

Editorial

René Descartes (1596–1650)

No list of architects of the European renaissance can be complete without including René Descartes. Descartes was born at La Haye, Touraine in France (1). A child prodigy that he was, he moved to Paris at the age of sixteen to undertake research in mathematics. But political disturbances forced him to move to Netherlands within five years. He returned to Paris in 1625, and drifted from mathematics to physics and philosophy. But his popularity in the intellectual circles of Paris soon started compelling him to spend more and more time on social activities. Therefore he again moved to Netherlands in 1629 in search of a quiet retreat, and stayed there till 1649. While there, his creative genius bloomed many a flower. In the medical arena, he dwelt on several subjects but he is best known for his conjectures about the nervous system. He visited slaughter houses to collect brains, specially sheep brains, and he left behind very accurate drawings of these. However, his physiological model of the nervous system appears ridiculous today. He proposed that body fluids were filtered, and only the finest and most rarified distillate reached the pineal (2). Pineal, which was considered the seat of the soul, gathered the distillate, or subtle spirits. The pineal directed the spirits to the ventricles. From the ventricles, the spirits could flow down the nerves to the muscles. On reaching the muscle, these spirits, or vital fluids, induced contraction. Since contraction was due to *addition* of fluids to the muscles, contraction was associated with swelling of muscles. However, it was soon shown by Jan Swammerdam that contraction led to only a change in the shape of a muscle, not its volume, and therefore the hypothesis about addition of fluids was incorrect. Much the same applies to all of Descartes' physiological theories.

Although Descartes' contribution to physiological facts as they stand today is next to nil, his enduring contribution is to the thought process generated during the renaissance. His most celebrated quote is "I think; therefore, I am". The supremacy which this sentence assigns to reason has been one of the basic tenets of modern science. Another of his well known quotes is "I must have no doubts before I can believe." The scepticism inherent in this sentence has guided and inspired much of modern science, and makes science incompatible with religion. However, Descartes lived during a period when scientists were not inclined to oppose the Church. The persecution of Galileo was still fresh. Perhaps because of this, Descartes attempted to remain within the Church while re-examining her fundamental beliefs (3).

His quiet creative life was interrupted in 1649 when he was called by Queen Christina of Sweden to be her tutor and principal consultant in her plans to establish an Academy in Stockholm (2). But unfortunately he succumbed to the harsh swedish winter and died in 1650. A few years after his death it was discovered that he had written a book, but hidden the manuscript for fear of persecution by the Church. The book, *Traite de L'Homme*, was published in 1662 in a Latin translation, and another two years later in its original form in French. The book turned out to be the most influential book of the century among physiologists, philosophers and

psychologists. Its most enduring concept has been the treatment of the body as a machine, a device the working of which could be explained entirely in terms of physical principles. The mechanistic point of view has been supremely useful in developing new knowledge in life sciences. The mechanistic point of view has enormous operational validity: it works. But today we lack the unbounding confidence of the scientists of the seventeenth and eighteenth centuries who naively looked forward to the conquest of nature (3). The mechanistic viewpoint, in its severe and uncompromising form, has run out of steam. Most biologists would perhaps now agree that conversion of non-living matter (*annakosa*, in yogic terminology) into forms of life needs the incorporation of an intangible principle, *pranakosa*, that science has not yet been able to unravel; which is nearly the same as what Descartes said in keeping with the atmosphere of his times, viz. that the body and the spirit are merely forms in which Divinity manifests itself (4). While bringing out the short half life of facts and the enduring influence of inspiring ideas, IJPP is proud to pay this tribute to Descartes, the physiologist and philosopher who also invented co-ordinate geometry.

REFERENCES

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