



## Corneille Heymans

### The Nobel Prize in Physiology or Medicine 1938

## Biography



Corneille Jean François Heymans was born in Ghent, Belgium, on March 28, 1892. His father was J. F. Heymans, formerly Professor of Pharmacology and Rector of the University of Ghent, who founded the J. F. Heymans Institute of Pharmacology and Therapeutics at the same University.

Corneille received his secondary education at the St. Lievenscollege (Ghent), St. Jozefcollege (Turnhout), and St. Barbaracollege (Ghent). He had his medical education at the University of Ghent, where he obtained his doctor's degree in 1920. After his graduation he worked at the Collège de France, Paris (Prof. E. Gley), University of Lausanne (Prof. M. Arthus), University of Vienna (Prof. H. H. Meyer), University College of London (Prof. E. H. Starling) and Western Reserve Medical School (Prof. C. F.

Wiggers).

In 1922 he became Lecturer in Pharmacodynamics at the University of Ghent. In 1930 he succeeded his father as Professor of Pharmacology, being also appointed Head of the Department of Pharmacology, Pharmacodynamics, and Toxicology; at the same time he became Director of the J. F. Heymans Institute. He is Professor Emeritus since 1963.

The scientific investigations carried out at the Heymans Institute are mainly directed towards the physiology and pharmacology of respiration, blood circulation, metabolism, and numerous pharmacological problems. These studies led, in particular, to the discovery of the chemoreceptors, situated in the cardio-aortic and carotid sinus areas, and also to contributions regarding the proprioceptive regulation of arterial blood pressure and hypertension. The discovery of the reflexogenic role of the cardio-aortic and the carotid sinus areas in the regulation of respiration, above all, earned C. Heymans the Nobel Prize in 1938.

Another series of investigations by Heymans and his collaborators was devoted to the physiology of cerebral circulation and of the physiopathology of arterial hypertension of nervous and renal origin; also to the study of blood circulation during muscular exercise; to the physiology and pharmacology of animals totally sympathectomized; to the study of the survival and revival of different nervous centres after the arrest of blood circulation; to the pharmacology of stimulating substances of cellular metabolism, to the pharmacology of the lungs and many other problems.

A prolific author, Heymans has since 1920 issued about 800 papers, published in different periodicals. The results of his investigations have been mainly reported by him in the following general publications: *Le Sinus Carotidien et les autres Zones vasosensibles réflexogènes* (1920); *Le Sinus Carotidien et la Zone Homologue Cardio-aortique*, with J. J. Bouckaert and P. Regniers (1933); *Sensibilité réflexogène des vaisseaux aux excitants chimiques*, with J. J. Bouckaert (1934); «Le centre respiratoire», with D. Cordier in *Ann. Physiol. Physicochim.*, II (1935) 335; «Survival and revival of nerve centers after arrest of circulation», *Physiol. Rev.*, 30 (1950) 375; «New aspects of blood pressure regulation», with G. van den Heuvel, *Circulation*, 4 (1951) 581; «Pharmakologische Wirkungen auf die Selbststeuerung des Blutdruckes», *Arch. Exp. Pathol. Pharmacol.*, 216 (1952) 114; «Action of drugs on carotid sinus and body», *Pharmacol. Rev.*, 7 (1955) 119; *Reflexogenic Areas of the Cardiovascular System*, with E. Neil (1958), «Vasomotor control and the regulation of blood pressure», with B. Folkow, in *Circulation of the Blood—Men and Ideas*, edit. by A. P. Fishman and D. W. Richards.

Heymans is publisher and Editor-in-Chief of the *Archives Internationales de Pharmacodynamie et de Thérapie*, founded in 1895 by his father and Professor E. Gley, Paris.

From 1945 to 1962 Heymans has lectured at numerous universities in Europe, North and South America, Africa, and Asia. He was in 1934 «Herter Lecturer» at the University of New York; and in 1937 he was «Lecturer of the Dunham Memorial Foundation» at Harvard University, as well as «Hanna Foundation Lecturer» at the Western Reserve University, and «Greensfelder Memorial Lecturer» at the University of Chicago. In 1939 he was «Lecturer of the Purser Memorial Foundation» at Trinity College, University of Dublin.

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Commissioned with special missions by the Belgian Government, the International Union of Physiological Sciences, and by the World Health Organization, he has travelled to Iran and India (1953), Egypt (1955), the Belgian Congo (1957), Latin America (1958), China (1959), Japan (1960), Iraq (1962), Tunisia (1963), Cameroun (1963).

He has been President of the International Union of Physiological Sciences and of the International Council of Pharmacologists and has presided over the 20th International Congress of Physiology held in Brussels in 1956. His vast knowledge of pharmacology has justified his nomination as Member of the Committee of Experts of the International Pharmacopoeia of the World Health Organization. In his own country he is Vice-President of the National Council on Scientific Policy.

Heymans is Member or Honorary Member of a large number of leading scientific societies concerned with physiology or medicine in Europe and in North and South America, including the Pontificia Academia Scientiarum, the Royal Society of Arts of Great Britain, the Académie des Sciences de Paris (Institut de France), Académie de Médecine de Paris, the Heidelberger Akademie für Wissenschaften, and the New York Academy of Sciences. He has been appointed Professor honoris causa of the University of Montevideo, and doctor honoris causa of the Universities of Utrecht, Louvain, Montpellier, Torino, Santiago de Chile, Lima, Bogotá, Rio de Janeiro, Algiers, Paris, Montpellier, Münster, Bordeaux, Toulouse, and Georgetown University, Washington.

Besides the Nobel Prize, his scientific awards include the Alvarenga Prize of the Académie Royale de Médecine de Belgique, the Gluge Prize of the Académie Royale des Sciences de Belgique, the Quinquennial Prize (1931-1935) for Medicine of the Belgian Government, the «Alumni» Prize for Medicine of the Belgian University Foundation, the Bourceret Prize of the Académie de Médecine de Paris (1930), the Monthyon Prize of the Institut de France (1934), the Pius XI Prize of the Pontificia Academia Scientiarum (1938), the Burgi Prize of the University of Bern and the de Cyon Prize (1931) of the University of Bologna, etc.

Heymans is Officer in the Order of the Crown with Swords, Grand Officer in the Order of the Polar Star (Sweden), Grand Officer of the Order of Leopold, Commander in the Order of St. Sylvester (Vatican City), Commander in the Knightly Order of the Holy Sepulchre of Jerusalem; other distinctions include the Civilian Cross (First Class) for Distinguished Services Rendered to the Fatherland, the Belgian War Cross 1914-1918, the Fire Cross with 8 bars 1914-1918. (He was Field Artillery Officer during the first World War. )

Professor Heymans married Berthe May, M. D. in 1921. There are four children by the marriage: Marie-Henriette, Pierre, Jean, and Berthe; and 18 grandchildren. He loves painting and is greatly interested in ancient literature dealing with the history of medicine; he is also a keen hunter.

From *Nobel Lectures, Physiology or Medicine 1922-1941*, Elsevier Publishing Company, Amsterdam, 1965

This autobiography/biography was written at the time of the award and first published in the book series *Les Prix Nobel*. It was later edited and republished in *Nobel Lectures*. To cite this document, always state the source as shown above.

*Corneille Heymans died on July 18, 1968.*

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