Ivan Petrovich Pavlov

Ivan Petrovich Pavlov was born on September 14, 1849 in the village of Ryazan, Russia, the son of Peter Dmitrievich Pavlov, who was the village priest. Like most other children from Ryazan, he went to the Church school, and was later was enrolled in a theological seminary.  It was after reading **The Origin of the Species** by Charles Darwin, and the works of Russian physiologist I. M. Sechenov that Pavlov decided to abandon his theological studies and become a man of science.  He left the seminary in favor of the University of St-Petersburg, where he enrolled in the Natural Sciences program.

Pavlov  realized his favorite subject was that of physiology, and it wasn't long before he that he produced, in tandem with a fellow student, his first paper, a work on **The Physiology of the Pancreatic Nerves** for which he was awarded a gold medal.  Pavlov completed his course and received the degree of Candidate of Natural Sciences, but not one to rest on his laurels, he went on to study  at the Academy of Medical Surgery where he was awarded another gold medal and later on, a fellowship; in addition to this, Pavlov was also Director of the Physiological Laboratory at the clinic of S. P. Botkin , a famed Russian physician.  It was there he produced his doctoral thesis on **The Centrifugal Nerves of the Heart**, for which he was later awarded the Nobel Prize in Medicine/ physiology (1904).

1890 was an important year for Pavlov, as he was asked to oversee the organization and run the Department of Physiology at the Institute of Experimental Medicine.  It was there he would conduct his most historically significant research, and also where he would remain for the rest of his life.  That same year, Pavlov was also appointed Professor of Pharmacology at the Military Medical Academy.

Pavlov's main area of research throughout his scientific career was on the digestive process, which brought on a series of experiments exploring the correlation between the nervous system and the autonomic functions of the body.  Pavlov experimented with dogs, studying the relationship between salivation and digestion. By applying stimuli to the animals in a variety of ways, using sound, visual, and tactile stimulation, he was able to make the animals salivate whether they were in the presence of food or not; a phenomenon he called the conditioned reflex.

Pavlov was also elected a corresponding member of the Russian Academy of Sciences in 1901, the Nobel prize in 1904,  he was elected Academician of the Russian Academy of Sciences in 1907, given an honorary doctorate at Cambridge University in 1912, and awarded the Order of the Legion of Honour in 1915, the recommendation of the Medical Academy of Paris.

Dr. Ivan Pavlov died in Leningrad on February 27,1936.

In addition to the many honors he received during his career, Pavlov should also be credited for the extraordinary impact his work, and that of his students and followers has had in the field of physiology.

**Conditioned vs. Innate Reflex**

An **innate** reflex is an instinctive and unlearned reaction to a stimulus. Although we do not know the exact cause of it, yawning is an innate reflex, as it is seen in newborn infants as well as adults.  It is believed that yawning occurs as the result of a change in physical state, from alertness to fatigue or as we awake from sleep.  Sneezing is another example of an innate reflex, as it is the uncontrolled reaction to the introduction of  foreign particles in one's nose, or a rapid change in temperature.  Attempts to stifle a sneeze are often unsuccessful, as the involuntary reaction is already underway.

A **conditioned** reflex is learned, either through negative or positive stimuli.  The fear of snakes is a learned reflex, as young children who would play with snakes and other reptiles with innocent fascination are soon taught to fear by example or stimuli i.e., a mother screams and pulls her child away from a harmless garter snake, reinforcing the gesture with a statement such as "You could have been bitten!"