned by the Sorbonne almost

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immediately upon publication. While waiting for the absolution, Rabelais made a collection of flowers and herbs which he sent to his friend, D'Estissac. Early in 1536 he received the bull of absolution which freed him from ecclesiastical censure, entitled him to return to the Benedictines when he chose, and allowed him to practise medicine, provided that he did not make use of the scalpel and cautery and did not work for gain. Upon his return to France he became a canon of St. Maur and continued his work in medicine. In 1537 he publicly demonstrated an anatomical dissection and took his doctor's degree at Montpellier, where he lectured upon a "very ancient" Greek text of Hippocrates.

Through his association with the Du Bellays, Rabelais was appointed to a diplomatic office at the conference between Francis I and Charles V in 1538. Following that, he entered the service of Guillaume du Bellay, the elder brother of his former patron, who was the leading diplomat of Francis I and at that time governor of Piedmont. He remained with the elder Du Bellay until his death in 1543 and during some of that time was employed in collecting manuscripts in Italy for the king's library. In 1545 he was allowed to print his book, to which a third volume was now added, "avec privilege du roi".

Despite the official sanction, the third book was also banned by the Sorbonne, and the following year Rabelais appears to have gone into something like voluntary exile by accepting the position of city physician in Metz. Shortly after the death of Francis I, he again joined Jean du Bellay in Rome. While there, in 1549, he wrote an account of the festivals held to celebrate the birth of a second son to the new king, Henry II. This account, known as the *Sciomachie*, was dedicated to the powerful Cardinal de Guise, Rabelais, feeling perhaps that he now had such strong supporters that he need not fear the Sorbonne authorities, returned to France and was presented with the livings of Saint Martin de Meudon and Saint Christophe de Jambet, although there is no evidence that he was ever active at either benefice. In 1552 he published the fourth volume of his work. The Sorbonne censured it, and the parliament suspended its sale, taking advantage of the king's absence from Paris. But it was soon relieved of the suspension. In January, 1553, Rabelais resigned his ecclesiastical positions because of ill health. He died, it is said, on April 9.



MICHEL DE MONTAIGNE

VOLUME 25

MICHEL EYQUEM DE MONTAIGNE

Essays

- That Men by Various Ways
Arrive at the Same End
Of Sorrow
That our Affections Carry
Themselves Beyond Us
That the Soul Discharges Her
Passions Upon False Objects,
Where the True are Wanting
Whether the Governor of a
Place Besieged Ought Him-
self to Go Out to Parley
That the Hour of Parley is
Dangerous
That the Intention is Judge of
Our Actions
Of Idleness
Of Liars
Of Quick or Slow Speech
Of Prognostications
Of Constancy
The Ceremony of the Inter-
view of Princes
That Men are Justly Punished
for Being Obstinate in the
Defence of a Fort that is not
in Reason to be Defended
Of the Punishment of Cowardice
A Proceeding of Some Amba-
sadors
Of Fear
That Men are not to Judge of
Our Happiness till after
Death
That to Study Philosophy is to
Learn to die*
- Of the Force of Imagination
That the Profit of One Man is
the Damage of Another
Of Custom and That We
Should Not Easily Change a
Law Received
Various Events from the Same
Counsel
Of Pedantry
Of the Education of Children
That It is Folly to Measure
Truth and Error by Our
Own Capacity
Of Friendship
Nine-and-Twenty Sonnets of
Estienne de la Boetie
Of Moderation
Of Cannibals
That a Man is Soberly to
Judge of the Divine Ordi-
nances
That We are to Avoid Pleasures,
Even at the Expense of Life
That Fortune is Oftentimes
Observed to Act by the
Rules of Reason
Of One Defect in Our Govern-
ment
Of the Custom of Wearing
Clothes
Of Cato the Younger
That We Laugh and Cry for
the Same Thing
Of Solitude
A Consideration Upon Cicero*

MICHEL DE MONTAIGNE

- | | |
|--|---|
| <i>Not to Communicate a Man's Honour</i> | <i>That the Relish of Good and Evil Depends in a Great Measure Upon the Opinion We Have of them</i> |
| <i>Of the Inequality Amongst Us</i> | <i>That the Mind Hinders Itself</i> |
| <i>Of Sumptuary Laws</i> | <i>That Our Desires are Augmented by Difficulty</i> |
| <i>Of Sleep</i> | <i>Of Glory</i> |
| <i>Of the Battle of Dreux</i> | <i>Of Presumption</i> |
| <i>Of Names</i> | <i>Of Giving the Lie</i> |
| <i>Of the Uncertainty of Our Judgment</i> | <i>Of Liberty of Conscience</i> |
| <i>Of War-Horses, or Destriers</i> | <i>That We Taste Nothing Pure</i> |
| <i>Of Ancient Customs</i> | <i>Against Idleness</i> |
| <i>Of Democritus and Heraclitus</i> | <i>Of Posting</i> |
| <i>Of the Vanity of Words</i> | <i>Of Ill Means Employed to a Good End</i> |
| <i>Of the Parsimony of the Ancients</i> | <i>Of the Roman Grandeur</i> |
| <i>Of a Saying of Caesar</i> | <i>Not to Counterfeit Being Sick</i> |
| <i>Of Vain Subtleties</i> | <i>Of Thumbs</i> |
| <i>Of Smells</i> | <i>Cowardice the Mother of Cruelty</i> |
| <i>Of Prayers</i> | <i>All Things Have Their Season</i> |
| <i>Of Age</i> | <i>Of Virtue</i> |
| <i>Of the Inconstancy of Our Actions</i> | <i>Of a Monstrous Child</i> |
| <i>Of Drunkenness</i> | <i>Of Anger</i> |
| <i>A Custom of the Isle of Cea</i> | <i>Defence of Seneca and Plutarch</i> |
| <i>To-morrow's a New Day</i> | <i>The Story of Spurine</i> |
| <i>Of Conscience</i> | <i>Observations on the Means to Carry on A War According to Julius Caesar</i> |
| <i>Use Makes Perfect</i> | <i>Of Three Good Women</i> |
| <i>Of Recompenses of Honour</i> | <i>Of The Most Excellent Men</i> |
| <i>Of the Affection of Fathers to Their Children</i> | <i>Of the Resemblance of Children to Their Fathers</i> |
| <i>Of the Arms of the Parthians</i> | <i>Of Profit and Honesty</i> |
| <i>Of Books</i> | <i>Of Repentance</i> |
| <i>Of Cruelty</i> | <i>Of Three Commerces</i> |
| <i>Apology for Raimond de Sebonde</i> | |
| <i>Of Judging of the Death of Another</i> | |
| <i>Upon Some Verses of Virgil</i> | |

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<i>Of Coaches</i>	<i>Of Diversion</i>
<i>Of the Inconvenience of Greatness</i>	<i>Of Vanity</i>
<i>Of the Art of Conference</i>	<i>Of Managing the Will</i>
<i>Of Experience</i>	<i>Of Cripples</i>
	<i>Of Physiognomy</i>

BIOGRAPHICAL NOTE

MICHEL DE MONTAIGNE, 1533-1592

MONTAIGNE is one of the few great writers who have invented a literary kind. The essay as he gave it had no forerunner in modern literature and no direct ancestor in the literature of classical times. In matter of style and language Montaigne's position is equally important, but the ways which led him to it are more clearly traceable. His favourite author was beyond all doubt Plutarch, and his own explicit confession makes it undeniable that Plutarch's translator, Jacques Amyot, was his master in point of vocabulary and (so far as he took any lessons in it) of style.

There is hardly any writer in whom the human comedy is treated with such completeness as it is in Montaigne. There is discernible in his essays no attempt to map out a complete plan and thus to fill up its outlines. But in the desultory and haphazard fashion which distinguishes him there are few parts of life on which he does not touch, if only to show the eternal contrast and antithesis which dominate it.

Montaigne was born on February 28, 1533. His father, Pierre Eyquem, was of merchant stock and had acquired the title of "lord and squire of Montaigne" by bearing arms for Francis I in Italy. His mother was descended from a family of Spanish Jews. Montaigne was their third son, but by the death of his elder brothers he became heir to the estate.

Although his father claimed "no knowledge of letters", he had mastered Latin, Spanish, and Italian, and like many other men of the time he made a hobby of education. He had his son awakened each morning by "the sound of a musical instrument". Servants who could speak no French were assigned to teach him Latin orally before he had learned his native tongue. At the age of six he was sent to the College of Guienne at Bordeaux, where he remained for seven years. In 1546 Montaigne was put to the study of law. His interest in jurisprudence and his success

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as a counsellor appear to have been small; he seldom attended the Parliament at Bordeaux, where his father had secured a magistrate's seat for him in 1554. He made frequent visits to Paris, the city "which makes me French". He witnessed at Bordeaux one of the frequent riots caused by the salt-tax, and was present at both the siege of Thionville in 1559 and the siege of Rouen in 1562. He spent much time about the court, and there gave himself "over to the desires that rule, as freely and recklessly as anyone else."

In 1565 Montaigne married Françoise de la Chassigne, whose father was also a member of the Bordeaux Parliament. Montaigne said that "spoiled natures such as mine, that hate every sort of bond and obligation" are not fit for marriage; yet he lived on excellent terms with his wife and bestowed some pains on the education of his daughter, Leonore, the only one of six children to survive infancy. In 1568, upon the death of his father, Montaigne inherited the family estate. "Being long out of patience with public duties and the servitude of the court," he retired to his château in 1571, abandoned the name of Eyquem, and determined to live "a tolerable life that is a burden neither to myself nor anyone else."

During his father's lifetime, and at his request, Montaigne had translated the *Theologia Naturalis* of Raymond of Sabunde, a Spanish schoolman. Upon first coming to live at Montaigne, he prepared for publication the works of Etienne de la Boetie, a friend of his youth, whose death, in 1563, he felt as a great loss. The remaining years of his seclusion were spent in writing the first two volumes of the *Essays*, which were published in 1580 at Bordeaux. He noted that his work found favour "the further off I am read", that in his own country of Gascony "they think it droll to see me in print". In addition to his writing, he maintained a relation to the court; he was awarded the order of Saint-Michel in 1571 and served as gentleman-in-ordinary to both Henry III and his successor, Henry of Navarre.

In the year following the publication of the *Essays*, Montaigne left his estate for extensive travel. He was determined to obtain relief from internal disorders that had been troubling him. Distrusting physicians, he sought cure by the use of mineral waters. He journeyed through Lorraine, Switzerland, Bavaria, and Italy. From the baths of Lucca he travelled to Rome, where he had an audience with the Pope and was made a Roman citizen.

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While at Lucca, Montaigne was informed of his election as mayor of Bordeaux and of a royal endorsement enjoining residence. After some time he journeyed homewards. His reluctance to hold public office was tempered only by the memory of his father, who had held various municipal posts in Bordeaux. Although Montaigne was not satisfied with his administration, he felt that he "nearly accomplished what I expected to do and far surpassed what I promised." He was re-elected for a second period, which terminated in 1585. He again retired to Montaigne but, in a short time, was driven from his estate by the plague and forced to seek refuge elsewhere.

Montaigne had begun to revise the *Essays* almost immediately after their publication in 1580; he perfected their form and added new ones which average fully four times the length of the earlier ones. By 1588 he completed the work and re-issued a revised version of the first two books together with a final volume of the essays written since 1580. While in Paris to superintend their publication he became involved in the civil strife between Henry III and Henry of Navarre, and was committed to the Bastille as a kind of hostage. But he was well known to and favoured by both Catherine de Medici and the Guises and was soon released. In Paris at this time he met Marie de Jars de Gournay, one of the most learned ladies of the sixteenth and seventeenth centuries, who had conceived such veneration for the author of the *Essays* that she travelled to the capital to make his acquaintance. A whimsical but pleasant friendship resulted, and Montaigne gave her the title of his "fille d'alliance" (adopted daughter), which she bore for the rest of her long life. Upon his death, with the approval of his widow, she became his literary executor and, together with Pierre de Brach, a poet of some note, published an edition, now the standard one, which made use of Montaigne's final annotations.

Montaigne did not long survive the publication of his third book. Shortly after he returned to his château, he was stricken with quinsy, which brought about paralysis of the tongue. He remained in possession of his other faculties and, on the evening of September 13, 1592, asked his wife, in writing, to call together some of his neighbours so he might bid them farewell. He requested Mass to be said in his room, and died while it was being celebrated.



WILLIAM SHAKESPEARE

VOLUME 26

WILLIAM SHAKESPEARE

The First Part of King Henry the Sixth
The Second Part of King Henry the Sixth
The Third Part of King Henry the Sixth
The Tragedy of King Richard the Third
The Comedy of Errors
Titus Andronicus
The Taming of the Shrew
The Two Gentlemen of Verona
Love's Labour's Lost
Romeo and Juliet
The Tragedy of King Richard the Second
A Midsummer-Night's Dream
The Life and Death of King John
The Merchant of Venice
The First Part of King Henry the Fourth
The Second Part of King Henry the Fourth
Much Ado About Nothing
The Life of King Henry the Fifth
Julius Caesar · As You Like It



VOLUME 27

WILLIAM SHAKESPEARE

Twelfth Night: or, What You Will
Hamlet, Prince of Denmark
The Merry Wives of Windsor
Troilus of Cressida

WILLIAM SHAKESPEARE

All's Well That Ends Well
Measure for Measure
Othello, The Moor of Venice
King Lear · Macbeth
Antony and Cleopatra
Coriolanus · Timon of Athens
Pericles, Prince of Tyre · Cymbeline
The Winter's Tale · The Tempest
The Famous History of the Life of King Henry the Eighth
Sonnets

BIOGRAPHICAL NOTE

WILLIAM SHAKESPEARE, 1564-1616

SHAKESPEARE'S plays are so universally known and loved and his pre-eminence as a poet and dramatist is so universally recognized that any attempt to summarize his many-sided greatness is clearly superfluous. Suffice it to say that in his plays the reader will find mirrored life in its entirety and mankind in all its moods from the basest to the most sublime.

Shakespeare was baptized in the parish church of Stratford-on-Avon in Warwickshire on April 26, 1564. His father, John Shakespeare, was a burgess of the recently constituted corporation of Stratford, and filled certain municipal offices, including that of high bailiff. By occupation he was a glover, although he appears to have dealt from time to time in various kinds of agricultural produce and may have combined a certain amount of farming with the practice of his trade. His wife, and the mother of the dramatist, Mary Arden, came of a distinguished Catholic family, and had brought her husband a farm of about fifty or sixty acres, known as the Asbies. There were at least eight children, William being the third child and eldest son.

Stratford possessed a free grammar school, and Shakespeare presumably obtained his education there. When he was about thirteen, his father's fortunes took a turn for the worse, and it seems likely that Shakespeare was apprenticed to some local trade. According to one story, he killed calves for his father, and "would do it in a high style, and make a

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speech." In November, 1582, he married Anne Hathaway, a woman eight years his senior, and their first child, Susanna, was baptized on May 26, 1583, followed by twins, Hamnet and Judith, in 1585. Before the birth of the twins Shakespeare's career in Stratford seems to have come to a tempestuous close. One tradition, coming from two different sources, asserts that he got into trouble through poaching on the estates of a considerable Warwickshire magnate, Sir Thomas Lucy, and found it necessary to leave town. But from this event until he emerges as an actor and rising playwright in 1592, his history is unknown. His entry into the theatrical world, according to the stage tradition, was in a menial capacity, perhaps even as a holder of horses at the doors.

By 1592, when he was twenty-eight, Shakespeare had begun to emerge as a playwright and had evoked the jealousy of at least one of the group of scholar poets who claimed a monopoly of the stage. Robert Greene, in an invective against the play-actors in his *Groats-worth of Wit*, parodies a line from *Henry VI* and speaks of an "upstart crow" who is "in his own conceit the only Shakescene in the country." While the theatres were closed from 1592 to 1594 because of riot and the plague, Shakespeare further enhanced his literary reputation by the publication of *Venus and Adonis* and *Lucrece*. It is also probable that the first of his sonnets then began to circulate privately, although they were not published as a whole until 1609.

After the reopening of the theatres in 1594, Shakespeare is listed among the "servauntes of the Lord Chamberlayne", the company for which he wrote and acted throughout his life. His acting seems to have been limited to such roles as the Ghost in *Hamlet* and Adam in *As You Like It*, but as a dramatist he was the mainstay of the company for some fifteen years. As early as 1598 the *Palladis Tamia*, a kind of literary handbook published by Francis Meres, extols Shakespeare as "the most excellent in both kinds (*i.e.*, comedy and tragedy) for the state", and one of "the most passionate among us to bewaile and bemoane the perplexities of love"; it also provides a list of twelve plays already written, which serves as a starting point for modern attempts at a chronological arrangement of his work. Shakespeare seems to have written more rapidly during these early years than later, but on an average he wrote for his company about two plays a year. His fellow-dramatists writing for the Chamberlain's men included Ben Jonson, Dekker, Beaumont and Fletcher, and Tourneur. He seems to have been particularly intimate

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with Jonson; there are stories of their jests and drinking bouts, and Jonson later declared, "I lov'd the man and do honour his meynory (on this side idolatry) as much as any."

In addition to being both actor and playwright, Shakespeare was also a shareholder in the company, and his prosperity was joined with that of his theatre. They were frequently asked to play at court, and *The Merry Wives of Windsor* is said to owe its origin to Elizabeth's desire to see Falstaff in love. James I on his accession took the company under his patronage, and during the remainder of Shakespeare's connection with the stage they were "the King's men". The records of performances at court show that they were by far the most favoured of the companies. Shakespeare was particularly popular; Jonson refers to his flights "that so did take Eliza and our James", and he is said to have received an autograph letter from King James. He appears also to have been on cordial terms with his fellows of the stage; one of them left him a small legacy, and in his own will he paid a similar compliment to three of his theatrical associates.

Shakespeare's increasing prosperity is reflected in the restored fortunes of his family at Stratford. The prosecution of John Shakespeare for debt ceased and in 1596 his application for a coat-of-arms, made at the time he was bailiff, was at length granted. In 1597 the playwright purchased New Place, one of the largest houses in Stratford. Here he established his wife and two daughters, his son having died the year before. Until 1610 he apparently lived and worked in London, making only occasional visits to Stratford, but in that year he seems to have returned to his birthplace. He lived as a retired gentleman on friendly terms with the richest of his neighbours and showed interest in local affairs which might affect his income or his comfort, such as a bill for the improvement of the highways in 1611, or a proposed enclosure of the open fields in 1614. His retirement did not imply a complete break with London life; his plays were still being produced, and he was providing new ones, although the last few may have been written at Stratford. As late as 1613 he is known to have bought a house in London at the Blackfriars, perhaps for purposes of investment rather than residence. It is likely that his connection with the king's company ended when the Globe Theatre was burnt down during a performance of *Henry VIII* in 1613.

In March of 1616 Shakespeare made his will, leaving to his daughter Susanna the bulk of his estate and to his wife "the second best bed with

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the furniture", although she also legally enjoyed until her death a third of his lands and houses. A month after his will was signed, on April 23, 1616, Shakespeare died and as a tithe-owner was buried in the chancel of the parish church.



VOLUME 28

WILLIAM GILBERT

On the Loadstone and Magnetic Bodies

GALILEO GALILEI

Dialogues Concerning the Two New Sciences

WILLIAM HARVEY

On the Motion of the Heart and Blood in Animals

On the Circulation of the Blood

On the Generation of Animals

BIOGRAPHICAL NOTE

WILLIAM GILBERT, 1540-1603

WILLIAM GILBERT was the most distinguished man of science in England during the reign of Elizabeth I and his principal work is his treatise on magnetism, which is printed here. This work, which embodied the results of many years' research, was distinguished by its strict adherence to the scientific method of investigation by experiment, and by the originality of its matter. It contains an account of the author's experiments on magnets and magnetic bodies and on electrical attractions and also his great conception that the earth is nothing but a large magnet and that it is this which explains, not only the direction of the magnetic needle north and south, but also the dipping of the inclination of the needle. Gilbert was also the first advocate of Copernican views in England, and he concluded that the fixed stars are not all at the same distance from the earth.

WILLIAM GILBERT

Gilbert was born on May 24, 1540, at Colchester in Essex. He came from an ancient Suffolk family and was the eldest of the five sons of Hierome Gilbert, recorder at Colchester. After completing his preliminary education at the town school, Gilbert in 1558 entered St. John's College, Cambridge, where he studied for eleven years. He took his bachelor's degree in 1560, was elected fellow the following year, and proceeded to work for his M.A., which he received in 1564. It was about this time that his interest in science apparently began to attract notice; he was appointed mathematical examiner in 1565 and then turned to the study of medicine, in which he received his doctorate four years later, when he was also elected senior fellow at St. John's College.

Shortly after receiving his degree, Gilbert left Cambridge and apparently made extensive travels on the continent, particularly in Italy. It is probable that he received the degree of Doctor of Physic from a continental university, and he presumably then made the acquaintance of some of the learned men with whom he was later in correspondence. After his return to England he settled in London in 1573, where he practised as a physician with "great success and applause". Admitted to the College of Physicians about 1576, Gilbert held the office of censor from 1581 to 1590; he was treasurer from 1587 to 1592 and again from 1597 to 1599, when he succeeded to the presidency of the college. He served on the committee appointed to superintend the preparation of the *Pharmacopoeia Londinensis*, which was undertaken by the college in 1589, although it did not appear until 1618.

During these years that Gilbert was making a reputation as a physician, he was also becoming known as a savant in chemistry, physics, and cosmology. He appears to have studied these sciences from his youth. His study of navigation is said to have resulted in the invention of two instruments enabling sailors "to find out the latitude without seeing of sun, moon, or stars". But the main basis of his reputation as a scientist was the publication in 1600, after eighteen years of reading, experiment, and reflection, of his book on the magnet, *De Magnete Magneticisque Corporibus et de Magno Magnete Tellure Physiologia Nova*. It was the first important work in physical science to be published in England, and almost immediately after its publication Gilbert was famous throughout Europe. Kepler paid tribute to its influence upon his own physical speculations. Galileo first turned his attention to magnetism after reading Gilbert and said of him that he was "great to a degree that is enviable".

GALILEO

Bacon, though he spoke disparagingly of Gilbert's attempt "to raise a general system upon the magnet", praised him as an experimental philosopher and seems to have taken whole paragraphs of Gilbert's work as his own.

At his London house, where he possessed a large collection of books, globes, instruments, and minerals, Gilbert gathered about him men who were interested in discussing scientific problems. The group, which held regular monthly meetings and constituted a kind of society, is now looked upon as precursor of the Royal Society. Gilbert presumably took a leading part in these discussions, and he is known to have continued his scientific investigations, but his only other book, a treatise dealing with meteorological subjects, *De Mundo Nostro Sublunari Philosophia Nova*, was edited after his death by his brother.

In 1601 Gilbert was appointed physician to Queen Elizabeth, and it appears that he then moved to the court. Upon the death of the Queen, it was discovered that her only personal legacy was made to Gilbert for the prosecution of his studies. He was immediately reappointed royal physician by James I, but died shortly afterwards, probably of the plague, on November 30, 1603, and was buried in the chancel of Holy Trinity Church in Colchester. He bequeathed his scientific library and instruments to the College of Physicians, but they were destroyed in the great fire of London. He left his portrait, which is said to have been painted for that purpose, to Oxford University. In it he is represented as standing wearing his doctor's robes and holding in his hand a globe on which is written the word *terrella*; as its inscription the painting has, *Gilbert, the first investigator of the powers of the magnet.*

BIOGRAPHICAL NOTE

GALILEO, 1564-1642

THE direct services of permanent value which Galileo rendered to astronomy are virtually summed up in his telescopic discoveries. His name is justly associated with a vast extension of the bounds of the visible universe, and his telescopic observations are a standing monument to his ability. Within two years of their first discovery, he had constructed approximately accurate tables of the revolutions of Jupiter's satellites, and he proposed their frequent eclipses as a means of determining longitudes, not only on land but at sea. His observations on sunspots are

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notable for their accuracy and the deductions he drew from them with regard to the rotation of the sun and the revolution of the earth.

Galileo Galilei was born at Pisa on February 15, 1564, the eldest of seven children. His father, who belonged to a noble but impoverished Florentine family, was a cloth merchant highly reputed for his skill in mathematics and music. At the age of twelve or thirteen Galileo was sent to school at the monastery of Vallombrosa, where he studied the Latin classics and acquired a fair command of Greek. He seems to have been a novice for a short time, but his father then withdrew him from the charge of the monks.

In 1581 Galileo was sent to the University of Pisa to study medicine. His father apparently hoped to prevent him from following either mathematics or music, whose unremunerative character he had experienced. The young Galileo was already known for his proficiency in music; his judgment in painting was highly esteemed, and Ludovico Cigoli accredited him with the success of his paintings; but mathematics soon had an overwhelming attraction for him. In his first year at the university Galileo discovered the isochronism of the pendulum, to which his attention had been drawn by a swinging lamp in the cathedral, and he applied the principle in a machine for measuring the pulse known as the *pulsilogia*. Although compelled to leave school in 1585 for want of funds, Galileo continued his investigations. He shortly afterwards published an essay describing his invention of the hydrostatic balance. During 1587 and 1588 he delivered two papers before the Florentine Academy on the site and dimensions of Dante's Inferno. A treatise written at this time on the centre of gravity in solids won him the title of "the Archimedes of his time".

Despite his growing fame, Galileo was unable to find a means of earning his living, until 1589. He tried several times unsuccessfully to obtain a teaching position, and he had even planned to seek his fortune in the East before he was called to the honourable but not lucrative post of mathematical lecturer at the University of Pisa. During the ensuing two years, 1589-91, he conducted experiments on the motion of falling bodies. His lectures on the import of his discoveries alienated the Aristotelian members of the faculty, and he further aroused the anger of the authorities by a burlesque in which he ridiculed the university regulations. In 1591 Galileo found it prudent to resign, and shortly afterwards he secured the chair of mathematics at the University of Padua.

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Galileo taught at Padua for eighteen years, from 1592 to 1610, and during that time established a European reputation as a scientist and inventor. His lectures, which were attended by persons of the highest distinction from all parts of Europe, proved so popular they were given in a hall that held two thousand persons. He wrote numerous treatises, which were circulated among his pupils, dealing with military architecture, gnomonics, the sphere, accelerated motion, and special problems in mechanics. His more notable inventions at Padua included a machine for raising water, a geometrical compass, and an air thermometer. But perhaps his most famous discovery came in 1609, when, upon learning that the Dutch were beginning to manufacture magnifying glasses, he put together a telescope and turned it for the first time towards the heavens. In his *Sidereus Nuncius*, published early in 1610, Galileo gave the first results of this new method of investigation; he noted the mountainous surface of the moon, the fact that the Milky Way consists of stars, and the observation of four of Jupiter's satellites, which he named the "Medicean Stars" in honour of the Grand Duke of Tuscany. Almost immediately, Galileo was nominated philosopher and mathematician extraordinary to the grand duke at a large salary and with unlimited leisure for research.

Galileo did not actively defend the Copernican doctrine until after he had begun to use the telescope. Although he wrote to Kepler as early as 1597 that he had "become a convert to the opinions of Copernicus many years ago", he continued to teach the Ptolemaic system throughout his stay at Padua. But with the discovery of the moons of Jupiter and the phases of Venus he came to the conclusion that "all my life and being henceforth depends" on the establishment of the new theory. Galileo's astronomical discoveries brought him great honour, and in 1611 he travelled to Rome, where he gave a highly successful demonstration of the telescope to the ecclesiastical authorities. But as soon as he tried to maintain that the Copernican theory could be reconciled with Scriptures, he began to encounter opposition from the theologians.

The first ecclesiastical attack upon Galileo occurred in 1614 when he was denounced from the pulpit in Florence for holding the new astronomical doctrine. Galileo replied by issuing his *Letter to the Grand Duchess Christine of Lorraine*, in which he strongly supported the words of Cardinal Baronius that the "Holy Spirit intended to teach us in the Bible how to go to Heaven, not how the heavens go." This letter was at

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once laid before the Inquisition, and in 1615 Galileo was informed by an ecclesiastical friend in Rome: "You can write as a mathematician and hypothetically, as Copernicus is said to have done, and you can write freely so long as you keep out of the sacristy." But early in 1616 the Holy Office condemned two fundamental Copernican propositions selected from Galileo's work *On the Sun Spots*, and he was summoned before Cardinal Bellarmine and warned not to hold or defend the Copernican theory. Dismayed by the slanders regarding him, Galileo obtained from the Cardinal a certificate explaining that he had not been made to abjure his opinions nor enjoined to perform salutary penance.

Galileo maintained silence until 1627. In that year he published *Il Saggiatore*, in which he contended that the new astronomical discoveries were more in accord with the Copernican than the Ptolemaic system; he added that, since the one theory was condemned by the Church and the other by reason, a third system would have to be sought. The book was dedicated to Urban VIII. It was well received by both ecclesiastical and scientific authorities, and in the course of two months Galileo had six audiences with the pope. Encouraged by this reception, he devoted the next eight years to writing his *Dialogue of the Two Principal Systems of the World* (1632). Upon its publication Galileo was denounced by the ecclesiastical authorities and summoned for trial before the Holy Office. He was accused on three charges: that he had broken his agreement of 1616, that he had taught the Copernican theory as a truth and not a hypothesis, and that he inwardly believed the truth of a doctrine condemned by the Church. In the trial of 1633 he was found guilty on the first two charges, but on his assertion that it was never his intention to believe the truth of the Copernican doctrine after its condemnation, he was denounced only as "vehemently suspected of heresy" and sentenced to punishment at the will of the court. Galileo submitted and made the required recantation.

On being allowed to leave Rome, Galileo went to Siena and resided for several months in the house of the archbishop. In December, 1633, he was permitted to return to his villa at Arcetri, near Florence, where he spent the remainder of his life in retirement according to the conditions of his release. Here he completed the *Dialogue of the Two New Sciences*, in which he turned back to the scientific investigations of his youth. The work, which was printed by the Elzevirs at Leyden in 1638, was considered by Galileo to be "superior to everything else of mine hitherto

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published". His last telescopic discovery — that of the moon's diurnal and monthly librations — was made in 1637, only a few months before he became blind. But blindness was not allowed to interrupt his scientific correspondence and investigation. He worked out the application of the pendulum to the clock, which Huygens was to apply successfully several years later, and was engaged in dictating to his disciples, Viviani and Torricelli, his latest ideas on the theory of impact when he was seized with fever. He died on January 8, 1642, and was buried in the chapel of Santa Croce in Florence.

BIOGRAPHICAL NOTE

WILLIAM HARVEY, 1578–1657

KNOWLEDGE of the circulation of the blood has been the basis of the whole of modern rational medicine. Harvey said that the blood is a carrier, always going round and round on the same beat. What it carried and why, how and where it takes up its loads and how, where and why it parts with them are questions the answering of which has been the main task of physiology in the centuries that have followed. Thus the work of Harvey lies at the back of every important medical advance.

Harvey was born at Folkestone on April 1, 1578, the eldest of the seven sons of Thomas Harvey, a prosperous Kentish yeoman. At the age of ten he was sent to the King's School at Canterbury and five years later to Gonville and Caius College, Cambridge, where he took his B.A. in 1597. To prepare himself for a medical career he went to the University of Padua, then the most celebrated school of medicine. Harvey was there while Galileo was achieving his first fame at Padua. He followed the anatomy lectures of the great Fabricius of Aquapendente and in the spring of 1602 took his degree at Padua; later that same year he was made a Doctor of Medicine at Cambridge.

Shortly afterwards, Harvey settled in London, married the daughter of Dr. Lancelot Browne, Queen Elizabeth's physician, and began to practise medicine. In 1604 he became a candidate of the Royal College of Physicians and was duly admitted a fellow three years later. Upon the recommendation of the king and the president of the college, he was appointed in 1609 assistant physician of St. Bartholomew's Hospital and in the following year succeeded to the post of physician. His practice prospered, and, although Aubrey, who knew Harvey, says that his

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anatomy was better than his therapy, it is known that he performed difficult surgical operations and had many illustrious patients, among them Francis Bacon and King James I, to whom he became physician extraordinary.

Upon his appointment as the Lumleian lecturer at the College of Physicians in 1615, Harvey began his lectures on anatomy in which he made known his work on the motions of the heart and blood. In his lectures he professed "to learn and teach anatomy, not from books, but from dissections, not from the positions of the philosophers but from the fabric of nature"; and during his lifetime he dissected more than eighty kinds of animals. His teaching also showed his wide knowledge of books. He knew all the anatomists from Vesalius to his own time; he had studied Aristotle, whom he quotes more often than any other author, and Galen; he was especially fond of Virgil, had read Plautus, Horace, Caesar, Cicero, Vitruvius, and St. Augustine, and was thoroughly familiar with the Bible.

In 1628, after "nine years and more" of teaching, Harvey published his work on the circulation of the blood, *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus*. The book was dedicated to Charles I, whom Harvey served as physician. It immediately attracted wide attention, although at first, and particularly on the continent, it was mostly of an adverse character. Harvey for the most part left the defence of his work to his supporters, and he lived to see his teaching generally accepted. His friend, Hobbes, declared that Harvey was "the only one I know who has overcome public odium and established a new doctrine during his own lifetime."

After the publication of his work Harvey became more closely associated with Charles I, and until 1646 his fortunes were involved with those of the king. By the king's command he relinquished his functions at the College of Physicians in 1629 to accompany James Stuart, the young Duke of Lennox, on his travels to the continent. Four years later he went to Nuremberg and Rome with the Earl of Arundel, who had been sent as an ambassador to the German emperor. As royal physician, he several times attended the king on his journeys. Despite his close connection with king and court, Harvey himself seems to have taken little interest in politics. In 1641 he still attended the king not only with the consent but also at the desire of parliament. But with the outbreak of war between the king and parliament, Harvey became identified with

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the royal cause. At the battle of Edgehill, Aubrey reports that he was given charge of the Prince of Wales and the Duke of York but was so little concerned with the battle that "he withdrew with them under a hedge and took out of his pocket a book and read." Harvey went to Oxford with the retreating royal forces in 1642 and remained there until the surrender of that city in 1646. He then returned to London and for the rest of his life lived there with his brothers, who were eminent merchants.

During the fifteen years that Harvey was in close attendance upon the king, he continued to pursue his medical investigations. In studying the process of generation he enjoyed the interest and support of Charles I, who not only placed the royal deer parks at his disposal, but also watched his demonstration of the growth of the chick with the same interest that he had shown for the movements of the heart. Even the Civil War did not completely interrupt his research. He notes that his "enemies abstracted from my museum the fruits of many years of toil" with the result that "many observations, particularly on the generation of insects, have perished, with detriment, I venture to say, to the republic of letters." Despite this loss, he had collected a large number of observations and had embodied the results of his investigations in a treatise. Finally, in 1651 his friend and disciple, George Ent, obtained the manuscripts and with the author's permission made public the work on generation, *Exercitationes de Generatione Animalium*.

This was the last of Harvey's labours. He had now reached his seventy-third year and was honoured at home and abroad. His college at Cambridge voted a statue in his honour, and the College of Physicians in 1654 elected him president, an office he declined because of age. He had already served three times as censor (1613, 1625, 1629), and in that capacity, together with three of his colleagues, had supervised practitioners, taken necessary proceedings against quacks, and inspected apothecaries. The same year that he was offered the presidency he built and equipped a library for the College, to which in 1656 he also made over his property in Essex with provision for a salary to the college librarian and the endowment of an annual oration. This address, according to Harvey's orders, is to exhort the fellow "to search out and study the secrets of nature by way of experiment, and also for the honour of the profession to continue mutual love and affection among themselves."

MIGUEL DE CERVANTES

Although afflicted by the gout, Harvey enjoyed the active use of all his faculties until his eightieth year. On June 3, 1657, he was attacked by paralysis and though deprived of speech was able to send for his nephews and distribute his personal things among them. He died the same evening and was buried with great honour in Hempstead Church, Essex.



VOLUME 29

MIGUEL DE CERVANTES

The History of Don Quixote de la Mancha

BIOGRAPHICAL NOTE

MIGUEL DE CERVANTES, 1546-1616

CERVANTES' *Don Quixote* entitles him to rank with the greatest writers of all times: "Children turn its leaves, young people read it, grown men understand it, old folk praise it." It has outlived all changes of literary taste, and is even more popular today than it was three centuries ago.

However, there is a tendency in modern criticism to regard *Don Quixote* as a symbolic, didactic or controversial work intended to bring about radical reforms in Church and State. Such interpretations did not occur to Cervantes' contemporaries nor to Cervantes himself. There is no reason for rejecting his plain statement that his main object was to ridicule the romances of chivalry, which in their latest developments had become a tissue of tiresome absurdities. It seems clear that his first intention was merely to parody these extravagances in a short story; but as he proceeded the immense possibilities of the subject became more evident to him, and he ended by expanding his work into a brilliant panorama of Spanish society as it existed during the sixteenth century.

Cervantes was born in the ancient university town of Alcalá de Henares, where he was baptized, on October 9, 1547, in the church of Santa Mariá la Mayor. His father was a travelling physician, and it is doubtful whether the family was ever long enough in one place for Cervantes to receive any formal education. According to his own testimony he enjoyed reading from childhood and took especial delight

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in the dramatic productions of the famous actor-manager, Lope de Rueda. At the age of twenty he made his first appearance as an author, contributing several poems to a volume commemorating the death of Isabel de Valois, the third wife of Philip II.

Shortly after his *début* as a writer, Cervantes was in Rome as a member of the retinue of Cardinal Acquaviva. He soon left the Cardinal to enlist as a private in the army which was being mustered to fight against the Turks. He was assigned to the "Marquesa", part of the armada under Don John of Austria. When the fleet came into action at Lepanto, Cervantes lay below, ill with fever. Despite the remonstrances of his comrades, he insisted that he would "rather die for his god and his king" than stay under cover. He received three gunshot wounds, two in the chest and one which maimed his left hand for life; to Cervantes the wounds were "stars lighting one to heaven and to fame", and the left hand was crippled "for the greater glory of the right". After convalescing at Messina, he returned to the army, served three more years in active service, and then was granted leave to return to Spain. He received letters of recommendation from Don John and the Duke de Sessa, viceroy of Sicily, in which he was described as "a soldier, as deserving as he was unfortunate."

The small galley carrying Cervantes back to Spain was attacked by Barbary corsairs near Les Trois Maries, and he, his brother, and the other Spaniards were taken as prisoners to Algiers. Cervantes became the slave of a Greek renegade named Dali Mami, and, since the letters found on him suggested that he was a man of some importance, his ransom was posted at an unusually high figure. He found the life of a captive "enough to sadden the merriest heart on earth" and made many ingenious attempts to escape. Upon the failure of one of them he was brought before the Dey of Algiers, Hassan Pasha, and "threatened with torture and instant death"; but the Dey, struck "by his peculiar grace in all things", remitted the punishment and bought Cervantes for himself. In 1577 he addressed a versified letter to the Spanish Secretary of State, suggesting an expedition to seize Algiers; the project, although practicable, was not attempted. In 1579, after another thwarted escape, Hassan Pasha again spared his life, declaring: "So long as I have the maimed Spaniard in my keeping, my Christians, my ships — aye, and the whole city — are safe." The Dey, however, was willing to release him for money, and Cervantes finally obtained his freedom by the payment of the ransom;

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his parents sent 250 ducats through the Trinitarian monks, and, when this was insufficient, the Christian traders of Algiers contributed the balance.

After his release Cervantes returned to Spain, where he tried to support himself by writing, particularly for the stage. Of the great volume of plays he wrote, he later singled out only one for praise, *La Confusa*, "which, with all respect to as many sword-and-cloak plays as have been staged up to the present, may take a prominent place as being good among the best." His most serious effort at this time was the prose-pastoral *Galatea* (1585), and, although it always remained his favourite work, he later remarked that it "proposes something and concludes nothing". The *Galatea* won him a small measure of repute but brought him no financial return.

The death of his father and his own marriage made it necessary for him to "put aside the pen". His wife's dowry brought him nothing more valuable than five vines, an orchard, some household furniture, four beehives, forty-five hens and chickens, one cock, and a crucible. He went to Seville as commissary to provide oil and wheat for the Armada and, after its defeat, continued to act as commissary to the galleys. Although he showed considerable zeal in the work, he soon became convinced that there was no prospect of advancement. He appealed to the king for a vacant post in the American colonies but was refused and given the advice to "look for something nearer home". In an effort to supplement his income, he turned again to writing, and, in 1592, signed a contract to write six plays at fifty ducats each, on the condition that no payment was to be made unless each was "one of the best ever produced in Spain". No opportunity to test the contract arose, since Cervantes was thrown into gaol. Although the reason for this imprisonment is not known, it was probably due to disorderliness in his accounts, for shortly after his release, he was in difficulty again with his superiors. When he proved unable to submit receipts for all official moneys he had collected, though no charge of dishonesty was proved, he was again committed to gaol. Subsequently he was released in disgrace and dismissed from public service.

Don Quixote appeared during the years of extreme poverty that succeeded his dismissal. From the remark in the prologue that "you may suppose it engendered in some dismal prison", it has been assumed that its conception, if not some of its actual writing, took place during one of his terms in gaol. The licence for its publication was obtained in 1604, while Cervantes was living in Valladolid in a tiny apartment with his

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wife and four or five female relatives. A few months after its publication the following year, Don Quixote and Sancho Panza had become proverbial types in Valladolid; and they were soon known throughout Europe. The appearance in 1614 of a spurious second part, issued under the name of Alonso Fernandez de Avellanada, goaded Cervantes to lay aside his other writing and complete his master work, which he accomplished by the end of 1615. During the decade between the two parts of *Quixote*, Cervantes wrote his *Exemplary Novels*, the *Journey to Parnassus*, and several comedies and intermezzos for the theatre.

Although Cervantes was known and celebrated throughout Europe, his fame never brought him wealth, or even comfort. The members of the special French embassy visiting Madrid in 1615 were amazed to learn that Cervantes was "old, a soldier, a gentleman, and poor". He died in Madrid on the same day as William Shakespeare, April 23, 1616. He was borne from his house with "his face uncovered", according to the rule of the Tertiaries of St. Francis, and buried in the church attached to the convent of the Trinitarian nuns.



VOLUME 30

SIR FRANCIS BACON

Advancement of Learning · Novum Organum · New Atlantis

BIOGRAPHICAL NOTE

FRANCIS BACON, 1561-1626

FRANCIS BACON was the prophet and philosopher of a new and dazzling conception of progress. In the *Advancement of Learning*, the broadest statement in English of his grand scheme, he arraigned traditional and obstructive methods of education and inquiry, outlined the current state of knowledge in all fields, and proposed new lines of exploration. But his prime interest was science, the mastery of nature for the use and benefit of man. His inspiring vision and his inductive method were set forth in the *Novum Organum*; after long wanderings in the desert of Aristotelian

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logic, men might enter the promised land through experimental science. Bacon's aims and method were praised by many scientists of his century; from many modern writers his ideas have received more criticism and less credit than they deserve. His dream of co-operative research, illustrated in the *New Atlantis*, was fulfilled in the Royal Society.

Bacon was born on January 22, 1561, in York House, London. He was the youngest son of Sir Nicholas Bacon, Lord Keeper of the Seal and Chancellor. His mother, Lady Anne Cooke, enjoyed some renown as a classicist and was sister-in-law to Sir William Cecil, Lord Burghley.

At the age of twelve Bacon entered Trinity College, where he resided for three years with his elder brother. He later claimed that it was at Cambridge as a student not yet sixteen that "he first fell into the dislike of the philosophy of Aristotle", which he judged to be "barren of the production of works for the benefit of the life of man". On leaving the university, he was sent to Paris in the retinue of the English ambassador to complete his political education. While there he attempted to perfect a new diplomatic code and, according to later anecdotes, became interested for the first time in experimental observation.

Recalled to England by the sudden death of his father in 1579, Bacon returned to find that he had been left the "narrow portion" of a younger son and had his livelihood to gain. He applied himself to the study of law at Gray's Inn and in 1582 was admitted to the bar. A "competitor at the bottom of the ladder for patronage and countenance", he passed twenty-five years in the shadow of Burghley, Essex, and Coke. In 1584 he wrote his first political memoir, the *Letter of Advice to Queen Elizabeth*, but his efforts to win favour with the Queen were unsuccessful. His uncle, Lord Burghley, appears to have "taken his zeal for ambition", and the most he would do was to help him obtain a seat in Parliament. His most ambitious Parliamentary effort, opposing a royal demand in 1593, incurred the strong displeasure of both Elizabeth and Burghley.

Bacon's only political success under Elizabeth came as a result of the trial against the Earl of Essex. He had been the intimate and protégé of Essex, who had attempted to use his influence with the Queen on his friend's behalf. After one failure to obtain Bacon a place, the Earl presented him with an estate worth £1,800; Bacon never lived within his income, and once, in 1598, he was arrested and imprisoned for debt. During the trial against Essex, Bacon came to take a leading rôle, although he had little to do with the preliminary case. He was one of

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the Queen's counsel and vigorously pressed the suit against his erstwhile patron. After the execution he was charged with drafting the defence of the Queen's conduct, which appeared as the *Declaration of the Practices and Treasons attempted and committed by Robert, late Earl of Essex*.

During these years Bacon was also engaged in scientific and literary work that even at the time enhanced his reputation. In a long letter to his uncle, written when he was thirty-one, he confessed, "I have as vast contemplative ends as I have moderate civil ends, for I have taken all knowledge for my province." In 1597 he published the first edition of his *Essays*. Included with them was a short tract entitled *Colours of Good and Evil*. This was the first published part of his ambitious project for the "Great Instauration" of science to restore to man the command over nature. In 1605 he published the *Advancement of Learning*, which was to occupy the first part in his plan.

With the accession of James I, Bacon rapidly rose to power in the political world. Writing in defence of the royal policies, he became one of the leaders of the King's cause against Parliament. Solicitor in 1607, he was Attorney-General by 1613, Lord Keeper of the Seal in 1617, and Chancellor the following year, when he was made Baron Verulam; in 1621 he was created Viscount St. Albans.

In defending the royal prerogative, Bacon was opposed to Sir Edward Coke, the greatest lawyer of the time, who had long been his rival. Bacon at first triumphed, and the King demoted and then removed Coke from all his offices, although he still continued to lead the Parliamentary forces. In 1621 Bacon became the object of Parliamentary attack, which was directed not only against him but also against the King. He was accused of receiving gifts, or bribes, from suitors in Chancery. When confronted with a list of twenty-eight charges, Bacon decided that defence would be of little use. He submitted a statement, declaring: "It resteth therefore that, without fig-leaves, I do ingenuously confess and acknowledge, that having understood the particulars of the charge, . . . I find matter sufficient and full, both to move me to desert the defence, and to move your lordships to condemn and censure me." He admitted receiving "gifts", but maintained that his intentions were pure and that his judgment had not been swayed by them; and none of the cases he had decided was ever retried. Pointing out that it was common practice for judges to accept gifts, he claimed he was "the justest chancellor that had been in the five changes since Sir Nicholas Bacon's time," although

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he also added that "it was the justest censure in Parliament that was these two hundred years." He was found guilty by the High Court of Parliament which decided that he should pay a fine of £40,000, be imprisoned in the tower at the King's pleasure, and neither hold any public office nor come "within the verge of the court".

Although the sentence was not fully carried out, Bacon never again held public office. He devoted the last years of his life to the elaboration of his "Instauratio Magna". His efforts, however, were limited almost entirely to his own writings, and he appears to have had little knowledge of the work of other scientists. He did not know William Gilbert, physician to both Elizabeth and James I, nor was he a member of the scientific association that regularly gathered at Gilbert's house. He was a patient of William Harvey, yet seems not to have known of his investigations; Harvey in fact later remarked that Bacon "writes philosophy like a lord chancellor". Bacon's last works, except for the *New Atlantis*, written between 1614 and 1617, were fitted into his over-all project. The *Novum Organum* (1620) was to serve as the second of the six parts of his plan. In 1623 under the title *De Augmentis Scientiarum* he brought out a Latin translation of the *Advancement of Learning*, containing many additions designed to fill out the other parts of his system. When death overtook him, on April 9, 1626, he was still engaged in that task.



VOLUME 31

RENE DESCARTES

Rules for the Direction of the Mind

Discourse on the Method

Meditations on First Philosophy

Objections Against the Meditations and Replies

The Geometry

BENEDICT DE SPINOZA

Ethics

RENE DESCARTES

BIOGRAPHICAL NOTE RENE DESCARTES, 1596-1650

THE place of honour as father of modern philosophy is usually given to Descartes: certainly many of his contemporaries regarded him as the founder of a new philosophy. Like Bacon and others before him, Descartes was dissatisfied with the state of knowledge in his time. Mathematics was the only study that seemed to be well-founded. And he thought that the difference was due to a difference in method. Descartes resolved, accordingly, to introduce something essentially like the mathematical method into philosophy. The first requisite was a sure starting point, an Archimedean fulcrum, as Descartes called it. In order to discover it he adopted from Augustine the instrument of "methodical doubt", rejecting everything that was open to doubt until he could discover something indubitable. Like Augustine, he found that though everything else could be doubted, the reality of the doubt itself could not. "It is easy to suppose that there is no God, no heaven, no bodies, and that we have no hands, no feet, no body; but we cannot in the same way conceive that we who doubt these things are not; for there is a contradiction in thinking that that which thinks does not exist when it thinks. Hence the conclusion I think, *therefore I am* is the first and most certain of all that occurs to one who philosophizes in an orderly way." This conclusion, however, is only accepted because it is "clear and distinct". Hence the general rule that "whatever I apprehend very clearly and distinctly is true".

Among such very clear and distinct ideas he includes that of God, the axioms of geometry and such already familiar "eternal truths" as *ex nihilo nihil fit*, etc., which he also calls innate ideas, in the sense that they are not derived from experience, but are evolved, in due course, by the immanent power of thought itself.

Descartes by birth belonged to the lesser nobility; both of his parents came from high legal families. He was born at La Haye, in Touraine, on March 31, 1596. Although a younger son, he derived an income, sufficient to make him independent throughout his life, from the property left him by his mother.

While still a boy Descartes was sent to the Jesuit School at La Flèche, founded by Henry IV and "one of the most celebrated schools in Europe". He appears to have been at La Flèche from 1606 to 1615,

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following the Jesuit programme of studies which aimed at reconciling the classical learning of the Renaissance with the scholastic philosophy of the Middle Ages. Suffering from poor health, he was entrusted to the special care of Father Dinet, afterwards the confessor to Louis XIII and Louis XIV. He was excused from morning duties and allowed to stay in bed, a habit he retained to the end of his life. After completing the full curriculum of languages and humane letters, logic, ethics, mathematics, physics, and metaphysics, Descartes later declared, "I found myself embarrassed with so many doubts and errors, that it seemed to me that the effort to instruct myself had no effect other than the increasing discovery of my own ignorance." Mathematics alone appeared to be an exception "because of the certainty of its demonstrations and the evidence of its reasoning". He completed his education at the University of Poitiers, where he took his degree in law on November 10, 1616.

Descartes spent the remainder of his youth in travelling, "resolved no longer to seek any other science than the knowledge of myself, or of the great book of the world". Like many young Frenchmen of the time, he enlisted as a gentleman volunteer in the army of Prince Maurice of Nassau in Holland. He was still interested in mathematics, and at Breda became a friend of Isaac Beeckman, mathematician and rector of the college at Dort. Beeckman, after their meeting, noted in his diary, "Mathematical physicists are scarce, and I myself had never had any conversation on that topic with anybody but him." Their discussions, according to Descartes, turned his mind to purely theoretical problems, and when he left Holland early in 1619 to seek more active military service in Germany, he had already completed an *Essay on Algebra* and a *Compendium on Music*, dedicated to his friend.

Descartes dated his life as a philosopher from 1619. Early in that year, after his study of algebra and geometry had yielded what he considered an "entirely new science", he wrote to his Dutch friend: "My project is unbelievably ambitious, but I cannot help feeling that I am sighting I know not what light in the chaos of present-day geometry, and I trust that it will help me in dispelling that most opaque darkness." In the autumn, after the army had gone into winter quarters, he retired to a village near Ulm on the Danube to devote himself to study and speculation. "On November 10, 1619," he wrote, "when I was filled with enthusiasm, I discovered the foundations of the wonderful science." The discovery was followed by a series of three dreams which left Descartes

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the impression that "the Spirit of Truth had opened to him the treasures of all the sciences".

The experience of November 10 did not immediately alter his way of life. Some time previously he had remarked, "As comedians put on a mask to hide their timidity, so I go forward masked preparing to mount the stage of the world, which up to now I have known only as a spectator"; and for the next nine years he continued to live as a soldier and a "gentil-homme" while preparing to apply his newly discovered method to all knowledge. In 1622 he was back in France, frequenting the society of the leading scientists and philosophers. Through his friends and correspondence he was already known and esteemed for his scientific abilities, although he had not as yet published anything. He appears to have been reluctant to make his work public until his researches in physics promised to yield practical results, and he felt he could no longer "keep them concealed without greatly sinning against the law which obliges us to procure, as far as in us lies, the general good of all mankind". At the same time he had occasion to discuss his research with Cardinal Bérulle, who was so impressed that he declared Descartes was morally obliged to make his thought known to the world. Feeling that he could not find in Paris the leisure and quiet he needed for writing, Descartes retired to Holland.

From 1629 until 1649 Descartes lived in Holland, leaving only for five short visits, three to France, one to England, and another to Denmark. He disliked dwelling for long in the same place and during that time changed his residence twenty-four times, concerned only, it would appear, to be in the neighbourhood of a university and a Catholic church. Most of his more important works were written and published in Holland. He wrote the *Rules for the Direction of the Mind* during the first year, and by 1633 had all but completed his *Treatise on the World*, when the condemnation of Galileo caused him to abandon all thought of publishing it. In 1637 he brought out the *Discourse on Method* with the three "Essays" accompanying it, the *Dioptric*, *Meteors*, and *Geometry*. Through Mersenne, who acted as his personal secretary in Paris, he circulated a manuscript of his *Meditations* and obtained objections to its arguments; the work was published with his answers to the objections in 1641.

Descartes' philosophy became a source of controversy in Holland even before the appearance of his works, as a result of the teaching of his

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friends in the universities. Cartesianism was attacked as subversive of religion, and at one time Descartes was summoned before the magistrates of Utrecht, although the matter went no further because of the intervention of influential friends.

Among his friends and admirers was Princess Elizabeth, daughter of Emperor Frederick V, then in exile in Holland. Although she was only nineteen when the *Discourse* appeared, she was interested in philosophical discussion, and Descartes, in dedicating the *Principles of Philosophy* (1644) to her, declared that hers was "the only mind, as far as my experience goes, to which both metaphysics and mathematics are easy". Queen Christina of Sweden also became interested in the "new philosophy", and, through the French Ambassador, Descartes carried on a correspondence with her on ethical subjects, part of which was reworded and published as the *Treatise on the Passions of the Soul* (1650). Late in 1649 she persuaded Descartes to go to the Swedish court. He was charged with the task of drawing up a statute for a proposed academy of science and teaching philosophy to the Queen. The lessons in philosophy were scheduled to be given three times a week at five in the morning. Descartes contracted an inflammation of the lungs and died after a very brief illness, on February 11, 1650.

BIOGRAPHICAL NOTE

BENEDICT DE SPINOZA, 1632-1677

SPINOZA'S philosophy marks the culmination of the various tendencies of the Renaissance. He vindicated the autonomy of reason against every kind of authority, subordinating even the Scriptures to it. He was the complete rationalist, the prince of rationalists. He attempted to interconnect the *whole* of reality in *one* organic cosmos which suffered no cleavage into a natural and supernatural realm, or into a work-day and a Sabbath vista.

Benedict (Baruch) de Spinoza was born in Amsterdam on the 24th of November, 1632, the son of a Jewish family which had emigrated from Portugal in the last decade of the sixteenth century to have the benefit of Dutch religious toleration. His father seems to have been of some prominence in the local Jewish community, and young Baruch was presumably educated in the Jewish schools. Whatever may be the value of the various reports as to the course of his education, there can be no doubt that he early acquired unorthodox opinions, for in July, 1656,

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after some controversy, the details of which are far from clear, he was solemnly excommunicated by the Jewish authorities for "abominable heresies which he practises and teaches". Cut off from his own people, his parents dead, Spinoza was thrown on his own resources.

The next four years Spinoza spent in or near Amsterdam, associating with members of the Collegiant, Mennonite, and Remonstrant sects, and devoting himself to the study of Latin, Greek, and other "humane sciences". Probably it was also during these years that he acquired or at least perfected the trade of lens-grinder, which provided him with a means of support throughout the rest of his life. Leaving Amsterdam in 1660, he retired to Rijnsburg, a small village near Leyden and headquarters of the Collegiant group, where, according to his first biographer, "removed from all the obstacles which he could only overcome by flight, he devoted himself entirely to philosophy".

During his three years at Rijnsburg Spinoza wrote the *Short Treatise on God, Man and his Well-Being*, the *Treatise on the Improvement of the Understanding*, Descartes' *Principles of Philosophy Geometrically Demonstrated* with appended *Metaphysical Thoughts*, and seems to have begun work on what eventually became the *Ethics*. The exposition of Descartes' *Principles* was undertaken for the instruction of a group of students, who had formed a sort of philosophical club in Amsterdam, and it was far from representing Spinoza's own views, as, indeed, the preface to the published work stated. Spinoza allowed it to be published, however, hoping that "perhaps on this occasion there will be found some who hold the first places in my country, who will desire to see the other things which I have written and which I acknowledge as my own, and they will make it their business that I should be able to publish them without any risk of trouble".

His reputation was already growing. He had been visited by and was corresponding with Henry Oldenburg, one of the first two secretaries of the Royal Society of London, and through him with Robert Boyle; through the years he became acquainted with numerous other prominent personages of both the political and intellectual worlds, among them Christian Huygens. Possibly in order to be closer to some of these friends, he moved to Voorburg, near The Hague, in 1663. Although the publication of his version of Descartes aroused considerable interest, it did not produce the consequences he had desired, since publication of his other works did not follow. While continuing to work on the *Ethics*, he began,

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in 1665, the composition of the *Theological-Political Treatise*, which was published anonymously in 1670. Spinoza was moved to write this book partly by a desire to assert "the liberty of philosophizing and of saying what we think", which "cannot be destroyed unless the peace and piety of the state is therewith also destroyed".

Condemnations of the *Treatise* immediately flew thick and fast, and in many Spinoza's name was mentioned. In the disorders consequent upon the French invasion of 1672, Jan de Witt, former Grand Pensionary of Holland and powerful friend and protector of Spinoza, was murdered by an angry mob. Spinoza, whose *Theological Political Treatise* had been denounced as "forged in hell by a renegade Jew and the devil, and issued with the knowledge of Mr. Jan de Witt", was so aroused by this event that he was with difficulty restrained from public denunciation of the murderers. The Prince of Condé, commanding the French Army at Utrecht, invited Spinoza to visit him, and Spinoza went, but with what motives this visit was requested or why paid is far from certain. In any case the effort was wasted for Condé had been called away, and Spinoza returned to The Hague, where he found himself an object of popular suspicion. The same year, 1673, he was offered a professorship at the University of Heidelberg, but he gracefully declined, declaring that he held back, "not in the hope of some better fortune, but from love of tranquillity, which I believe I can obtain in some measure by refraining from public lectures".

The remainder of his life was spent quietly at The Hague, where he had settled in 1670. He completed his *Ethics* and sought to publish it, but was discouraged by the complaints aroused by the mere rumour of its being on the press. Subsequently he began his *Political Treatise*, which remained unfinished, and planned a Hebrew grammar. In 1676, already seriously ill with the consumption which was to kill him, he received a visit from Leibnitz, with whom he had already corresponded on problems of optics, and they conversed "often and at great length". Four months later, on a quiet Sunday afternoon in February, 1677, while the "people of the house" were at church, he died in the presence of an Amsterdam physician-friend. His funeral was "attended by many illustrious personages and followed by six coaches". He was forty-four. He left a small library, his clothes, a little furniture, some finished lenses (which "sold pretty dear"), and his manuscripts, which were published the same year by his friends.

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VOLUME 32

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English Minor Poems

<i>On the Morning of Christ's Nativity and The Hymn</i>	<i>Arcades</i>
<i>A Paraphrase on Psalm 114</i>	<i>Lycidas</i>
<i>Psalm 136</i>	<i>Comus</i>
<i>The Passion</i>	<i>On the Death of a Fair Infant</i>
<i>On Time</i>	<i>At a Vacation Exercise</i>
<i>Upon the Circumcision</i>	<i>The Fifth Ode of Horace, Lib. I</i>
<i>At a Solemn Musick</i>	<i>Sonnets, I, VII-XIX</i>
<i>An Epitaph on the Marchioness of Winchester</i>	<i>On the New Forcers of Con- science under the Long Par- liament</i>
<i>On the Lord Gen. Fairfax at the Siege of Colchester</i>	<i>Il Penseroso</i>
<i>Song on May Morning</i>	<i>To the Lord General Cromwell May 1652</i>
<i>On Shakespeare, 1630</i>	<i>To Sir Henry Vane the Younger</i>
<i>On the University Carrier</i>	<i>To Mr. Cyriack Skinner upon his Blindness</i>
<i>Another on the Same</i>	
<i>L'Allegro</i>	

Psalms, I-VIII, LXXX-LXXXVIII

Paradise Lost

Samson Agonistes

Areopagitica

BIOGRAPHICAL NOTE

JOHN MILTON, 1608-1674

MILTON, the supreme classical artist in English (and modern European) poetry, wrote as the conscious heir of the ancients. He recreates the large conventions and endless details of the classical epics; his images blend the general with the particular, the vague with the concrete; and his rich bold style is, like that of Homer and Virgil, elevated above common speech, though its ornate stylization includes both simplicity and complex density of suggestion and overtone. The use of blank verse for a long poem was a radical novelty, and Milton's handling of it in *Paradise Lost*

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added new worlds to English prosody, providing a sharp contrast with the baroque beauty of his earlier ode "On the Morning of Christ's Nativity". *Samson Agonistes* shows still further development of style beyond that of *Paradise Lost*. It is the only English drama on the Greek model that can stand with those of the ancients, being in part in ruggedly irregular (but not free) verse, that comes close to the rhythms and intonations of speech.

Of Milton's prose works the most popular and eloquent is the *Areopagitica*, which was a remonstrance addressed to parliament and attacking the whole system of licensing and censorship of the press.

John Milton was born in Bread Street, London, on December 9, 1608. "My father," he wrote, "destined me, while yet a little boy for the study of humane letters . . . Both at the grammar school and also under other masters at home, he caused me to be instructed daily." At the age of seventeen he was admitted to Cambridge. Here his first years were darkened by unpopularity and a quarrel with the college authorities, but he worked diligently and by the time he received his Master of Arts degree in 1632, his unusual powers had won him recognition and esteem. At Cambridge he decided to abandon his original plan of entering the service of the Church, giving as his reason that he preferred "blameless silence before the sacred office of speaking, bought and begun with servitude and forswearing".

Milton's literary gifts were apparent early. *On the Morning of Christ's Nativity* was written while the poet was still at Cambridge. *L'Allegro* and its companion piece, *Il Penseroso*; two masques, *Arcades* and *Comus*; and *Lycidas*, an elegy for a college friend drowned at sea, were the fruit of six years of study, chiefly of the classics, that followed the termination of his university career. These years, passed quietly with his father in the rural setting of a small Buckinghamshire village, were succeeded by fifteen months of travel in France and Italy where he was widely received. He made a special visit to Galileo, "grown old, a prisoner to the Inquisition for thinking in Astronomy otherwise than the Franciscan and Dominican licensers thought".

Even in the pastoral setting of *Lycidas* there were unmistakable stirrings of Milton's concern with the problems of Church reform. When, in 1641, this became one of the crucial issues in the rising tide of civil war, Milton emerged from his life of study and teaching. Renouncing his poetry for militant prose, he scourged those who favoured Episcopacy,

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holding them responsible for arresting the course of the Reformation. His attack was framed in a series of pamphlets, the most elaborate of these being a treatise entitled *The Reason of Church Government urged against Prelaty*.

In 1643, when he was thirty-five, Milton married Mary Powell, the seventeen-year-old daughter of a Cavalier family. After a few weeks she returned to her home and seemed to have no intention of continuing the relationship. Two years later, however, she came back, and their married life was resumed. There were three daughters of this union and a son who died in infancy. Mary Powell herself died in childbirth in 1654.

In the same year that his wife left him, Milton wrote his famous treatise, *The Doctrine and Discipline of Divorce, Restored to the good of both sexes from the Bondage of Canon Law and other Mistakes*, asserting that marriage being a "private matter" could be dissolved in cases of incompatibility. This incendiary tract and another on the same subject happened to have been published without a licence immediately after the enactment of a new ordinance requiring the licensing of all works. Accordingly, proceedings against Milton were instituted. His answer was *Areopagitica, a Speech for the Liberty of Unlicensed Printing*, published the following year, without a licence.

With the fall of the Stuarts in 1649, Milton mobilized his energies in the service of Cromwell and the Commonwealth. In answer to *Eikon Basilike*, a work of disputed authorship purporting to be the last meditations of Charles I, he wrote *Eikonoklastes*, a point by point refutation. Published the same year was a pamphlet entitled *Tenure of Kings and Magistrates, proving that it is lawful and hath been held so in all ages, for any who have the power, to call to account a Tyrant or wicked King, and, after due conviction, to depose and put him to death, if 'he ordinary Magistrate have neglected or denied to do it*. This was probably instrumental in Milton's appointment as Latin Secretary to the Council of State, a position he retained until 1660. The poet continued to defend the Commonwealth against the attacks of continental writers in a series of Latin tractates. This controversy raged for four years with an extraordinary degree of violence and personal vituperation; Milton's participation against the advice of physicians brought him to total blindness.

Turning once more to domestic affairs, Milton focused his attention on church reform, advocating the complete separation of Church and State and mutual tolerance between Protestant sects. In 1660, on the eve of

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the Restoration and with full awareness that his was one of the last voices to be raised against the "readmitting of kingship", Milton published *The Ready and Easy Way to Establish a Free Commonwealth* and a number of other pamphlets outlining a plan for a permanent parliament.

The Restoration put an end to Milton's public life and forced him to go into hiding. Just why he was not executed with the other prominent supporters of the Commonwealth is not clear. At the age of fifty-two, after nineteen years of stormy political activity, he again turned to the studious and literary pursuits of his youth. To this last period of his life belong his greatest poetic achievements: *Paradise Lost* (1667); its sequel, *Paradise Regained* (1671); and finally *Samson Agonistes* (1671). His prose writings of these last years include a miscellany of scholarly and historical works and *De Doctrina Christiana*, the final statement of his religious position, which by a series of mischances was not published until 1825.

Underlying this vigorous literary activity was the loneliness of Milton's personal life. Totally blind at the time of Mary Powell's death, he lived in helpless dependence on his motherless daughters, who grew up resenting him and careless of his comfort and wishes. This bleak home life was interrupted briefly in 1656 by the poet's marriage to Katherine Woodcock, who died in childbirth less than a year later. In 1663 he married Elizabeth Minshull, then but twenty-five. She seems to have brightened his last decade, which was passed in quiet study tempered with music and the company of friends. Weakened by the gout and other maladies, he died on November 8, 1674, and was buried beside his father in the church of St. Giles Cripplegate.



VOLUME 33

BLAISE PASCAL

The Provincial Letters

Pensées

Preface to the Treatise on the Vacuum

New Experiments Concerning the Vacuum

*Account of the Great Experiment Concerning the Equilibrium
of Fluids*

BLAISE PASCAL

*Treatises on the Equilibrium of Liquids and on the Weight
of the Mass of the Air*
On Geometrical Demonstration
Treatise on the Arithmetical Triangle
Correspondence with Fermat on the Theory of Probabilities

BIOGRAPHICAL NOTE

BLAISE PASCAL, 1623–1662

PASCAL'S *Provincial Letters*, written in defence of Arnauld against the Jesuits, are the first example of French prose which is at once considerable in bulk, varied and important in matter, perfectly finished in form. They owe not a little to Descartes, for Pascal's indebtedness to his predecessor is unquestionable from the literary side, whatever may be the case with the scientific.

In the better known *Pensées*, the subjects dealt with by Pascal concern more or less all the great problems of thought on what may be called the theological side of metaphysics — the sufficiency of reason, the trustworthiness of experience, the admissibility of revelation, free will, foreknowledge, and the rest. Speaking generally, the tendency of the *Pensées* is towards the combating of scepticism by a deeper scepticism, or, as Pascal himself calls it, Pyrrhonism, which occasionally goes the length of denying the possibility of any natural theology. Pascal explains all the contradictions and difficulties of human life and thought by the doctrines of the Fall, and relies on faith and revelation alone to justify each other.

As for Pascal's scientific treatises, whether we look at his pure mathematical or at his physical researches, we see the strongest marks of a great original genius creating new ideas, seizing upon, mastering and pursuing farther everything that was fresh and unfamiliar in his time. We can still point to much in exact science that is absolutely his, and we can indicate infinitely more which is due to his inspiration.

Pascal was born at Clermont Ferrand in Auvergne, June 19, 1623. His father, Étienne Pascal, had been trained as a lawyer in Paris and held the post of President of the Court of Aids at Clermont. His mother, the pious Antoinette Begon, died in 1626, leaving to her husband the care of Gilberte, Blaise, and the baby, Jacqueline.

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In 1631 Étienne Pascal sold his post, moved to Paris, and set about the education of his son. His method, according to Gilberte, "was to keep the child always in advance of his work". The boy was first to learn to think for himself, stimulated by the observations, questions, and conversation of his father. Later, after he had mastered Greek and Latin, he was to be allowed to study geometry. But at the age of twelve the boy began geometry by himself and is supposed to have achieved the equivalent of Euclid's first thirty-two theorems before his father noticed his precocity.

The elder Pascal always associated with men of eminence in science and the arts, and in his company the young Pascal was introduced to Father Mersenne's circle and became acquainted with Desargues, Fermat, and Roberval. Following a geometrical method of Desargues, Pascal completed before he was sixteen a work on conic sections that was widely circulated, though never published, which, according to his own account, embraced the work of Apollonius. Though his health was seriously affected by the intensity of his intellectual work, a few years later he achieved a still greater reputation by his invention of the first calculating machine.

Although the Pascal family had been regular and respectful in their religious practice, religion was not especially important in their lives until 1646 when they became acquainted with Jansenism. Pascal, then only twenty-three, had his attention directed to religious and theological questions, and he seems to have been influential in converting his whole family to the Jansenist version of Catholicism. His sister, Jacqueline, decided to renounce the world, and on the death of her father in 1651 she entered the Jansenist convent of Port Royal.

Pascal himself continued his scientific and mathematical researches. The same year that he began to think about Jansenism he performed his variations on Torricelli's experiment, which resulted in his *New Experiments concerning the Vacuum* (1647). This in turn led to his investigation of the action of fluids under pressure of air which established his reputation as one of the founders of hydrodynamics. By 1651 he had apparently completed most of the work for his *Great Experiment concerning the Equilibrium of Fluids*, although it was not published until 1663. Upon the death of his father, he laid aside to some extent his scientific researches, frequented polite society with his friends, the young Duc de Roannez and the Chevalier de Méré, shared their interests, and

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read Epictetus and Montaigne. Puzzling over a problem posed by de Méré concerning the division of stakes in a game of chance, he began to investigate the theory of probability. His results appeared in 1654 in the correspondence with Fermat and in the *Treatise on the Arithmetical Triangle*.

By 1654 Pascal felt "an extreme aversion for the beguilements of the world". The contrast between his life and that of Jacqueline, whom he visited the same year at Port Royal, intensified his dissatisfaction. His growing decision to retire from the world was confirmed on November 23, 1654, when he experienced what is known as his "second conversion". The written memorial of that experience, which he wore thereafter as a kind of amulet, records that from ten-thirty until twelve-thirty that night he knew "the God of Abraham, God of Isaac, God of Jacob, not of philosophers and scientists", and that he resolved "total submission to Jesus Christ and to my director". The following January he went into retreat at Port Royal, and, although he did not actually become one of its famous solitaries, he was henceforth identified with its interests.

Pascal's talents were soon employed by the Jansenists. In 1655 Antoine Arnauld, the official theologian of Port Royal, was condemned by the Sorbonne, and it was considered expedient to enlist opinion for the Jansenists against their Jesuit adversaries. Perhaps at the suggestion of Arnauld himself, Pascal began his *Provincial Letters*, which, from January, 1656, to April, 1657, captivated Paris by their style as well as their polemic. He was also asked to work upon a manual of geometry for use in the Port Royal schools, and it is probably in connection with this that he wrote his essay *On Geometrical Demonstration*.

Afflicted with ill health since infancy, Pascal's suffering had become so acute in 1658 that any sustained effort became increasingly difficult. In one attempt to distract his mind from a persistent toothache, he turned to the problem of the cycloid, which had occupied his friend, Roberval, as well as many other mathematicians of the time. Before publishing his results, he proposed his theorems for public competition. Wallis and Lalouère among others accepted the challenge, but only Pascal was able to provide the complete solution.

Although he considered geometry the "highest exercise of the mind", as he wrote Fermat, "it is only a trade . . . and I am steeped in studies so far from that mentality that scarcely do I remember that there is any such". After the cure of his niece at Port Royal in 1656, which was

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known as the Miracle of the Holy Thorn, Pascal began reading and collecting material for what he planned to be an *Apology for the Christian Religion*. He put down his thoughts “upon the first scrap of paper that came to hand . . . a few words and very often parts of words only”. These fragments, found after his death, compose what has come to be known as his *Pensées*, which were first edited by the Jansenists in 1670 and constantly re-edited thereafter.

As death approached, Pascal’s life became more austere. He gave his possessions to the poor and continually strove for complete detachment from those he loved. “It is unjust that anyone should attach himself to me . . . for I am not an end and aim of anyone,” he wrote on a paper he kept always about him to fix his resolve. In June, 1662, he gave shelter to a poor family which developed small-pox. Rather than dispossess them, he moved to the house of Gilberte, where he was seized with a violent illness which lingered for two months. He died on August 19, at the age of thirty-nine.



VOLUME 34

SIR ISAAC NEWTON

Mathematical Principles of Natural Philosophy *Optics*

CHRISTIAAN HUYGENS

Treatise on Light

BIOGRAPHICAL NOTE

SIR ISAAC NEWTON, 1642–1727

NEWTON’S *Philosophiæ Naturalis Principia Mathematica*, known for short as the *Principia* and translated here with the English title *Mathematical Principles of Natural Philosophy*, was his great work and established his fame. Some little time elapsed before it was fully accepted on the continent but for more than 200 years it reigned supreme, and all theories of cosmogony were based on the principles laid down by

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Newton. His mechanics guided astronomers and men of science in their search for natural science. And if in later years Einstein carried us some steps further and picked up some few more of the jewels which Newton sought on the shore, Newton's laws remain, included it may be, in a more comprehensive statement of the truth.

Newton was born at Woolsthorpe, Lincolnshire, on Christmas Day, 1642. His father, a small farmer, died a few months before his birth, and when in 1645 his mother married the rector of North Witham, Newton was left with his maternal grandmother at Woolsthorpe. After having acquired the rudiments of education at small schools close by, Newton was sent at the age of twelve to the grammar school at Grantham, where he lived in the house of an apothecary. By his own account, Newton was at first an indifferent scholar until a successful fight with another boy aroused a spirit of emulation and led to his becoming first in the school. He displayed very early a taste and aptitude for mechanical contrivances; he made windmills, water-clocks, kites, and sun-dials, and he is said to have invented a four-wheel carriage which was to be moved by the rider.

After the death of her second husband in 1656, Newton's mother returned to Woolsthorpe and removed her eldest son from school so that he might prepare himself to manage the farm. But it was soon evident that his interests were not in farming, and upon the advice of his uncle, the rector of Burton Coggles, he was sent to Trinity College, Cambridge, where he matriculated in 1661 as one of the boys who performed menial services in return for their expenses. Although there is no record of his formal progress as a student, Newton is known to have read widely in mathematics and mechanics. His first reading at Cambridge was in the optical works of Kepler. He turned to Euclid because he was bothered by his inability to comprehend certain diagrams in a book on astrology he had bought at a fair; finding its propositions self-evident, he put it aside as "a trifling book", until his teacher, Isaac Barrow, induced him to take up the book again. It appears to have been the study of Descartes' *Geometry* which inspired him to do original mathematical work. In a small commonplace book kept by Newton as an undergraduate, there are several articles on angular sections and the squaring of curves, several calculations about musical notes, geometrical problems from Vieta and Van Schooten, annotations out of Wallis' *Arithmetic of Infinities*, together with observations on refraction, on the grinding of spherical

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optic glasses, on the errors of lenses, and on the extraction of all kinds of roots. It was around the time of his taking the Bachelor's degree, in 1665, that Newton discovered the binomial theorem and made the first notes on his discovery of the "method of fluxions".

When the Great Plague spread from London to Cambridge in 1665, college was dismissed, and Newton retired to the farm in Lincolnshire, where he conducted experiments in optics and chemistry and continued his mathematical speculations. From this forced retirement in 1666 he dated his discovery of the gravitational theory: "In the same year I began to think of gravity extending to the orb of the Moon, . . . compared the force requisite to keep the Moon in her orb with the force of gravity at the surface of the earth and found them to answer pretty nearly." At about the same time his work on optics led to his explanation of the composition of white light. Of the work he accomplished in these years Newton later remarked: "All this was in the two years of 1665 and 1666, for in those years I was in the prime of my age for invention and minded Mathematics and Philosophy more than at any time since."

On the reopening of Trinity College in 1667, Newton was elected a fellow, and two years later, a little before his twenty-seventh birthday, he was appointed Lucasian professor of mathematics, succeeding his friend and teacher, Dr. Barrow. Newton had already built a reflecting telescope in 1668; the second telescope of his making he presented to the Royal Society in December, 1671. Two months later, as a fellow of the Society, he communicated his discovery on light and thereby started a controversy which was to run for many years and to involve Hooke, Lucas, Linus, and others. Newton, who always found controversy distasteful, "blamed my own imprudence for parting with so substantial a blessing as my quiet to run after a shadow". His papers on optics, the most important of which were communicated to the Royal Society between 1672 and 1676, were collected in the *Optics* (1704).

It was not until 1684 that Newton began to think of making known his work on gravity. Hooke, Halley, and Sir Christopher Wren had independently come to some notion of the law of gravity but were not having any success in explaining the orbits of the planets. In that year Halley consulted Newton on the problem and was astonished to find that he had already solved it. Newton submitted to him four theorems and seven problems, which proved to be the nucleus of his major work. In some seventeen or eighteen months during 1685 and 1686 he wrote in

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Latin the *Mathematical Principles of Natural Philosophy*. Newton thought for some time of suppressing the third book, and it was only Halley's insistence that preserved it. Halley also took upon himself the cost of publishing the work in 1687 after the Royal Society proved unable to meet its cost. The book caused great excitement throughout Europe, and in 1680 Huygens, at that time the most famous scientist, came to England to make the personal acquaintance of Newton.

While working upon the *Principles*, Newton had begun to take a more prominent part in university affairs. For his opposition to the attempt of James II to repudiate the oath of allegiance and supremacy at the university, Newton was elected parliamentary member for Cambridge. On his return to the university, he suffered a serious illness which incapacitated him for most of 1692 and 1693 and caused considerable concern to his friends and fellow-workers. After his recovery, he left the university to work for the government. Through his friends Locke, Wren, and Lord Halifax, Newton was made Warden of the Mint in 1695 and four years later, Master of the Mint, a position he held until his death.

For the last thirty years of his life Newton produced little original mathematical work. He kept his interest and his skill in the subject; in 1696 he solved overnight a problem offered by Bernoulli in a competition for which six months had been allowed, and again in 1716 he worked out in a few hours a problem which Leibnitz had proposed in order to "feel the pulse of the English analysts". He was much occupied, to his own distress, with two mathematical controversies, one regarding the astronomical observations of the astronomer royal, and the other with Leibnitz regarding the invention of calculus. He also worked on revisions for a second edition of the *Principles*, which appeared in 1713.

Newton's scientific work brought him great fame. He was a popular visitor at the Court and was knighted in 1705. Many honours came to him from the continent, he was in correspondence with all the leading men of science, and visitors became so frequent as to prove a serious discomfort. Despite his fame, Newton maintained his modesty. Shortly before his death, he remarked: "I do not know what I may appear to the world, but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."

CHRISTIAAN HUYGENS

From an early period of his life Newton had been much interested in theological studies and before 1690 had begun to study the prophecies. In that year he wrote, in the form of a letter to Locke, an *Historical Account of Two Notable Corruptions of the Scriptures*, regarding two passages on the Trinity. He left in manuscript *Observations on the Prophecies of Daniel and the Apocalypse* and other works of exegesis.

After 1725 Newton's health was much impaired, and his duties at the Mint were discharged by a deputy. In February, 1727, he presided for the last time at the Royal Society, of which he had been president since 1703, and died on March 20, in his eighty-fifth year. He was buried in Westminster Abbey after lying in state in the Jerusalem Chamber.

BIOGRAPHICAL NOTE

CHRISTIAAN HUYGENS, 1629-1695

CHRISTIAAN HUYGENS' researches in physical optics constitute his chief title-deed to immortality. He developed the wave theory of light which had already been adopted by Hooke in 1665; he assumed that all the points of a wave front originate secondary waves, the aggregate effect of which is to reconstitute the primary disturbance at the subsequent stages of its advance, thus accomplishing its propagation; so that each primary wave front is the envelope of an indefinite number of secondary undulations. This resolution of the original wave is the well-known "Principle of Huygens", and by its means he was able to prove the fundamental laws of optics and to assign the correct construction for the direction of the extraordinary ray in uniaxial crystals. These investigations, together with his experiments on polarization, are recorded in his *Treatise on Light*.

The family into which Christiaan Huygens was born, on April 14, 1629, at The Hague, was one of the most eminent in both the political and literary development of the Dutch Renaissance. The father of the scientist, Constantijn Huygens, Lord of Zuylichem, was secretary of state for three successive Princes of Orange; he carried out many diplomatic missions, particularly to England where he was knighted in 1621. While there he became the friend of Donne, whose poetry he began translating into Dutch. As one of the leaders of the Amsterdam school, he was the intimate friend of Vondel, the Dutch national poet, and was himself Holland's foremost classical poet.

CHRISTIAAN HUYGENS

Sir Constantijn, who was a distinguished Latinist, a musician, and a mathematician, took upon himself the preliminary instruction of his sons, Christiaan, the second son, was trained as a boy in languages, drawing, and music. At thirteen he began the study of mechanics, which together with mathematics soon became his chief interest. But before devoting his entire attention to these subjects he was sent to Leyden to study law with Vinnius, who later dedicated his famous commentary on the *Institutes* to him. In 1646 Huygens transferred to Breda, where his father directed the new university, and two years later he took his degree in law. In both places he continued his pursuit of mathematics, particularly with Van Schooten, who included some of Huygens' notes in his edition of Descartes' *Geometry*.

At seventeen Huygens communicated his first mathematical discovery to Mersenne, who introduced him to the learned world as "the Dutch Archimedes", and soon after, he was in correspondence with the leading scientists of Europe. Descartes, on being shown a mathematical paper of Huygens, declared his confidence that "he will excel in this science wherein I see hardly anyone who knows anything". Although Descartes frequented Sir Constantijn's house, it does not appear that he ever met his son. They exchanged letters, Descartes called Huygens "a son of his own blood", and when Huygens was travelling in Denmark in 1649 with the Count of Nassau, he regretted that time and weather did not permit his crossing over to Sweden to visit Descartes, who was then living there at the invitation of Queen Christina.

At the age of twenty-one Huygens published his first works on mathematics, dealing with the quadrature of conic sections, and in 1654 he made the closest approximation so far obtained of the area of the circle. Two years later he sent to Van Schooten his work on probability, which while recognizing the priority of Pascal's and Fermat's treatment, constituted the first treatise on the subject when published in a volume of Van Schooten's mathematical writings. At the same time Huygens was working with his elder brother on astronomy. They found a new method of grinding and polishing lenses which overcame the defects of spherical and chromatic aberration and enabled them to construct an improved telescope. Huygens's first observations yielded the discovery of the Orion nebula and of a new satellite to Saturn as well as a truer description of the rings about that planet. The need for an exact measure of time in observing the heavens led Huygens to the invention of the pendulum-

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clock, which was presented to the states-general in 1657 and was followed a year later by a description of the requisite mechanism.

Huygen's reputation now became international. As early as 1655 the University of Angers had distinguished him with an honorary degree of doctor of laws. In 1663, on the occasion of a visit to England, he was elected a fellow of the Royal Society. Two years later, on the establishment of the French Royal Academy of Sciences, Colbert invited him to be its first foreign resident, and for the next fifteen years Huygens made his home in France. He received a handsome pension from Louis XIV and lived at Paris in the Bibliothèque du Roi. Although Huygens disliked the world of rank, wealth, and fashion, he did not live the life of a recluse in Paris; he even wrote some verses to the celebrated Ninon de Lenclos. Yet the greater part of his efforts, despite delicate health, were spent in intense scientific research. His treatises on "Dioptrics" and the concussion of elastic bodies were hailed not only for their discoveries, but also for the style in which they were presented, and Newton claimed that among modern writers he had most closely approximated the style of the ancients. His greatest work, the *Horologium oscillatorium* (1673), dealt with the problems raised by the pendulum-clock, and contained original discoveries sufficient for several important treatises.

Twice during his residence in Paris, Huygens returned to Holland in the hope that his native air would restore his health, and in 1681, perhaps because of the revocation of the Edict of Nantes, he severed his connections and left France. Upon his return to Holland, Huygens took up again the study of optics, physics, and astronomy. He had always been interested in useful inventions and, in addition to the pendulum-clock, had already improved the air pump and the barometer, provided the first idea of the micrometer, and introduced the use of a spiral hand for a watch-spring. In Holland he turned again to the construction of telescopes. Using lenses of long focal distance mounted on poles, he produced what were called "serial telescopes". He also succeeded in constructing an almost perfectly achromatic eye-piece, still known by his name. His researches in optics finally led him to publish in 1690 his *Treatise on Light*, which had been written in French in 1678 while at Paris. In response to the need for some means of representing the solar system, Huygens constructed a "planetary machine" capable of showing the motions of the planets. It was apparently also at this time that he wrote the imaginative work found among his posthumous papers called

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Cosmotheoros, and translated into English under the title, "*The celestial worlds discovered, or conjectures concerning the inhabitants, plants, and productions of the worlds in the planets.*"

Worn out by his great and varied activity and the burden of an enormous correspondence, Huygens died at The Hague, on June 8, 1695, at the age of sixty-six.



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JOHN LOCKE

A Letter Concerning Toleration
Concerning Civil Government, Second Essay
An Essay Concerning Human Understanding

GEORGE BERKELEY

The Principles of Human Knowledge

DAVID HUME

An Enquiry Concerning Human Understanding

BIOGRAPHICAL NOTE

JOHN LOCKE, 1632-1704

THE *Essay Concerning Human Understanding* embodies Locke's philosophy. It was the first extensive attempt to estimate critically the certainty and the adequacy of human knowledge when confronted with God and the Universe. Excluding from his enquiry "the physical consideration of the mind" he sought to make a faithful report, based on an introspective study of consciousness, as to how far a human understanding of the universe can reach. It was Locke's distinction to present to the modern world in his own "historical plain method", perhaps the largest assortment ever made by any individual of facts characteristic of human understanding: his mission was to initiate modern criticism of the foundations and limits of our knowledge.

Locke was born on August 29, 1632, the eldest child of a respectable Somerset family of Puritan sympathies. His father was a lawyer, small

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landowner, and captain of a volunteer regiment in the parliamentary army. Locke's early education was carefully tended by his father at their rural home at Belton, near Bristol; and it was probably through the influence of the elder Locke's parliamentary patrons that he obtained a place at Westminster School, where he remained from his fourteenth to his twentieth year. In 1652 he won a scholarship to Christ Church, Oxford.

At the time Locke entered Oxford, Cromwell was chancellor, and the Puritans were in control. The curriculum however was still the traditional one of grammar, rhetoric, logic, geometry, and moral philosophy. Locke later declared that he "had lost a great deal of time at the commencement of his studies, because the only philosophy then known at Oxford was the "Peripatetic", and his friend, Lady Masham, reported that he often told her that "he had so small satisfaction there from his studies . . . that this discouragement kept him from being any very hard student". Nevertheless, after taking his bachelor's degree in 1656, he remained at Oxford to obtain his master's degree and then became successively lecturer in Greek, reader in rhetoric, and finally in 1664 censor of moral philosophy. But such activity did not fully occupy his attention. The reading of Descartes, which gave him "a relish of philosophical things", and the founding at Oxford of the Royal Society led him to begin experimenting in chemistry and meteorology. Soon afterwards he began the study of medicine and by 1666 he was engaged in occasional practice, although he never took a doctor's degree.

The commonplace books kept between his twenty-eighth and thirty-fourth year show that it was also at Oxford that Locke became interested in political questions. His citations are concerned with such topics as the constitution of society, the relation of Church and State, and the importance of religious toleration. In 1665 he interrupted his medical studies to serve on a diplomatic mission to Brandenburg. On his return he considered going to Spain as secretary of the embassy, although he eventually declined the offer. In 1667 he abandoned the academic life for the political world of London and "the society of great wits and ambitious politicians". This action came about largely as a result of an accidental meeting and ensuing friendship with Lord Ashley, Chancellor of the Exchequer, who persuaded Locke to enter his household as personal physician, general adviser, and confidant. For the next sixteen years Locke served his patron in various capacities. He saved Ashley's life by operating on an "imposthume in the breast", prescribed for the

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servants, helped to arrange the marriage of the eldest son, and drew up the "Fundamental Constitutions of the Government of Carolina", a colony of which Ashley was a "lord protector". When Ashley was made first Earl of Shaftesbury and Lord Chancellor in 1672, Locke became "secretary of presentations" and secretary of the council of trade.

Locke's many practical duties in London did not prevent him from pursuing his scientific and philosophical interests. His medical studies provided the basis for a close friendship with Sydenham, and Locke sometimes accompanied him on his professional calls. He kept up his early interest in chemistry with his friend, Robert Boyle, and upon the latter's death, edited his *General History of the Air*. He frequently held informal gatherings for the discussions of questions in science and theology. On one such occasion, when meeting with "five or six friends", a question arose concerning the "limits of human understanding". Locke undertook to provide an answer, and what was thus "begun by chance, was continued by entreaty, written by incoherent parcels, after long intervals of neglect resumed again as humour and occasions permitted", and published after almost twenty years as *An Essay Concerning Human Understanding*.

Locke's fortunes were closely linked with those of Shaftesbury, and when the Earl fell from power in 1675, Locke withdrew from public life. He went to France, where he remained four years, during which he sought to restore his health, which had never been good, and to work upon his *Essay*. At Montpellier he was the neighbour of the Earl of Pembroke, later also the patron of Berkeley, to whom he dedicated his work. When Shaftesbury again arose to power in 1679, Locke returned to England and resumed his former activities. Although he seems to have played little part in Shaftesbury's plotting with Monmouth against the King which led to the Earl's exile and death, he fell under royal suspicion, and in 1683 he found it safer to seek refuge in Holland. Fearing arrest at the insistence of the English government, he lived at first in Amsterdam under the assumed name of Dr. Van der Linden. He rapidly formed congenial associations, especially among the Remonstrants, with whom Spinoza had also lived, and settled down to complete the *Essay*. In 1687 he made his first appearance as an author by publishing an abstract of it in the *Bibliothèque Universelle* of his friend, Le Clerc. It seems likely that he was involved to some extent in planning the Revolution of 1688. He had friends among the English refugees, he was

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known to William of Orange, and he returned to England in 1689 in the same ship which carried William's wife, Princess Mary.

Although Locke was offered several responsible positions in the new régime, he preferred to devote himself to his writings and accepted only the comparatively light task of commissioner of appeals. Within four years he completed his most important works. The *Letter Concerning Toleration*, which had been written and published in Latin in Holland, appeared in English the year of his return. In 1690 the *Two Treatises on Civil Government* and the *Essay* appeared, and three years later the *Thoughts on Education*.

Prompted by ill health and dissatisfaction with the course of public affairs, Locke retired in 1691 to Oates Manor in Essex, the home of Lady Masham, daughter of Ralph Cudworth, the Cambridge Platonist. He continued to work at the *Essay* and in 1694 published a second edition; a third and a fourth edition were also brought out during his lifetime. The *Essay* and *Letter Concerning Toleration* involved him in a long series of controversies regarding the religious implications of his teaching. The *Second* and *Third Letter Concerning Toleration*, the pamphlets interchanged with Bishop Stillingfleet of Worcester, and the *Reasonableness of Christianity* belong to these years, as does the series of letters to Isaac Newton. He continued to be occupied with political problems and expressed his views on currency reform in his *Observations on Silver Money* and *Further Considerations on Raising the Value of Money*. Upon the establishment of commission on trade and plantations, Locke reluctantly accepted a post as one of the commissioners. This office absorbed all the time his health permitted him to spend in London from 1696 to 1700, when constant illness compelled his resignation.

Locke's last years were spent quietly in retirement at Oates. He occupied himself with biblical studies and wrote a commentary on St. Paul's Epistles. He was in the midst of writing a *Fourth Letter on Toleration* when he died on October 28, 1704. He was buried near Oates by the parish church of High Laver.

BIOGRAPHICAL NOTE

GEORGE BERKELEY, 1685-1753

THE philosopher George Berkeley set himself the task of opposing the mechanistic methods of explanation generally accepted in his time in consequence of the fashion set by the great pioneers of modern science.

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He feared that that way lay materialism and atheism. But it was Locke's *Essay Concerning Human Understanding* that served him chiefly as the text of his criticism, especially in his *Principles of Human Knowledge* and the *Three Dialogues*.

Locke had maintained that our ideas of primary qualities resemble their external objects, whereas those of secondary qualities have no corresponding objects. Berkeley objected that both kinds of ideas are equally dependent on the mind and there is no more need of justification to assume the objective existence of primary than of secondary qualities. Moreover, it is absurd to suppose that an idea can resemble anything that is not an idea. And if it is superfluous to assume the objective existence of primary qualities corresponding to certain ideas of sensation, it is even more unnecessary to assume, with Locke, the independent existence of material substances of which, strictly speaking, we have no idea at all. For Berkeley the ideas are the objects of knowledge, and there is nothing beyond them.

The net result of Berkeley's speculations is an idealist philosophy according to which the only realities are God, other spirits or minds which He has created, and the innumerable ideas which He has produced and arranged for us to apprehend in certain sequences arbitrarily decreed by Him.

Berkeley, the eldest son of an English settler in Ireland, was born on March 12, 1685, probably at Dysert Castle, near Thomastown in County Kilkenny. At the age of eleven he was enrolled in Kilkenny school and because of his precocity was assigned to the second class. At fifteen he entered Trinity College, Dublin. He gained a scholarship in 1702, took his bachelor's degree two years later, and upon completing his master's degree in 1707, he obtained a junior fellowship, after passing the examination with great distinction. In 1709 he was ordained deacon in the Anglican church.

The *Common Place Book* he kept during these early years at Trinity College reveal that Berkeley first became interested in philosophy through the influence of Newton, Boyle, and Locke. In 1705 he had formed a society to discuss the "new philosophy", and his notes indicate that he was soon convinced that he had discovered a "new principle" which enabled him to overcome the difficulties he encountered in Locke. His first publications were two short mathematical treatises, which appeared in 1707. His own philosophical doctrine was applied for the first time

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in *An Essay Towards a New Theory of Vision* (1709) and given full statement a year later in his *Treatise Concerning the Principles of Human Knowledge*. His concern with moral and social problems became evident at this time in a series of sermons he delivered in the college chapel, which were subsequently published as *A Discourse on Passive Obedience*.

In 1713 Berkeley obtained a leave of absence from his academic responsibilities and went to England. He intended to arrange for the publication of his *Three Dialogues Between Hylas and Philonous*, written in answer to objections against his *Principles*, and also to "make acquaintance with men of merit". In London his charm and wit were instantly appreciated. Swift introduced him at court and recorded the event in his journal: "That Mr. Berkeley is a very ingenious man, and I have mentioned him to all the Ministers, and I will favour him as much as I can." Pope made him the gift of "a very ingenious new poem", Steele invited him to write for his paper, the *Guardian*, and Addison entertained him with wine at the premiere of his *Cato*.

Most of the time between 1714 and 1721 Berkeley spent in travel on the continent. Swift secured him an appointment as Chaplain to Lord Peterborough, special ambassador for the coronation of the King of Sicily, and he spent the greater part of 1714 in France and Italy. His return at the end of that year coincided with the fall from power of his friends, and, being unable to obtain an appointment to his liking, he accepted another opportunity to travel on the continent, this time as tutor to the son of the Bishop of Clogher, who had presided at his ordination. Berkeley held this position from 1716 until 1721. He spent most of the time in Italy where, in addition to his tutorial work, he explored antiquities and art treasures and devoted considerable attention to the observation of natural phenomena. On one occasion he climbed Vesuvius while it was erupting, and his notes on the event were later published in the *Transactions of the Philosophical Society*.

Berkeley returned to England in 1721 to find the country in the midst of the social crisis caused by the bursting of the South Sea Bubble. He published his view of the affair in the *Essay towards preventing the Ruin of Great Britain*, in which he proposed extensive sumptuary laws, encouragement of the arts, and return to a simpler life. Soon afterwards, he conceived his project for the encouragement of religion among the American natives by the establishment of a college in Bermuda. To his

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friend, Lord Percival, to whom he had dedicated the *Theory of Vision*, he sent his verses prophesying, "Westward the course of Empire takes its way," and in a letter declared his determination "to spend the rest of my days in the island of Bermuda". In 1723 Esther Vanhomrigh, Swift's "Vanessa", somewhat mysteriously left him half of her property, amounting to four thousand pounds, although Berkeley claimed that she was "a perfect stranger". A year later he was appointed to the rich Deanery of Derry. The resulting improvement of his fortunes made it possible for him to pursue his Bermuda project with greater vigour. In 1724 he returned to London and published his pamphlet entitled *A Proposal for the Better Supplying of Churches in our Foreign Plantations and for Converting the Savage Americans to Christianity*. In addition to obtaining many private subscriptions for his plan, he persuaded Parliament to promise a grant of twenty thousand pounds, and obtained a royal charter for his projected college.

In 1728 he married the daughter of the chief justice of Ireland and with three companions departed for America. The group settled first at Newport, Rhode Island, with the aim of buying lands and stock to supply the college at Bermuda and of encouraging commerce between the island and the mainland. But with Berkeley away from London, Parliament showed no inclination to forward the promised grant, and in 1731 it became clear that the project was a failure. During the rest of his sojourn in America, Berkeley devoted himself to study, preached occasionally, and wrote his *Alciphron, or the Minute Philosopher*. On his departure he left his farm, house, and library to Yale. Although his own plans had failed, he continued to follow with lively interest the progress of education in America and on several later occasions donated books to Yale and Harvard.

For the last last eighteen years of his life Berkeley was Bishop of Cloyne in Ireland. The year he became bishop he published his *Analyst* (1734), in which he criticized Newtonian mathematics and suggested certain corrections. Between 1735 and 1737 he published a series of papers entitled *The Querist*, which dealt with the welfare of Ireland. The plague years of 1740 and 1741 led him to publish his *Siris, or a Chain of Philosophical Reflexions and Enquiries concerning the Virtues of Tar-Water* (1744). He had encountered the medicinal use of tar-water while in America, and in this work he endeavoured to account for its allegedly universal curative powers by means of certain neo-Platonic doctrines, which he had studied during his stay in Rhode Island.

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Berkeley's health, which had begun to fail, was seriously affected by the death of his eldest son in 1750. He had long wanted to retire to Oxford and now in order to be with his younger son, who was studying there, he took the extraordinary step of resigning his bishopric. The King refused to accept his resignation and declared that he might live where he chose but he must die a bishop. Berkeley moved to Oxford in 1752. He died there the following year on January 14 and was buried in Christ Church.

BIOGRAPHICAL NOTE DAVID HUME, 1711-1776

DAVID HUME pursued the problems and methods of Locke to their extreme conclusion, in the sense that he showed that the kind of empiricism which Locke had advocated leads to positivism in science and scepticism in philosophy. It is one of the ironies of history that the book which Berkeley wrote in order to prevent or to cure scepticism actually infected Hume with it. Berkeley had contended that there is not sufficient evidence for assuming material substances or material causality, as we have no ideas of either; but he defended both the substantial nature and causal power of Spirits. In his *Enquiry Concerning Human Understanding* Hume argued that the same reasons which led Berkeley to reject material substances and material causes are also valid against the assumption of mental substances and mental causes.

Hume was born at Edinburgh on April 26, 1711, the younger son in a good but not wealthy family. His father, "who passed for a man of parts", died when Hume was still a child, and he was brought up by his mother at the family estate of Ninewells, near Berwick. About 1723 he entered the University of Edinburgh, and, according to his *Autobiography*, "passed through the ordinary course of education with success". His letters show that when he returned to Ninewells about three years later he had acquired a fair knowledge of Latin, slight acquaintance with Greek, and a literary taste inclining to "books of reasoning and philosophy, and to poetry and the polite authors". His studious disposition led his family to believe that law was the proper profession for him, but he "found an insurmountable aversion to everything but the pursuits of philosophy and general learning; and while they fancied I was poring upon Voet and Vinnius, Cicero and Virgil were the authors which I was secretly devouring".

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A too "ardent application" to his studies threatened his health, and in 1734, determined to try a complete change of scene and occupation, Hume entered a business house in Bristol. In a few months he found "the scene totally unsuitable", and he set out for France, resolved "to make a very rigid frugality supply my deficiency of fortune, to maintain unimpaired my independency, and to regard every object as contemptible, except the improvement of my talents in literature". He visited Paris, resided for a time at Rheims, and then settled at La Flèche, where Descartes had gone to school. During his three years in France he wrote the *Treatise of Human Nature*, and in 1737 returned to London to attend to its publication. It appeared in three volumes during 1739-40. Contrary to his expectations, his first effort "fell dead-born from the press without reaching such distinction as even to excite a murmur among the zealots."

Upon the failure of his book Hume retired to Ninewells and devoted himself to study, mainly in politics and economics. In 1741 he published the first volume of his *Essays, Moral and Political*, which enjoyed such success that a second edition was brought out the following year. At that time he also issued a second volume of essays. He continued to look about for a position that would secure him independence, and in 1744 tried hard to obtain the chair of moral philosophy at Edinburgh. Failing in this attempt, he accepted the post of tutor to the Marquis of Annandale, who had been declared a lunatic by the court. Upon his dismissal a year later, Hume accepted the office of secretary to General St. Clair, a distant relative, who was engaged in an "expedition which was at first meant against Canada, but ended in an incursion on the coast of France". After the failure of this venture he accompanied the general on a "military embassy to the courts of Vienna and Turin" on which he "wore the uniform of an officer and was introduced at these courts as aide-de-camp to the general". He remarks that these two years (1746-48), "almost the only interruption which my studies have received during the course of my life", enabled him to return to Scotland "master of near a thousand pounds".

During his absence from England in 1748 his *Philosophical Essays* was published. Afterwards entitled *An Enquiry concerning Human Understanding*, it was a re-casting of the first part of the *Treatise* by which he hoped to gain a larger audience. But the first reception of the work was little more favourable than that accorded to the *Treatise*. In 1751 he re-cast the third book of the *Treatise* and published it as *An Enquiry*

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concerning the Principles of Morals. That same year he was again unsuccessful in his attempt to obtain a professor's chair at Edinburgh, this time as the successor to his friend, Adam Smith, in the chair of logic. The following year, despite accusations of heresy, he received the post of librarian at the Advocates' Library, which though small in salary provided excellent facilities for literary work.

During his years as librarian Hume attained his greatest success as a man of letters. He continued his essays and in 1757 brought out the *Four Dissertations*, one of which was devoted to the *Natural History of Religion*. The *Dialogues concerning Natural Religion* were also completed, but on the advice of friends publication was postponed until after his death. Most of his efforts, however, were devoted to the writing of history, to which he may have turned his attention because of the success of his political and economic essays. Adam Smith had recommended that he begin with Henry VII, but he chose to start with the period of James I, 'an epoch when, I thought, the misrepresentations of faction began chiefly to take place'. Although Hume was disappointed by the reception of the first volume, which appeared in 1753, his *History of England* was well received, and within a few years it brought the author a larger revenue than had ever before been obtained in his country from literature. The work was completed by 1761, although Hume continued to revise it throughout most of the remainder of his life, excising from it all the "villainous seditious Whig strokes" and "plaguy prejudices of Whiggism" that he could detect.

Although "not only independent but opulent . . . and determined never more to set foot out of" his native country, Hume in 1763, accepted an invitation to go to Paris as acting secretary of the embassy. For three years he enjoyed Parisian society. Meeting with men and women of all ranks and stations, he noted "the more I resiled from their excessive civilities, the more I was loaded with them". He returned home, convinced "there is a real satisfaction in living at Paris". Rousseau accompanied him, persuaded by Hume to seek shelter in England. The association was of short duration; it ended in a violent and sensational quarrel for which Rousseau seems to have been largely to blame. Hume, after serving as under secretary at the Foreign Office for a year (1767-68), retired to Edinburgh, where he built himself a new house, and settled down "with the prospect of enjoying long my ease, and of seeing the increase of my reputation".

JONATHAN SWIFT

In the spring of 1775 Hume was stricken with a troublesome though not painful illness. Preparing himself for "a speedy dissolution", he wrote a short autobiography, in which he drew his own character. "I am," he wrote, "or rather was (for that is the style I must now use in speaking of myself; which emboldens me the more to speak my sentiments), I was, I say, a man of mild dispositions, of command of temper, and of an open, social, and cheerful humour, capable of attachment, but little susceptible of enmity; and of great moderation in all my passions. Even my love for literary fame, my ruling passion, never soured my temper, notwithstanding my frequent disappointments."

A visit to Bath in 1776 seemed at first to relieve his sickness, but on the return journey more alarming symptoms developed, his strength rapidly sank, and, little more than a month later, he died in Edinburgh on August 25, 1776.



VOLUME 36

JONATHAN SWIFT

Gulliver's Travels

LAURENCE STERNE

The Life and Opinions of Tristram Shandy, Gent.

BIOGRAPHICAL NOTE

JONATHAN SWIFT, 1667-1745

OF the many English writers whose work shows traces of the journalism of the day the most emphatic and the ablest is Jonathan Swift. He was a man of subtle wit and wide reading. Yet the greater part of his output was devoted to deriding the claims of the intellect. Swift's life was one of disappointed ambition. As a political writer he was courted by Whigs and Tories in turn; he had hopes of an English prebend; and the final award of the Deanery of St. Patrick's, Dublin, was less than he thought he deserved. Such disappointments, along with recurring ill health, made his temper somewhat morose, and awareness of this has led critics to see in his writings a misanthropy which is not there. Especially is this the

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case where criticism of *Gulliver's Travels* — the work which means Swift to the world at large — is concerned. Yet to call him the “master of hatred” on the strength of his claim (in a letter to Pope) to hate “all nations, professions and communities” is absurd, for in this he is only expressing his dislike of hysteria. To accuse him of “savage disgust” because he borrows man's less agreeable physical functions to symbolize man's moral shortcomings is to forget that this has been the allowed method of satire in all ages. Nobody loved an ironist, least of all one who makes the reader so acutely aware of his failings. Swift is aware of this. That he does not see himself as a Houyhnhnm and the rest of mankind as Yahoos is evident from the fourth book of *Gulliver's Travels*, where Gulliver's ambiguous position is in some measure a representation of Swift's own. Of Swift's prose style Johnson allows only “that he understands himself; and his readers understand him”. Johnson prefers Addison, for reasons which he makes clear, but Swift is the greater master. In Addison's style there is always a hint of calculation intervening between the thought and the utterance. Swift's words flow direct from Swift's mind. His invention — as any reader of *Gulliver's Travels* will confirm — is inexhaustible: he could write brilliantly on any subject.

Shortly after the death, in 1658, of Thomas Swift, Vicar of Goodrich, his five sons migrated to Ireland in hope of restoring the family fortunes, lost through their father's support of the losing side during the Civil War. The eldest son, Godwin, gained wealth and, when his younger brother died, leaving a widow and two children without any source of income, he became their support. The second of these children was Jonathan Swift, born in Dublin on November 30, 1667. At the age of six, he was sent to Kilkenny Grammar School and later to Trinity College by his Uncle Godwin. Swift attributed the fact that he was “stopped of his degree for dullness and insufficiency” to his uncle's ill-treatment of him, which, as he put it, caused him to become so “discouraged and sunk in spirits” that he neglected his studies. By a special provision, he obtained his degree from this institution in February 1685.

In 1689, his uncle having died insolvent, Swift went to England and entered the employment of the essayist and diplomat, Sir William Temple, in his retirement at Moor Park. After “growing into some confidence” with his employer and obtaining an M.A. degree from Oxford, his lack of advancement rankled. He left Temple, took orders in Ireland, and was appointed to the parish of Kilroot near Belfast. Two

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years later he resigned and returned to Moor Park, where he remained until his patron's death.

Swift's ten years' connection with Temple had acquainted him with men and affairs and afforded him the opportunity for extensive reading and writing. "He writ and burnt, and writ again upon almost all manner of subjects," even composing Pindaric poems in the manner of Cowley which elicited Dryden's comment: "Cousin Swift, you will never be a poet." Before Temple's death, Swift had written two satires, *The Battle of the Books* and *The Tale of a Tub*, which, however, were not published until 1704.

After Temple's death, Swift found another patron in the Lord Justice of Ireland, Lord Berkeley, but again he was disappointed in his hope of preferment and forced to content himself with the income from three small parishes. The only one which had a church was Larocor with its congregation of fifteen people, "most of them gentle and all of them simple". Here Swift established himself. To Larocor he invited Esther Johnson, the "Stella" to whom he addressed his *Journal*, and her companion, Rebecca Dingley. Esther Johnson had been a dependant of Sir William Temple, and Swift had taught her to read and write when they resided at Moor Park together; she had been eight, he, twenty-two.

Swift's life in Ireland did not absorb his energies or satisfy his ambitions. He travelled often to London where he frequented the coffee houses and made the acquaintance of Addison, Steele, Pope, and Congreve. Like them, his sympathies were with the Whig party and his first political pamphlet, published in 1701, was actually attributed to various Whig leaders. Swift's discovery that the Whigs did not intend to use their power to aid the Church was the occasion for a letter and three tracts, the most famous being the *Argument to prove that the abolishing of Christianity in England may, as things now stand, be attended with some inconveniences* (1708).

In 1710, the Tory, Robert Harley, became Chancellor of the Exchequer and shrewdly welcomed Swift "with the greatest respect and kindness imaginable". Soon afterwards Swift became the editor of the Tory weekly, the *Examiner*. His pen made him a power in the State; he warned Harley "never to appear cold" to him; at the Court, he boasted to Stella, "I am so proud I make all the lords come up to me." With the accession of George I, the Tory Ministry fell, and Swift retired to the deanery of St. Patrick's in Dublin, bestowed on him by Queen

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Anne instead of the English appointment he would have preferred as recompense for his services.

While in London Swift entered deeply into the literary life of the time. He invented Sir Isaac Bickerstaff, who predicted and announced the death of the almanac-maker and astrologer, John Partridge, so convincingly that the man was obliged to issue a special almanac to assure his clients that he was still alive. At the time his political activity was at its height, Swift was treasurer of a society of wits and statesmen, known as the Brothers; a contributor to the *Tatler*, *Spectator*, and *Intelligencer*; joint founder with Pope and Arbuthnot of the Scriblerus Club. To this period belong a miscellany of works in prose and verse and his *Journal to Stella*, a series of daily letters to the two ladies in Ireland, minutely recording his busy life and his inmost thoughts with an admixture of tenderness, humour and playfulness.

In 1714 Swift returned to Ireland, where, to his discomfort, he was later followed by Esther Vanhomrigh, a young girl he had come to know in London. Although he undoubtedly preferred the company of Stella, his relations to both ladies remained ambiguous; it is not known whether he ever married Stella or whether he ever saw her except in the presence of Mrs. Dingley. The history of his attachment to Miss Vanhomrigh is preserved in the poem, *Cadenus (Decanus) and Vanessa*, and in their correspondence, later edited by Sir Walter Scott. At length Vanessa, in 1723, took the despairing step of writing to Stella, or to Swift, demanding to know whether they were married. Swift returned the letter and left Vanessa for ever without uttering a word. Within a few weeks Vanessa was dead. Stella died five years later.

Swift hated the Irish and always considered himself an "Englishman dropped in Ireland", but, as a "fighter for human liberty", he was outraged by the results of English misrule. Once again he took up his pen to combat the Whigs, this time on behalf of the Irish. Gradually there collected around him the nucleus of an Irish party which gained popular support as a result of the six famous *Drapier Letters* (1724), wherein Swift protested against the scandalous patent accorded to William Wood for supplying Ireland with a coinage of copper halfpence. His *Modest Proposal for Preventing the Children of Poor People from Being a Burden to their Parents or the Country* (1729), by the expedient of eating them, further aroused the national spirit. Swift became revered as a leading Irish patriot, a reputation he felt he in no way deserved

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“because what I do is owing to perfect rage and resentment, and the mortifying sight of slavery, folly, and baseness about me, among which I am forced to live”. A product of the period of his Irish banishment was *Travels Into Several Remote Nations of the World by Lemuel Gulliver*, published in 1726.

During his last years Swift suffered acute physical torture from an ailment that had long plagued him with giddiness and deafness. In March 1742, it became necessary to appoint guardians of his person and estate. After a paralytic stroke in September of the same year, he sank into complete mental apathy, which lasted until his death on October 19, 1745. In his will he made provision for his interment in St. Patrick's in the same coffin as Stella “as privately as possible and at twelve o'clock at night”, for the disposition of his fortune to found a lunatic asylum in Dublin, for the Latin inscription on his black marble tombstone “in large letters, deeply cut and strongly gilded”, commemorating his release from the “savage indignation” that could no longer “lacerate his heart”.

BIOGRAPHICAL NOTE

LAURENCE STERNE, 1713-1768

THE development of the English novel in the eighteenth century was rapid and diverse. Throughout its development up to 1760, however, it had retained basically the same framework of a more or less chronological sequence of events leading to an outcome foreseen by the writer. It remained for Laurence Sterne to complete the process by radically altering the framework in the first impressionistic novel. *Tristram Shandy* presents life not as a series of cause and effect but as a flux of irrelevances without relationship except in the consciousness of the person experiencing them. The coherence of events thus depends solely on the associations they set up in the minds of Sterne's characters; and since, according to Locke, the association of ideas is irrational, the pattern of events must be equally so. In his brilliant explorations of absentmindedness Sterne found the means to both pathos and comedy, but it is in comedy (as when the birth of the hero results from an association of ideas in his father's mind) that the technique is seen at its most effective.

The Treaty of Utrecht having been concluded, Roger Sterne with his British regiment landed in Clonmel, Ireland, where his wife joined him.

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A few days later, on November 24, 1713, their son, Laurence, was born. "My birthday," Laurence Sterne records in the short autobiographical sketch written for his daughter, "was ominous to my poor father, who was the day after our arrival, with many other brave officers, broke and sent adrift into the wide world with a wife and two children."

Until Roger Sterne's death in 1731, the Sterne family "decamped bag and baggage" every time new orders were issued to his regiment. Children were born and died, one on an expedition from Bristol to Hampshire, another in the barracks at Dublin, two others at Carrickfergus. "My father's children were not made to last long," Sterne comments. At the siege of Gibraltar, Roger Sterne was run through the body in a duel "about a goose". Although he survived, it impaired his constitution; he contracted the "country fever, which made a child of him" and one day "he sat down in an armchair and breathed his last".

Sterne's memoir is permeated with a tender regard for the "little smart man" who was his father; for his patience in the face of fatigue and disappointments "of which it pleased God to give him full measure"; and for the innocence of his intentions, which caused him to suspect no one, "so that you might have cheated him ten times in a day, if nine had not been sufficient for your purpose". Sterne appears to have had little affection for his mother and implies that his father married her because he was in debt to her stepfather. She seems to have been perpetually in need of money after her husband's death, and Sterne found irksome the continual demands she made upon him.

"By God's care of me, my cousin Sterne became a father to me and sent me to the University." This was in 1732. At Jesus College, Cambridge, where his great-grandfather, the Cavalier Archbishop of York, had once been Master, Sterne took both B.A. and M.A. degrees, as well as holy orders. Through the good offices of his uncle, a clergyman with strong Whig tendencies, he obtained the parish of Sutton-in-the-Forest immediately after his ordination and other preferments later. Eventually, uncle and nephew quarrelled; Sterne refused to "write paragraphs in the newspapers" furthering the Whig cause, which he considered "dirty work".

In 1741 he married Elizabeth Lumley, wooing her in a series of elaborate love letters, overflowing with "sensibility". After their marriage, Sterne resided at Sutton and for the next twenty years was occupied with the fairly light duties of an eighteenth-century English cleric. He made

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frequent jaunts to Skelton Castle to visit the Rabelaisian friend of his Cambridge days, John Hall-Stevenson, the "Eugenius" of *Tristram Shandy* and the author of *Crazy Tales* and other perverse fables and verse. Sterne ranged with enjoyment in Hall-Stevenson's extraordinary library of obscure learning and his name came to be associated with the "Demoniacs" of Skelton Castle, a society founded by its "ingenius" master.

Sterne was forty-six before his metamorphosis into a writer, and by the time he was fifty-five he was dead. Before 1759 his literary efforts had been sparse: a few political pamphlets for his uncle, two sermons, and other random pieces. In writing a political allegory on a local ecclesiastical intrigue, Sterne seems to have discovered his talent as a humourist.

In 1759, Sterne began work on *Tristram Shandy*. He described it as a "picture of himself" and wrote at it with feverish exuberance so that the first two volumes were ready for publication by January 1760. They enjoyed an immediate and sensational reception, and in March 1760 Sterne went to London. Reporting the progress of his triumph, he wrote: "My rooms are filling every hour with great people of first rank who strive who shall most honour me." His literary renown resulted in his being presented with the curacy of Coxwold, which Sterne described as "a sweet retirement" and named Shandy Hall.

In the next two years he produced four more volumes of *Tristram*, completing them rapidly in a few months and going up to London to be entertained and feted. But the strain caused a flare-up of a chronic lung condition, and it was decided he should avoid the rigours of the English winter by a sojourn in the South of France.

Tired and ill upon his arrival, he was warned by the French doctors that he had not long to live, but soon after he was up and about with "a fortnight of dinners and suppers on my hands . . . I Shandy it more than ever," he wrote to a friend, "and verily believe that by mere Shandyism . . . I fence as much against infirmities, as I do by the benefits of air and climate." In the summer of 1762 his wife and daughter joined him and, somewhat against his will, he spent the next two years in Toulouse and elsewhere in the South, returning alone to England in 1764. By January of the following year the seventh and eighth volumes of *Tristram* were finished.

In 1761, a volume of Sterne's sermons had appeared as *The Sermons of Mr. Yorick*, rather ordinary in themselves but remarkable in their

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contrast to the author's other writings. In 1766 a second and more unorthodox series of Mr. Yorick's sermons appeared, which sought to "avoid all commonplace cant" and to add a fillip of Shandyism to the interpretation of the parables.

It was in the winter of 1767, when he brought the ninth volume of *Tristram* to London, that he met Mrs. Draper, a young and attractive Anglo-Indian matron with a pathetic history. So violent and widely publicized was the "sentimental" relationship that developed that Mrs. Sterne heard of it in France, and Mr. Draper ordered his wife back to India immediately. From the 13th of April until the 4th of August, Sterne kept his *Journal to Eliza* in which he recorded his sufferings separated from his "Bramine".

Out of a second trip to the continent in 1765 was spun the *Sentimental Journey through France and Italy*. It was finished by February of 1768, but Yorick had "worn out both his spirits and his body with the *Sentimental Journey*", as he wrote a friend. "'Tis true that an author must feel himself, or his reader will not—but I have torn my whole frame into pieces by my feelings." In what proved to be his last letter to his daughter, he speaks of "this vile influenza" which soon turned to pleurisy. He was bled and blistered, to no avail. On March 18, in the course of a dinner party at which a number of Sterne's friends were present, a footman was dispatched to inquire after his health. It is in the words of this man that the writer's last moments are recorded: "I went into the room, and he was just a-dying. I waited ten minutes; but in five he said, 'Now it is come.' He put up his hand, as if to stop a blow, and died in a minute."

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VOLUME 37

HENRY FIELDING

The History of Tom Jones, A Foundling

BIOGRAPHICAL NOTE

HENRY FIELDING, 1707-1754

DEFOE, Richardson and Fielding are the three great figures of the eighteenth-century novel in England. The most significant quality of their work is a degree of realism previously unknown in English prose

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fiction. Of the three it is Fielding, the conscious disciple of Cervantes, who, in *Tom Jones*, most successfully combines fiction with an epic quality. Indeed Fielding's description of the somewhat episodic *Joseph Andrews* as the "comic epic poem in prose" better fits *Tom Jones*, which shows him more clearly as the conscious artist. The introductory chapters prefixed to each book not only endow the novel with a critical rationale but they constitute an important technical advance for in them the author himself appears as the shaping spirit of the story. Hitherto authors (even Richardson) had commended their stories by claiming historical accuracy; Fielding asserts the right of the author to manipulate his narrative in the interests of artistic truth.

Henry Fielding was the eldest of six children born to General Edmund Fielding and Sarah Gould, daughter of a judge of the King's Bench. A year after the death of Henry's mother in 1718, Edmund Fielding married again. The Goulds were concerned about the estate and care of the children of their line. There was much quarrelling and finally a long process of litigation. The boy Henry was in school at Eton and escaped much of the confusion, but it is recorded that during one of the crises he ran away from Eton to his grandmother's house and that several times while he was staying there he was threatened with seizure by his father's servants.

Fielding left Eton when he was eighteen and for a year or more appears to have roamed about accompanied by a valet. In the latter part of 1725 he was living in Lyme and making every effort, including an attempt at abduction, to marry a Miss Sarah Andrew, a fifteen-year-old heiress. The young woman's guardians frustrated Fielding's plans, and he consoled himself by translating part of Juvenal's Sixth Satire as "All the Revenge Taken by an Injured Lover".

When he came down to London, Fielding improved his acquaintance with his cousin, Lady Mary Wortley Montagu, and solicited her aid for his first comedy, *Love in Several Masques*. It was produced in February 1728, but had no chance of a run because *The Beggar's Opera* had opened some two weeks before. Fielding published it with a dedication to his famous cousin and a preface boasting "that none ever appeared so early upon the stage".

Within a month after the adventure of his first play, Fielding was enrolled as a student at the University of Leyden, where he appears to have pursued his interest in classical literature. His studies were ended

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after a year and a half because, though his father had promised an allowance, as Fielding put it, "any man might pay it who would". Back in London, as against being a "hackney coachman", he chose being a "hackney writer". Within five years he turned out some fifteen plays in every kind of comic vein. They brought him a lively fame; one of them, *Tom Thumb*, won renown for having made Swift laugh for the second time in his life.

In 1734 Fielding married Charlotte Cradock of Salisbury. He was singularly devoted to her throughout the ten years of their married life, speaking of her as "one from whom I draw all the solid comfort of my life". Many of his friends commented on the extraordinary intensity of his grief on the occasion of her death.

Fielding seems to have retired to the country for a while after his marriage. But in 1736 he was back in London as manager of the Haymarket Theatre, where a newly formed company of comedians enacted his political satires. These plays attacking the Walpole ministry were too successful. Walpole secured the passage of the Licensing Act of 1737, which closed the Haymarket Theatre. Fielding did not contest the ordinance; he merely commented: "I left off writing for the stage when I ought to have begun."

At the age of thirty and with a family dependent upon him, Fielding enrolled as a law student in the Middle Temple. His application to study was so unusual that he was called to the Bar in less than half the ordinary period of probation. During the period of his legal studies, he met some of his financial obligations by editing a newspaper, *The Champion*, in which he renewed his quarrel with Walpole.

Fielding's life in the nine years after his admission to the Bar was harrassed by debts and ill health, and complicated by his return to active journalism on the occasion of the Jacobite insurrection and the continuing animosities that raged as an aftermath of his early literary activity. He tried diligently to travel the Western Circuit, attend sessions of court and establish himself as a lawyer. It was in this period that he published three of his four novels: *Joseph Andrews* (1742), *Jonathan Wild* (1743) and *Tom Jones* (1749).

In 1749 Fielding was appointed Justice of the Peace of Middlesex and Westminster. The office had fallen into considerable disrepute; the justice received his fees from the litigants whose cases he heard. Fielding had to

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defend himself against charges of venality even though "on the contrary, by composing, instead of inflaming, the quarrels of porters and beggars, and by refusing to take a shilling from a man who most undoubtedly would not have another, I reduced an income of above five hundred pounds of the dirtiest money upon earth to little more than three hundred pounds, a considerable portion of which remained with my clerk". Fielding discharged the many and tiresome duties of magistrate with great conscientiousness. He deepened the conception of the office by his long investigations into riots and robberies and by his determination to effect reforms in the penal code, in crime prevention, and in police efficiency. Returning to writing in this new role of legal and social reformer, he published painstaking legal pamphlets and, as a way of agitating for social reconstruction, started another newspaper. *The Covent Garden Journal*. His final novel, *Amelia*, was written as a vehicle for exposing "some of the most glaring evils . . . which at present infect the country".

By 1753, Fielding's health was "reduced to the last extremity". He resigned his magistracy, tried various specifics, including Bishop Berkeley's famous tar-water, and finally resorted to a warmer climate as his only hope of life. The protracted discomforts of his long and curious voyage to Portugal are narrated at length in the posthumous tract, *Journal of a Voyage to Lisbon*. In his forty-eighth year, two months after his arrival in Portugal, Fielding died. He was buried in the English cemetery at Lisbon.



VOLUME 38

CHARLES DE SECONDAT, Baron de Montesquieu

The Spirit of Laws

JEAN JACQUES ROUSSEAU

A Discourse on the Origin of Inequality

A Discourse on Political Economy

The Social Contract

BARON DE MONTESQUIEU

BIOGRAPHICAL NOTE

BARON DE MONTESQUIEU, 1689-1755

MONTESQUIEU'S *Spirit of Laws* represents the reflections of a singularly clear, original and comprehensive mind, corrected by forty years' study of men and books, arranged in accordance with a long deliberated plan and couched in language of remarkable freshness and idiosyncrasy. It consists of thirty-one books which in some editions are grouped in eight parts. Speaking summarily, the first part, containing eight books, deals with laws in general and with forms of government; the second, containing five, with military arrangements, with taxation, etc.; the third, containing six, with manners and customs, and their dependence on climatic conditions; the fourth, containing four, with economic matters; and the fifth, containing three, with religion. The last five books, forming a kind a supplement, deal specially with Roman, French and feudal law.

Montesquieu was baptized Charles Louis de la Brède, taking his name from the estate which had been part of his mother's dowry when she married Jacques de Secondat. Born at La Brède, about ten miles from Bordeaux, Montesquieu, like Montaigne, was of Gascon origin, and, like the essayist, he was as an infant placed under the care of a poor man's wife, so that he might know the poor were his brothers. In 1700 he was sent to the college of the Orations at Juilly, near Meaux, where he studied classical letters, history, and the sciences. The family had long been associated with the law, and Montesquieu completed his education by preparing for the bar. After the death of his father, he placed himself under the protection of his uncle, the Baron de Montesquieu, and became a counsellor to the Bordeaux Parliament. At his behest he married the heiress of a Huguenot military family in 1715. The following year his uncle died, leaving him his name, his important judicial office of President of the Bordeaux Parliament, and his whole fortune.

Although holding the presidency and acting as a professional jurist, Montesquieu appears to have taken more interest in literature and the vogue of scientific experimentation. He became a member of the Bordeaux Academy of Sciences and between 1717 and 1723 submitted numerous papers on such diverse subjects as the policy of the Romans in matters of religion, the causes of intoxication, intermittent fever, the echo, the transparency and weight of bodies, the movement of the sea,

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fossil remains, and the flower of the vine. In 1721 he published anonymously at Amsterdam his first extensive literary work, the *Persian Letters*, which, purporting to be exchanged between two Persians travelling in Europe, satirized the follies of French society. Within a year the book had gone through four authorized and numerous pirated editions. His reputation as a wit established, he began to frequent the court and the literary society of the capital. In 1725 he was named to the French Academy, but the King opposed his election, invoking the obsolete rule requiring residence in Paris. The following year Montesquieu sold the life-tenure of his office in Bordeaux, with the provision that upon his death it revert to his son. He moved to Paris to devote himself to literature and in 1728 obtained membership in the Academy.

Almost immediately afterwards he set out on a tour of Europe to observe men, their customs, and their social and legal institutions, apparently with the project in mind of writing *The Spirit of Laws*. He accompanied the Earl of Waldegrave to Vienna, visited Italy for almost a year and with Lord Chesterfield returned to England in 1729 by way of Piedmont and the Rhine. During his eighteen months in England he met many notables, including Pope, Walpole, and Swift, and gained a wide acquaintance with English life. Although disliking some traits of the English, he greatly admired their institutions, and on returning to his estate at La Brède he might have seemed to outward appearance to be settling down as a squire. He altered his park in the English fashion, made sedulous inquiries into his own genealogy, arranged an entail, asserted, though not harshly, his seignorial rights, kept the poachers in awe, and generally reorganized his estate.

His principal occupation at La Brède, however, was the preparation of his literary works. In his great study (some sixty feet long by forty wide) he was constantly dictating, making abstracts, revising essays, and in other ways preparing his main book. He may have thought it wise to soften the transition from the *Persian Letters* to *The Spirit of Laws* by interposing a work graver than the former and less elaborate than the latter. *The Considerations on the Causes of the Grandeur and Decadence of the Romans* appeared in 1734. Although the book was eagerly read, the salons, thinking only of the author's reputation as a wit, claimed that the *Persian Letters* and the new book were respectively the "grandeur et decadence" of M. de Montesquieu.

The Spirit of Laws was not formally begun until about 1743, and

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Montesquieu worked upon it four years before it was completed. He submitted the finished manuscript to a group of friends, including Helvetius, Fontenelle, and Crébillon the Younger. Although they unanimously advised against publication, Montesquieu brought out the work in Geneva in 1748. In France the book met with an unfriendly reception from both the supporters and the opponents of the régime. But in the rest of Europe, and particularly in England, it received the highest praise. The English increased their purchase of the wine made at La Brède, and Montesquieu noted that "the success of my book in that country contributed to the success of my wine, although I think that the success of my wine has done still more for the success of my book".

In revising the final proofs of the book, Montesquieu is reported to have remarked: "This work has nearly killed me, and now I shall rest and labour no more." Although he spent most of his remaining eight years in the country, he still visited Paris, and on one such occasion he procured the release of an admirer who had been imprisoned at the instigation of Voltaire. The romance of *Arsace et Isménie*, a short incomplete treatise on *Taste*, and many of his *Pensées* were composed after the appearance of *The Spirit of Laws*.

At the end of 1754 he went to Paris with the intention of closing his house in the city so that he might retire permanently to La Brède. While there he was stricken with a fever. He died within a fortnight, on February 10, 1755, and was buried in the Church of St. Sulpice. Memorial services were held for him by the French Academy, the Prussian Academy, and the British Royal Society; Frederick the Great paid tribute to him to D'Alembert, and at the instance of Lord Chesterfield the London *Evening Post* lamented his death as the loss of "a friend to mankind".

BIOGRAPHICAL NOTE

JEAN JACQUES ROUSSEAU, 1712-1778

ROUSSEAU may be said to hold, as an influence, a place almost unrivalled in literary history. The defects of all sentimental history are noticeable in him, but they are palliated by his wonderful feeling, and by the passionate sincerity even of his insincere passages. In politics, however, he was a sincere, and, as far as in him lay, a convinced republican. He saw that under the French monarchy the actual result was the greatest misery of the greatest number, and he did not look much

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further. The *Social Contract* is for the political student one of the most curious and interesting books existing. Historically it is null; logically it is full of gaping flaws; but its mixture of real eloquence and apparent cogency is exactly what always carries a multitude with it.

The Rousseau family, which had fled from France at the time of the religious wars, had been in Geneva for more than a century when Jean Jacques was born, on June 28, 1712. His mother died in childbirth. His father, a watchmaker, taught him to read when he was five or six and before he was ten they had read together the "romances" his mother had left; from them he later declared, "I date my uninterrupted self-consciousness . . . and my odd, romantic notions of human life." He also read history, particularly Plutarch, who "became my favourite author . . . cured me a little of my taste for romance . . . and formed in me the free and republican spirit". When he was about ten, his father, as the result of a quarrel, had to leave Geneva, and Rousseau was put in the care of an uncle, who entrusted his education to the pastor of Boissy.

At the age of twelve or thirteen, when Rousseau had completed his elementary education, he was placed as an apprentice, first to a notary and, when that proved unsuccessful, to an engraver. In 1728 he abandoned his master, left the town, and began the series of adventures and wanderings, which are recorded in the first six books of his *Confessions*. After a few days he appealed for charity to a Catholic priest in Savoy, who recommended him to a Madame de Warens, known for her good works. Aided by her, he went to Turin and presented himself to a hospice, where he was provided with food and lodging for nine days while being instructed in the Catholic faith. Although he later remarked that his renunciation of Protestantism was "at bottom the act of a bandit", Rousseau continued to regard himself as a Catholic until 1754. After serving a few months as a lackey, he re-visited Annecy and appealed to Madame de Warens, who took him into her house and after some years became his mistress.

During the nine or ten years that he was with Madame de Warens, Rousseau made several efforts to fit himself for an occupation. For a while he considered the priesthood and studied with the priests of St. Lazare. Then, thinking that he was better fitted for music, he took lessons from the choir-master of the cathedral; although not very proficient, he never afterwards lost interest in music, and it was several

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times his sole source of support. The only systematic studying he did during these years was at the rural retreat of Les Charmettes, where, prompted by Voltaire's *Philosophical Letters*, he undertook to make a survey of all the sciences. In a more or less desultory manner he read the seventeenth-century philosophers and worked at mathematics, astronomy, anatomy, the Latin poets, history, and theology. His life with Madame de Warens was interrupted by frequent wanderings. On one occasion he returned to find that his place in the household had been taken by another. Rousseau then accepted the position of a tutor with a noble family of Lyons. After a few months he found that teaching was not to his liking, and in 1741 he went to Paris.

Rousseau's plans for establishing himself in the capital rested upon a new system of musical notation which he had developed. Although he succeeded in presenting it before the Academy of Sciences, it won no adherents. He was compelled to accept the post of secretary to the French Ambassador at Venice, which he obtained through one of the leading families he had become acquainted with at Paris. Returning to the city in 1745, he copied music for a living, cultivated the society of the literary circles, and through Diderot became a contributor on music to the *Encyclopédie*. His opera, *Les Muses galantes*, which was privately produced, won him some measure of fame. At about the same time, he began to live with Thérèse le Vasseur, a plain and ignorant servant girl at his hotel. He remained with her throughout his life, and according to his account, which is sometimes questioned, she bore him five children, all of whom were consigned at birth to the foundling hospital.

While at Venice in 1743 Rousseau planned a book on "political institutions" which would "set the seal upon my reputation"; but it was not until 1749 that he actually began to write upon politics. In that year he entered the contest held by the Academy of Dijon for the best essay on the subject: "Has the progress of the arts and sciences contributed more to the corruption or purification of morals?" Rousseau's essay, attacking civilization as corrupting the goodness of nature, won him the prize and immediate literary fame. The salons honoured him, the office of the receiver-general provided him with a lucrative post, another of his operas was presented at court, and he had the opportunity of obtaining a royal pension, although after some hesitation he turned it down. Diderot asked him for an article on politics, and he wrote the *Discourse on Political Economy*, which first appeared in the *Encyclopédie*

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in 1755. In the same year he published the *Discourse on the Origin of Inequality*, which also had been written for a Dijon Academy contest.

Shortly after his first literary success Rousseau began to apply to himself his teachings on the simple life, and in 1756 he retired to the country near Paris to live at the Hermitage, which had been set up for him by Madame d'Épinay. Here he wrote *La Nouvelle Héloïse* and became involved in an obscure and bitter quarrel with Diderot and Frederick Melchior Grimm, the lover of Madame d'Épinay. He left the Hermitage in 1758 and settled at Montlouis, where he wrote both *Émile, on Education*, and the *Social Contract*, which were published in 1762.

Rousseau's quarrel with Diderot and Grimm embittered his relations with all of the Encyclopaedists. He angered them still more by his attack upon D'Alembert and Voltaire for their defence of theatrical representations. By his views on politics and religion he incurred the enmity of the French authorities. *Émile*, shortly after its appearance, was condemned by the parliament of Paris, and Rousseau learned that he would be arrested if he did not go into exile.

The first years of his exile were passed in Neuchâtel, which then belonged to Prussia. His controversial writings with those who condemned him continually embroiled him in public disputes, and he was finally compelled to flee again. He went first to the territory of Berne, but the same fate awaited him there. Finally in 1766 he accepted the invitation of Hume and accompanied him to England, leaving Thérèse to follow later in the company of Boswell. At first he enjoyed some popularity; he met the great men of the day and received a pension from the King. But he soon quarrelled with Hume, and in 1767 he fled back to France, where he had learned he would be unmolested. After wandering about for some time, he settled in Paris in 1770, resumed his former occupation of music-copying, and completed his *Confessions* and other autobiographical works. He could not rid himself, however, of his suspicions of secret enemies, which had tormented him since his quarrel with Diderot, and in 1778 he gladly accepted the offer of a cottage at Ermenonville. He died suddenly on July 2 in circumstances that gave rise to rumours of suicide, although later inquiries failed to bear them out.



ADAM SMITH

VOLUME 39

ADAM SMITH

An Inquiry into the Nature and Causes of the Wealth of Nations

BIOGRAPHICAL NOTE

ADAM SMITH, 1723–1790

ADAM SMITH'S *Wealth of Nations* is one of the great books of classical political economy. It is a work in which wisdom, learning and the power of analysis are found to an extraordinary degree. Smith gave the world a new view of the advantages of trade as a mechanism for working out the division of labour, and a new philosophy of commerce. But he saw in commerce, as well as internal trade, a means to welfare, not merely to the aggrandizement of the state. Money, from the commercial point of view, he held to be merely an instrument, a wheel of trade. The real source of a country's trade, he said, is its labour, and its wealth or well-being could be increased only by making its labour more effective. These were Smith's fundamental principles. Although the *Wealth of Nations* is the most influential brief ever formulated for unimpeded trade, its greatest importance lies not in that circumstance, but in the general picture, at once simple and comprehensive, which it gives of the economic life of a nation.

Adam Smith was born on or shortly before June 5, 1723, in the small town of Kirkcaldy, ten miles from Edinburgh on the Firth of Forth. His father, who had been comptroller of the customs, died five months before the child's birth, and his mother devoted most of the remaining sixty-one years of her life to caring for her son. His childhood was uneventful except for one incident. In 1726, while visiting his mother's family, he was kidnapped by gypsies; the prompt action of his uncle soon effected his rescue.

After finishing his term at the Kirkcaldy grammar school, Smith at the age of fourteen entered the University of Glasgow. Although his favourite studies were mathematics and natural philosophy, he came strongly under the influence of Francis Hutcheson, who, as professor of moral philosophy, taught a "benevolent theory" of morals which had as its end the "greatest happiness for the greatest number". It was probably

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the result of Hutcheson's teaching that Smith, on going to Balliol College, Oxford, in 1740, devoted much of his study to moral philosophy. He remained at Oxford for six years without once returning home, and, though he found much of which he did not approve, he used the occasion to read extensively in the classics, French and Italian literature, as well as in morals and politics. Smith left Oxford in 1746 without completing the term of his fellowship, probably because of his unwillingness to take ordination, as was expected of appointees to the scholarship he held.

After a two-year stay with his mother at Kirkcaldy, where he continued his studies, Smith went to Edinburgh. There, under the patronage of Lord Kames and the Philosophical Society, he gave a series of public lectures on rhetoric and belles-lettres. In 1751 he was called to the University of Glasgow, first as Professor of Logic, and after a few months as Professor of Moral Philosophy. This position he occupied for twelve years, and he later declared it was "by far the most useful, and therefore by far the happiest and most honourable period" of his life. His course of lectures was divided into four parts: natural theology, ethics, jurisprudence, which he handled historically in the manner of Montesquieu, and a study of "those political regulations which are founded upon expediency, and which are calculated to increase the riches, the power, and the prosperity of the state".

Smith was highly successful as a lecturer, and the influence of even his first lectures is evident upon the work of Hugh Blair, the rhetorician, and William Robertson, the historian. From 1751 he was an intimate friend and something of an adviser to Hume. He also came to hold an important place in the town as well as the university. Though Glasgow was a provincial centre, numbering no more than 23,000 inhabitants, the rising trade of the Clyde already gave promise of the town's future industrial and commercial prominence. Smith numbered many friends among its principal merchants and financiers. According to Sir James Steuart, the "last of the mercantilists", and Smith's rival for favour, it was Smith who converted Glasgow's business leaders to a policy of free trade. Speaking to the Glasgow Economic Society, founded by his friend, the eminent merchant, Andrew Cochrane, Smith in 1755 claimed credit for the novel system of economic liberty then beginning to attract supporters.

Smith first appeared as an author in 1755 with two articles in the

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Edinburgh Review, which gave his views on the *Encyclopédie*, Rousseau's picture of savage life, and Johnson's *Dictionary*. In 1759 he published his *Theory of Moral Sentiments*, embodying the second portion of his university course. Two years later a second edition was called for, and he added an appendix, entitled "Considerations concerning the first Formation of Languages". The following year he was awarded the honorary degree of doctor of laws by the Academic Senate of Glasgow.

In 1763 Smith gave up his university post to accept the offer of a life-time pension by Charles Townshend in return for acting as tutor to his young step-sons on a tour of France. They spent some eighteen months at Toulouse, at that time the seat of a parliament, made a visit of two months to Geneva, where Smith met Voltaire, and then settled for almost a year in Paris. Smith, who was a minor celebrity in his own right, frequented the most fashionable salons and associated with Turgot, D'Alembert, Helvetius, Marmontel, and Rochefoucauld. He also enjoyed close relations with the proponents of *laissez-faire* among the Physiocrats, notably Quesnay and Dupont de Nemours. In 1766 the assassination in the streets of Paris of the Duke's younger brother, also in Smith's charge, brought to a close his continental sojourn.

For the next seven years Smith lived with his mother at Kirkcaldy, engaged in close study most of the time, interrupted only by occasional visits to Edinburgh and London. He was occupied with his *Inquiry into the Nature and Causes of the Wealth of Nations*, which there is some reason for believing he had begun at Toulouse. In 1773 he took his manuscript to London. In ill health and unsure of his future, he named Hume his executor with instructions to publish in event of his death his "juvenile" essay, *A History of Astronomical Systems, That Were in Fashion Down to the Time of Descartes*; this was apparently part of his earlier project of a "connected history of liberal sciences and elegant arts". For the next five years he spent almost all his time in London and lived on terms of intimacy with many of the leading figures of the day, including Gibbon, Burke and Reynolds. His close knowledge of colonial affairs is said to reflect his frequent conversations with Benjamin Franklin, and Smith himself proposed a plan of imperial federation designed to satisfy the grievances of the colonies. In 1776 the *Wealth of Nations* was published. Hume, in a congratulatory letter, declared, "*Euge! belle!* dear Mr. Smith, I am much pleased with your performance". Within six months the first edition was exhausted, and during

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Smith's life-time the book went through five editions. Pitt is reported as saying, "We are all your scholars," when the author entered a room in which Pitt was seated with his fellow cabinet members, and the work seems to have had considerable influence on the budget drawn up by Lord North in 1777 and 1778.

The only other work published by Smith, except for revisions of his two earlier books, was his letter on the death of Hume in 1776. Because of its unqualified praise of Hume's moral qualities, the letter aroused a storm of controversy throughout the British Isles, and Boswell among others denounced it as a piece of "daring effrontery". In 1778 Smith was named a commissioner of the customs of Scotland, and for the remainder of his life he dwelt with his mother and a cousin in Edinburgh. He enjoyed an eminent place in society, his "Sunday suppers" were long celebrated, and with Joseph Black, James Hutton, Adam Ferguson, and Dugald Stewart he formed one of the leading clubs of the city.

After the death of his mother in 1784, Smith's health began to decline. In preparation for his death he ordered the destruction of his manuscripts, except for a few selected essays. Among the papers so destroyed were probably the lectures on natural religion and jurisprudence which formed part of his course at Glasgow, and also his lectures on rhetoric; a copy of student notes has since been discovered on the course on jurisprudence, *Lectures on Justice, Police Revenue and Arms*, which he gave some time between 1762 and 1764. After a painful illness Smith died, on July 17, 1790, and was buried at Canongate.



VOLUMES 40 and 41

EDWARD GIBBON

The Decline and Fall of the Roman Empire

BIOGRAPHICAL NOTE

EDWARD GIBBON, 1737-1794

GIBBON'S literary art, the sustained excellence of his style, his piquant epigrams and his brilliant irony, would not perhaps secure for his *Decline and Fall* the immortality it seems likely to enjoy and its undisputed claim to be one of the great books of the western world,

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were it not also marked by ecumenical grasp, extraordinary accuracy and striking acuteness of judgment. It is needless to say that in many points his statements and conclusions must now be corrected. He was never content with second-hand accounts when the primary sources were accessible, but since he wrote, new authorities have been discovered or rendered accessible and in the vast region which Gibbon surveyed there is hardly a section which has not been submitted to the microscopic examination of specialists. Nevertheless, though outdated as a textbook, the *Decline and Fall* remains one of the monuments of English historical writing by reason of its unique style and majestic grasp of an immense field.

Edward Gibbon was the eldest of seven children born to Edward Gibbon and Julia Porten, and their only child to survive infancy. He attributed his survival to the affectionate care of his aunt, Catherine Porten, "the true mother of my mind as well as my health". It was she who encouraged him in his "invincible love of reading" which he pursued widely in his grandfather's library until his "indiscriminate appetite subsided by degrees in the historic line".

Gibbon's early schooling had been irregular and frequently interrupted by illness. Then, suddenly, as he approached his sixteenth year, "his disorders wonderfully vanished". Shortly afterwards his father sent him to Oxford. Here he received neither instruction nor companionship, finding the boys frivolous, the dons indolent, and his fourteen months at the university "the most idle and unprofitable" of his whole life.

In the course of his solitary literary rambles during these fourteen months, Gibbon became converted to Catholicism. He wrote to his father of the step, and the elder Gibbon, with the impetuosity that seems to have characterized his dealings with his son, sent the sixteen-year-old youth to Lausanne. Here under the tutelage of the Calvinist minister, M. Pavilliard, young Gibbon repudiated his Catholicism and followed a carefully supervised programme of studies with particular emphasis on the French and Latin classics and on the mastery of these languages.

At the age of twenty, Gibbon fell in love with Suzanne Curchod, who found his unprepossessing appearance "spirituelle et singulière" and reciprocated his affections. His request for his father's permission to marry her met with refusal. He quietly acceded: "Without his consent," he wrote, "I was destitute and helpless. I sighed as a lover, I obeyed as a son."

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The Seven Years' War had already been in progress for a year, when, in 1758, Gibbon returned to England, more French than English in his outlook. From 1759 until the war ended in 1763, he served as a captain under his father in the Hampshire Militia. He assessed the value of this experience as making him "an Englishman and a soldier" and as giving him insight into military organization and tactics, "so that the Captain of the Hampshire Grenadiers has not been useless to the historian of the Roman Empire".

Upon his release from the militia, Gibbon decided to embark on a long-projected tour of Europe. In 1761 he completed, in French, his first work, *Essay on the Study of Literature*, in defence of classical studies. This had given him some status abroad and when, in 1763, he visited Paris, his essay "entitled" him to a "favourable reception". But it was Rome that moved him to an unwonted enthusiasm, that seemed to give a new form and vividness to all he had read and studied. Here, according to a celebrated passage of the *Memoirs*: "On the fifteenth of October 1764, as I sat musing amidst the ruins of the Capitol, while the barefooted friars were singing Vespers in the Temple of Jupiter, the idea of writing the decline and fall of the city first started to my mind."

But it was not until 1772, two years after the death of his father, that Gibbon settled in London and submitted himself to the rigours of his life work. In the interim, he made several sallies into the field of polite letters, dividing his time between the family home at Buriton and the fashionable clubs of London. His membership in Johnson's literary club was an annoyance to Boswell, who described him as "an ugly, affected, disgusting fellow".

Gibbon was elected to the House of Commons in 1774. Although he held his seat during the stormy years of the American Revolution, he did not speak once. Like his stint in the Hampshire militia, his eight sessions in parliament he considered not wasted; they comprised "a school of civic prudence, the first and most essential virtue of a historian".

The first volume of the *Decline and Fall*, published in 1776, was immediately acclaimed as a classic and attacked for its discussion of Christianity. Volumes II and III, which followed shortly afterwards, were more quietly received.

Since 1779 Gibbon had been serving on the Board of Trade, a sinecure which added to his income. The Board existed in a state of "perpetual virtual adjournment" and "unbroken sitting vacation" until it was

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dissolved as a result of the campaign conducted against it by Edmund Burke in 1782. Shortly afterwards, the historian also lost his seat in parliament. As it now became impossible for him to maintain himself in London, he arranged to live in Lausanne with his life-long friend, George Deyverdun.

At Lausanne, in the comfort of his well-appointed bachelor quarters, the last three volumes reached rapid completion. In a famous passage of his autobiography, he commemorates his deliverance from his labours: "It was on the night of the 27th June, 1787, between the hours of eleven and twelve, that I wrote the last line of the last page in a summer-house in my garden. After laying down my pen, I took several turns in a *berceau*, or covered walk of acacias . . . I will not dissemble the first emotions of joy on the recovery of my freedom, and, perhaps the establishment of my fame. But my pride was soon humbled, and a sober melancholy was spread over my mind by the idea that I had taken an everlasting leave of an old and agreeable companion, and that whatsoever might be the future fate of my history, the life of the historian must be short and precarious." For Gibbon it had always been reading and study that "supplied each day, each hour, with a perpetual source of independent and rational pleasure", just as his library had been "the foundation" of his works and the "best comfort" of his life.

In the "autumnal felicity" that followed in the wake of the completion of the *Decline and Fall*, Gibbon began work on his autobiography. But the mood was shattered by the death of Deyverdun in 1789, and in 1793 Gibbon returned to London. He had been suffering for some time from dropsy and the gout and upon his return, underwent a number of operations. Gibbon died on January 16, 1794.



VOLUME 42

IMMANUEL KANT

The Critique of Pure Reason
Fundamental Principles of the Metaphysic of Morals
The Critique of Practical Reason

IMMANUEL KANT

*Preface and Introduction to the Metaphysical Elements of
Ethics with a Note on Conscience*

General Introduction to the Metaphysic of Morals

The Science of Right

The Critique of Judgement

BIOGRAPHICAL NOTE

IMMANUEL KANT, 1724–1804

KANT is the founder of the “critical” philosophy or of “transcendentalism”. The stress which Descartes had laid on thought, or subjective experience, in basing his whole system on the *cogito ergo sum*, quite naturally resulted in a divorce between ideas, on the one hand, and the external world on the other. Kant attempted a new way of bringing thought and reality into touch once more. Kant himself liked to stress the “critical” character of his philosophy as the new element which he contributed; and consequently called his three great works *critiques*. He described all his predecessors as “dogmatic” philosophers, because they did not begin their philosophy with a critical examination of human capacity for knowledge.

Kant was born at Königsberg in East Prussia on April 22, 1724. His father, a saddler in the city, was descended from a Scottish immigrant; his mother was German. Both parents were devoted followers of the Pietist branch of the Lutheran Church, and it was largely through the influence of their pastor that Kant, who was the fourth of eleven children but the eldest surviving son, obtained an education.

In his eighth year Kant entered the Collegium Fredericianum, which his pastor directed. It was a “Latin School”, and during the eight and a half years that he was there, Kant acquired a love for the Latin classics, especially for Lucretius. In 1740 he enrolled in the University of Königsberg as a theological student. Though he attended course in theology, and even preached on one or two occasions, he was principally attracted to mathematics and physics. Given access to the library of his professor in these subjects, he read Newton and Leibniz and in 1744 started his first book, dealing with the problem of kinetic forces. By that time he had decided to pursue an academic career, but on failing to obtain the post of under-tutor in one of the schools attached to the

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university, he was compelled for financial reasons to withdraw and seek a position as a family tutor.

During the nine years that Kant was a tutor (1746–1755), he was employed by three different families. In this position he was introduced to the influential society of the city, acquired social grace, and made his farthest travels from his native city, which took him to Arnsdorf, about sixty miles from Königsberg. In 1755, aided by a relative, he was able to complete his degree at the university and assume the role of *Privat-docent*, or lecturer. The three dissertations he presented for this post dealt respectively with fire, the first principles of metaphysical knowledge, and “the advantages to natural philosophy of a metaphysic connected with geometry”. With the opening of the winter term he began his lectures. At first he restricted himself to mathematics and physics, and that year and the next he published several scientific works, dealing with the different races of men, the nature of winds, the causes of earthquakes, and the general theory of the heavens. But he soon branched into other subjects, including logic, metaphysics, and moral philosophy. He even lectured on fireworks and fortifications, and gave every summer for thirty years a popular course on physical geography. Kant enjoyed great success as a lecturer; his style, which differed markedly from that of his books, was humorous and vivid, enlivened by many examples drawn from his wide reading in English and French literature, and in books of travel and geography, as well as in science and philosophy.

During his fifteen years as a *Privat-docent*, Kant's fame as writer and lecturer steadily increased. Though he failed twice to obtain a professorship at Königsberg, he continued to refuse appointments elsewhere. The only academic preferment he received during this lengthy probation was the post of under-librarian, which he was given in 1766. Finally in 1770 he obtained the chair of logic and metaphysics. In later years he served six times as dean of the philosophical faculty and twice as rector.

Kant's inaugural dissertation as professor, *On the Form and Principles of the Sensible and Intelligible World*, indicated the direction of his philosophical interests. In submitting it to a friend that same year, he wrote: “For about a year I flatter myself that I have attained that conception which I have no fear that I shall ever change, though I may expand it, by means of which all kinds of metaphysical questions can be tested according to sure and every criteria, and by means of which it can be decided with certainty how far their solution is possible.” But it was

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not until 1781 that the *Critique of Pure Reason* appeared, although he declared that the actual writing took but four or five months. In the same letter he also noted his intention to investigate "pure moral philosophy" and to systematize his metaphysics of morals, which was first accomplished in 1785 with the publication of the *Fundamental Principles of the Metaphysic of Morals*. The *Critique of Practical Reason* was brought out in 1788 and the *Critique of Judgement* two years later.

The "critical philosophy" was soon being taught in every important German-speaking university, and young men flocked to Königsberg as a shrine of philosophy. In some cases the Prussian Government even undertook the expense of their support. Kant came to be consulted as an oracle on all kinds of questions, including such subjects as the lawfulness of vaccination. Such homage did not interrupt Kant's regular habits. Scarcely five feet tall, with a deformed chest, and suffering from weak health, he maintained throughout his life a severe regimen. It was arranged with such regularity that people set their clocks according to his daily walk along the street named for him the Philosopher's Walk. Until old age prevented him, he is said to have missed this regular appearance only on the occasion when Rousseau's *Émile* so engrossed him that for several days he stayed at home.

As early as 1789 Kant's health began to decline seriously. He still had many literary projects, but found it impossible to write more than a few hours a day. In 1792 with the appearance of his work, *On Religion Within the Limits of Reason Alone*, he became involved in a dispute with the Prussian authorities on the right to express religious opinions, and at the request of the government he remained silent for some years on the subject. In 1795 he published his treatise on *Perpetual Peace*. In 1797, after a career of forty-two years, he delivered his last lecture and retired from the university. The following year, by way of asserting his right to resume theological discussions, he wrote on the conflict of the faculties in the university. This proved to be Kant's last book; the large work, at which he laboured until his death, on the connection between physics and metaphysics was found to be only repetition of his already published works. After a gradual decline, which was painful to himself and his friends, he died on February 12, 1804.



ALEXANDER HAMILTON

VOLUME 43

AMERICAN STATE PAPERS

The Declaration of Independence

Articles of Confederation

The Constitution of the United States of America

ALEXANDER HAMILTON

JAMES MADISON

JOHN JAY

The Federalist

JOHN STUART MILL

On Liberty

Representative Government

Utilitarianism

BIOGRAPHICAL NOTE

ALEXANDER HAMILTON, 1757–1804

JAMES MADISON, 1751–1836

JOHN JAY, 1745–1829

THE task for the *Federalist* authors was marked out for them the day the new Constitution for the United States was made known to the people of New York State. On the same day it was published, and immediately beside it in the papers, appeared an attack upon the Constitution, signed by Cato, who was known to be Governor Clinton. Thereafter, many of the most powerful figures in New York political life, writing under the name of renowned Romans, came out in opposition to the new instrument of government.

ALEXANDER HAMILTON, although only thirty years old and an immigrant, was the natural leader for the New York supporters of the new Constitution. Born illegitimately, of Scottish and French Huguenot stock, on the British Island of Nevis in the West Indies, his youthful

JAMES MADISON

talents at writing and commerce were so unusual that friends took up a collection and sent him to America in 1772 to complete his education. He used his writing talents to defend the cause of the Colonies during the events leading up to the Revolution, so successfully, in fact, that two of his pamphlets were thought to be the work of Jay. With a thirst for military glory that was to remain with him throughout his life, he took part in the New York campaign as an artillery captain and won a place on Washington's staff. Washington employed him, however, for his power with the pen, and for four years he was the General's private secretary. In this position he became acquainted with many of the most influential men in the states and learned at first hand the weakness of the Confederation. As early as 1780 he was writing to men of influence and urging the calling of a convention to form a new government. As a lawyer in New York City, he took a prominent part in the events that finally resulted in the Constitutional Convention. One of the three New York delegates to the Convention, he argued for the establishment of a strong national government based on the British model. He was the only New York member to sign the Constitution.

In the New York fight for ratification Hamilton at first took it upon himself to answer Clinton. Under the name of Caesar he wrote two articles, bitterly personal and scornful of Cato's appeal to the "majesty of the multitude". But persuaded that such tactics would not win support for the new Constitution, he abandoned them. His next effort, written while returning on a Hudson sloop from legal duties in Albany, appeared under the signature of Publius. It was the first number of the *Federalist*. From late October 1787 until the following April a continuing stream of articles from the pen of Publius poured forth, sometimes as many as four in one week. They were printed by the newspapers throughout the states and issued in book form even before all the numbers had appeared in the papers. Although the articles appeared under the signature of Publius which Hamilton had used once before, they were soon known to be the work of several men. Their genesis as a joint work, however, is uncertain. Madison later reported that both Hamilton and Jay were agreed upon the work when Hamilton asked him to make a third in the undertaking. The combination was the strongest to be found in New York for an intellectual defence of the new Constitution.

JAMES MADISON was a representative of the Southern aristocracy, the eldest son of a Virginia planter. He gained his first political experi-

JOHN JAY

ence during the Revolution as a delegate to the Continental Congress, he became acquainted with Hamilton and Jay and with them was part of the group seeking to strengthen the national government. He was active in promoting the developments that led to the Constitutional Convention and, in the months immediately preceding the meeting, devoted his efforts to preparing for the establishment of a new government. He wrote an essay on the "Vices of the Political System of the United States", made an extensive study of ancient and modern confederacies, and drew up an outline for a new system of government. This was the basis for the Virginia plan which at Philadelphia led to the formation of the Constitution. With James Wilson of Pennsylvania, he shared the honours of being most responsible for its final form. September 1787 found him in New York serving for the second time as the Virginia Delegate to the Continental Congress.

JOHN JAY, at the time the *Federalist* appeared, enjoyed the greatest prestige of any of the three men. By some he was considered as second only to Washington in service to his country. The oldest of the three, he came from a well-to-do New York merchant family of Huguenot extraction. He served on the Continental Congress from its inception in 1774 and was later its president. In his own state he took a leading part in the Revolutionary political developments. He was the author of the first New York Constitution and, after its establishment, its first Chief Justice. His greatest fame at the time, however, came to him as a result of his role as a diplomat. His first venture into European diplomacy was to obtain a treaty with Spain. That proving a failure, he was sent on to Paris to act with John Adams and Franklin in negotiating the terms of peace with Great Britain. Described by Adams as "the Washington of the negotiations", he was instrumental in obtaining recognition of the independence of the United States which ended the Revolutionary War. He was rewarded for his role by being made the Secretary of Foreign Affairs for the Continental Congress, a post he continued to fill until Jefferson took over as Secretary of State under the new government. Because of his strongly national views, he was turned down as a delegate to the Constitutional Convention.

All three *Federalist* collaborators, in addition to their wide practical experience, were men of high intellectual culture, along very similar lines. Each began his schooling under a Christian minister and completed it with a college education. Hamilton and Jay attended King's College

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(now Columbia), Madison the College of New Jersey (now Princeton). They followed the standard curriculum of the time: the liberal arts programme divided between the trivium and quadrivium and based on the ancient classics with considerable practice in scholastic disputation. The whole programme was infused with religion and politics which were the primary ends of the programme. The emphasis upon religion and politics is illustrated by the commencement exercises held at New Jersey while Madison was there in 1770. Among the many disputations there was a Latin syllogistic debate on the thesis: "Omnes Homines, Jure Naturae, liberi sunt" (all men by the law of nature are free), and another in English on the topic: "The Different Religious Professions in any State if Maintained in their Liberty Serve it by Supplying the Place of a Censor Morum." Both Madison and Jay after completing their undergraduate course went on to do graduate work, thus being among the first graduate students in America. Jay received his master's degree in 1767 with a discourse on "The Usefulness of the Passions" and a debate on "Whether a man ought to engage in War without being persuaded of the justness of his Cause." Madison remained an extra year at New Jersey, reading particularly in theology and Hebrew. Hamilton's college work was interrupted by the war, but he continued after the war to perfect himself in law, as had his two other collaborators. Hamilton, unlike them, depended upon the practice of law for his living, and, while not holding down a political office, earned the reputation of being the most brilliant lawyer in New York. Madison never practised law, nor did Jay except for the few years before he embarked upon his public life.

The actual writing of the *Federalist* and the authorship of the particular papers have been a matter of long and sometimes bitter dispute. They were done in a great hurry, and, as Madison later remarked, they often went directly from the writer to the printer without being seen by the other collaborators. One reason that Jay did so few is thought to be that he suffered from a serious illness soon after the series was begun. Hamilton was the busiest of the three men at the time. He was carrying on a full legal practice, attending the sessions of the state supreme court, and campaigning for election to the Continental Congress. Madison was called home before the papers were completed to take part in the battle for ratification in Virginia, which looked as bad for the Federalist cause as it did in New York.

The intellectual defence of the Constitution was put to practical use

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by the three collaborators in their state ratifying conventions. Madison led the Federalist forces in Virginia, and Hamilton and Jay in New York. Against what seemed hopeless odds, they won their fight, but not, in fact, until the new Constitution had already been ratified by the required nine states. Virginia was the tenth state to ratify and New York the eleventh, a month later.

The partnership which resulted in the *Federalist* was dissolved in the efforts to translate the Constitution from a paper document into a functioning government. Although all three men had expressed dissatisfaction with the Constitution as not providing sufficiently strong national government, Madison parted company with Hamilton and Jay over the measures which they advocated for securing the supremacy of the national government.

Hamilton, as the first Secretary of the Treasury, had the task of placing the new government on a sound financial basis. He initiated this work by a series of three reports submitted to Congress. The first, on public credit, called for the full assumption by the national government of the war debts of the old Confederation and the states. The second provided for the establishment of a national bank. The third, on manufactures, called for government protection of manufactures by means of duties. Although this last proposal was defeated by Congress, it has been called the "first great revolt from Adam Smith".

Madison, elected a member of the House of Representatives, became the leader of the opposition in Congress against Hamilton's proposals. He led the move for a Bill of Rights, the lack of which had been one of the main issues in the fight for ratification. With his friend, Jefferson, who had been appointed the first Secretary of State, he advised the President that Hamilton's measures could not be reconciled with the Constitution. Difference over the interpretation of the Constitution was intensified by the conflict over foreign affairs that arose with the outbreak of war between England and Revolutionary France. Hamilton, in a series of letters published in the papers under the signature of Pacificus, defended England and the American policy of neutrality. Madison, at the instigation of Jefferson, countered with a series of letters signed Helvidius.

Jay's activities during the opening years of the new government further embittered the relations of the former collaborators. As the first Chief Justice of the Supreme Court, he passed down decisions strongly support-

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ing Hamilton's view of the national government. The decision in his greatest case, *Chisolm vs. Georgia*, caused a revolt in Congress over its emphasis on the supremacy of the national government over that of the states. This resulted in the passing of the eleventh amendment in the Constitution, asserting the sovereign irresponsibility of the states as regards private suits by citizens of another state. However, the greatest cause of division proved to be the treaty he negotiated with England which has since gone under his name. It was so bitterly attacked by the Jefferson and Madison groups, known as "Republicans", that in many places Jay was burnt in effigy. In defence of the treaty, Hamilton wrote his *Camillus* letters. Although Jefferson again appealed to Madison as the only one able to cope with Hamilton in debate, Madison did not respond.

The three *Federalist* authors, although divided by partisan strife, were brought together once again in Washington's Farewell Address. Washington appealed to all three for advice, and their suggestions, with most from Hamilton, went into the final draft of the message.

Hamilton's last years were rent by political strife. After retiring to the private practice of law, he continued to be the active leader of the Federalist Party. His influence was so great during the Adams administration that Cabinet members often consulted with him about official policy, even behind the President's back. This led to a break between the two men. Hamilton made the break irreparable by writing a pamphlet attacking Adams, which split the Federalist Party and led to its disintegration. His partisan battles reached a climax when he was challenged to a duel by Aaron Burr, then Vice-President, with whom Hamilton had long been in political competition in the municipal, state, and national field. Hamilton died as a result of a shot received from Burr's pistol.

Jay, following the negotiation of the treaty with England, served two terms as governor of New York. His administration is noted among other things for the law commanding the gradual abolition of slavery in New York. (All three men looked upon slavery as a tragedy for America. Jay and Hamilton were active in the New York Society for the Manumission of Slaves, while Madison took a leading part in the movement for the colonisation of Negroes.) Jay, after completing his terms as governor, retired from public life to his farm in Bedford. He was often consulted for the early history of the Republic, his occasional reminiscences, among other things, furnished Cooper with the material for his novel, *The Spy*. Known for his knowledge of the Bible, he was often asked by ministers

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for his interpretation of the prophecies and for the last years of his life was president of the American Bible Society.

Madison was Jefferson's Secretary of State for two terms and, as the chosen successor, followed him in the Presidency. He served for two terms and then, in 1817, retired to his home in Montpelier. His last years were spent in agricultural and literary pursuits. With Jefferson he gave much of his attention to the University of Virginia. At Jefferson's request, for instance, he prepared a list of theological works for the library, including, in addition to the Reformation theologians, the great Scholastics, Aquinas, Duns Scotus, Bellarmine. One of their last acts was to prescribe the curriculum in political philosophy with Locke and Sidney for political theory and the *Federalist* for the Constitution. He devoted much time to the preparation of his papers on Constitutional questions and to the editing of his monumental series of notes on the debates at the Federal Convention, the publication of which confirmed his fame as "Father of the Constitution".

BIOGRAPHICAL NOTE

JOHN STUART MILL, 1806-1873

THE influence which John Stuart Mill's books exercised upon contemporary English thought can scarcely be overestimated. In political philosophy his greatest work was done as an advocate of liberty. In the treatise *On Liberty* he shows that political liberty alone is insufficient, that social tyranny may be more grinding than legal tyranny. And he showed consistently that any despotism, however benevolent, must in fact cramp and destroy the development of any people. He was torn all his life between his passion for individual liberty and initiative and his sense of the benefits of social control. In the field of political economy Mill was at the end of the line of classical economists which began with Adam Smith. The title of his chief work, *Principles of Political Economy, with some of their Applications to Social Philosophy*, though open to criticism indicated a less narrow and formal conception of the field of the science than had been common among his predecessors. It is an admirably lucid, and even elegant, exposition of Ricardian economics, the Malthusian theory being of course incorporated with these. In philosophy Mill's chief work was to systematize and expound the utilitarianism of his father and of Bentham. He may in fact be regarded as the final exponent of that

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empirical school of philosophy which owed its impulse to John Locke, and is generally spoken of as being typically English. Its fundamental characteristic is the emphasis laid upon human reason; that is, upon the duty incumbent upon all thinkers to investigate for themselves rather than to accept the authority of others.

Mill, in his *Autobiography*, declared that his intellectual development was due primarily to the influence of two people: his father, James Mill, and his wife.

James Mill elaborated for his son a comprehensive educational programme, modelled upon the theories of Helvetius and Bentham. It was encyclopaedic in scope and equipped Mill by the time he was thirteen with the equivalent of a thorough university education. The father acted as the boy's tutor and constant companion, allowing Mill to work in the same room with him and even to interrupt him as he was writing his *History of India* or his articles for the *Encyclopaedia Britannica*. Mill later described the result as one that "made me appear as a 'made' or manufactured man, having had a certain impress of opinion stamped upon me which I could only reproduce".

The education began with Greek and arithmetic at the age of three. By the time he was eight Mill had read through the whole of Herodotus, six dialogues of Plato, and considerable history. Before he was twelve he had studied Euclid and algebra, the Greek and Latin poets, and some English poetry. His interest in history continued, and he even attempted writing an account of Roman government. At twelve he was introduced to logic in Aristotle's *Organon* and the Latin scholastic manuals on the subject. The last year under his father's direct supervision, his thirteenth, was devoted to political economy; the son's notes later served the elder Mill in his *Elements of Political Economy*. He furthered his education by a period of studies with his father's friends, reading law with Austin and economics with Ricardo, and completed it by himself with Bentham's treatise on legislation, which he felt gave him "a creed, a doctrine, a philosophy . . . a religion" and made a "different being of him".

Although Mill never actually severed relations with his father, he experienced, at the age of twenty, a "crisis" in his mental history. It occurred to him to pose the question: "Suppose that all your objects in life were realized; that all the changes in institutions and opinions which you are looking forward to, could be completely effected at this very instant: would this be a great joy and happiness to you?" He reported

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that "an irrepressible self-consciousness distinctly answered, 'No'," and he was overcome by a depression which lasted for several years. The first break in his "gloom" came while reading Marmontel's *Mémoires*: "I . . . came to the passage which relates his father's death, the distressed position of the family, and the sudden inspiration by which he, then a mere boy, felt and made them feel that he would be everything to them — would supply the place of all that they had lost." He was moved to tears by the scene, and from this moment his "burden grew lighter".

From the time he was seventeen, Mill supported himself by working for the East India Company, where his father was an official. Although he began nominally as a clerk, he was soon promoted to assistant-examiner, and for twenty years, from his father's death in 1836, until the Company's activities were taken over by the British Government, he had charge of the relations with the Indian states, which gave him wide practical experience in the problems of government. In addition to his regular employment, he took part in many activities tending to prepare public opinion for legislative reform. He, his father and their friends formed the group known as "philosophical radicals", which made a major contribution to the debates leading to the Reform Bill of 1832. Mill was active in exposing what he considered departures from sound principle in parliament and the courts of justice. He wrote often for the newspapers friendly to the "radical" cause, helped to found and edit the *Westminster Review* as a "radical" organ, and participated in several reading and debating societies, devoted to the discussion of the contemporary intellectual and social problems.

These activities did not prevent him from pursuing his own intellectual interests. He edited Bentham's *Rationale of Judicial Evidence*. He studied logic and science with the aim of reconciling syllogistic logic with the methods of inductive science, and published his *System of Logic* (1843). At the same time he pushed his inquiries in the field of economics. These first took the form of *Essays on Some Unsettled Questions in Political Economy* and were later given systematic treatment in the *Principles of Political Economy* (1848).

The development and productivity of these years he attributed to his relationship with Mrs. Harriet Taylor, who became his wife in 1851. Mill had known her for twenty years, since shortly after his "crisis", and he could never praise too highly her influence upon his work. Although he published less during the seven years of his married life than at any other

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was sitting in the back parlour of Mr. Davies' bookstore, when Johnson came unexpectedly into the shop. Davies perceived him through the glass door and pointed him out to Boswell "in the manner of Horatio, when he addresses Hamlet on the appearance of his father's ghost". Boswell at this first encounter was thoroughly snubbed, but with "characteristical" resilience, bolstered by Tom Davies' assurance: "Don't be uneasy: I can see he likes you very well," he called on Johnson eight days later. On this occasion Johnson pressed him to stay; on the thirteenth of June he said, "Come to me as often as you can"; on the twenty-fifth of June, Boswell gave the great man a little sketch of his own life, and Johnson exclaimed with warmth, "Give me your hand; I have taken a liking to you." In August, when Boswell set out for Utrecht, Johnson accompanied him as far as Harwich.

After a winter divided between study of the law and the company of "many beautiful and amiable ladies", Boswell embarked on a two-year tour of the continent, where he forced his acquaintance on such leading figures as Voltaire and Rousseau and proceeded to "Boswellize" them, drawing them out on various subjects. Desiring "something more than just the common course", he determined to visit Corsica, which appealed to him because it was a nation "actually fighting for liberty", where the inhabitants lived in a "state of nature". From Rousseau, he obtained a letter of introduction to the leader of the Corsican insurgents, Pascal Paoli, whose society he cultivated with that minute and skillful care which he was afterwards to bestow upon Johnson.

Corsica was a turning point; "I 'got upon a rock in Corsica and jumped into the middle of life," Boswell later wrote to Paoli. He returned to England as "Corsica Boswell" and, in the full regalia of a Corsican chieftain, obtained an interview with William Pitt on behalf of that "oppressed nation". Politically his advocacy was a failure; "We cannot be so foolish," said Lord Holland, "as to go to war because Mr. Boswell has been to Corsica." An immediate success, however, was his *Account of Corsica, Journal of a Tour to that Island, and Memoirs of Pascal Paoli* (1768), which won even the grudging praise of Gray: "Any fool may write a most valuable book by chance, if he will only tell us what he heard and saw *with veracity*." But Johnson was tired of Corsica; "Empty your head of Corsica," he directed Boswell.

In accordance with the terms of the agreement with his father, Boswell returned to Edinburgh and in July 1766 was admitted to the Scottish

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bar. "What strength of mind you have had!" was Boswell's comment on his early legal work. He had hoped, too, that the "character to support", which his successful authorship of *Account of Corsica* had given him, would furnish the incentive to "a better course of life". But the long list of encounters with "little charmers" and heiresses, which fill his letters to Temple at this time, attest to his failure. Despite his reluctance to "resign his liberty for life to one woman", he married his cousin Margaret Montgomerie in 1769.

For two years after his marriage he continued to practise law in Edinburgh but in 1772 he was again in London with his biographical notebook. Upon Johnson's recommendation he was elected to the Club. In August of 1773, the Great Lexicographer, then well over sixty, suddenly consented to Boswell's constantly urged project of a tour through Scotland. Boswell carefully planned the expedition down to the last detail and in every way extended himself to entertain his friend. "It is very convenient to travel with him," Johnson wrote Mr. Thrale, "for there is no house where he is not received with kindness and respect. He has better faculties than I imagined." There was no qualification in Boswell's appreciation of the uncouth old man, whom his father described as "an auld dominie, who keepit a schule and ca'd it an academy", and his wife called a bear. He wrote in the day-by-day account of their travels, *Journal of a Tour to the Hebrides*: "Had I not Dr. Johnson to contemplate, I should have sunk into dejection but his firmness supported me. I looked at him as a man, whose head is turning giddy at sea, looks at a rock."

The years following the tour to the Hebrides were increasingly a story of quarrels with his father, financial worries, alcoholism, and melancholia, the "black dog" of hypochondria, as Boswell described it. Signing himself "The Hypochondriack", he contributed a series of some seventy essays on various moral and religious subjects to the *London Magazine*. On June 30, 1784, Boswell and Johnson dined at Sir Joshua Reynolds' and rode home together. Boswell recalled the old man's "fare you well" and how, without looking back, he had "sprung away with a kind of pathetick briskness". He had not accompanied Johnson into the house "from an apprehension that my spirits would sink", and, although Johnson did not die until December, Boswell never saw him again.

During the years after Johnson's death, Boswell attempted unsuccessfully to enter parliament and to build up a law practice in England,

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nourishing "the delusion" for the rest of his life "that practice may come at any time". Painstakingly he laboured on his biography of Johnson, "arranging a prodigious multiplicity of materials, supplying omissions, searching for papers buried in different masses". After the death of his wife in 1789, he sank further into melancholia and alcoholism, always vowing reform. Neither the critics' universal praise of his *Tour to the Hebrides* (1785) and *The Life of Samuel Johnson* (1791), nor the "several matrimonial schemes" he entertained from time to time, could keep him his "fluttering self" for long. He died in London, of a complication of disorders, on May 19, 1795, and was buried in Auchinleck.



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Experimental Researches in Electricity

BIOGRAPHICAL NOTE

ANTOINE LAVOISIER, 1743-1794

THE outstanding features of Lavoisier's work were the use of the balance and the clearness with which he interpreted quantitative results, a clearness founded on his conviction that no ponderable matter disappears in any chemical change. The spread of this and of Lavoisier's other important doctrines—notably his oxygen theory—was greatly facilitated by the defined and logical form in which he presented them in his *Elements of Chemistry*, and eventually they were adopted universally.

Lavoisier was born in Paris on August 26, 1743. His father was attorney to the Parliament of Paris. His mother was the daughter of the

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secretary to the Vice-Admiral of France and heiress to a considerable fortune.

After completing his elementary education Lavoisier was sent to the *Collège Mazarin*. His early ambitions were literary rather than scientific, and in 1760 he won second prize in a rhetorical contest. Although on leaving the college he went on to prepare for law, and received his Licentiate in 1764, he devoted himself to science, studying, with well-known teachers of the time, mathematics, astronomy, botany, mineralogy, geology, and chemistry. He also began to conduct experiments and observations of his own. One of the earliest was in meteorology; he made barometrical observations several times daily and engaged others in the same pursuit with the aim of discovering the laws governing the weather. His zeal for investigation was so great that at the age of nineteen he decided to cut himself off from all social activity; he gave ill health as an excuse and for several months lived in retirement on a diet of milk.

His formal career as a scientist began in 1763 when he was invited by Guettard, his teacher in geology, to collaborate in preparing the first mineralogical atlas of France. Lavoisier's part of the project consisted largely of collecting data; he kept elaborate notebooks, which indicate that he was not only amassing material but analysing and developing ideas for later research. While engaged in this work, he entered the contest held by the French Academy of Science for the best essay on methods for lighting the streets of a large city at night. The essays were divided into two groups, practical and scientific, and while the prize was given to entries in the first group, Lavoisier alone was singled out from the second for special mention and a gold medal from the King. The work with Guettard also yielded material which Lavoisier worked up in the form of *mémoires* to be presented to the Academy of Science. In 1768, after he had presented four such papers, two on hydrometry and two on gypsum, he was elected a member of the Academy. His youth excited comment, and, as a friend of the family remarked, at the age of twenty-five he had obtained "a position which is usually won, with great difficulty, by men past their fiftieth year".

Desirous of securing a larger income for research, Lavoisier, shortly after his nomination to the Academy, bought an interest in the *Ferme*, an association of financiers who had the privilege of collecting the national taxes in return for a fixed annual sum paid in advance to the Government. His friends at the Academy did not entirely approve of this

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association, but it did provide him with the money he sought, and it also made him acquainted with Farmer-General Paulze, whose daughter he married in 1771.

Lavoisier entered further into public life when the Government took over the manufacture of gunpowder. Upon his suggestion, Turgot, Minister of the Treasury, cancelled the private production of gunpowder and established the *Régie des poudres*, a four-man administrative committee headed by Lavoisier. With this appointment he was assigned a house at the Arsenal, where with his own funds he established a fully-equipped laboratory, which he made available to all scientists interested in his work. As his scientific fame increased the laboratory became a meeting place for prominent scientists, and among his guests he numbered Priestley, Franklin, Watt, Tennant, and Arthur Young. Lavoisier always retained an interest in younger scientists, providing financial assistance for many and making laboratory assistants of others, among whom was the Dupont who later went to America and founded the munitions firm.

Although occupied with many practical concerns in connection with the *Ferme* and the *Régie des poudres*, Lavoisier reserved six hours a day, from six to nine in the morning and from seven to ten at night, for his scientific work, and one full day each week for experiments. His wife, who was fourteen at the time of her marriage, became an active partner in his research. She assisted in the laboratory, learned English so as to translate the technical works of Priestley and Cavendish, and drew the illustration for the *Traité Élémentaire de Chimie* (1789). Lavoisier also engaged in many philanthropic works, starting a model farm to demonstrate the advantages of scientific agriculture, and planning the establishment of savings banks, insurance societies, canals, and work-houses for improving the conditions of the community.

When the Revolution occurred, Lavoisier had long been a national figure. He was Director of the Academy of Sciences, deputy of the States-General of 1789, and a prominent member of the club founded to promote the cause of constitutional monarchy. For some years after 1789 Lavoisier continued to work as secretary and treasurer of the commission to secure uniformity of weights and measures. In 1791 he was made a member of the commission on arts and professions; his report for this commission, *Réflexions sur l'instruction publique* (1793), presented a detailed scheme for public free education. But almost from the beginning of the Revolution, Lavoisier had been under suspicion because of his

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association with the *Ferme* and *Régie des poudres*, and from early 1791 he was subjected to vitriolic attack from Marat. In 1794 he and the other farmers-general were placed on trial by the revolutionary Tribunal and condemned to death. Lavoisier and his father-in-law were guillotined on May 8, 1794, at the Place de la Revolution and their bodies thrown into nameless graves in the cemetery of La Madeleine.

BIOGRAPHICAL NOTE JOSEPH FOURIER, 1768-1830

FOURIER'S *Theory of Heat* marked an epoch in the history of mathematical physics. The transference of heat in the interior of a solid body formed one of the earliest subjects of mathematical and experimental treatment in the theory of heat. The law assumed by Fourier was of the simplest possible type, but the mathematical application, except in the simplest cases, was so difficult as to require the development of a new mathematical method. Fourier succeeded in showing how, by his method of analysis, the solution of any given problem with regard to the flow of heat by conduction in any material could be explained in terms of a physical constant, the thermal conductivity of the material, and that the results obtained by experiment agreed in a qualitative manner with those predicted by his theory. But the experimental determination of the actual values of these constants presented formidable difficulties which were not surmounted till a later date.

Fourier was born at Auxerre on March 21, 1768, the son of a poor tailor. An orphan at eight, he was recommended by a friend to the Bishop of Auxerre, who obtained admission for him in the local military school conducted by the Benedictines of Saint-Maur. He quickly distinguished himself as a student and showed distinct literary ability; at twelve he was writing sermons which were often used with great effect in Paris. At the age of thirteen mathematics began to attract him strongly. The prescribed hours of study did not suffice; he arose at night, concealed himself behind a screen, and by the light of candle-ends carefully collected during the day, pursued his mathematical studies. When he was twenty-one he delivered his first memoir before the Academy of Sciences on the resolution of numerical equations of all degrees.

Educated by monks in a military school, Fourier seems to have considered that only the army or the church could provide a career. With

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a strong recommendation from Legendre he applied for admission to the artillery. He was refused with the statement, "Fourier, not being of noble birth, cannot enter the artillery, not even if he is a second Newton." He then entered the Benedictine Order, where he remained as a novice from 1787 to 1789. Upon the outbreak of the Revolution he left the convent, although this did not result in any break with the Benedictines, since they immediately appointed him to the principal chair of mathematics at their school in Auxerre. When his colleagues became ill, he took their place, and besides teaching mathematics he also lectured on rhetoric, history, and philosophy.

At Auxerre, Fourier embraced the cause of the Revolution, joined the peoples' party, and served as publicist, recruiting agent, and member of the Citizens' Committee of Surveillance; in this last function he exercised such moderation that he was himself in danger from the Terror. When, in 1794, the Normal School was instituted at Paris to train a specially selected group of new teachers, Fourier was among the fifteen hundred that were chosen, and, although he began as a student, he was soon made a "master of conference". The school failed after a short time, but Fourier had so impressed the authorities that when the Polytechnic School was founded, he was appointed to its faculty, first as "superintendent of lectures on fortification" and then as "lecturer on analysis".

Napoleon sometimes attended the sessions at the Polytechnic School, and when he organized the expedition to Egypt in 1798, Fourier was asked to be a part of it, although he was not informed of the role he was expected to play. Fourier was in Egypt for three years, engaged in the most varied activities: organizing factories for the army, constructing machines, leading scientific expeditions, and executing numerous administrative tasks. He acted as the representative of the general-in-chief, receiving complaints from the Egyptian populace, and for one period was virtually governor of half of Egypt. On the death of General Kléber he was called upon to present a eulogy before the French Army. As secretary of the Institute of Cairo he instigated the collection of materials for the famous *Description of Egypt*. In collaboration with Napoleon he wrote the historical introduction to this work, which established his literary reputation and eventually won him membership in the French Academy.

On his return to France in 1802 Fourier was appointed prefect of the Département of Isère and for the next thirteen years lived at Grenoble.

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He composed the disputes between the different parties and brought order out of the confusion left by the Revolution in his province. As part of a general policy of public improvements, he initiated an extensive road-building project and undertook the reclamation of marsh-lands which had been the source of infection for thirty-seven communes. In recognition of his services he was created Baron of the Empire in 1808.

His many administrative duties as prefect of Isère did not interrupt his work as a mathematician and man of letters. He conducted investigations into the motions of heat in solid bodies with the aim of reducing them to mathematical formulation, and in 1807 submitted his first paper on the subject to the Academy of Sciences. To induce the author to extend and improve his researches the Academy assigned as the problem for its prize competition of 1812, "The mathematical theory of the laws of the propagation of heat and the comparison of the results of this theory with exact experiment." The judges were Laplace, Lagrange, and Legendre, and they awarded the prize to Fourier for his memoir in two parts, *Théorie des Mouvements de la chaleur dans les corps solides*. The first part was re-published in 1822 as the *Théorie Analytique de la Chaleur*.

Fourier continued to hold his position as prefect until the Revolution of 1814, but Napoleon's return from Elba proved to be his political downfall. As Napoleon was approaching Grenoble, Fourier went to Lyons to notify the Bourbons that the city would undoubtedly capitulate. They refused to believe him and made him responsible for the safety of the city. Upon his return to Grenoble, which had surrendered, he was taken prisoner and brought before the Emperor, Napoleon confronted him: "You also have declared war against me? . . . It only grieves me to see among my enemies an *Egyptian*, a man who has eaten along with me the bread of the bivouac, an old friend. How, moreover, could you have forgotten, Monsieur Fourier, that I have made you what you are?" Fourier's loyalty was re-established, although he did not share Napoleon's confidence of victory. The end of the Hundred Days and the Restoration found him deprived of political office, in disgrace, and almost penniless.

A friend and former pupil who was prefect of Paris made it possible for him to become Director of the Bureau of Statistics, which he remained until his death. His political past, however, did not prevent renewed recognition of his scientific abilities. In 1816 he was proposed for membership in the Academy of Sciences, and although Louis XVIII refused his consent at that time, he became a member the following year.

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He was made permanent secretary of the Division of Mathematical Sciences in 1822, member of the French Academy in 1826, and a year later succeeded Laplace as President of the Council for Improving the Polytechnic School. In 1828 he became a member of the government commission established for the encouragement of literature.

He died on May 16, 1830, of aneurism of the heart, which had been aggravated by his habit of wrapping himself in all seasons like "an Egyptian mummy" and living in airless rooms at an excessively high temperature.

BIOGRAPHICAL NOTE MICHAEL FARADAY, 1791-1867

IT might almost be said of Michael Faraday that he ushered in the modern era of electricity in industry. Yet he scorned to work for manufacturers and left to others the work and the reward of adapting his discoveries to practical use. By discovering the principle of electromagnetism and the induction of electric currents he paved the way for the invention of dynamics and other electrical machines in use today.

Faraday was born on September 22, 1791, in Newington, Surrey, the son of a blacksmith. When he was five, the family moved to London, and he grew up in such poverty that, as he later recalled, the loaf of bread his mother gave him had to last a week. "My education," he wrote, "was of the most ordinary description, consisting of little more than the rudiments of reading, writing, and arithmetic at a common day school. My hours out of school were passed at home and in the streets."

At the age of twelve he became an errandboy for a bookseller and bookbinder, and a year later he was accepted because of exemplary conduct as an apprentice without fee. His scientific education began while he was engaged in binding books. As he later wrote to a friend: "It was in those books, in the hours after work, that I found the beginning of my philosophy. There were two that especially helped me, the *Encyclopaedia Britannica*, from which I gained my first notions of electricity, and Mrs. Marcet's *Conversations on Chemistry*, which gave me my foundation in that science." With what money he could spare he bought materials for experiments, and by 1812 was conducting investigations in electrolytic decomposition. In the spring of that year, through the generosity of a customer, he was able to attend a series of four

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lectures by Sir Humphry Davy at the Royal Institution. He took careful notes, wrote them out in fuller form, and bound them into a book. He sent the notes to Davy with a request for employment at the Royal Institution in any capacity connected with science. Davy advised him not to give up a skilled trade for something in which there was neither security, money, nor opportunity for advancement, but a few months later, on the dismissal of a laboratory assistant, he offered the post to Faraday. He became Davy's assistant in March 1813 and in October of that year accompanied him on a tour of the universities and laboratories of France, Italy, and Switzerland, which lasted until April 1815.

Upon his return to England and the Institution, Faraday continued as Davy's assistant and began research of his own. In 1816 he made his first contribution in the form of an analysis of caustic lime from Tuscany, which was published in the *Quarterly Journal of Science*. From that time he wrote an increasing number of notes and memoirs. In 1821 he began work upon electromagnetism; he first collected and repeated all the known experiments, published an account of them in the *Annals of Philosophy*, and proceeded to make his own investigations. His experiments were meticulously recorded in numbered paragraphs, and in 1831 he started the first section of his *Experimental Researches in Electricity*, which was to occupy him intermittently for the next twenty-three years. First published in the form of monographs in the "Transactions of the Royal Society", they were later brought out in three volumes (1844, 1847, 1855).

Faraday was occupied during these years with many things in addition to research in electricity. Pursuing the chemical investigations he had begun as Davy's assistant, he made a special study of chlorine, discovered two new chlorides of carbon, initiated experiments on the diffusion of gases, and was among the first to succeed in their liquefaction. Many of his discoveries had industrial applications, some of which he investigated, such as the alloys of steel and the manufacture of glass. He was called upon to act as a consultant on many works of public concern, and for thirty years he was adviser to Trinity House on the supervision of the lighthouses of England. In 1823 he was elected to the Royal Society over Davy's strong opposition, which, however, Faraday did not permit to interfere with their friendship. In 1833 he was made the Fullerian professor of chemistry for life, and although he was not obliged to lecture, he frequently did so in order to increase the stability and

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influence of the Institution. His celebrated *Chemical History of a Candle* was one of the series of Christmas lectures for children which he had started at the Institution. He received honorary degrees and scientific tributes from all parts of the world, and both the Royal Society and the Royal Institution tried in vain to persuade him to accept the presidency. As he told his friend Tyndall in refusing the Royal Society's offer, "I must remain plain Michael Faraday to the last."

After he had become famous for his discoveries, Faraday's services were eagerly sought by industry and commerce. For a few years he did a little "professional business", as he called it, and in 1830 received more than a thousand pounds in return. It is estimated that this work might easily have yielded five thousand pounds in 1832, but he then felt, as he later told Tyndall, that he had to decide whether to make wealth or science the pursuit of his life. He chose science and lived and died a poor man.

Faraday married in 1821, "an event", he wrote, "which more than any other contributed to my earthly happiness and healthful state of mind". The marriage was childless, but Faraday's lodgings in the Royal Institution were always full of his wife's nieces and nephews, for he enjoyed the company of children and liked to take part in their games. Faraday's parents belonged to the small dissident Presbyterian sect known as Sandemanians, and Faraday himself attended their meetings from childhood; he made a formal declaration of faith at thirty and for two different periods discharged the office of elder.

Faraday's last years were spent in seriously declining health. As early as 1841, as a result of overwork, he had suffered a serious breakdown and was compelled to take a complete rest for a period of several years. Although he was back in the laboratory by 1845 and for fifteen years engaged in some of his most important research, his health was never completely restored. When at length he found his memory failing and his powers declining, he yielded to others whatever parts of his work he could no longer accomplish according to his own standard of efficiency. Queen Victoria, in 1858, provided him with a house at Hampton Court which had rooms so arranged that he had no stairs to climb. In 1862 he delivered his last lecture and performed his last experiment. He died on August 25, 1867.



GEORG WILHELM FRIEDRICH HEGEL

VOLUME 46

GEORG WILHELM FRIEDRICH HEGEL

The Philosophy of Right · *The Philosophy of History*

BIOGRAPHICAL NOTE

GEORG WILHELM FRIEDRICH HEGEL, 1770-1831

HEGEL is the founder of logical Idealism or Panlogism. He rejected the unknown "thing-in-itself" of Kant and the equally unknown "identity" or Absolute which, according to Schelling, manifests itself in Nature and mind. He denied the opaqueness of ultimate reality and insisted that the entire universe "can be penetrated by thought". Mind and Nature are not merely manifestations or expressions of an otherwise unknown Absolute; they are the Absolute itself. Moreover, mind and Nature, according to Hegel, are not two distinct or parallel realities but integral components of one process of self-revelation. Mind needs for its own development an objective world, or Nature, on which to exercise itself; but this objective world is itself mental, something that is at once appearance and reality — "the real is rational and the rational is real". The development of this rational reality is a kind of dialectic proceeding by the method of thesis, antithesis and synthesis, or position, negation, and reconciliation. Some thought occurs; it is opposed by another thought, which also turns out to be inadequate; but what is true in each, the thesis and the antithesis, is harmonized and made mutually supplementary in another thought, which synthesizes them; e.g., "becoming" is such a synthesis of "being" and "not-being". The whole world, according to Hegel, is made up of such opposites which are reconciled, and this conception by Hegel of the cosmic process as a rational dialectic stimulated new views of history, and, consequently, a new interest in it.

Hegel's *Philosophy of Right* is a theory in which the fundamental principles of law, morality and social institutions (political and municipal) are said to be connected stages in the logical evolution of rational will. It is animated by the idea that whatever is real is rational and whatever is rational is real. His theory was not a mere formulation of the Prussian State. It is inspired by an overpowering sense of the value of organization — a sense that liberty can never be dis severed from order, that a vital

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inter-connection between all the parts of the body politic is the source of all good.

The *Lectures on the Philosophy of History* is the most popular of all Hegel's works. The history of the world is a scene of judgment where one people and one alone holds for a while the sceptre, as the unconscious instrument of the universal spirit, till another rises in its place with a fuller measure of liberty -- a larger superiority to the bonds of natural and artificial circumstance. Three main periods -- the Oriental, the Classical and the Germanic -- in which respectively the single despot, the dominant order, and the man as man possess freedom -- constitute the history of the world.

Hegel was born at Stuttgart on August 27, 1770, the oldest child of a minor state official. His achievement at the local grammar school and *gymnasium* was not remarkable. A journal from that time contains evidence of interest in history, Greek and Latin literature, and theology, and he then began his lifelong habit of making copious extracts from his reading which he annotated and arranged alphabetically. At the age of eighteen he entered the University of Tübingen as a student of theology. But he showed little aptitude for theology; his sermons were a failure, and he found more congenial reading in the classics. The certificate which he received in 1793 commended his excellent talents but declared that his industry and knowledge were mediocre, his speaking poor, and that he was particularly deficient in philosophy. He seems to have profited most from the companionship of his friends, notably Hölderlin and Schelling, with whom he read Kant and Plato.

On leaving Tübingen, Hegel became a tutor in a private family, as had Kant and Fichte before him. He held such a position first at Bern (1793-1796) and then at Frankfurt (1797-1800). From the years when he was a tutor there remains a large number of manuscripts, in various stages of completion and of varying importance, but all indicative of a great deal of study. During his residence in Switzerland he wrote a life of Jesus, a critique of positive religion, and several studies in the history of religion. Later his attention turned to questions of economics and government, and he left writings on the reform of the Prussian land laws, a commentary on James Stewart's *Political Economy*, and other studies of similar character which have since been published. In 1800 he produced a sketch which is generally regarded as the first systematic statement of his philosophy.

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In 1799 his father died, and a small inheritance offered Hegel a brief period of independence. He wrote to Schelling, who was already on the way to fame, asking him to suggest a suitable town for a brief period of studious withdrawal, specifying, among other requirements, "a good beer". Expressing his joy at the recent successes of his friend in the academic world, he confessed that he too had ambitions: "The ideal of my youth has necessarily taken a reflective form and been transformed into a system. Now I am asking myself, while still busy with this task, how can I return to influencing the life of mankind?" Schelling's answer must have been enthusiastic, for Hegel abandoned his plans for a quiet vacation and joined him at Jena almost immediately. Here he became a *Privat-docent* at the university, after he had presented as his qualifying dissertation a treatise *On the Orbits of the Planets*. In the winter of 1801 his lectures, delivered in the late afternoon and attended by eleven students, dealt with logic and metaphysics; succeeding series in later years, somewhat better attended, were devoted to a "system of speculative philosophy", the history of philosophy, pure mathematics, and other topics. Before Schelling's departure from Jena, in 1803, he and Hegel collaborated in the publication of the *Journal of Critical Philosophy*.

Although Hegel appeared at first as a follower of Schelling, his own views rapidly became distinct and he set about preparing a systematic exposition. In the preface to his first important work, *The Phenomenology of Spirit*, he went to some length to make a kind of disavowal of Schelling's position. It was while he was engaged in the details of publication of this work that his academic career was brought abruptly to a close by the Napoleonic campaign culminating in the battle of Jena in the autumn of 1806. In a letter written to a friend on the day before the battle, after expressing anxiety regarding the fate of his manuscripts then on the way to the printer, he spoke of seeing Napoleon: "I saw the Emperor — that world-soul — ride through the town to reconnoitre. It is indeed a strange feeling to see such a person, who here, from a single point, sitting on his horse, reaches over and masters the world!"

The Phenomenology of Spirit appeared in 1807 despite the war, but Hegel himself was at a loose end. For a time (1807–1808) he edited the *Bamberger Zeitung*, but finding journalism distasteful, he accepted a position as headmaster of the *Aegidien-gymnasium* at Nuremberg, where he remained until 1816. In 1811 he married. Two volumes of his *Science of Logic* were published in 1812, and a third in 1816, and he was offered

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professorships at Erlangen, Heidelberg, and Berlin. He accepted the invitation to Heidelberg, but after the publication of his *Encyclopaedia of the Philosophical Sciences* in 1817, the offer of Berlin was renewed and accepted, and he occupied the chair vacant since the death of Fichte.

The thirteen years of Hegel's professorship at the University of Berlin (1818-1831) brought him to the summit of his career and made him the recognized leader of philosophic thought in Germany. With every year his personal prestige and following increased, until his name was linked with that of Goethe by his more enthusiastic disciples. In 1821 he published *The Philosophy of Right*, the last of the large works published in his lifetime. His lectures on aesthetics, the philosophy of religion, the philosophy of history, and the history of philosophy were constantly revised and improved and finally published after his death. In 1830 he became rector of the university and was decorated by Frederick William III of Prussia.

On the 7th of November, 1831, Hegel finished the preface to a second edition of his *Logic*. In closing he recalled the legend that Plato revised the *Republic* seven times, and remarked that, despite this illustrious example, "the writer must content himself with what he has been allowed to achieve under the pressure of circumstances, the unavoidable waste caused by the extent and many sidedness of the interests of the time, and the haunting doubt whether, amid the loud clamour of the day and the deafening babble of opinion . . . there is left any room for sympathy of pure thought". Seven days later he died of cholera, and was buried, as he had wished, between Fichte and Solger.

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VOLUME 47

JOHANN WOLFGANG VON GOETHE

Faust

BIOGRAPHICAL NOTE

JOHANN WOLFGANG VON GOETHE, 1749-1832

THE supreme work of Goethe's latter years is *Faust*, Germany's greatest contribution to the literature of the world. Although Part I was published in 1808, Part II was not completed until shortly before Goethe died and

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was published in 1832. In Part I is set out Faust's Despair, his pact with Mephistopheles and his love for Gretchen; Part II covers the magician's life at court, the winning of Helen of Troy and Faust's purification and salvation.

Goethe was born on August 28, 1749, at Frankfurt-on-Main. His father was a lawyer of independent means and an imperial councillor; his mother was the daughter of the mayor of Frankfurt. The first sixteen years of his life were spent almost entirely at home, where he gained some acquaintance with the Bible and the classics, Italian, Hebrew, English, music, and drawing.

In 1765 Goethe began his preparation for the law by attending the University of Leipzig. However, it was literature rather than law that occupied him. Moved by his love for a young woman, he began to turn "everything which rejoiced or troubled me into a picture or a poem". A serious breakdown of his health in 1768 cut short his stay at Leipzig. After a long period of convalescence, much of which was devoted to the study of Paracelsus, alchemy, and "natural magic", Goethe went to Strasbourg, where in 1771 he completed his legal training.

While at Strasbourg, Goethe became acquainted with Herder, who, he later remarked, "tore down the curtain which had covered the poverty of German literature". Together they studied Gothic architecture, read Homer, Shakespeare, Ossian, and folk-song, and discussed a new German literature. When Goethe returned to Frankfurt in 1771, he had schemes for dramas and various literary works but no strong desire to practise law. That same year he began his first important work, the drama celebrating the sixteenth-century robber-knight, *Gotz von Berlichingen*. After a period of several months spent at the imperial courts at Wetzlar, where he knew and loved Lotte Buff, Goethe produced his novel, the *Sorrows of Young Werther* (1774), written "as by a somnambulist" in four weeks' time. Both the *Werther* and the *Gotz*, published a year previously, had an enormous success and inaugurated the literary movement known as *Sturm und Drang* (Storm and Stress). They found many imitators throughout Europe; even the clothes that Werner wore became the fashion; and for a long time thereafter Goethe was known only as the "author of Werther".

Goethe once remarked: "I am like a snake, I slough my skin and start afresh." In 1775, in the midst of his literary triumph, he accepted the invitation of Duke Karl August and moved to the court at Weimar,

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which was to remain his home for the rest of his life. He was reproached by his friends for abandoning his literary talents, and he soon became so involved with duties of state that for the next ten years he spent little time in writing. He was not long in Weimar before he was entrusted with almost all the offices of the tiny State. As councillor of legation, he attended the privy council and the trial of prisoners. He also had charge of the war and finance commissions as well as the administration of roads, mines, and forests. In 1782 he was raised to the nobility by the emperor and a short time later became president of the chamber.

Partly in connection with his new duties at Weimar, Goethe revived the interest in science that he had first shown at Strasbourg. He took up again the study of anatomy and in 1784 discovered that the intermaxillary bone exists in man in a rudimentary form, thus contributing to the development of the evolutionary doctrine. His experiments with the structure and growth of plants provided him with the material later incorporated in his *Metamorphoses of Plants*. He also began his work in optics.

Although eminently successful in carrying out his practical duties, Goethe came to regret them as a "terrible disease" which kept him from writing, and "grievously disturbed my creative power". In 1786, determined to escape them for a time, he set out for Italy, disguised as a merchant under the name of Moller. For twenty-two months he remained in Italy and felt that he "found himself again as an artist". Under the influence of what he regarded as the classical spirit, he resolved, "I will occupy myself only with lasting conditions, such as we see in the Greek statues." With that inspiration he re-worked and completed many of the books he had begun previously, including *Iphigenie auf Tauris*, *Torquato Tasso*, and *Egmont*.

After his return to Weimar in 1788, Goethe found it impossible to resume his former life. "My outer man," he wrote, "could not accustom itself to the change." His Italian sojourn had separated him from Charlotte von Stein, whom he had loved for twelve years, and to the scandal of Weimar he took into his house Christine Vulpius, a young factory worker, whom he finally married in 1806. His new classic dramas attracted little attention, and Germany seemed to like only the *Sturm und Drang* literature, which he felt had left far behind. Schiller had then begun his rise to literary fame, and Goethe at the time felt Schiller was in every way his opposite. He was delighted, however, when Schiller

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invited him in 1794 to contribute to a new review he was starting. Shortly afterwards, their meeting occurred, inaugurating a friendship which was to last until the younger poet's death in 1805.

Largely under Schiller's influence, Goethe returned to literature with renewed interest. Together they wrote the *Xenian*, attacking the literary foibles of their time. Goethe, to some extent, inspired the plays of Schiller, which he produced as the director of the ducal theatre. He wrote *Wilhelm Meister's Apprenticeship* (1796), the epic idyll, *Hermann and Dorothea*, and a number of poems. He was also persuaded to resume work upon the Faust legend, which he had begun to dramatize as early as 1774. He had published a fragment of it in 1790. At the constant urging of Schiller he now completed the first part, which was published in 1808. It immediately won an enthusiastic reception, even from those most opposed to the classicism of the Weimar school.

After Schiller's death Goethe ceased to take any active part in the literary movements of his day, although he continued to direct the Weimar theatre until 1817 and was the recognized doyen of German literature. Nor was he much involved with the great political events of his time. He tended to regard Napoleon as the defender of civilization against the Slavs, and in the interview between the two men at Erfurt in 1808 the poet reciprocated the admiration of the French conqueror, who began the meeting by exclaiming: "*Vous êtes un homme.*" Goethe still continued to produce a great volume of literary work of all kinds. In 1810 he brought out his *Theory of Colour*. The following year he began his autobiography, under the title of *Poetry and Truth*. *Wilhelm Meister's Travel Years* first appeared in 1821.

In 1824 Goethe returned to work on the second part of *Faust*, and by 1832 the poem was completed. Although often interrupted the composition of *Faust* had taken Goethe almost sixty years. Shortly after its completion, on March 31, Goethe died. He was buried beside Karl August in the ducal vault at Weimar, to which the remains of Schiller were also removed.



VOLUME 48

HERMAN MELVILLE
Moby Dick ; or, The Whale

HERMAN MELVILLE

BIOGRAPHICAL NOTE

HERMAN MELVILLE, 1819-1891

MELVILLE'S greatest work, *Moby Dick*, is regarded by some as the greatest novel written in English. It may be read with complete enjoyment as a stirring tale of external voyage, but inwardly it is lined with metaphysical speculation regarding "the nature of ultimate reality". Like Henry James, Melville was inspired by Nathaniel Hawthorne but his fiction is more robust than either Hawthorne's or James's, although he shared with the latter a final preoccupation with the problem of evil. Melville's philosophical conclusions are not clear-cut, but it is apparent that he tended to be pessimistic about the cosmos and the heart of man.

The author of *Moby Dick* was born in New York in 1819, descended from Scottish stock on his father's side and from Dutch Calvinist on his mother's. His father, an importer of French dry-goods, had built a prosperous business which flourished until the depression of the late twenties. Mr. Melville moved to Albany to re-establish himself but died in 1832, his mind deranged by worry and overwork. The necessity of contributing to the support of his family compelled Herman to leave school at the age of fifteen to clerk for his uncles.

In 1837 Melville shipped on a merchantman bound for Liverpool, taking this course probably, as did the hero of his partly autobiographical novel, *Redburn*, because of "sad disappointments in several plans I had sketched for my future life, the necessity of doing something for myself, united to a naturally roving disposition". Upon his return from this first voyage, Melville taught at schools in Pittsfield, Massachusetts, and Greenbush, New York. But in 1841 he went to sea again, this time on the whaler, *Acushnet*. He jumped ship at Nukuhiva in the Marquesas Islands and spent a few weeks with the cannibals of the Taipi valley. For a year he roved the Pacific and finally boarded at Honolulu the man-of-war, *United States*.

In a letter written to Hawthorne in 1851, Melville dated his life from his twenty-fifth year, the year of his discharge from the *United States*. "Until I was twenty-five," he wrote, "I had no development at all. Three weeks have scarcely passed, at any time between then and now, that I have not unfolded within myself." His first novels were drawn from his experience in the South Seas. *Typee* was published in London and New York in 1846, and *Omoo* appeared the following year. They brought

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Melville considerable literary fame, along with censure for his exaltation of the savage and his criticism of missionaries.

In 1847 Melville married Elizabeth Shaw, the daughter of Chief Justice Lemuel Shaw of Boston, to whom he had dedicated *Typee*. He and his new wife settled in New York, where, as the protégé of Evert Duyckinck, who had reviewed his novels for the *Literary World*, he was prominent in the city's literary life. In Duyckinck's extensive library, Melville discovered Shakespeare, whose writings had been unavailable to him among the books he had "picked up by chance here and there" in ships' libraries and second-hand bookstores.

"Those deep faraway things . . . those occasional flashings-forth of the intuitive Truth . . . those short, quick probings at the very axis of reality," that Melville found in Shakespeare, were to enter into the writing of his next novel, *Mardi*, published in 1849. This work, an allegorical romance in a Polynesian setting, was accorded the same unenthusiastic reception that was to be given all the books in which he tried to "get a living by the truth". Rather than "go to the Soup Societies", as he put it, Melville turned again to straight narrative in *Redburn* (1849) and *White-Jacket* (1850), semi-autobiographical tales of life aboard a merchantman and a man-of-war. Both were favourably received. "But I hope I shall never write such a book again," he wrote Duyckinck, "tho' when a poor devil writes with duns all around him . . . like the devils about St. Anthony — what can you expect of that poor devil? What but a beggarly *Redburn*! And when he attempts anything higher — God help him! . . . Witness *Mardi*."

Melville was irritated at the persistence of his fame as "a man who lived among the cannibals" and became increasingly restive under "the petitionings and remonstrances of literary friends of all sorts". In 1850, after a trip to England to arrange for the publication of *White-Jacket*, he settled on a farm in Pittsfield, Massachusetts, hoping to eke out the meagre income from his books by small-scale farming.

The same year Hawthorne moved to nearby Lenox. Melville had written an essay in praise of Hawthorne, placing him beside Shakespeare "in his great power of blackness . . . that appeals to that Calvinistic sense of Innate Depravity and Original Sin". Hawthorne, on his side, had recognized Melville as "no common man" and said of his writing that "no man ever put the reality before his reader more unflinchingly". The two writers became friends and often walked together, talking "about

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time and eternity, things of this world and the next, and books, and publishers, and all possible and impossible matters”.

It was to Hawthorne that Melville dedicated *Moby Dick* (1851), writing to him of the “hell-fire in which the whole book is broiled”. This work, he felt, marked the end of that process of “unfolding within” begun when he was twenty-five: “I feel that I am now come to the inmost leaf of the bud, and that shortly the flower must fall to the mould.” Melville was filled with “a sense of unspeakable security” because Hawthorne understood this book. “It’s a long stage, and no inn in sight, and night coming, and the body cold. But with you for a passenger, I am content and can be happy,” he wrote to the elder author. In the same letter he describes his own sensations: “I have written a wicked book, and feel spotless as the lamb. Ineffable socialities are in me. I would sit down and dine with you and all the gods in old Rome’s Pantheon. It is a strange feeling — no hopefulness is in it, no despair.”

At the same high tension, he finished his next novel, *Pierre*, published the following year. The reviews were universally unfavourable; even Duyckinck complained that Melville had let his mind run “riot amid remote analogies”. Melville attempted, without success, to secure a consular appointment in 1853. The same year a fire at the warehouse of his publishers destroyed not only his books but also the plates from which they had been printed; they were not reprinted during his lifetime. Unable to find other means of earning his livelihood, he was obliged to continue writing; he completed two novels and a book of short stories by 1857.

Low in spirits and broken in health, Melville travelled to Europe in 1856. On his way to the Holy Land, he visited Hawthorne, then Consul at Liverpool. The two, according to Hawthorne’s account, sat among the sandhills, and Melville, as was his wont, “began to reason of Providence and futurity, and of everything that lies beyond human ken, and informed me that he ‘had pretty much made up his mind to be annihilated’; but still he does not seem to rest in that anticipation; and, I think, will never rest until he gets hold of a definite belief. It is strange how he persists . . . in wandering to-and-fro over these deserts, as dismal and monotonous as the sandhills amid which we were sitting. He can neither believe, nor be comfortable in his unbelief”.

The last thirty-three years of Melville’s life were spent in almost complete obscurity. From 1857 to 1860 he lectured throughout the East

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and Middle West on such subjects as "The South Sea", "Travel", "Statuary in Rome". Once again, in middle age, he sought the solace of the sea, voyaging to San Francisco aboard his brother's clipper ship. In 1866 he was appointed a customs inspector in New York, a position he held until 1885. Now and then a student or an enterprising literary man would visit him in his retirement and would return to report that he was only interested in talking philosophy or religion. Three volumes of short poems and an epic on his pilgrimage to the Holy Land form the bulk of his writings during this period. *Billy Budd*, a somewhat more tranquil novel, was finished just before his death and published posthumously in 1924.

Herman Melville died in New York on September 28, 1891. Only one newspaper carried an obituary notice, and this was but a few lines.



VOLUME 49

CHARLES DARWIN

The Origin of Species by Means of Natural Selection
The Descent of Man and Selection in Relation to Sex

BIOGRAPHICAL NOTE

CHARLES DARWIN, 1809-1882

DARWIN'S *Origin of Species* is probably the most famous of all scientific works even today, and in fact was immensely popular as soon as it was published — the whole edition of 1,250 copies was exhausted on the day of issue. From the point of view of the history of science, the significance of Darwin's theory lies in the new and vast extension it gave to the field in which causes intelligible to the human mind can be sought as explanations of phenomena. Thus evolution is co-ordinated in the history of thought with the Newtonian theory of gravitation, with physical and chemical theories of physiology and with the uniformitarian theory of geology. The first four chapters explain the operation of artificial selection by man and of natural selection in consequence of the struggle for existence. The fifth chapter deals with the laws of variation and causes

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of modification other than natural selection. The five succeeding chapters consider difficulties in the way of a belief in evolution generally as well as in natural selection. The three remaining chapters (omitting the final recapitulation) deal with the evidence for evolution. The theory which suggested a cause of evolution is thus given the foremost place and the evidence for the existence of evolution considered last. The evidence had never been thought out and marshalled in a manner which bears any comparison with that of Darwin, and the work would have been epoch-making had it consisted of the later chapters alone.

The *Descent of Man and Selection in Relation to Sex* both fulfilled Darwin's statement in the *Origin* that "light would be thrown on the origin of man and his history", and collected the evidence in support of his hypothesis of sexual selection which he had briefly described in an earlier essay.

In evaluating the qualities that accounted for his "success as a man of science", Charles Darwin in his modest autobiography, written "because it might possibly interest my children", traces from his early youth, "the strongest desire to understand and explain" whatever he observed. His childhood fantasies were concerned with fabulous discoveries in natural history; to his schoolmates he boasted that he could produce variously coloured flowers of the same plant by watering them with certain coloured fluids.

His father, a highly successful physician, was somewhat puzzled by the singular interests of his second son as well as by his undistinguished career in the classical curriculum of Dr. Butler's day school; he accordingly decided to send him to Edinburgh to study medicine. At Edinburgh Darwin collected animals in tidal pools, trawled for oysters with New-haven fishermen to obtain specimens, and made two small discoveries which he incorporated in papers read before the Plinian Society. He put forth no very "strenuous effort" to learn medicine.

With some asperity, Dr. Darwin proposed the vocation of clergyman as an alternative. The life of a country clergyman appealed to young Darwin, and, after quieting his doubts concerning his belief in "all the dogmas of the Church", he began this new career at Cambridge. He proved unable, however, to repress his scientific interests and developed into an ardent entomologist, particularly devoted to collecting beetles; he had the satisfaction of seeing one of his rare specimens published in Stephen's *Illustrations of British Insects*: As at Edinburgh, he enjoyed

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many stimulating associations with men of science. It was a professor of botany at Cambridge, J. S. Henslow, who arranged for his appointment as naturalist on the government ship, H.M.S. *Beagle*.

From 1831 to 1836 the *Beagle* voyaged in Southern waters. Lyell's researches into the changes wrought by natural processes, set forth in *Principles of Geology*, gave direction to Darwin's own observations of the geological structure of the Cape Verde Islands. He also made extensive examinations of coral reefs and noted the relations of animals on the mainland to those of the adjacent islands, as well as the relation of living animals to the fossil remains of the same species.

Darwin described the voyage of the *Beagle* as "by far the most important event in my life". Besides making him one of the best qualified naturalists of his day, it developed in him the "habit of energetic industry and of concentrated attention". This new purposefulness on the part of his son was succinctly noted by Dr. Darwin, who remarked upon first seeing him after the voyage: "Why, the shape of his head is quite altered."

After his return, Darwin settled in London and began the task of organizing and recording his observations. He became a close friend of Lyell, the leading English geologist, and later of Hooker, an outstanding botanist. In 1839 he married his cousin, Emma Wedgwood, and towards the end of 1842, because of Darwin's chronic ill health, the family moved to Down, where he lived in seclusion for the rest of his days. During the six years in London, he prepared his *Journal* from the notes of the voyage and published his carefully documented study of *Coral Reefs*.

The next eight years were spent in the laborious classification of barnacles for his four-volume work on that subject. "I have been struck," he wrote to Hooker, "with the variability of every part in some slight degree of every species." After this period of detailed work with a single species, Darwin felt prepared to attack the problem of the modification of species which he had been pondering for many years.

A number of facts had come to light during the voyage of the *Beagle* that Darwin felt "could only be explained on the supposition that species gradually become modified". Later, after his return to England, he had collected all the material he could find which "bore in any way on the variation of plants and animals under domestication". He soon perceived "that selection was the keystone of man's success. But how selection could be applied to organisms living in a state of nature remained for some time a mystery". One day, while reading Malthus on *Population*, it

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suddenly occurred to him how, in the struggle for existence which he had everywhere observed, "favourable variations would tend to be preserved and unfavourable ones to be destroyed. The result would be the formation of a new species. Here then I had at last a theory by which to work".

He confided this theory to Hooker and Lyell, who urged him to write out his views for publication. But Darwin worked deliberately; he was only half through his projected book when, in the summer of 1858, he received an essay from A. R. Wallace at Ternate in the Moluccas, containing exactly the same theory as his own. Darwin submitted his dilemma to Hooker and Lyell, to whom he wrote: "Your words have come true with a vengeance — that I should be forestalled." It was their decision to publish an abstract of his theory from a letter of the previous year together with Wallace's essay, the joint work being entitled: *On the Tendency of Species to form Varieties and on the Perpetuation of Varieties and Species by Natural Means of Selection*.

A year later, on November 24, 1859, *The Origin of Species* appeared. A storm of controversy arose over the book, reaching its height at a meeting of the British Association at Oxford, where the celebrated duel between T. H. Huxley and Bishop Wilberforce took place. Darwin, who could not sleep when he answered an antagonist harshly, took Lyell's advice and saved both "time and temper" by avoiding the fray.

In his work, however, he stayed close to his thesis. He expanded the material of the first chapter of the *Origin* into a book, *Variation of Plants and Animals under Domestication* (1868). *The Expression of the Emotions* (1872) offered a natural explanation of phenomena which appeared to be a difficulty in the way of the acceptance of evolution. His last works were concerned with the form, movement, and fertilization of plants.

Darwin's existence at Down was peculiarly adapted to preserve his energy and give direct order to his activity. Because of his continual ill health, his wife took pains "to shield him from every avoidable annoyance". He observed the same routine for nearly forty years, his days being carefully parcelled into intervals of exercise and light reading in such proportions that he could utilize to his fullest capacity the four hours he devoted to work. His scientific reading and experimentation, as well, were organized with the most rigorous economy. Even the phases of his intellectual life non-essential to his work became, as he put it,

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“atrophied”, a fact which he regretted as “a loss of happiness”. Such non-scientific reading as he did was purely for relaxation, and he thought that “a law ought to be passed” against unhappy endings to novels.

With his wife and seven children his manner was so unusually “affectionate and delightful” that his son, Francis, marvelled that he could preserve it “with such an undemonstrative race as we are”. When he died on April 19, 1882, his family wanted him to be buried at Down; public feeling decreed that he should be interred in Westminster Abbey, where he was laid beside Sir Isaac Newton.



VOLUME 50

KARL MARX

Capital

KARL MARX and FRIEDRICH ENGELS

Manifesto of the Communist Party

BIOGRAPHICAL NOTE

KARL MARX, 1818–1883

KARL MARX, the Father of Communism, was the chief exponent, with Lenin, of Communist theory. His *Das Kapital* (Capital) and the *Manifest der Kommunisten* (The Communist Manifesto), written in collaboration with Friedrich Engels, are the two great classics of Communist doctrine. The starting point of Marx's theory of Socialism is his doctrine of the class struggle. This provides the clue to the two doctrines directly associated with his name — the materialist conception of history and the theory of surplus value. The former of these, though it underlies all his thinking, is nowhere systematically expounded in his books. The latter is the main theme of *Capital*.

The *Communist Manifesto*, on the other hand, was a concise exposition of the working class movement in modern society according to the views of Marx and Engels, to which was added a critical survey of the existing socialist and communist literature, and an explanation of the attitude of

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the Communists towards the advanced opposition parties in the different countries of the world.

On his father's side, Marx was descended from a family of eminent rabbis. His father, a prosperous lawyer, holding an official post in the Prussian services, adopted Lutheranism for himself and his family in 1824. His mother was a simple woman of Hungarian origin, who never learned to speak or read German.

Marx was born on May 5, 1818, in the ancient city of Trier in the Rhineland, where he completed his early schooling. At seventeen he was sent to the University of Bonn to study law, but appears to have devoted most of his time to "wild frolics", and the following year, after engaging in a duel, he was transferred to the University of Berlin, which had the reputation of being a "workshop" rather than a "tavern". Instead of applying himself to the study of the law, Marx read the Latin, English, and Italian classics and began to "wrestle with philosophy", as he wrote to his family. At nineteen he became the youngest member of the "Doktor Klub", a group of "young Hegelians" who gathered to discuss the rival interpretations of Hegel's religious and philosophic views. They criticized religious orthodoxy along the lines suggested by Feuerbach's *Essence of Christianity* and adopted positions on political questions "at the extreme left wing of the republican movement". The triumph of conservatism in governmental and educational circles led Marx to hasten the completion of his university work. He finished a dissertation *On the Difference between the Natural Philosophies of Democritus and the Epicureans*, submitted it to the University of Jena, then notorious for its readiness to grant diplomas, and received his doctoral degree in 1841.

Convinced that an academic career was closed because of the conservative reaction, Marx turned to journalism. In October 1842, he became an editor of the liberal paper of Cologne, the *Rheinische Zeitung*. In its pages he defended the wine-growing peasants of the Moselle against the wood-theft laws enacted by the Rhenish diet, and expressed his growing awareness of economic issues. The paper was suppressed, and he came reluctantly to the view that "physical force must be overthrown with physical force, and theory will be a physical force as soon as the masses understand it". The experience on the *Rheinische Zeitung*, he later testified, led him "to move from pure politics to socialism".

After the suppression of the paper Marx married his boyhood sweetheart, the aristocratic Jenny von Westphalen, and went to Paris to further

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his knowledge of economics and socialism. He was soon associated with Louis Blanc, Proudhon, Heine, and the other German émigrés and French socialists whose efforts made Paris the intellectual centre of the Socialist movement. With the well-known literary leader of Radical Hegelianism, Arnold Ruge, he edited the *Deutsch-französische Jahrbucher*, which in its first and only issue contained articles by Feuerbach, Bakunin, and Engels, as well as two by Marx, one on the Jewish question and the other on Hegel's philosophy of law. Marx's journalistic efforts in Paris were then devoted chiefly to the radical magazine, the *Vorwärts*.

While in Paris Marx met Friedrich Engels (1820–1895), with whom he began a lifelong friendship and collaboration. Engels, the son of a cotton manufacturer of Barmen, Germany, was then working in one of his father's factories in England, where he associated with the Owenites and Chartists and had the opportunity, denied to Marx, of studying at close range the organization of modern manufacture and its impact upon the workers. His *Position of the Working Classes in England* (1844) was written from this experience.

In 1845 the entire staff of the *Vorwärts* received orders, instigated by the Prussian Government, to leave France, and Marx went to Brussels, where he was soon joined by Engels. By this time he had sketched his theory of history, and with Engels as his collaborator, began to work it out in detail. Together they wrote the *German Ideology*, which, however, was not published until 1932. They acquired a local German weekly, the *Brüsseller Deutsche Zeitung*, and "commenced political agitation", as Engels later wrote, by joining a communistic society, the League of the Just, which had branches in Brussels, London, Paris, and several Swiss towns. This group had become the League of the Communists, when it met in London in 1847, and Marx and Engels were assigned the task of stating its aims. They produced the *Communist Manifesto*; Engels wrote a first draft which was rewritten by Marx.

Shortly after its publication, the February Revolution of 1848 broke out in France. Marx and Engels, expelled from Belgium, paid a brief visit to that country before going to Cologne to aid the revolution there. They founded a daily newspaper, the *Neue Rheinische Zeitung*, as "An Organ of Democracy", and were able to carry on their campaign for revolution for almost a year before the paper was suppressed. Marx was prosecuted for high treason and, though acquitted by the jury, he was

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forced to leave Prussian territory. He turned again to France, but was soon presented with the choice of either settling in Brittany or leaving France; he preferred to go to England for "the next dance".

Marx passed the last thirty-four years of his life in England, living with his family in the slums of Soho, almost completely dependent upon the small sums Engels could send him. In 1852 he became a political correspondent for the *New York Tribune*, but his articles never brought more than two pounds and usually not that much. Most of his time was spent in poring over books and newspapers in the British Museum or writing at home. While suffering from the loss of three of his six children, and from poverty, liver attacks, carbuncles, and boils — "Plagued like Job, though not so Godfearing," he wrote to Engels — Marx produced the *Critique of Political Economy* (1859) and the first volume of *Capital* (1867).

In 1864 Marx again became active in the field of politics. He organized the International Working Men's Association (the First International) and served as actual head of its general council. While its first years were more than usually successful, the anarchist agitation of Bakunin, the Franco-Prussian war, and the Paris Commune created conditions that made it impossible to maintain a centralized federation. At the instigation of Marx the general council was moved to the United States and, in 1876, formally dissolved in a conference at Philadelphia.

Marx regarded his main work as finishing the *Capital*. He wrote to a friend: "I laugh at the so-called 'practical' men and their wisdom. If one wants to be an ox one can easily turn one's back on human suffering and look after one's own skin. But I should have regarded myself as really impractical had I died without finishing my book, at least in manuscript." He was unable, however, to complete the work, and Engels brought out the second and third volumes after his death.

With an improvement in fortune in his last years Marx sought relief for his seriously declining health at various European spas, but returned to England without any marked improvement. When the news of his wife's death was brought to him as he lay ill with pleurisy, he murmured: "The Moor" — so he was called by his children — "is dead too." He died fifteen months later, on March 14, 1883, in London, and was buried at Highgate Cemetery.



LEO TOLSTOY
VOLUME 51
COUNT LEO TOLSTOY
War and Peace

BIOGRAPHICAL NOTE
LEO TOLSTOY, 1828-1910

TOLSTOY'S *War and Peace* is one of the world's masterpieces of literature and indeed has a considerable claim to being the world's greatest novel. Together with his *Anna Karenina* it marks the highest point reached in its development by the realistic novel. In these novels literary realism attains its goal: an adequacy of the verbal pattern to the living reality which ultimately produces the feeling, familiar to readers of Tolstoy, that his characters are to be classified with people in flesh and blood, not with other characters in fiction. The countless characters that fill the stage are seen not from the outside only but from the inside. The women in this respect are particularly remarkable in *War and Peace*, and among them most of all Natasha, who is the centre of the novel, the embodiment of its philosophy, the quintessence of spontaneous, nature-wise mankind.

Count Leo Nikolayevich Tolstoy was born on August 28, 1828, at the family estate of Yasnaya Polyana, in the province of Tula. His mother died when he was three and his father six years later. Placed in the care of his aunts, he passed many of his early years at Kazan, where, in 1844, he entered the university. He cared little for the university and in 1847 withdrew because of "ill health and domestic circumstances". He had, however, done a great deal of reading, of French, English, and Russian novels, the New Testament, Voltaire, and Hegel. The author exercising the greatest influence upon him at this time was Rousseau; he read his complete works and for some time wore about his neck a medallion of Rousseau.

Immediately upon leaving the university, Tolstoy returned to his estate and, perhaps inspired by his enthusiasm for Rousseau, prepared to devote himself to agriculture and to improving the condition of his serfs. His first attempt at social reform proved disappointing, and after six months he withdrew to Moscow and St. Petersburg, where he gave himself over

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to the irregular life characteristic of his class and time. In 1851, determined to "escape my debts and, more than anything else, my habits", he enlisted in the Army as a gentleman-volunteer, and went to the Caucasus. While at Tiflis, preparing for his examinations as a cadet, he wrote the first portion of the trilogy, *Childhood, Boyhood, and Youth*, in which he celebrated the happiness of "being with Nature, seeing her, communing with her". He also began *The Cossacks* with the intention of showing that culture is the enemy of happiness. Although continuing his army life, he gradually came to realize that "a military career is not for me, and the sooner I get out of it and devote myself entirely to literature the better". His *Sevastopol Sketches* (1855) were so successful that Tsar Nicholas issued special orders that he should be removed from a post of danger.

Returning to St. Petersburg, Tolstoy was received with great favour in both the official and literary circles of the capital. He soon became interested in the popular progressive movement of the time, and in 1857 he decided to go abroad and study the educational and municipal systems of other countries. That year, and again in 1860, he travelled in Europe. At Yasnaya Polyana in 1861 he liberated his serfs and opened a school, established on the principle that "everything which savours of compulsion is harmful". He started a magazine to promote his notions on education and at the same time served as an official arbitrator for grievances between the nobles and the recently emancipated serfs. By the end of 1862 he was so exhausted that he discontinued his activities and retired to the steppes to drink *koumis* for his health.

Tolstoy had been contemplating marriage for some time, and in 1862 he married Sophie Behrs, sixteen years his junior, and the daughter of a fashionable Moscow doctor. Their early married life at Yasnaya Polyana was tranquil. Family cares occupied the Countess, and in the course of her life she bore thirteen children, nine of whom survived infancy. Yet she also acted as a copyist for her husband, who after their marriage turned again to writing. He was soon at work upon "a novel of the 1810's and '20's" which absorbed all his time and effort. He went frequently to Moscow, "studying letters, diaries, and traditions" and "accumulated a whole library" of historical material on the period. He interviewed survivors of the battles of that time and travelled to Borodino to draw up a map of the battleground. Finally, in 1869, after his work had undergone several changes in conception and he had "spent five

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years of uninterrupted and exceptionally strenuous labour under the best conditions of life", he published *War and Peace*. Its appearance immediately established Tolstoy's reputation, and in the judgment of Turgenev, the acknowledged doyen of Russian letters, gave him "first place among all our contemporary writers".

The years immediately following the completion of *War and Peace* were passed in a great variety of occupations, none of which Tolstoy found satisfying. He tried busying himself with the affairs of his estate, undertook the learning of Greek to read the ancient classics, turned again to education, wrote a series of elementary school books, and served as school inspector. With much urging from his wife and friends, he completed *Anna Karenina*, which appeared serially between 1875 and 1877. Disturbed by what he considered his unreflective and prosperous existence, Tolstoy became increasingly interested in religion. At first he turned to the orthodox faith of the people. Unable to find rest there, he began a detailed examination of religions, and out of his reading, particularly of the Gospels, gradually evolved his own personal doctrine.

Following his conversion, Tolstoy adopted a new mode of life. He dressed like a peasant, devoted much of his time to manual work, learned shoemaking, and followed a vegetarian diet. With the exception of his youngest daughter, Alexandra, Tolstoy's family remained hostile to his teaching. The breach between him and his wife grew steadily wider. In 1879 he wrote the *Kreutzer Sonata* in which he attacked the normal state of marriage and extolled a life of celibacy and chastity. In 1881 he divided his estate among his heirs and, a few years later, despite the opposition of his wife, announced that he would forgo royalties on all the works published after his conversion.

Tolstoy made no attempt at first to propagate his religious teaching, although it attracted many followers. After a visit to the Moscow slums in 1881, he became concerned with social conditions, and he subsequently aided the sufferers of the famine by sponsoring two hundred and fifty relief kitchens. After his meeting and intimacy with Chertkov, "Tolstoyism" began to develop as an organized sect. Tolstoy's writings became almost exclusively preoccupied with religious problems. In addition to numerous pamphlets and plays, he wrote *What is Art?* (1896), in which he explained his new aesthetic theories, and *Hadji-Murad* (1904), which became the favourite work of his old age. Although his activities were looked upon with increasing suspicion by the official authorities, Tolstoy

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escaped official censure until 1901, when he was excommunicated by the Orthodox Church. His followers were frequently subjected to persecution, and many were either banished or imprisoned.

Tolstoy's last years were embittered by mounting hostility within his own household. Although his personal life was ascetic, he felt the ambiguity of his position as a preacher of poverty living on his great estate. Finally at the age of eighty-two, with the aid of his daughter, Alexandra, he fled from home. His health broke down a few days later, and he was removed from the train to the station-master's hut at Astopovo, where he died, on November 7, 1910. He was buried at Yasnaya Polyana, in the first public funeral to be held in Russia without religious rites.



VOLUME 52

FYODOR MIKHAILOVICH DOSTOEVSKY

The Brothers Karamazov

BIOGRAPHICAL NOTE

FYODOR DOSTOEVSKY, 1821-1881

THE two novelists now unquestionably classed as the greatest of their age were Tolstoy and Dostoevsky, and both produced their greatest work between 1864 and 1880. In Dostoevsky's case this period saw the publication of his four great novels — *Crime and Punishment*, *The Idiot*, *The Possessed* and *The Brothers Karamazov*, which is the greatest of the four. In these books Dostoevsky gave his full measure as one of the most outstanding novelists of any period, and as a personality of exceptionally deep significance. For psychological imagination, for power of dramatic construction, for the conviction and reality of his characters he has no equals.

Fyodor Mikhailovich Dostoevsky was born on October 30, 1821, in an apartment attached to the Hospital of the Poor in Moscow, where his father was an attending physician. Following the death of his mother in 1837, he moved to St. Petersburg and was accepted into the School of Military Engineers. A classmate reported that he "always held himself

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aloof, never took part in his comrades' amusements, and usually sat in a corner with a book". His morbid self-consciousness was further aggravated by his father, who had retired to a disorderly life on his estate and refused to provide his son with a regular allowance. On one occasion, Dostoevsky sent his father a letter reviling him for his neglect; before the elder Dostoevsky was able to reply he was murdered by his serfs. It is a family tradition that the first of his epileptic seizures, from which Fyodor was to suffer throughout his life, occurred at this time.

Following his examinations at the Engineering School, Dostoevsky was made a second lieutenant. In 1844, however, without "money to buy civilian clothes", he resigned his commission to devote himself to literature. With the appearance of his first novel, *Poor Folk*, in 1846, he came to be regarded as the most promising of the younger novelists. Through the critic, Belinsky, he met "a lot of important people" and received a "comprehensive lesson on how to live in the literary world". His success, however, was short-lived. The few novels following *Poor Folk* were badly reviewed, and Dostoevsky began to avoid Belinsky's salon, where he was subjected to systematic ridicule, particularly from Turgenev who, on previous occasions, had been "more than friendly".

He continued to associate, however, with another group of advanced young men who, led by Petrashevski, met to study the French socialists and to discuss social and political reforms in Russia. In the wave of reaction that followed 1848, the members of the "Petrashevski circle" were arrested, and, after a severe investigation culminating in a mock execution, Dostoevsky was sent to the penal colony at Omsk. In prison, he reported, he lived like a "person buried underground". He had not "one single being within reach with whom I could exchange a cordial word. I endured cold, hunger, sickness, I suffered from the hard labours and the hatred of my companions, who bore me a grudge for being a well-born person". The ordeal aggravated Dostoevsky's epilepsy, but "the escape into myself . . . did bear its fruits". In 1854 he was ordered to Semipalitinsk to complete his punishment, as a soldier. Five years later, through the offices of friends, his sentence was lifted.

Upon his return to St. Petersburg, Dostoevsky published *The House of the Dead* and *The Insulted and the Injured*. At the same time, together with his brother, Mikhail, he founded a successful journal called *The Times*. In 1863, however, it was suppressed by the government as the result of a misunderstanding. The Dostoevskys were allowed to revive

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their publication under another name, *The Epoch*, but the new review failed to gain public attention. In 1864 Mikhail died, and, after a year or more of struggle, Dostoevsky discontinued the journal. He found himself burdened with debts and with the obligation of supporting his brother's family.

The failure of *The Epoch* coincided with an intense personal crisis for Dostoevsky which left its mark on all his later work. While in Siberia, he had married Maria Dmitrievna Isaev, the widow of an intelligent though dissolute schoolmaster. The marriage brought neither of them happiness; and, shortly after his return to St. Petersburg, Dostoevsky became intimate with Polina Suslova, a young woman of a sensual and aggressive nature, who appears to have seriously affected his work and to have provoked his neurotic passion for gambling. During an absence from Russia with Polina, Dostoevsky's wife was taken ill, and her death, three months before that of his brother, moved him to write the confession known as *Letters from the Underworld* or *Notes from Underground* (1864).

During the following years, Dostoevsky suffered constantly from epilepsy, poverty, and the anxiety that accompanied his gambling. Because of his financial obligations, he signed ruinous contracts with publishers which forced him to write at abnormal speed such works as *Crime and Punishment* (1866) and *The Gambler* (1867). While at work on the latter novel, he engaged a secretary, Anna Grigorievna Snitkin, whom he married the same year. His success as a novelist enabled him to satisfy some of his creditors, but "this so enraged the others" that he was forced to leave St. Petersburg to escape indictment. Despite his complaint that he would "always be a foreigner in a foreign land", and the fear that he was "losing the capacity to write at all", the four years he lived abroad were among the most productive of his life. At Geneva and Vevey, he wrote *The Idiot* (1868-69); at Dresden, *The Eternal Husband* (1870), and *The Possessed* (1871).

While in exile, Dostoevsky conceived the idea of editing "something in the shape of a paper" so that he "could for once say the last word" on his convictions. He carried out his plan in 1876 with the publication of *An Author's Diary*, in which he extended the doctrine of national and democratic Christianity he had initiated in *The Times*. As a result of this activity, he became influential as a journalist and spent his last years in comparatively favourable circumstances. In 1877 he suspended his publication to compose a vast cycle called *The Life of a Great Sinner*,

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which was to deal with the existence of God, "the problem that has consciously and unconsciously tormented me all my life". *The Brothers Karamazov*, the sole part of the work that he completed, was published in 1880.

In that year, his contemporary fame reached its peak with an invitation from The Society of the Friends of Russian Literature to speak at the unveiling of the Pushkin monument in Moscow. At the moment he finished speaking, he reported, even Turgenev, whose "western" ideas had long been the source of personal antagonism, "rushed up to cover me with kisses . . . protesting over and over again that I had done great things".

Dostoevsky died on January 28 of the following year. His funeral was the occasion of a public demonstration.



VOLUME 53

WILLIAM JAMES

The Principles of Psychology

BIOGRAPHICAL NOTE

WILLIAM JAMES, 1842-1910

WILLIAM JAMES'S *The Principles of Psychology* is one of the classics of the subject; it is of course dated now, but it is dated as Galileo's work was in physics and Darwin's in biology, because it was the originative matrix of the great variety of new developments which are the current vogue.

The work was intended as a textbook of psychology, but it grew under James's hand and did not appear until 1891. When it did appear, it was not a textbook but a monumental work in two volumes from which the textbook was condensed the following year. The *Principles* was at once recognized as both definitive and innovating in its field. It established the "functional point of view" in psychology. It assimilated mental science to the biological disciplines and treated also thinking and knowledge in

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the aspect of instruments in the struggle to live. It made at one and the same time the fullest use of principles of psychophysics and defended, without embracing, free will.

The founder of the James dynasty in America, William James, emigrated from Ireland in 1789. Upon his death, he left a fortune which enabled his heirs to become financially independent upon coming of age. For the most part this seems to have resulted in "an extravagant, unregulated cluster, with free-living ancestors, handsome dead cousins, lurid uncles, beautiful vanished aunts, persons, all busts and curls", but it also made possible the careers of Henry James senior and his two sons, William and Henry. It was difficult for the James children to explain their father's life of religious activity, dissociated from any established church; "Say I'm a philosopher, say I'm a seeker for truth, say I'm a lover of my kind, say I'm an author of books if you like, or best of all, just say I'm a student," the elder Henry suggested.

William and Henry were born in New York within fifteen months of each other and always maintained a warm intimate relationship. Even as a boy, William manifested the extraordinary personal and intellectual gifts which were to set him apart in later life. Henry records that "occasions waited on William, had always done so" and entered his intelligence "as with the action of colouring matter dropped into water". Because of the elder Henry's restless wanderings on the continent and his desire to have his sons "*be* something, something unconnected with specific doing, something free and uncommitted", the boys received schooling irregularly in London, Paris, Boulogne-sur-Mer, Geneva, and Bonn. This type of education was admirably suited to the temperament of young Henry, whose assimilation to the career of writing, except for a brief detour into the study of law, was immediate and complete.

William, on the other hand, only gradually and after many false starts, was able to find an adequate outlet for his manifold talents. He successively studied art, chemistry, anatomy, and physiology; accompanied Louis Agassiz on an expedition to Brazil; and took a medical degree at Harvard in 1869, though he seems to have had no intention of practising. This uncertainty in the professional sphere was accompanied by a severe mental depression. He seems, like his father, to have suffered an acute spiritual crisis. As the senior Henry found a satisfactory explanation of God's relation to man in the religious teachings of Swedenborg, so William was delivered from the deterministic universe of Mill, Bain, and

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Spencer by Renouvier's discussion of free will. "My first act of free will," he proclaimed, "shall be to believe in free will."

In 1872 William was appointed instructor in physiology at Harvard. "The appointment to teach physiology is a perfect god-send to me just now," he wrote to his brother, Henry, "an external motive to work — dealing with men instead of my own mind, and a diversion from those introspective studies which had bred a sort of philosophical hypochondria in me of late." In 1875 he gave a course on "The Relation between Physiology and Psychology" and set up the first laboratory in America for experimenting in this field.

In the summer of 1878 James married Alice Gibbens, a Boston school teacher. In the same year he signed a contract to produce a textbook in psychology by 1880, which appeared as the two-volume *Principles of Psychology* in 1891. After publication of the *Principles*, James lost interest in this "nasty little subject; all one cares to know lies outside it".

The publication of the *Principles* brought in its wake a flood of invitations to lecture before various groups throughout the country. Many of these were collected in *The Will to Believe and Other Essays in Popular Philosophy* (1897), *Human Immortality* (1898), and *Talks to Teachers on Psychology and to Students on Some of Life's Ideals* (1899).

James had been concerned with religion from an empirical point of view as early as 1869, when he had noted in a review the "anomalous" and "discreditable" attitude of a so-called enlightened society toward psychical phenomena. To ascertain the appropriate "stall or pigeonhole" for these "wild facts", he helped organize the American Society for Psychical Research in 1884. Two years later he was invited to give the Gifford Lectures on Natural Religion at the University of Edinburgh.

On a vacation climb in the Adirondacks in 1898, James underwent a variety of religious experience: "It seemed as if the Gods of all the nature-mythologies were holding an indescribable meeting in my breast with the moral Gods of the inner life . . . Doubtless in more ways than one, things in the Edinburgh lectures will be traceable to it," he wrote to his wife. The climb, however, overtaxed his heart, which would not have impaired his health if he had not essayed the Adirondacks the following summer and lost his way. There followed two years of complete collapse. Thus the Gifford Lectures were not finished until 1902, when they were also published in book form as *The Varieties of Religious Experience*.

James, forced to limit his teaching, now turned his energies toward

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philosophy. Thirty years before, a Harvard colleague, Charles Peirce, had founded Pragmatism, which James interpreted in a series of lectures, collected as *Pragmatism: A New Name for Some Old Ways of Thinking* in 1907. His replies to the criticisms this invoked appeared as *The Meaning of Truth* (1909). "Does Consciousness Exist", "The Thing and its Relations", and other studies were published posthumously as *Essays in Radical Empiricism*. The same essential position was stated less technically in *A Pluralistic Universe* (1909).

James started "rounding out" his philosophical system but was forced to leave it "an arch built only on one side" to be published after his death as *Some Principles of Philosophy*. In the spring of 1910 it seemed advisable for him to go to Europe for his health. Too much "sitting up and talking" with friends more than offset any benefits he might have received, and despairing of any relief, he turned homeward. He died two days after his return at his country home in Chocorua, New Hampshire.



VOLUME 54

SIGMUND FREUD

- The Origin and Development of Psycho-Analysis*
Selected Papers on Hysteria (Chapter 1-10)
The Sexual Enlightenment of Children
The Future Prospects of Psycho-Analytic Therapy
Observations on "Wild" Psycho-Analysis
The Interpretation of Dreams
On Narcissism
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Repression
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Beyond the Pleasure Principle
Group Psychology and the Analysis of the Ego

SIGMUND FREUD

The Ego and the Id
Inhibitions, Symptoms, and Anxiety
Thoughts for the Times on War and Death
Civilization and its Discontents
New Introductory Lectures on Psycho-Analysis

BIOGRAPHICAL NOTE

SIGMUND FREUD, 1856–1939

THE name of Freud, the founder of psychoanalysis, is the greatest and most widely known in the history of psychology. From an early age he had an intense interest in chemical psychology and in 1894 he took the decisive step of replacing hypnosis as a means of resuscitating buried memories by the method of free association, which is the kernel of the psychoanalytic method. This led him to make important discoveries concerning the structure and nature of the various psychoneuroses and to extend these discoveries to the normal mind. The three most fundamental of these were : (1) the dynamic influence of this on consciousness; (2) the fact that the splitting of the mind into layers is due to an intraphysical conflict between various sets of forces, to one of which he gave the name of “repression”; and (3) the existence and importance of infant sexuality. He came to see in the unconscious conflicts over the young child’s sexual attitude towards its parents, which together with the accompanying jealousy and hostility he refers to as the Oedipus conflict, not only the central factor in the neuroses, but a fundamental contribution to the formation of character in general.

Freud was born on May 6, 1856, at Freiburg in what is now Czechoslovakia. When he was four, the family moved to Vienna, and his father continued his trade as a small merchant. While following the usual course of studies at the *Gymnasium*, where for seven years he was first in his class, Freud was attracted by Darwin’s theories to the study of science. Although he had no “particular predilection for the career of a physician”, Freud later noted that “it was upon hearing Goethe’s beautiful essay *On Nature* . . . just before I left school that I decided to become a medical student”. In 1873 he entered the university of Vienna, where, he records in his autobiographical sketch, he experienced the effects of anti-Semitic prejudice.

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While pursuing his medical studies, Freud began experimental investigation by studying the nervous system of the fish in the physiological laboratory of Ernst Brücke. After taking his medical degree in 1881, financial reasons compelled him to become an interne at the General Hospital. With the little spare time he had as an interne, he pursued research at the Institute of Cerebral Anatomy on the subject of nervous diseases. The publication of several monographs on cerebral paralysis in children won him the post of lecturer in neuropathology at the university, and in 1885 he was awarded a travelling fellowship to advance his studies. Having become interested the previous year in Breuer's treatment of hysteria by hypnosis, during which the patient was induced to recollect his past, Freud now chose to pursue such investigation under Charcot, the neurologist, at the Sorbonne. Freud studied with him about a year and was strengthened in his determination to take the then revolutionary step of investigating hysteria from a psychological point of view. Before returning home in 1886, he spent a few months at a children's clinic in Berlin and made extensive observations of the nervous disorders of children.

Upon his return to Vienna, Freud married and, to provide for a rapidly increasing family, established himself as a specialist in nervous diseases. In the first years of his practice his principal technique "aside from haphazard psycho-therapeutic methods" was hypnotic suggestion. He resumed his friendship with Breuer and in collaboration with him published in 1895 the *Studies in Hysteria*. The partnership was dissolved after the book was completed, and soon afterwards Freud took the decisive step of replacing hypnotism by the method of "free association". Largely as a result of his extensive clinical practice, he turned to the analysis of dreams, and in 1900 provided the first statement of his doctrine in the *Interpretation of Dreams*.

Except for his brief collaboration with Breuer, Freud for more than a decade "stood completely isolated" from the medical world, and his theories, when not completely ignored, were the object of ridicule. It was not until 1902 that several young doctors began to gather around him with the intention of learning and practising psychoanalysis, and from this group grew the Viennese Psycho-Analytic Society. Although his *Psychopathology of Everyday Life* (1904) received more favourable public notice, the opposition to his theories increased as soon as he began publishing his views on the sexual life of children. His work, however,

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soon began to receive international attention from the medical profession. The Burgholzi Clinic in Zürich in 1906 was the first institution outside Austria to adopt the method of psychoanalysis. By 1908 Freud had colleagues throughout Europe, including Adler, Brill, Ferenczi, Ernest Jones, Jung, Sadger, and Stekel, and in that year the first International Congress of Psycho-Analysis was held at Salzburg. In the following year, at the invitation of Clark University, Freud visited the United States and gave five lectures on his discoveries, which were later published as the *Origin and Development of Psycho-Analysis*. With the establishment of the International Psycho-Analytic Association in 1910 Freud devoted his efforts with increasing success to the development of the psychoanalytic movement. Disagreement later led to a severance of relations between Freud and several of his closest associates, including Adler, Stekel, Rank, and Jung, but Freud was the acknowledged founder of psychoanalysis and the leader of the movement.

After 1912 Freud gave most of his time to directing the Psycho-Analytic Society, editing its various journals, and writing many monographs. Although his clinical practice was not as extensive as in previous years, he still remained active as an analyst, and his records of the case-histories of his patients cover almost fifty years. At the University of Vienna during the two winter sessions between 1915 and 1917, he again explained his theories before a general public, as he had in the United States, in lectures afterwards published as the *General Introduction to Psycho-Analysis*.

Until the end of World War I Freud was mainly occupied with special problems concerning the unconscious, and it was not until 1920 that he began to deal with the more general problems raised by his studies, particularly with the factors making for what he called repression. In 1920 he published *Beyond the Pleasure Principle*, and three years later the *Ego and the Id*. As early as 1913 Freud had attempted in *Totem and Taboo* "to make use of the newly discovered findings of analysis in order to investigate the origin of religions and morality". He now "returned to the cultural problems which had fascinated me long before", and published *The Future of an Illusion* (1927), *Civilization and its Discontents* (1929), and *Moses and Monotheism* (1939), which was his last book.

With the award of the Goethe Prize in 1930, when he was also given the freedom of the city of Vienna, Freud reached what he described as

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“the climax of my life as a citizen”. But soon afterwards, Freud notes, “the boundaries of our country narrowed, and the nation would know of us no more”. Upon the Nazi invasion of Austria in 1938, Freud’s books were burned, the *Psychoanalytische Verlag*, directed by his son, was destroyed, and his passport confiscated. For years Freud had lived in virtual seclusion, largely because of the development of a cancer of the mouth which caused him great pain. He was finally allowed to leave Austria in 1938 after the payment of a large ransom. With his wife, a nephew, and his daughter, Anna, he went to England, where another of his sons lived. He died on September 23, 1939, in Hampstead, London.



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- Hazlehurst High School, *Hazlehurst, Mississippi* (Robert D. Sanders Foundation)

- Highland Park Public Library,
Highland Park, Illinois (Donald
S. Trumbull)
- Howard University, *Washington,
D.C.* (Harold F. Linder)
- Indiana County and Free Lib-
rary, *Indiana, Pennsylvania*
(A. E. Troutman Company,
Indiana, Pennsylvania)
- Institute for Advanced Study,
Princeton, New Jersey (Harold
F. Linder)
- International House, Columbia
University, *New York, New
York*
- International House, University
of California, *Berkeley, Califor-
nia*
- International House, University
of Chicago, *Chicago, Illinois*
- Iowa Wesleyan College, *Mount
Pleasant, Iowa* (Mr. and Mrs.
George B. McKibbin)
- Jackson Public Library, *Jackson,
Michigan* (The L. H. Field
Company, *Jackson, Michigan*)
- Jewish Community Center, *Wash-
ington, D.C.*
- Jewish Theological Seminary of
America, *New York, New York*
(Arthur L. H. Rubin)
- Jewish Theological Seminary of
America, *New York, New York*
(Salomon Bros. & Hutzler)
- John Hay Library, Brown Uni-
versity, *Providence, Rhode
Island* (Harold H. Swift)
- Knox College, *Galesburg, Illinois*
(H. J. Szold)
- Lafayette College, *Easton, Penn-
sylvania* (Wm. Laubach &
Sons, *Easton, Pennsylvania*)
- Lake Charles Public Library,
Lake Charles, Louisiana (The
Muller Company, *Lake Charles,
Louisiana*)
- Lake Forest College, *Lake Forest,
Illinois*
- Lawrence College, *Appleton, Wis-
consin* (D. C. Everest)
- Lebanon Community Library,
Lebanon, Pennsylvania (The
Bon Ton, *Lebanon, Pennsyl-
vania*)
- Liberal Arts Foundation, *New
York, New York* (Arthur L. H.
Rubin)
- Library of International Relations,
Chicago, Illinois (Eunice F.
Hale)
- Lincoln Memorial University,
Harrogate, Tennessee (Fore-
man M. Lebold)
- Lower Columbia Junior College,
Longview, Washington (The
Bon Marché, *Longview, Wash-
ington*)
- Madeira School, *Greenway, Fair-
fax County, Virginia*
- Mary Armstrong Ayers Memorial,
Oak Park, Illinois (Friends of
the Oak Park Library, *Oak
Park, Illinois*)

- Maryville College, *Maryville, Tennessee* (Glen A. Lloyd)
- Michigan State College, *East Lansing, Michigan* (Michigan National Bank, *Lansing, Michigan*)
- Millsaps College, *Jackson, Mississippi* (Robert D. Sanders Foundation)
- Mississippi Southern College, *Hattiesburg, Mississippi* (Robert D. Sanders Foundation)
- Morehouse College, *Atlanta, Georgia* (Harry Scherman)
- Mount Holyoke College, *South Hadley, Massachusetts* (Alfred K. Eddy)
- New Mexico Military Institute, *Roswell, New Mexico* (A. Norman Into)
- New Mexico School of Mines, *Socorro, New Mexico* (United States Potash Company, *New York, New York*)
- New Mexico Western College, *Silver City, New Mexico* (Kennecott Copper Corporation, Chino Mines Division, *Hurley, New Mexico*)
- The New York Public Library, *New York, New York* (Harold F. Linder)
- Nicholas Murray Butler Library, Columbia University, *New York, New York* (Willard V. King)
- Northland College, *Ashland, Wisconsin* (D. C. Everest)
- North Shore Congregation, Israel Library, *Glencoe, Illinois* (Mr. and Mrs. Louis H. Silver)
- Osterhout Free Public Library, *Wilkes-Barre, Pennsylvania* (Pomeroy's Inc., *Wilkes-Barre, Pennsylvania*)
- Paterson Free Public Library, *Paterson, New Jersey* (Quackenbush Company, *Paterson, New Jersey*)
- Pennsylvania College for Women, *Pittsburgh, Pennsylvania* (Paul Mellon)
- Pierson College, Yale University, *New Haven, Connecticut* (Harold F. Linder)
- Piney Woods School, *Piney Woods, Mississippi* (Robert D. Sanders Foundation)
- Pottsville Free Public Library, *Pottsville, Pennsylvania* (Pomeroy's Inc., *Pottsville, Pennsylvania*)
- Princeton University, *Princeton, New Jersey* (Alfred T. Carton)
- Rapid City Air Force Base, *Rapid City, South Dakota* (L. S. Donaldson Company, *Rapid City, South Dakota*)
- Rockford College, *Rockford, Illinois* (Mrs. Tiffany Blake)
- Roosevelt College, *Chicago, Illinois* (Robert Pollak)

- St. Benedict's College, *Atchison, Kansas* (True E. Snowden)
- St. John's College, *Annapolis, Maryland* (Paul Mellon)
- St. Louis Public Library, *St. Louis, Missouri* (Friends of Charles H. Compton, *St. Louis, Missouri*)
- Salt Lake City School Board, *Salt Lake City, Utah* (Geneva Steel Company, *Geneva, Utah*)
- Saybrook College, Yale University, *New Haven, Connecticut* (Edison Dick)
- Southwest Missouri State College, *Springfield, Missouri* (Heer's, Inc., *Springfield, Missouri*)
- Southern Methodist University, *University Park, Texas* (The Titche - Goettinger Company, *Dallas, Texas*)
- State College of Washington, *Pullman, Washington* (John W. Maloney, through Friends of the Library of the State College of Washington, *Pullman, Washington*)
- Sterling Library, Yale University, *New Haven, Connecticut* (Mr. and Mrs. Louis H. Silver)
- Swarthmore College, *Swarthmore, Pennsylvania* (Harold F. Linder)
- Syracuse Public Library, *Syracuse, New York* (Dey Bros. & Company, *Syracuse, New York*)
- Trinity College Library, *Hartford, Connecticut* (Paul Mellon)
- Trinity University, *San Antonio, Texas* (Joske's of Texas, *San Antonio, Texas*)
- United States Naval Academy, *Annapolis, Maryland* (Harold F. Linder)
- University of California, *Berkeley, California*
- University of California at Los Angeles, *Los Angeles, California*
- University of Chicago, *Chicago, Illinois* (Mr. and Mrs. Renslow P. Sherer)
- University of Chicago Library, *Chicago, Illinois*
- University of Cincinnati, *Cincinnati, Ohio* (The Rollman & Sons Company, *Cincinnati, Ohio*)
- University of Iowa, *Iowa City, Iowa* (Henry Carlton Shull)
- University of Maryland, *College Park, Maryland*
- University of New Mexico, *Albuquerque, New Mexico* (Potash Company of America, *Carlsbad, New Mexico*)
- University of Tampa, *Tampa, Florida* (Maas Bros., *Tampa, Florida*)
- University of Virginia, *Charlottesville, Virginia*

- University of Virginia, *Charlottesville, Virginia* (Paul Mellon)
- Valeria Home, Inc., *Oscawana, New York* (John Langeloth Loeb)
- Varnum Memorial Library, *Jeffersonville, Vermont* (Scott Buchanan)
- Virginia Military Institute, *Lexington, Virginia* (R. C. Kramer)
- Virginia Polytechnical Institute, *Blacksburg, Virginia* (Paul Mellon)
- Wabash College, *Crawfordsville, Indiana* (Pierre F. Goodrich)
- Warren Library Association, *Warren, Pennsylvania* (Metzger-Wright Company, *Warren, Pennsylvania*)
- Weber College, *Ogden, Utah* (C. C. Anderson Company, *Ogden, Utah*)
- Wharton County High School, *Wharton, Texas* (Mrs. Clive Runnells)
- Whitman College, *Walla Walla, Washington* (The Bon Marché, *Walla Walla, Washington*)
- Whitworth College, *Spokane, Washington* (The Bon Marché, *Spokane, Washington*)
- Wilson College, *Chambersburg, Pennsylvania* (Mrs. Thomas A. Mellon)
- Winchester Foundation, *Winchester, Indiana* (Pierre F. Goodrich)
- Woodland High School, *Woodland, California*
- Yakima Valley Junior College, *Yakima, Washington* (Barnes-Woodin Company, *Yakima, Washington*)
- Yale University, *New Haven, Connecticut*
- Young Men's and Young Women's Hebrew Association, *New York, New York* (John Langeloth Loeb)

OTHER INSTITUTIONS OR ORGANIZATIONS

- Chicago Lying - In Hospital, *Chicago, Illinois* (Claire D. Swift)
- Commonwealth Edison Company Library, *Chicago, Illinois* (Charles Y. Freeman)
- Minneapolis Star & Tribune Library, *Minneapolis, Minnesota* (John Cowles)
- The Washington Post Library, *Washington, D.C.*