

characteristic of the nerve. The quicker the reactions of a nerve the smaller will be the value of k ; for human motor or sensory nerve, k is about 250 micro-seconds. Electrical studies of the excitation process and action potential, which is a constant accompaniment of a nerve impulse, are beginning to shed new light on the initiation of the nerve impulse, and physiologists with the aid of other engineering devices are looking forward to the solution of this problem, which they hope will turn out to be on a simple physico-chemical basis.

Science News a Century Ago

The Siamese Twins

LONDON MEDICAL GAZETTE, January 16, 1836, said: "This inseparable pair are now at Paris. M. Geoffroy de St. Hilaire congratulated the savans of the Academy of Sciences on the circumstance. Six years ago, he says, he applied in vain to the French Government to allow this 'teratological curiosity' to enter France. It may now be examined at leisure; and will be found deserving of attention, not only from the singular mode in which the individuals are united, but as presenting a specimen of a race of men little known to Europeans. M. Coste has visited these singular strangers, and raised rather a curious question about them, namely, at what epoch of intra-uterine life their union took place. He has satisfied himself that it occurred during the last days of the first month of pregnancy".

Darwin's Observations in New South Wales

The beginning of 1836 found the *Beagle* on passage from New Zealand to Australia, and on January 12 the ship anchored in Sydney Cove, whence she sailed on January 30 to Tasmania. Darwin took the opportunity of making an excursion to Bathurst, 120 miles inland, where he arrived on January 20 after a four days' ride. In the course of his journey he passed parties of convicts working in chains, under the charge of sentries, and groups of aborigines whose skill with the spear he admired. He ascended the Blue Mountains, made notes on the vegetation and geology of the district, went kangaroo hunting and had the good fortune to see several of "the famous *Ornithorhynchus paradoxus*".

The rapid prosperity and future prospects of the colony puzzled Darwin. The country was unfit for canals, pasturage was thin and agriculture on account of the drought could never succeed on an extended scale. "I formerly imagined", he wrote, "that Australia would rise to be as grand and powerful a country as North America, but now it appears to me that such future grandeur is rather problematical". He was deeply interested in the state of society and the condition of the convicts, and though he admitted he had few opportunities of studying the latter, speaking of the use of Australia as a penal settlement, he said, "On the whole, as a place of punishment, the object is scarcely gained; as a real system of reform it has failed, as perhaps would every other place; but as a means of making men outwardly honest—of converting vagabonds, most useless in one hemisphere, into active citizens of another, and thus giving birth to a new and splendid country—a grand centre of civilization—it has succeeded to a degree perhaps unparalleled in history".

Death of Antoine-François de Férussac

ON January 21, 1836, the French soldier and naturalist, Antoine-François de Férussac, died at the age of forty-nine years. The son of Jean-Baptiste-Louis de Férussac (1745–1815), a colonel who had fought in the Revolutionary wars and had devoted his leisure to zoology, de Férussac was born at Lauzerte (Tarn-et-Garonne) on December 30, 1786. While undergoing military training in Paris, he attended the lectures of Cuvier, Lamarck and Latreille, and at the age of twenty read a paper on Crustacea to the Paris Academy of Sciences which was printed in the *Annales du Muséum*. His corps being sent to Germany, he took part in the battles of Jena and Austerlitz, and afterwards served in Silesia and Spain, returning home severely wounded. Though some years later he served in the National Guard, he was always devoted to the study of natural history, writing many papers and in 1819 completed and published his father's "Histoire naturelle, générale et particulière des mollusques terrestres et fluviatiles". In 1823 he founded the *Bulletin universel des sciences et de l'industrie*, which, in spite of Government assistance, he was only able to carry on for a few years.

Magazine of Popular Science

AN advertisement in *The Times* of January 23, 1836, said, "The Magazine of Popular Science, and Journal of the Useful Arts", will be published on the 1st of February, and continued monthly, price 1s. 6d., edited under the direction of the Society for the Illustration and Encouragement of Practical Science, at the Adelaide-street Gallery, London. . . ."

The Railways of England and Wales

IN its issue of January 23, 1836, the *Athenæum* gave a review of the principal railways in England and Wales under the three headings: (1) those completed and in operation; (2) those not yet completed, but in progress of formation; and (3) those existing only in prospectuses and engineers' surveys. Altogether, about thirty railways were included in the review, which was accompanied by a map drawn by James Arrowsmith. After dealing with the railways themselves, the writer of the article said, "Having thus hastily noticed the principal railway schemes lately brought forward, a few observations in conclusion may not be misplaced. The magnitude of the sums already risked in this new class of speculation indicates a degree of private wealth and enterprise, such as no time or country but ours, we believe, has ever exhibited. . . . Little attention has yet been given to calculate the effects which must result from the establishment throughout the kingdom of great lines of intercourse traversed at a speed of twenty miles in the hour. It is a subject deserving the attention of all such as are studious of social and economic philosophy. The experiment is quite unprecedented and its effects will not be easy to estimate". The writer was not very sanguine regarding the immediate prosperity of some of the projects, but remarked: "There is also one consoling circumstance on the very extremity of railway speculation: the vast sums it is destined to swallow up will, at least, be consumed for the advantage of some one at home, and not sunk in the shafts and mountains of a foreign territory".