

# Bernardo Alberto Houssay

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Bernardo Alberto Houssay, a remarkable scientist, died on September 21, 1971, the first day of spring in the southern hemisphere, in Buenos Aires, the city of his birth in 1887. With clear ideas and his own life as an example, he did more to stimulate the development of scientific investigation and raise the level of scientific teaching in that part of the continent than anyone else. His life shows what capacity and will, combined with a noble ideal, can achieve, and serves as an example for today's younger generations.

Reared in a middle-class French home, he received an excellent education and soon familiarized himself with the classics. At this point in his life he had already manifested some interesting facets of his character. A pharmacist at seventeen, he became a physician and professor of physiology in the School of Veterinary Medicine at twenty-three. In fact, from the age of thirteen he was economically independent of his parents, working and studying at the same time. Still, there remained time to practice sports: He was the champion sprinter in college, member of the football team, and captain of the rugby team. By this time, his love for the natural sciences had manifested itself not only in the university career he had chosen, but also in the private collections of animals and plants he had gathered.

In the first years after graduation from medical school (1910), he was engaged in various professional activities simultaneously, as was the custom in Argentina at that time. Actually, the necessity of sustaining himself economically obliged him to follow that way of life. Thus, from 1910 until 1919 he was Professor of Physiology in Veterinary Medicine as already mentioned, from 1911 to 1917, physician at Alvear Hospital; and from 1915 to 1918, Chief of Endocrinology in Experimental Pathology at the Bacteriology Institute. At the same time, he maintained a private practice.

His involvement in all these institutions during years of intensely active work permitted him to gain experience and to mature. During this period he developed ideas that, later on, he had the opportunity to put into



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practice. In this formative period he took advantage of the facilities of the School of Veterinary Medicine to learn and practice operative technics and of the Institute of Bacteriology to study the problems of immunity. It was then that he saw the need to devote all his time to scientific investigation and modern teaching methods.

He had followers despite national difficulties and showed that investigation was possible in Argentina, that limitations were not due to the environment, and that investigators there were equal in mental capacity to those on other continents.

In 1919 a new and happy event occurred which was to change his life. He was appointed Professor of Physiology of the School of Medicine of Buenos Aires. In that position he began to use the enormous potential he had accumulated. He created the Institute of Physiology and soon received universal acclaim for the quality of his investigations and for his full-time dedication to his task. In this manner, he was the first such professor in Argentina, forming legions of disciples and, as Carlson has said, "He put Argentina on the world map of physiology."

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In 1920 he married his co-worker at the Bacteriology Institute, Dr. María Angélica Catán, who was his devoted colleague until her death in 1960. She served efficiently as collaborator in his work, as his wife, and as mother to his children, all at the same time. She bore him three sons, now presently all physicians.

This disciplined and intense way of life continued until 1943. That year, a surprising event occurred which modified everything. A revolution occurred in Argentina, and a military dictator seized control of the country. Within a few months, a wave of discontent swept over the people, and a group of citizens signed a manifesto which asked the authorities for, among other things, "effective democracy and panAmerican unity." The response was dismissal of the university professors signing this manifesto. Among them was Houssay, who saw, within a few minutes, the destruction of his life's efforts.

He reacted immediately, with decision and energy. With the economic assistance and collaboration of some of his disciples, he founded the Institute of Biology and Experimental Medicine. This private, nonprofit institution is still in existence; it was the first of its kind in Argentina and served as a model for others.

He worked at the institute until his last days, producing studies and teaching. There, with his followers, he completed his well known work entitled *Human Physiology* in 1955. He gathered multitudes of scholars from all countries of the world. In 1947, the peace of the institute was disrupted by the news that Houssay had received the Nobel Prize. Since the authorities did not permit ceremonies, however, he had to celebrate in seclusion.

In 1955, at the beginning of a new revolution, Houssay returned to the Institute of Physiology, but only temporarily, to receive the compensation he merited. He permitted his disciples to return to the school while he continued to work at the Institute of Biology and Experimental Medicine.

But at the end of 1959, he added a new activity to his previous ones: creation of the National Research Council. In this way, and with the support of the State, he was able to extend many benefits to science and to investigators, and thus accelerate the rehabilitation of science in Argentina. The advantageous effects of his actions became quickly apparent.

This description of Houssay's life shows two dominating characteristics: his faithfulness to science, which he maintained in all circumstances, and the love of his country and his people. He had many offers to go else-

where, where the facilities were better, but he preferred to remain in his own country, battling difficulties and making triumph his ideals of spiritual and physical betterment in the field of science.

#### *His scientific personality*

A sharp mind, a memory beyond the common, a fertile imagination, a critical and severe judgment and, finally, a decidedly forceful execution of all his decisions were characteristics of the Houssay that his associates all knew and appreciated. To these must be added his dedication to his work and his proverbial persistence—he never appeared to recognize fatigue.

Houssay was the sum of many outstanding and positive characteristics. Understanding this mixture not usually found in a single person, he had an idea of the Cyclopean task which needed to be accomplished. His work, viewed at a distance, appears to be one done by many persons.

Already we have spoken of his love for science, freedom, his country, his people, and justice. Beseiged by questions when dismissed from his university chair in 1943, he distributed among his friends the resumé of the principles that guided his life. He said:

"Love of one's country"

"Love of freedom"

"Personal dignity"

"Payment of debts"

"Devotion to science"

"Dedication to work"

"Respect for the judgment of one's fellow men"

"Affection for my kinsmen, disciples and friends"

B. A. Houssay, 1943

His complete dedication to physiology made him soon decide to get at the root of the book by Claude Bernard: *Introduction à l'étude de la médecine expérimentale*. The book influenced him, and he thought then that it was his destiny to be a physiologist, that it would be useful for his country to develop this almost non-existent discipline, and that it was necessary to concentrate on one activity. Thus, he devoted himself exclusively to learning physiology on his own, with neither teachers nor schools (which did not exist at the time), and without traveling abroad.

From the first moment he had clear ideas of both teaching and investigation—his work in the School of Veterinary Medicine (1910-19) contributed greatly in formulating them. There, he put his ideas into action, but where he really applied them was in the School of Medicine (1919-43).

With regard to his students, he was often severely

critical of their belief in the "dogma" of the instruction given by the professor, their continuous petitions against examinations, which interrupted teaching, and their repeated political participation outside the university. He proclaimed that in order to remedy some of these injustices, instruction ought to be active, practical and reasonable; adapted to the student on the basis of his intelligence, knowledge, character, aptitude, etc.; and adjusted to the number of educational possibilities of the school or, if not, new opportunities should be created. In respect to this last point, bear in mind the usual masses of students that overflow the classroom. Houssay thought full-time professors ought to be in charge of teaching the basic subjects. He favored the creation of higher level private universities whose titles would be recognized by the State.

Many of his ideas are not yet realized in Argentina. Some were implemented in neighboring countries before they were in Argentina. They revolutionized and benefited learning. One must mention that he had marked resistance from numerous groups, students and professors, who fought against him.

*His work as an investigator*

The name of Houssay as physiologist is known throughout his own country and abroad. He founded one of the best known schools of physiology in South America. His disciples number in the hundreds, spread throughout the world.

The works of his school exceed 2,000, but those that

carry his signature number 900. The themes of these works are diverse—many are concerned with medical education, others with immunity; the nervous system; regulation of the circulation and in particular, hypertension; endocrinology; reproduction; metabolism; diabetes; etc.

His studies on the role of the hypophysis in the regulation of carbohydrate metabolism are classics. The well known *Houssay's dog* and *hypophyseal diabetes* are among his most well known contributions that led to the Nobel Prize which he received in 1947.

In addition to the Nobel prize, the distinctions he received for his scientific labors number in the hundreds. These are: Doctor honoris causa of the School of Medicine, member of the Academies of Science and of Medicine, the Baly (England), Cook (Australia), and Ch. Mickel (Canada) prizes, the Banting Medal (United States), etc. One of the last distinctions was that the VIIth Congress of the International Diabetes Federation was held in his honor.

Houssay believed firmly that scientific investigation is the basis of today's world and benefited humanity more and more. He always insisted, however, that science ought to apply strict moral rules to itself. In this way, it would contribute to better health, well-being, richness and power.

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*Editor's Note:* We acknowledge the assistance of Sue Ann Hennessy who helped with the translation.