

## Science News a Century Ago

## Cholera Statistics for 1831-32

On June 15, 1835, Sir David Barry read a paper to the Statistical Society "On the Statistics of Epidemic Cholera as it occurred in Great Britain between the 26th of October 1831 and 31st of December 1832". Sir David divided his paper into two main parts dealing respectively with the progress of cholera in Great Britain and in the Metropolis. The disease, he said, prevailed as an epidemic in London during the ten months February 9 until December 31, the whole number of new cases being 11,020 and of deaths 5,275. The total numbers of new cases and deaths, for Great Britain and the Metropolis, were 80,203 and 30,924 respectively. In concluding his paper, he made observations on the quarantine regulations, in the course of which he said that the history of cholera by no means justified the apprehension which re-enacted the old expensive plague-precaution system of delaying the landing or sale of cargoes, until the promulgation of a paper by the Central Board of Health in January 1832 entitled "Reasons founded on Authentic Facts in the History of Spasmodic Cholera, for establishing a Specific Code of Sanitary Restrictions for that Disease, considered independently of Plague, Yellow Fever, and other Infectious Maladies" put a period to the evil. England having thus taken the initiative in the amendment of the quarantine laws, considerable mitigation very soon followed in other countries, with great relief to trade and without compromising the security of the public health.

Sir David Barry (1780-1835) had been employed by the Government to investigate the yellow fever epidemic at Gibraltar in 1828; and, on the outbreak of the cholera epidemic, was sent to Russia to report on it.

## Metamorphoses in the Crustacea

Among several papers submitted to the Royal Society on June 18, 1835, was one "On the Supposed Existence of Metamorphoses in the Crustacea" by J. O. Westwood, secretary to the Entomological Society. A report of this paper in the *Philosophical Magazine* said: "The author refers the principal modifications of form which occur during the progressive development of animals to the three following heads: 1st, that of an animal produced from the egg in the form which it is destined to retain through life, its only change consisting of a series of moultings of the outer envelope, attended merely by an increase in size, and not by the acquisition of new organs; 2ndly, when the animal at its exclusion from the egg, exhibits the form which it continues to possess, subject to a series of moultings, during several of the last of which certain new organs are gradually developed; and 3rdly, when the form of the animal at its exclusion from the egg, is totally different from that under which it appears at the later periods of its existence; such change of form taking place during two or three of its general moultings, and consisting, not only in the variation of the body, but also a complete change in the nutritive and digestive systems and in the acquisition of various new organs. This last phenomenon peculiarly characterizes what is termed a metamorphosis . . ."

## Balloon Excursion Extraordinary

Under the above title, the *Mechanics' Magazine* of June 20, 1835, quoted the following extract from the *New York Journal of Commerce* relating to a balloon flight a short time before. "Mr. Clayton, a volunteer aeronaut in the West, made an ascent from Cincinatti, and was observed to pass off in a south-easterly direction. Nothing more was seen of him for a number of days and great anxiety was felt for his safety. At length, nine days after his departure, he returned to Cincinatti, having made the most extraordinary excursion on record. He did not, indeed, ascend as high as a number have done before him, but the distance he sailed is beyond all precedent, being not less than 350 miles. All this was accomplished in  $9\frac{1}{2}$  hours, which is at the rate of nearly 37 miles an hour. The greatest height to which he ascended was about  $2\frac{1}{2}$  miles." Commenting on this, the *Mechanics' Magazine* said: "The longest aerial voyage previously on record was, we believe, that of M. Garnerin in 1807, who travelled 300 miles in  $7\frac{1}{2}$  hours".

## Societies and Academies

## DUBLIN

Royal Dublin Society, April 30. J. H. ORTON: The biological condition of re-laid oysters. Exceptionally high mortality had occurred amongst these oysters, but no disease was recognised, and their poor physiological condition and the presence of 'chambering' in the shells made it probable that the mortality was due to abnormal weather conditions. G. T. PYNE: A simple titrametric method for the approximate determination of milk phosphates. This method is suitable for the estimation of soluble and of total phosphates. J. BAXLEY BUTLER, J. CARROLL and MISS KIRBY: The toxicity of native pyrethrum. Experiments show that pyrethrum prepared from Irish-grown plants approximates in toxicity to that obtained from plants grown in England, and exceeds that from most other sources.

Royal Irish Academy, May 13. K. G. EMELÉUS: The Faraday dark space. New evidence is brought forward to show: (a) that resonance radiation emitted from the negative glow and travelling in straight lines is of importance in fixing the length of the Faraday dark space; (b) that there is a secondary electron emission from surfaces in the Faraday dark space. JAMES SMALL and ISOBEL K. JOHNSTON: Mathematical evolution in Compositæ, including proof of normal death of species. Udney Yule's mathematical theory of evolution is confirmed in detail, but modified by the old-age death of species, not according to chance, after a limited lifetime. The ages of the tribes of Compositæ, calculated from Yule's formulæ, in doubling periods, when plotted against a time scale in million years, follow an exponential curve, the BAT curve, with the formula  $k + nd = T.2^n$ . For Compositæ, grasses and Angiosperms in general,  $k = 0.6$ ,  $d = 0.9$ ,  $T = 1.09375$  million years. The BAT curve is based upon observed points for Compositæ, but it applies to Mrs. Reid's percentage extinctions for the Pliocene deposits and to Lyell's shell curve which goes back to Palæocene, with for molluscs an 11 million-year doubling period and a 66 million-year lifetime for species. It applies also with simplicity to the evolutionary history of species-number in Angiosperms back to Jurassic, and of the