Tribute to a legend:

Prof.A.S.PAINTAL,FRS

(24 September 1925 — 21 December 2004)

Professor Paintal- the first Indian Medical Professional to become Fellow of Royal Society (FRS) works on cardiovascular and respiratory physiology. During the years 1952-1960, he discovered several sensory receptors in the viscera. These include the type B receptors of the atria, the ventricular pressure receptors, the gastric stretch receptors, the mucosal mechanoreceptors of the intestines, and the pressure pain receptors of muscles. Foremost amongst the receptors discovered by his were the juxtapulmonary capillary or type J receptors which are stimulated by a rise in the interstitial fluid volume and increase in pulmonary blood flow. Their stimulation gives rise to breathlessness and termination of exercise. He described the reflex termination of exercise as one of their most important functions - providing a protective reflex to humans and animals against excessive pulmonary pressures. He and his collaborators showed that these receptors were also stimulated by increased blood flow, as in exercise and that stimulation of J receptors produced respiratory sensations leading to dry cough. His work on the conduction and block in mammalian nerves gave the electro physiologists a tool to enable them to distinguish between the myelinated and non-myelinated nerve fibres. He also demonstrated that the Head's paradoxical reflex was an artefact. During his research career spanning well over five decades, Dr Paintal had less than 400 publications which included original research papers, reviews, papers presented at conferences etc. Most of his papers appeared in international journals but his preference for the British journal - Journal of Physiology (London) is quite clear. The Web of Science, published by the Institute for Scientific Information, Philadelphia lists 236 papers of Paintal from the source journals of the Science Citation Index and as many as 141 from non-source journals. The 'influence' of Paintal on biomedical science, especially physiology is distinct and appears to be overwhelming. Until 2004, his papers were cited as many as 3672 times. And they will continue to be cited by researchers paying homage to his outstanding discoveries. Ten of his papers have been cited over 150 times with the reviews were cited extensively - Physiological Reviews (1973) as many as 871 times and Pharmacological Reviews (1964) cited 203 times. That the

Physiological Review is cited 12 times even in 2004, underlines its relevance even after 40 years after publication. His path-breaking report on J receptors published in 1969 in Journal of Physiology (London), cited 323 times, and was a Citation Classic. Significantly, all the eight papers that were highly cited appeared in the Journal of Physiology (London). In an era when scientists the world over were fast switching to scientific disciplines which fetched more funding and public glory, Paintal continued to work in a very unfashionable area like physiology. As a medical student at the King George's Medical College, Lucknow, he left an unmatched and enviable record of academic accomplishments. True to his style, he has left a legacy for the International science that will be difficult to match. While we were overawed by his extraordinary ability as a scientist (a Fellow of the Royal Society in 1981), he was simplicity personified, modest to a fault, and carried his greatness lightly on his slender shoulders. His accessibility to colleagues at all levels was as legendary as were his impeccable manners and old world charm. In an article entitled "a new era in Physiology" by Cornellie Heymans and Eric Neil coined the terms "Pre-Paintal" versus "Post-Paintal" while referring to the impact of his discoveries. In his own view, his greatest contribution to science in India apart from his discoveries has been the formation of the Society of Scientific Values, which he helped to establish and served as its first President. This Society, the first of its kind in the world, has as its main objective, amongst others, to promote integrity, objectivity and ethical values in the pursuit of science.

He was widely honored in India and abroad and was elected to the Fellowship of the Royal Society of Edinburgh in 1966, followed by an election to the National Academy of Medical Sciences, and the Indian National Science Academy. In 1981, he was elected to the Royal Society (U.K.), the first Indian medical scientist to be so honored. An honorary membership of the Physiological Society (U.K.) and the American Physiological Society followed soon after as did an Honorary Fellowship of the Royal College of Physicians. His outstanding scientific contributions won him several National Awards and Honorsviz: Dr. B.C. Roy Award, Medical council Silver Jubilee Research Award, Barclay Medal, Prof.S.C.Mahalanabish Memorial Oration by the Physiological Society of India, Rameswar Birla National Award, First Jawaharlal Award in Science, Acharya J.C. Bose Medal, Silver Jubilee Award, AIIMS, C.V. Raman Award, Jawaharlal Nehru Birth Centenary Award. The President of India bestowed on him the coveted honour of "Padma Vibhushan" in 1986. He was elected as a member of the International Council of Physiological Sciences in 1997 and re-elected for another term upto 2005.

By
Arif Siddiqui
RIPAH International University
Islamabad, Pakistan
&
Kusal K.Das
BLDE University, Bijapur-586103,Karnataka,India