Science News a Century Ago

H.M.S. *Beagle* enters the Pacific

For about two and a half years, H.M.S. *Beagle* under Capt. FitzRoy had been engaged on the exploration of the eastern shores of South America, including Patagonia, the Falkland Islands and Tierra del Fuego ; but in June 1834 the ship passed from the Atlantic to the Pacific and started on that part of her voyage which was to carry her to Tahiti, New Zealand, Australia and home by the Cape of Good Hope. Weighing anchor on June 8, the vessel left Port Famine and proceeded down the Magdalen Channel, "that gloomy passage which", says Darwin, "I have before alluded to, as appearing to lead to another and worse world". On the evening of that day the ship anchored at Cape Turn close to Mount Sarmiento, the highest peak in Tierra del Fuego, and the passage was resumed next day in good weather. By night, however, the western part of the channel had been reached, "but the water was so deep that no anchorage could be found. We were in consequence obliged to stand off and on in this narrow arm of the sea, during a pitch-dark night of fourteen hours long". On June 10, Darwin says, "In the morning we made the last of our way into the open Pacific. The western coast generally consists of low, rounded barren hills of granite and greenstone. Sir J. Narborough called one part South Desolation, because it is 'so desolate a land to behold', and well indeed might he say so. . . . One sight of such a coast is enough to make a landsman dream for a week about shipwrecks, peril and death ; and with this sight we bade farewell for ever to Tierra del Fuego."

Sir James South's Telescope

In his autobiography, Airy records that on June 14, 1834, "I went to London, I believe for the purpose of trying the mounting of South's telescope, as it had been strengthened by Mr. Simms by Sheepshanks's suggestions. I was subsequently in correspondence with Sheepshanks on the subject of Arbitration on South's Telescope, and my giving evidence on it. On July 29th, as I was shortly going away, I wrote him a Report on the Telescope to be used in case of my absence. The award, which was given in December, was entirely in favour of Simms." South, who was born in 1785 and died in 1867, was a London surgeon who through his friendship with Joseph Huddart (1741–1816) became an amateur astronomer. His first observatory was in Southwark and his second, built in 1826, on Campden Hill, Kensington, where he had a "princely collection of instruments such as have never yet fallen to the lot of a private individual". His work gained for him the Copley Medal in 1826 and the presidency of the Royal Astronomical Society in 1829. About this time he purchased a 12-in. object glass made by Cauchoix from glass supplied by Guinand, and employed Edward Troughton (1753–1835), then in partnership with William Simms (1793–1860), to construct an equatorial telescope for it. The mounting unfortunately did not prove successful, and after an attempt at arbitration the matter went into the courts and led to "the most remarkable astronomical trial which ever took place in England". South, who was of a very litigious nature, was so embittered by losing the case that he broke up the instrument, placarded the walls of his observatory with an extraordinary bill and sold the debris by auction. Fortunately the object glass was not destroyed. In 1862, South presented it to Trinity College, Dublin, and it was afterwards used by Brünnow and Ball at the Dunsink Observatory.

Thilorier's Experiments on Carbonic Acid

Faraday succeeded in 1823 in liquefying carbonic acid, and in 1834 Thilorier obtained it in the solid form of 'snow'. Thilorier, the details of whose life do not appear to be known, contributed several papers to the Paris Academy of Sciences, one of which was read on June 16, 1834. In a report of this paper the *Athenæum* said : "M. Thilorier presented for inspection a machine for obtaining chemically, and in a short time, a quart of carbonic acid : the memoir presented a variety of experiments upon this almost intangible liquid, since it can only be procured in vessels hermetically sealed. M. Thilorier announces that in gases the pressures at different degrees of temperature do not correspond with the densities, as is generally believed. Liquid carbonic acid, he says, is of all bodies, that which dilates and contracts itself the most under the influence of atmospheric variations in temperature. Its enormous power of dilation points it out as a new principle of movement far more powerful than any hitherto applied. . . . It is also the liquid that produces the greatest depression of temperature. Directing a jet of it on the ball of a thermometer of spirits of wine, it reduced it to 75° below zero, the greatest depression hitherto observed being 68°. M. Thilorier intends to apply this liquid to an air gun."

Societies and Academies

LONDON

Royal Society, May 31. A. F. W. HUGHES : Development of blood vessels in the head of the chick. The development of both arteries and veins in the head of the chick from the stage of two days of incubation to that of hatching is described, thus continuing the previous account of Sabin, whose methods have been employed in the present study. The simultaneous study of both arteries and veins has thrown light on the well-known fact that one type of vessel tends to accompany the other in adult anatomy. Frequently a nerve also enters into this relationship. Such a complex has been found, in the head of the chick, to develop from a capillary plexus developed along the course of a nerve, out of which both an arterial and a venous channel differentiate. There is evidence that in other vertebrates, and in other regions of the body, similar developmental processes take place. Questions of vascular homology, and current theories on the developmental mechanics of the circulatory system are discussed in the light of the facts which this study discloses. The suitability of the embryonic vascular system as an object of experimental embryological study is stressed. A. FARKAS, L. FARKAS and J. YUDKIN : Decomposition of sodium formate by bacterium coli in the presence of heavy water. The isotopic composition of the hydrogen evolved from mixtures of heavy and ordinary waters with sodium formate by the action of this organism has been analysed. Its composition is defined by the equilibrium $H_2O + HD \rightleftarrows HOD + H_2$. Since the gas liberated is in equilibrium as defined by the equation