



**University of
Zurich**^{UZH}

**Zurich Open Repository and
Archive**

University of Zurich
Main Library
Strickhofstrasse 39
CH-8057 Zurich
www.zora.uzh.ch

Year: 2012

Obituary: John T. Shepherd, MD, MChir., DSc.

Vanhoutte, Paul M ; Lüscher, Thomas F

DOI: <https://doi.org/10.1093/eurheartj/ehr440>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-154747>

Journal Article

Published Version

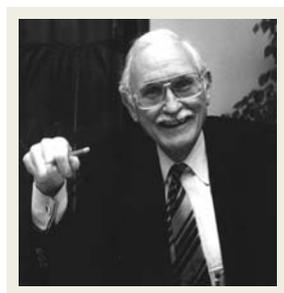
Originally published at:

Vanhoutte, Paul M; Lüscher, Thomas F (2012). Obituary: John T. Shepherd, MD, MChir., DSc. *European Heart Journal*, 33(2):279-280.

DOI: <https://doi.org/10.1093/eurheartj/ehr440>

Obituary: John T. Shepherd, MD, MChir., DSc.

Cardiovascular physiology has lost a great researcher and gentleman, a pioneer during the second half of the twentieth century



John T. Shepherd

John T. Shepherd died in Rochester, Minnesota, on 4 October 2011, after a long illness. With his death, physiology lost a physician scientist who contributed much to the field of cardiovascular medicine and the scientific community. His friends and colleagues will remember his gentle humour, engaging intellect, and humanitarian qualities.

John Shepherd was born on 21 May 1919 in Northern Ireland and was an alumnus of Queens University in Belfast, where he completed his clinical training and became a physiologist of the peripheral circulation. A Fulbright Scholarship brought him for the first time to the Mayo Clinic in Rochester, Minnesota, to work as a postdoctoral fellow with another legend in cardiovascular physiology, Dr Earl Wood. Both his unconditional attachment to Mayo and his passion for haemodynamic investigations stem from that first stay in Rochester. Indeed, although he returned to Northern Ireland after his Fulbright Scholarship and even spent some time in Paris (he loved to reminisce about his French experiences!), he returned to the Department of Physiology at the Mayo Clinic in 1957, where he pursued the rest of his brilliant career. He was an extraordinary man at the service of that remarkable institution. He became American, but he remained so British. ... Many years later, Dr Shepherd was invited back to Queens University in Belfast to receive an honorary degree, a very special recognition, as universities only exceptionally bestow such honour on one of their own alumni.

At Mayo, Dr Shepherd blossomed scientifically. But the Mayo Foundation also provided the stage on which his superior interpersonal skills not only permitted the expansion of cardiovascular research, but also the development of the Mayo Medical School. He trained generations of young cardiovascular researchers in his simple, basic philosophy of human relationships. He deeply

believed in the committee-driven structure of the Mayo Clinic and became a master in orchestrating consensus. Thus, over the years he played a prominent key role as one of the leaders of the organization, becoming in succession, Chairman of the Department of Physiology and Biophysics, Director for Research (1969–76), Dean of the new Mayo Medical School (1977–83), Member of the Board of Governors, Member of the Board of Trustees, and Chair of the Board of Development. His remarkable capacities and his desire to provide service to science were also recognized outside of the Mayo Clinic, as illustrated best by his Presidency of the American Heart Association (1975–76), and his Chairmanship of the NASA Space Medicine Committee (1965–74).

Dr Shepherd was a remarkable scientist and a true scholar. His early work in Ireland, using simple often self-imposed plethysmography was key to our understanding of the autonomic control of the human peripheral circulation. He was one of the pioneers in defining the role of systemic veins as the regulator of the return of blood to the heart and taught us that not all veins are equal in that regard, with the splanchnic veins adjusting from moment to moment the capacitance of the cardiovascular system because they escape the effects of gravity due to changes in body position. In association with Dr David Donald, a remarkable experimental surgeon, and a number of postdoctoral fellows from all over the world he defined the role of the various reflex receptor systems (in particular the high and low pressure baroreceptors) which constantly feed homeostatic information into the vasomotor centers of the *medulla oblongata*.

Although Dr Shepherd's training and expertise was in studies in the intact organism, whether animal or human, he soon realized that to dissect vascular responses it is often necessary to examine blood vessels *in vitro*. Hence, he participated intensely in studies first on isolated veins and later on isolated arteries that progressively clarified our understanding of adrenergic responsiveness, pre-synaptic regulation of noradrenaline release, the impact on vascular tone of local changes in temperature and pH, and the important contribution of endothelium-derived vasoactive factors. But he only accepted *in vitro* data when they helped him understand vascular behaviour in the intact organism. He was truly a translational researcher *avant la lettre*. We, who have had the privilege to work with him, will never forget how incomparable a mentor he was, forcing us to ask the rational question, to apply technology only to answer that question, to listen to the

tissues, to be simple, to be clear, and to prefer graphs over lengthy words.

Dr Shepherd was a remarkable leader, a superb researcher, a great teacher, and a unique mentor. But we remember him most as a warm human being, always understanding, listening, and willing to help. He was a man of great modesty, of great humour, and of great wit, torn apart somehow, between the rigidity of his

Presbyterian upbringing, his implacable rational mind, and his inborn 'joie de vivre'. We have lost a true friend. We will miss him . . .

Paul M. Vanhoutte¹ and Thomas F. Lüscher²

¹Department of Pharmacology and Pharmacy, Li Ka Shing Faculty of Medicine, Hong Kong, China; ²Division of Cardiology, University of Zurich, Zurich, Switzerland

John Shepherd produced over 300 scientific publications and four books.

Some landmark studies are:

Cohen RA, Shepherd JT, Vanhoutte PM. Effects of the adrenergic transmitter on epicardial coronary arteries. *Fed Proc* 1984a;**43**:2862–2866.

Cohen RA, Shepherd JT, Vanhoutte PM. Vasodilatation mediated by the coronary endothelium in response to aggregating platelets. In: Vanhoutte PM, Vatner SF, eds. *Vasodilator Mechanisms*. Basel: Karger; 1984b. p35–42.

Cooke JP, Creager MA, Osmundson PJ, Shepherd JT. Sex differences in control of cutaneous blood flow. *Circulation* 1990;**82**:1607–1615.

Cooke JP, Shepherd JT, Vanhoutte PM. The effect of warming on adrenergic neurotransmission in canine cutaneous vein. *Circ Res* 1984;**54**:547–553.

Shepherd JT. *Physiology of the Circulation in Human Limbs in Health and Disease*. Philadelphia: W.B. Saunders; 1963. p1.

Shepherd JT. The cardiac catheter and the American Heart Association. *Circulation* 1974;**50**:418.

Shepherd JT, Joyner PM, Vanhoutte PM. The sensory systems involved in cardiovascular regulation. *Cardiology: Fundamentals and Practice*. Vol. 7. 1990a. p164–182.

Shepherd JT, Katusic ZS, Vedernikov Y, Vanhoutte PM. Mechanisms of coronary vasospasm: role of endothelium. *J Mol Cell Cardiol* 1990b;**23**:125–131.

Shepherd JT, Lorenz RR, Tyce GM, Vanhoutte PM. Acetylcholine-inhibition of transmitter release from adrenergic nerve terminals mediated by muscarinic receptors. *Fed Proc* 1978;**37**:191–194.

Shepherd JT, Vanhoutte PM. *Veins and Their Control*. Philadelphia: W.B. Saunders; 1975. p1–269.

Shepherd JT, Vanhoutte PM. *The Human Cardiovascular System. Facts and Concepts*. New York: Raven Press; 1979. pp. 1–351.

Shepherd JT, Vanhoutte PM. Local modulation of adrenergic neurotransmission. *Circulation* 1981;**64**:655–666.

Shepherd JT, Vanhoutte PM. Why nerves to coronary vessels? *Fed Proc* 1984;**43**:2855–2861.

Shepherd JT, Vanhoutte PM. Spasm of the coronary arteries: causes and consequences (the scientist's viewpoint). *Mayo Clin Proc* 1985;**60**:33–46.

Shepherd JT, Vanhoutte PM. Mechanisms responsible for coronary vasospasm. *J Am Coll Cardiol* 1986;**8**:50A–54A .

Shepherd JT, Vanhoutte PM. The sensory systems involved in cardiovascular regulation. In: Brandenburg RO, Fuster V, Giuliani ER, McGoon DC, eds. *Cardiology: Fundamentals and Practice*. Chicago–London: Year Book Medical Publishers, Inc.; 1987a. p164–182.

Shepherd RJF, Vanhoutte PM. Mechanisms of coronary artery spasm. *Cardiology* 1987b;**4**:46–48, 76.

Shepherd JT, Vanhoutte PM, Donald DE. Regulation of the veins by the arterial baroreceptors. In: Sleight P, ed. *Arterial Baroreceptors and Hypertension*. New York: Oxford University Press; 1980. pp. 123–129.

Vanhoutte PM, Cooke JP, Lindblad LE, Shepherd JT, Flavahan NA. Modulation of postjunctional alpha-adrenergic responsiveness by local changes in temperature. *Clin Sci* 1985;**68**(Suppl. 10):121s–123s.

Vanhoutte PM, Katusic ZS, Shepherd JT. Vasopressin induces endothelium-dependent relaxations of cerebral and coronary, but not of systemic arteries. *J Hypertens* 1984;**2**:421–422.

Vanhoutte PM, Shepherd JT. Adrenergic pharmacology of human and canine peripheral veins. *Fed Proc* 1985;**44**:337–340.

Verhaeghe RH, Lorenz RR, McGrath MA, Shepherd JT, Vanhoutte PM. Metabolic modulation of neurotransmitter release-adenosine, adenine nucleotides, potassium, hyperosmolarity and hydrogen ion. *Fed Proc* 1978;**37**:208–211.