Editorial

Grandeur and Poverty of Medical Specialization

Aspiration Toward a New Humanism

The outstanding progress of contemporary medicine is not free of perils. The profound scientific and technical transformation of medicine constitutes one of the crucial problems of our time. This is why Professor Rijlant, illustrious President of the III World Congress of Cardiology, asked me to discuss this problem and its immediate consequence, the pre-eminence of specialization, fertile in valuable achievements, but also pregnant with risks.

The Dangers of Specialization

It is true that specialization carries within itself an enormous expansive force of progress, responsible in great part for the spectacular advance which we are witnessing, but it also contains the germ of regression in the intellectual and spiritual realm. Specialization means fragmentation, partial vision, limitation of our horizon. What is gained in depth is lost in breadth. In order to master one field of knowledge one must abandon the rest; man thus confines himself to one point and sacrifices the whole vision of his science and the universal vision of his world. With this his general culture suffers, for it must let go of much, as one who throws out ballast; then his scientific training suffers, for he ceases to look on science as a whole in order to keep a poor little portion in his hands; finally his moral world suffers, for the sacrifice of culture constitutes a sacrifice of values which should set the standard of his life. And in this drama of the present-day scientist an imminent risk is foreshadowed, the dehumanization of medicine and the dehumanization of the physician.

One who looks only at the thundering race of the progress that medicine is achieving may not perceive the severe risks which that race brings with it. He may not be aware that we are at a crossroads, able to make ourselves change direction, and he may not realize that for these conquests and material advances we may all, perhaps, have to pay dearly—the physician, the patient, and medicine itself.

This is a real problem, not a fictitious one. It constitutes one of the great preoccupations of the physicians, educators, and philosophers of our time. On more than one occasion I have expressed my acute anxiety over this situation, which was unknown to our ancestors. As I am neither philosopher nor historian, I am aware of my slight competence to take up this matter, but since the problem touches me as physician and educator, I have accepted the invitation and I wish to present to you a series of reflections that aim to awake the interest of all, old and young. Above all, I feel it important to address myself to the young.

From the National Institute of Cardiology, National University of Mexico, Mexico, D. F.

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for they are those who will shape the medicine of the future and upon them depends the stamp they will impress upon it as a science, and the form of medicine which they will practice tomorrow as a profession.

I know very well that a long exposition of general ideas is not to the taste of our age, and that physicians usually prefer concrete contributions, new facts, daring technics, or mathematical formulations that define unsolved problems. I understand this attitude; basically all that is beautiful. To conquer a new truth is like seizing a star. Moreover, it gives the feeling of power or the intoxication of triumph, both of which suit the spirit of youth. In spite of that, I suggest that we imagine ourselves students of Hellenic times and walk together through the gardens of Academe or the Lyceum while we discuss serenely some general matters of medicine.

PRE-EMINENCE OF SCIENTIFIC MEDICINE

That we are at a fascinating moment of the evolution of medicine is something that even the uninitiated observe: the advances achieved in this first half of our century are worth as much as all that was accumulated in many preceding centuries. Of course this prodigious advance could not have been attained without the work of those who preceded us. Present science already existed in the germ of the previous work; but the miracle of the seed does not at all lessen the majesty of the tree.

It was in this century that medicine ceased to be purely clinical, and anatomic comparison was no longer enough. A day came when detailed studies of organic function were required. To achieve them, physics and chemistry, biology and mathematics entered medicine, first timidly and then tumultuously, and with them came complex technics, precision instruments, and the rigors of mathematical analysis. It was the heyday of the laboratory and the beginning of a new era, the era of research. The so-called basic sciences came to change the traditional aspect of medicine, attempting to substitute scientific for empirical knowledge, and laboratory experiment for pure observation.

It is impossible to trace the exact limit that separates the two epochs. Never in history has it been possible to say where one age ends and another begins, and one must accept conventional boundaries. Even in the most radical changes, the ages superimpose or overlap, as happened with medieval and Renaissance medicine, when Galen continued to reign in physiology a century after Vesalius had begun his revolution in anatomy. If this happens in ages which are essentially opposed, as the medieval with its scholastic philosophy that became dogma, and the Renaissance with its scientific criterion that became free criticism, even greater difficulty exists in tracing the starting point of the scientific and experimental medicine of our day.

The fact is that basically the difference is not essential but quantitative; medicine was already scientific earlier, especially that of the nineteenth century. One cannot ask for greater scientific exactness than that of Laennec’s comparisons or of Claude Bernard’s experiments. Science could not be more precise than it was in the hands of Pasteur, of Koch, and of Virchow, nor was it ever more disinterested and accurate than in Roentgen’s experiments. It is not then, that our medicine is scientific and the other was not. The change comes rather from the fact that now it is not only a fragmentary aspect or an isolated field that is being transformed; all the fields of medicine are being attacked scientifically, all are being subjected to experimental methods, and in all, the basic sciences have entered to clarify problems.

GREAT CONTRIBUTIONS OF OUR TIME

No one could deny that the harvest has been extraordinary, not to say fantastic. If we limit ourselves solely to our field of cardiology, we see that in this half century cardiovascular radiology has been born and has attained the technical refinements of kymography, tomography, selective angiography, and radiocinematography. Electrocardiography has been born, with its immense contribution, particularly in the field of coronary insufficiency and mechanical behavior
due to hypertrophies or overloading. The fecund exploration of cardiac catheterization has been born, with all that it teaches with regard to pressures, output and flow, tissue respiration and metabolism. We see that almost all that is known of congenital, hypertensive, and pulmonary cardiopathies belongs to our epoch, as well as the knowledge of myocardial infarction, deficiency, and Chagas cardiopathies. We see that with us has been born the surgery of the heart, the mastery over cardio-aortic syphilis and bacterial endocarditis, the control of sustained rheumatic activity and the prevention of rheumatic carditis by means of antibiotics; that our arsenal has been enriched with Fraenkel's strophantidine, Arnaud's ouabaine, Stohl's lanatosides, and all the gamut of hypotensive drugs, mercurial diuretics, vitamins, anticoagulant and antiarrhythmic medication. Why continue an interminable enumeration? The list would include the influence of hormones, the action of enzymes, and the role of electrolytes, all that world of new knowledge which has come to clarify causes and mechanisms in the chapter of diagnosis, and which has endowed us with effective arms in treatment and prevention.

Let the present-day contribution be placed on one side of the scales and on the other the contribution of the 50 preceding centuries, and it will be seen that there is no error in affirming that the recent harvest is superior to the old. If today one of the great cardiologists of the last century, Traube, Stokes, or Potain should come here to a Congress, his astonishment would know no bounds. He would begin by noting our technical language. What they could not even glimpse with all their wisdom and experience has today become an easy notion, within the grasp of any medical student.

**Scientific Research Under Way**

Their amazement at what has been accomplished in 2 or 3 generations would be infinitely greater if they gazed on what is being forged. The visceral pathology that they knew is beginning to be explained in terms of tissue pathology and then of cell pathology; as well as being specific entities, diseases are turning into systemic reactions; in the background of rheumatic fever appears the reaction of fibroblastic tissue; instead of single causes—germ, toxic product or deficiency—complex interactions, allergic shocks, and enzyme actions reveal themselves; behind the organic lesions appear metabolic disturbances, profound biochemical changes or alteration of the physical properties of a cell or a membrane which change its electric charge, its salt interchange, or its richness in ions. When we reach the level of the atom, matter and energy are confused; the limit between the organic and the functional becomes blurred, and all the immense machine of the organism displays suffering even in its cells and its electrons when a disease sets in. To the astonishment of our visitors would be added the pleasure of seeing that their hypotheses now have validity as theories.

We who are present at these changes also see the progress with delight, but we begin to look with distress at what might be the medicine of tomorrow, the day when the investigations that are being carried on give out their answer. As in the dreams of the alchemists, we should not know what to do with such a medicine, transmuted and dehumanized, converted into a philosopher's stone.

**The Advent of Specialties—Pure Research versus Clinical Research**

The natural result of this impressive mass of knowledge and of this technicalization of medicine, of this invasion of the physical, chemical and mathematical sciences, has been the birth of specialties. It is now impossible for one man to know, even in its essential aspects, all this world of medicine. It is impossible for him to follow its rapid transformation; impossible, too, for him to master all the technics of study, so varied and so complex. As a sign of the times, specialties have sprung up, which permit a man to concentrate on one field and study it thoroughly until he masters it. What was an effect of the vertig-
inous advance of science became afterward a causal factor of that progress.

The advantage of medical specialization can no longer be debated, either in the pragmatic aspect of the profession or as a factor for the advance of knowledge. Each specialty has carried out clinical investigation in its field and all may glory in having furnished a great mass of contributions.

A specialist's research, however, is soon exhausted if he works only as a clinician and technician, without having basic scientific training. The great answers will be formulated in the language of physics, chemistry, and biology, supported by mathematical rigor. A conflict has arisen which appears more clearly each day, that of pure or basic research as opposed to applied clinical research. The "pure" scientists look on this latter with disdain as pragmatic and limited in its scope, and they even deny it the rank of science, claiming that it does not go much beyond empirical knowledge.

This is a grave error, which inhibits the collaboration between the two groups. Applied research may be as scientific as the other, though the two differ in their goals and their immediate results. It is true that disinterested research is that which usually gives the clue to the great scientific problems. It is true that Einstein's relativity theory made possible the study of atomic radiation and provided the basis for medication by radioactive isotopes, that Fleming's discovery made possible the manufacture of antibiotics and solved the treatment of infectious diseases, and that Planck's quantum theory is the truth which must some day explain the processes of oxidation in cell life and the transformation of chemical energy into electrical,—the basis of nervous activity,—or into mechanical,—the basis of muscular activity. But research applied to clinical medicine, though it is usually modest, is not therefore less noble, provided it is carried out with scientific method. The regulated experiment in the laboratory animal cannot be compared to the natural experiment provoked in man by disease. As long as the clinical investigator takes into consideration the numerous variables and does not fall into false schematizations, he can achieve experimentation as rigorous as that of the laboratory and of the same scientific value.

As proof of the foregoing, there are the extraordinary contributions which we owe to clinical investigation. Mellanby rightly asked what we should know of vitamins B1, C or D, of insulin, thyroxin, and of the active principles of the liver and the stomach in pernicious anemia if experimentation had not been carried out by clinicians in the field of pathology.

One must then, react against the tendency observed in the younger generations to consider only laboratory investigation scientific, and to look with disdain on clinical research, as if it were a kind of secondary value. It is one of the many fetishes that the man of study creates, forgetting that the scientific quality does not depend on the tools that are used, but rather on the method which is followed, and that merit does not rest on the method, however scientific it may be, but on the creative idea. There is much laboratory research which is worth nothing because it is empty of content. Simmel has made the accusation that we have suffered for some time from a fetishist cult of method and we consider any contribution very valuable because of the simple fact that the method is impeccable, and there are even studies that justify the caustic phrase of Chesterton, that "much research reminds one of a blind man looking in a dark room for a black hat that is not there."

In reality, the two kinds of research are not strangers, and should, on the contrary, complement each other. Studies in the field of the normal may be made at the same time as those in the field of pathology; observation mates well with experimentation, and the contributions of analysis are solely the necessary stage by which to arrive at the work of synthesis.

Scientific Training of the Specialist

For the specialists, cardiologists in our case, however, to be able to participate in this joint movement, they must have a sound scientific training. This should be an indispensable requisite today. It is no longer enough to be
good clinicians in the traditional sense of the word. That may be well for the practical ends of the profession but the cardiology of today is too much inlaid with exact sciences to be mastered without a solid scientific foundation. "You cannot become so much as a modest engineer here until you have first done the mathematics and the physics from which any true understanding of science must spring. You cannot be a specialist until you are a scientist," said Jacob Bronowsky to his students. We should say exactly the same today to those who wish to specialize in our field. "You cannot be specialists in Cardiology if you are not at the same time clinicians and scientists."

To know traditional clinical medicine, to master the usual technics, to be informed of current theories, this is enough to make a practical cardiologist, but not a specialist in cardiology. The former are clinicians in the noble sense of the word, but they are clinicians of circumscribed activity, of limited range, very useful in the social community, but less so in the scientific community. The true specialists, on the other hand, are those who can advance the knowledge in their field.

This requirement that the specialist be a scientist as well as a clinician does not imply any scorn for traditional clinical medicine. The place of the latter is different, very high and very noble. I have referred to the specialist fitted for investigation, but I do not seek to have all cardiologists consecrated to it. I think, like Sir John Parkinson, that in every first class hospital a place of honor beside the scientists should be kept for the superior clinicians, those who are just that, clinicians of knowledge and experience, in whose hands the finest traditions are preserved and the trust and safety of the patients repose. They too live their special science, which is to keep men alive. They know that with a certain dose of science, and another of experience, a man is saved.

**SCIENCE VERSUS HUMANISM**

When the requisite of two-fold training is fulfilled by the specialists, there will arise even more seriously the problem already mentioned in relation to the great development of sciences: I speak of their divorce from humanism. And the more the specialist cultivates his scientific side, the greater will be the risk. There will appear in him the tendency to overspecialization, which threatens to destroy the criterion of unity in science and which will make imminent the divorce from humanism. There is no worse form of spiritual mutilation in a physician than the lack of humanistic culture. He who lacks it may be a great technician in his craft, may be a learned man in his science, but in all else he cannot but be a barbarian, wholly ignorant of that which gives human understanding and sets the values of the moral world. And that, in a cardiologist, is unforgivable.

Humanism is not a luxury, nor a refinement of scholars who have time to waste in frivolities disguised as spiritual satisfactions. Humanism means culture, understanding of man and his aspirations and miseries;—evaluation of what is good, what is beautiful, and what is just in life; the setting of the standards that rule our internal world; the eagerness to excel which leads us, in the philosopher's phrase, to "match life with thought." The pursuit of humanism will make us cultured. Science is something else; it makes us strong but not better. Therefore the more learned the physician is, the more cultured he should be.

The humanists of the Renaissance, satiated with the barbarous world in which they lived socially and with the obscure intellectual world of the Middle Ages, produced the great movement of the liberation of conscience. They reascended the river of history to seek contact with Greek culture; they sought inspiration in the great classics of literature and philosophy and learned to free themselves from scholastic dogmatism, utilizing reason. They realized that the major interest of man is that of looking at man, in order to know and understand him. Their vision then attained the breadth of the world and they could proudly shout Terence's phrase: "_homo sum, humani nihil a me alienum puto._"
The world then experienced a miraculous hour that will never again be repeated in history, for there will never again be the happy conjunction of circumstances that engendered it. In that miraculous hour, Leonardo da Vinci exemplifies the prodigy, showing what is "a man capable of whatever a human creature can do"; Copernicus makes our world descend from its geocentric throne and sends it spinning humbly in its orbit; Vesalius initiates the revolution of medicine against the authority of texts; Michael Angelo creates another world in the Sistine Chapel, and makes marble speak: "parla e per che non parla?"; America rises from the ocean, divined by Columbus; and Asia is sketched on the horizon, announced by Marco Polo and confirmed by Vasco da Gama; and the printing press, the great renewer, undertakes to diffuse throughout the world this marvelous conjunction of rebellions against medieval life and scholastic thought.

It was this splendid humanism which engendered our modern world, which in the intellectual realm launched us in search of truth, questioning nature herself; and in the artistic aspect inculcated in us the love of beauty, free from sin; which in the spiritual realm infused in us the aspiration to be universal men, and which, revindicated in the moral realm, our higher dignity as men.

**Humanism and Medicine**

It is this precious heritage that has given the physician through the ages, his superior position and his authority over his patients, making him a counsellor and guide, not only a physician. His culture has permitted him the understanding of the human problem that is enclosed in each clinical case, and understanding means sympathy. The physician is not a mechanic who is to repair a sick organism as one repairs a machine that is out of order. He is a man who looks at another man, with eagerness to help, offering what he has, a little of science and a great deal of understanding and sympathy. Why should we let this fundamental human aspect be lost? It comes not from our science but from deeper roots, from our culture, which sets us a duty, and from our sensibility, which translates, to paraphrase Peguy, an impulse of the soul toward goodness.

It is useless for the skeptic to smile. He thinks that with his technic and his science, he needs nothing more to master cardiology; but he will be incomplete, a cripple, if he is not also rich in culture, deeply impregnated with humanism, a humanism rooted before he reaches the University, continued through all his medical studies, and prolonged afterward indefinitely throughout his whole life.

The skeptic's smile might perhaps be justified if it were argued that the scientist and the humanist adopt at times opposed and in a way antithetic positions—the humanist with his face turned toward the remote past, the scientist living solely in the present minute, avid of the latest finding, uninterested in the already surpassed knowledge of yesterday. These extreme situations fortunately are not the rule. The scientist who proceeded thus would prove that he does not deserve the name if he does not know that the science of today lacks foundation and meaning without that of yesterday, for it, according to the expression of Sarton, "is the only human activity which is truly cumulative and progressive." No, fortunately, these two conquests of man, science and culture, are neither opposed nor mutually exclusive; rather, they fraternize and complete each other harmoniously when man joins talent and sensibility.

**The Humanism of Our Age**

Faced by this situation, we may properly ask what is the humanism that is commended as a complement to scientific education. Is it classical humanism, that which cultivates the dead languages, glosses the Greek and Latin classics, and probes the history of philosophical thought?

It is not that, certainly. It would be a beautiful ideal if scientists could attain such a refinement of culture, recreating the archetype of the universal man. That has become impossible in our vertiginous age. There no longer exists the omnivalent man of that stat-
ure, such as was Leonardo, who with equal competence prepared a *Treatise of Anatomy* in 30 volumes, painted the *Last Supper*, or worked out calculations so that man could fly, or such as were Alberti, Fracastoro, or Erasmus or so many others who could equally well hold a chair of medicine or one of languages or one of philosophy.

Our age no longer permits such omnivariance. The humanism we pursue is not the traditional nostalgic one, as Lain Entralgo calls it, that looks only backward. There is room for a humanism of our time, dynamic and effective. "In the Beginning was the Word," says Holy Gospel. It is the same in our case; the root of present humanism must be the knowledge of the principal living languages. Through them we shall be able to look at the thought of races and countries which are not ours and drink information at the very springs. We shall receive in passing the lesson in humility that science and culture do not end at the boundaries of our country. The whole world seethes, the whole world works and creates. How should we go on, in isolation, ignorant of ourselves, at once owners and prisoners of our own language? For scientific ends this constitutes a limitation of ignorance, and for human ends, it pushes us toward incomprehension, the first form of scorn. Already in the middle of the eighteenth century Sézne protested: "National prejudice," he said, "dominates even the scientists; many imagine that genius and knowledge are exclusive to their country and that the other nations are condemned by nature to sterility. This vanity may perhaps be useful to the States," he added, "but it is something that degrades the spirit." Because of all this I think that in the world of intelligence one's own language does not suffice and if a scientist is to be cultured, he should begin by cultivating languages.

Since it is an eternal aspiration, culture is not a universal and static thing; it changes and shapes itself according to the time and the place. Hence the knowledge of history is an essential requisite for contemporary humanism, broad history, of peoples, of civilization and of men's thought. We physicians are interested moreover, decisively, in the history of our specialty, which shows us the evolution of medical doctrines. Jacobi said to his students: "For as without the knowledge of the history of your country you can not understand its structure, or without that of the embryo the full development of the body, so without that of your science and art you will not be a citizen in your profession."

In compliance with the duty imposed by culture, man must afterward immerse himself in the world in which he lives, feeling himself not a stranger, nor even a pure spectator of the social reality that surrounds him. He may be barely an atom of this world, if you wish, but alive and vibrant, a creative energy of his time; for one cannot conceive culture divorced from life itself, nor genuine humanism uninterested in the problems of man.

And when one has attained all this, the knowledge of languages and of history in its broadest sense, when one recognizes social reality and is interested in the hour in which one is living, the humanism of our age would be sad and dull if man did not adorn his spirit with selected readings, with frequent contact with the modern classics, with love of beauty—in word, music, or plastic art—and with reflection on the eternal themes of conduct—duty, love, goodness—all forms of sublimating the soul in the face of the hard reality of living. The march along these harsh paths of perfection leads up to a point, the same at which the classic humanists arrived, that of knowing that the highest concern of man must be man himself, in order to study and understand him, with all that this implies of interest in his life and respect for his creative effort.

This is the humanism which we must foment in our age, a humanism the deeper and more passionate, the greater the limitation imposed by an exigent and unilateral scientific education. This is the indispensable prescription for the specialist of today, that which teaches that what is important is not to know but to understand; to understand man, to understand the world, to understand one's position in life;
that which, moreover, aids him in developing the gift of sympathy with which he must approach the patient. As by a catalytic effect, humanism projected into science invites man to flee from selfish isolation and impels him to work nobly in collaboration at the same time as it offers him a formula to counteract, in large part, the harmful tendencies that rise from specialization—those of the scientist who isolates himself from other men, the specialty that separates itself from other specialties, the medicine which separates itself from other sciences, and the science which divorces itself from culture.

**HUMANISM, A CORRECTIVE FOR SCIENTIFIC DEFORMITY**

The situation of isolation and divorce is accentuated more each day. The younger generation seems not to have noticed it. I have been able to watch it at close quarters, because I have spent many years dedicated to the training of specialists in cardiology. In almost all of them one notes a passionate eagerness to master the technic rather than to possess themselves of the method, and the cult of the apparatus is more easily developed in them than a passion for scientific ideas. It is the characteristic error of our epoch which Samuel Ramos points out, that of raising the means to the rank of an end. "Before the marvelous results of technic," he says, "the scientist falls on his knees to her, forgetting that she is a simple means." On the other hand, general theories matter less to the young, and the problems of culture are wont to interest still less.

It is possible that the smile of the skeptic will appear again as he thinks that there is exaggeration in this, and that culture, though estimable, is more of an adornment than a necessity for the medical specialist. I, on the other hand, consider it as indispensable as scientific discipline itself, and because of this I say with complete conviction to all my students: you cannot be good cardiologists as long as you are not cultured men. This is a new way of repeating the old saying of Paracelsus in the sixteenth century: "It is a gross thing for a physician to call himself a physician and find himself empty of philosophy and know nothing of it."

The humanist spirit imbedded in the scientist obliges him to flee from pure pragmatism as a philosophy of medicine and forces him not to be content with facts without going deeply into their explanation, and not to let himself stick fast in accumulated data without seeking the theory which makes a whole of them. This attitude helps to clear up one of the great problems of our present medicine, which is fragmentary, disarticulated, rich in facts, and poor in theories. In earlier times there were too many theories and a lack of support by facts. Today when we have learned the lesson of "saper vedere," today we have an excess of facts and few general theories. Little analytical men abound and we lack superior men who can work out syntheses, whereas the true scientific spirit rests precisely upon alternating the two things. "Analytical investigations," says Sarton, "without synthetic attempts must necessarily degenerate into crude empiricism; synthetic constructions without periodic experimental contact must necessarily degenerate into a sterile dogmatism."

The humanistic spirit instilled into the scientist keeps him from reposing a mythical faith in science, or believing it to be of absolute value, and helps him to understand, humbly, its relativity, and to admit that science will never cover the entire field of medicine; that however great, however excessive its progress may be, there will always be a very broad field for the empiricism of knowledge, for the "chaste observation" of our ancestors. If all organic reactions could one day come to be measured, recorded, and even reproduced in the laboratory, there would always remain outside the rigorous control of physics and chemistry the psychic reactions of the patient, his sufferings and his anguish, as would the obscure genetic factor which has governed us since the beginning of time.

If it is not to be supposed that all this will fit within the rigidity of a mathematical formula, and if he who suffers is a man and not
a machine or a laboratory retort, there will always be a place for the clinician to give voice to an opinion and lead medicine in the future as he has led it until now. Therefore he should not abandon his high human values and he should stubbornly enrich his culture. If because of the exigency of the age, his specialization turns toward pure science, his humanism will help him to bow with humility before the immensity of what he does not know. Shortly before his death, Newton, one of the giants of scientific thought, said sadly: "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.'"

I think it is time to stop. While we walked through the garden of Academe, discussing these general matters of medicine, the afternoon has ended. The sun has set beside the Pireus and there is only to be seen the brightness, half rose and half gold, of the sacred hill of the Acropolis. By good fortune this light is enough to guide our steps.

IGNACIO CHAVEZ

Pre-Harveian Doubts of Galenic Doctrine

Among our self-righteous forebears it was frequently the fashion to attach to the condemned man some indication or symbol of his crime, and in the case of Servetus, chained to the stake and about to be burned alive, a copy of his recently printed Christianismi restitutio was fastened to his leg. To Calvin it symbolized the heresies of the condemned man and Calvin's determination that they should be destroyed. That the book also contained the first printed description of the pulmonary circulation meant nothing to him. As a lawyer and theologian he would not have understood it, and as a believer in predestination and himself as one of "the choice elected few" it was of little consequence anyway. As a matter of fact, the entire edition of one thousand copies of the book was tracked down and almost completely destroyed so that to our knowledge only three copies have survived, but sufficient to gain for the author a recognition denied him in his own day. Thus the book which went with Servetus to his destruction and symbolized for Calvin the end of both the heretic and his heresies has, on the contrary, revived the name of the victim and for many has gained him a brighter place in history than that of his executioner. Finally, the fact that this first account of the pulmonary circulation is imbedded in a theological work is in the case of Servetus no cause for amazement.—CHARLES D. O'MALLEY. The Complementary Careers of Michael Servetus: Theologian and Physician. History of Medicine and Allied Sciences 8: 378, 1953.
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IGNACIO CHAVEZ

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