Lamarck, French Naturalist, Is Dead!

Recent arrivals from Paris this week brought news that Jean Baptiste Pierre Antoine de Monet Lamarck died on the 18th of December 1829. A giant of French natural science, Lamarck was famous for his many contributions to biological thought.

Lamarck was born in the village of Bazantin in 1744, educated by the Jesuits at Amiens and decorated as a war hero at Bergen-op-Zoom. He studied medicine in Paris while supporting himself by working in a bank office. His interests expanded to include meteorology, chemistry and botany. In 1778 he published *Flore Française*, an important work that popularized the use of dichotomous keys to identify plants. The great popularity and utility of this work brought him membership in the Academy of Sciences. In 1781 and 1782 he was botanist to the King; his close association with Buffon secured this position. Additional botanical works include the *Dictionnaire de Botanique* and *Illustrations de Genres*. In 1793 as a consequence of a reorganization at the Jardin du Roi, where he held a botanical appointment, his interests turned to zoology. As his interest in zoology grew many important works were published, in spite of the fact that he began to lose his sight and ultimately became totally blind.

All of Lamarck's endeavors were characterized by a breadth of knowledge, precise detail and a great ability to create systems of classification. Lamarck first saw animals as either vertebrates or invertebrates. Having made great contributions, it must, unfortunately, be recognized that at times his speculations regarding chemistry and meteorology were generally considered without value. For his flawed meteorological predictions he incurred the wrath of Napoleon in 1810.

Inspired by the earlier work of Buffon, Lamarck speculated on the origin of life. He accepted the theory of spontaneous generation. Under the influence of heat and electricity the whole of life formed from gelatinous bodies. Once having been created, organisms change according to four laws.

These are:

I. The steady increase in the volume of organisms and their parts.

II. The production of new organs is brought about by need or want.

III. The development of organs and their action depends on their being used.

IV. Acquired new organs, or changes in organization, are passed on to future generations.

His important second law, his hypothesis of evolution, explains the long neck of the giraffe, the slender legs of ruminants and the dwarfed front limbs of the kangaroo. The fourth law explains the passage of acquired characteristics to offspring.

Lamarck was truly a great man. It is difficult to imagine the growth of natural science without him. We are fortunate for his speculations regarding the origin of life and its subsequent evolution according to the four great laws. He has explained, for all, the origin and change of life on earth. We may all rest secure in this knowledge.
Yesterday, noted naturalist and controversial scientist Charles Darwin died. Mr. Darwin had been in declining health for several years. He passed at his home in Down (Kent), England.

Darwin was born on February 12, 1809, at Shrewsbury, England. Darwin gained notoriety after publication of the book, On Origin of Species, published November 24, 1859. Darwin began his academic career studying medicine at the University of Edinburgh, but soon switched to theology at Cambridge. However, the study of nature was Darwin's calling. "I was a born naturalist," he said of himself. Every aspect of nature intrigued him. He loved to collect, to fish and hunt, and to read nature books. The country town of Shrewsbury, population 20,000, was the perfect place for a "naturalist in training." Darwin's letters and notes give the impression he devoted more time to collecting, hunting and riding than to his prescribed studies at Cambridge. Yet he did well on his examinations, finishing tenth on the list of nonhonors students.

Immediately after graduation Darwin signed on the H.M.S. Beagle as naturalist and gentleman companion of Captain Robert FitzRoy. The good captain had been commissioned to survey the coasts of Patagonia, Tierra del Fuego, Chile and Peru. The Beagle left Plymouth, England on December 27, 1831 and returned on October 2, 1836. While on the voyage Darwin kept a travelogue (Journal of Researches) in which he described all the places he visited. One of the most intriguing stops was the equatorial Galapagos Islands. Here Darwin studied many unusual plants and animals. When at sea, Darwin spent time reading academic works such as Charles Lyell's Principles of Geology which introduced him to the idea of uniformitarian geology and Jean Baptiste Lamarck's arguments for evolutionary thinking. After the five year voyage, Darwin spent his time sorting his collections and sending them to various specialists to be described.

The results of his voyage, the cataloguing of his collections, the ideas of other scientists and philosophers, especially Thomas Malthus's Essay on the Principle of Population, and Darwin's ability to think critically led him to the most controversial biological theory ever; evolution by common descent and the principle of natural selection. However, Darwin was reluctant to publish this theory. In fact he did not publish it until approached by Alfred Russel Wallace, who had developed the same theory independently. Together they announced the theory in 1858 and Darwin's famous book was published in 1859. If we could look into the future, we would see that the debate started by Darwin goes on and on.

In January 1839 Darwin married his cousin Emma Wedgwood, and in September 1842 the couple moved from London to the village of Down. They had twelve children, eleven of whom survive.