

## Science News a Century Ago

### The Reef at Pernambuco

FROM Ascension, H.M.S. *Beagle* sailed for Bahia in order to complete the chronometrical measurement of the world. Arriving there on August 1, 1836, she sailed for the Cape Verde Islands on August 6, but being delayed by unfavourable winds on August 12 put in at Pernambuco, anchoring inside the reef. Of this reef, Darwin wrote: "I doubt whether in the whole world any other natural structure has so artificial an appearance. It runs for a length of several miles in an absolutely straight line, parallel to, and not far distant from, the shore. It varies in width from thirty to sixty yards, and its surface is level and smooth; it is composed of obscurely stratified hard sandstone. At high water the waves break over it; at low water its summit is left dry, and it might then be mistaken for a break-water erected by Cyclopean workmen. . . . Although night and day the waves of the open Atlantic, turbid with sediment, are driven against the steep outside edges of this wall of stone, yet the oldest pilots knew of no tradition of any change in its appearance. This durability is much the most curious fact in its history; it is due to a tough layer, a few inches thick, of calcareous matter, wholly formed by the successive growth and death of the small shells of *Serpulæ*, together with some few barnacles and nulliporæ. These nulliporæ, which are hard, very simply-organised sea-plants, play an analogous and important part in protecting the upper surfaces of coral-reefs, behind and within the breakers, where the true corals, during the outward growth of the mass, become killed by exposure to the sun and air. These insignificant organic beings, especially the *Serpulæ*, have done good service to the people of Pernambuco; for without their protective aid the bar of sandstone would inevitably have been long ago worn away, and without the bar, there would have been no harbour". Darwin in 1841 described the bar in detail in the *London and Edinburgh Philosophical Magazine*.

### Monument to Champollion

ON August 13, 1836, the *Athenæum* said: "The monument erected at Figeac to the memory of Champollion, is an Egyptian obelisk of the purest and severest style, of very hard granite from a quarry near Figeac. It bears an inscription to the following effect: 'To the memory of F. J. T. Champollion, who first penetrated into the mysteries contained in the writing and monuments of ancient Egypt, and who was taken from Science by a premature death on the 4th of March 1832. He was born at Figeac the 23rd of September 1791'." Champollion died in Paris, and was buried in the Père-Lachaise cemetery. His grave is marked by an obelisk bearing a medalion.

### Aerial Surveying from Balloons

IN the *Mechanics' Magazine* of August 13, 1836, is a note from the *Scotsman* referring to the work of Charles Green (1785-1870), the aeronaut who up to that time had made 218 ascents. On the last occasion when Lord Clanricarde went up with him, he observed, it was said, that surveyors and architects

could with greater facility take plans of noblemen's estates by ascending in a balloon, as they could have a bird's-eye view of every locality, and if they only once adopted that method they would never relinquish it. Since the suggestion was made, an artist named Burton had called on Mr. Green to obtain the plan of a balloon constructed so as to be used for this purpose. The inventor proposed to fasten the car to the balloon by a swivel and to build a waggon to which the balloon could be attached. The waggon could be conveyed to any place a surveyor required, where, on a calm day, he could take plans, carrying with him the proper instruments.

### Sir Charles Bell leaves London

SIR CHARLES BELL, the eminent surgeon, having accepted the chair of surgery at Edinburgh left London in August, 1836. One of the last letters he wrote from his residence, 30 Brook Street, was to his sister Miss Bell. In this he said: "The house is in a hustle. Books gone—pictures packing. People surveying the house! This does look like a change. All my sacred corners usurped—a naked house not a home. . . . I leave no enemy behind me, and Marion is universally beloved. . . ."

"While the season lasts, our society is all we could wish; but now our friends hurry to their better houses in the country, where they invite us, but where we cannot go. Many a long day we have been left solitary in a crowd, losing spirits and health."

"Without independent fortune, the relations which we have formed with society are not without their drawbacks. I must be independent and through exertion more than fortune. I must pursue that course through which I have attained station to feel comfortable. I could have made a fortune, and so my friends say, but I could not also attain to what I am, and to what they would have me. . . ."

### Statistical Desiderata

IN the Section of Statistics at the sixth meeting of the British Association held at Bristol in August 1836, Mr. W. R. Greg brought forward proofs of the total deficiency of statistical information in some subjects of international importance, and the unsatisfactory nature of that which had been collected by public authority in others. From examination of population tables, tables of births and deaths, criminal statistics, the statistics of education, of illegitimate birth and of stolen property, the author was led to conclude, that "with the exception of the revenue and commercial tables, no general documents yet exist in England from which any philosophical influences can be safely drawn, and that till the materials are wholly re-collected, all attempts to elicit such inferences can only end in disappointment and error". In order to obtain more satisfactory results in future, he deems it highly necessary to depart from the plan so commonly resorted to, of issuing circular queries, and to commit the task of obtaining authentic and complete information to individuals who shall make the execution of it their professional duty and whose labours shall be remunerated accordingly.

### County Natural History Societies

IN a paper entitled "A Proposal to Establish County Natural History Societies for Ascertaining the Circumstances in all Localities which are

Productive of Diseases or Conducive to Health", Dr. J. Conolly, late professor of the practice of medicine in the University of London, after pointing out the advantages which the country practitioner possessed over those living in towns, especially as regards the intimate acquaintance he gradually acquired concerning every circumstance in the locality, suggested the formation in every county in England of a society consisting of scientific men of every class and description and comprising the following sections: (a) statistics, (b) geology and mineralogy, (c) geography, (d) meteorology, (e) agriculture, (f) botany, (g) archaeology, (h) chemistry and (i) medical topography and statistics. The business of this last section would be "to apply all the exact knowledge furnished by the other sections to the subject of health and disease; to note, with extreme care, the relation of phenomena developed in the human body to the natural or statistical or historical and political and moral circumstances in which the subjects of such phenomena were placed". (*Trans. Prov. Med. and Surg. Assoc.*, 1, 180; 1836.)

## Societies and Academies

### Paris

Academy of Sciences, June 29 (*C.R.*, 202, 2109-2220).

JEAN TILHO: The present condition of the zone of capture of the Logone by the Bénoué. Further measurements and observations confirming the possible danger of the capture of the Logone (Tchad basin) by the Bénoué (Niger basin).

VITO VOLTERRA: The integration of the equations of biological fluctuations.

CLAUDE CHABAUTY: Certain ternary diophantic equations.

FARID BOULAD BEY: The general forms of equations of nomographic order 6 and 5 representable by conical nomograms.

S. BUCHEGUENNE: The deformation of Bianchi surfaces.

GEORGES GIRAUD: A general class of equations with principal integrals.

ALEXANDRE GHKA: The interpolation of analytical functions.

EMILE MERLIN: The nature of the trajectories of certain perfect heterogeneous fluids.

HENRI MINEUR: The galactic rotation of globular clusters.

JEAN JACQUES TRILLAT and M<sup>lle</sup>. RENÉE VAILLÉ: A method of measuring the adsorption of oils by metallic surfaces.

PIERRE CIBIÉ: A method of laboratory control of the light projectors of motor-cars.

A. HAUTOT: The *K*-radiation of crystallized boron. It is concluded that the remarkable variation of the electrical conductivity of boron with temperature is due to a variation of the energy distribution of the conductivity electrons.

JACQUES ERRERA POL MOLLET and MARY L. SHERRILL: The infra-red absorptions of liquid hydrocarbons. The influence of the double linkage.

HENRI BIZETTE and BELLING TSAÏ: The thermal variation of the magnetic double refraction of nitric oxide (NO) and of compressed oxygen.

M<sup>lle</sup>. MADELEINE GEX: Variations in the ultra-violet spectrum of phenol as a function of the pH. Over a range of pH from 1 to 12, the changes in the ultra-violet spectrum suggest four changes in the structure of the phenol molecule.

F. HAMMEL: The analogy of the monohydrated sulphates of the magnesium series. Results of X-ray studies of the monohydrated sulphates of magnesium, manganese, iron, cobalt, nickel, copper and zinc.

FRANÇOIS BOURION and M<sup>lle</sup>. ODILE HUN: The cryoscopic determination of the total hydration of the ions of hydrochloric acid.

M<sup>lle</sup>. CÉCILE STORA: The mechanism of the Becquerel effect of organic molecules.

Tr. NÉGRESO and W. J. CROOK: The equilibrium relations of the oxides of iron in the slag of refinery furnaces.

M<sup>lle</sup>. JEANNE BOULANGER: The systems zirconyl oxalate, alkaline oxalates and water.

PIERRE CARRÉ and LOUIS PEIGNÉ: The relative mobilities of the normal alkyl radicals in their chlorothioformates.

HENRI WAHL: The chlorination of *p*-chlorotoluene. The chlorination of *p*-chlorotoluene gives a mixture containing 58 per cent of the 2,4-dichlorotoluene and 42 per cent of the 3,4-compound. This proportion is not affected by the nature of the catalyst, or by variations of temperature between 20° and 40° C.

PIERRE LEGOUX: The origin of the gold of the Guinea-Sudan borders.

LOUIS DONCIEUX, LOUIS DUBERTRET and HENRI VAUTRIN: The Oligocene and Burdigalian of the Syrian desert.

MAURICE PARAT: The Oxfordian and Kimmeridgian of Milne Land (Eastern Greenland).

ANDRÉ AURIC: The suitability of a cycle of 334 years for meteorological predictions.

HENRI COLIN and MARCEL SIMON: The proportion of ash and its alkalinity in the beetroot.

ETIENNE FOEX and MAURICE LANSADE: A bacteriosis of the banana tree.

M. and M<sup>me</sup>. FERNAND MOREAU: The toxicity of some cations for the *Saprolegnia*.

LÉO ESPIL and GABRIEL MANDILLON: The action of bromacetates on various alkaloids. Sodium bromacetate reacts with strychnine sulphate, giving a non-toxic product. The toxicity of this alkaloid would appear to be connected with the existence of a free amino group.

M<sup>me</sup>. VÉRA DANTCHAKOFF: Sex hormones and the role of the placenta in the ontogenesis of mammals.

ISRAEL and MICHEL MAGAT: The ultra-violet spectrum of normal and leucæmic blood.

FRED VLÈS: The conditions of stimulation of fluorescence of proteins.

ERNEST KAHANE and M<sup>lle</sup>. JEANNE LÉVY: The origin of the choline of sperm. The existence in sperm of free choline is a secondary phenomenon due to the action of a diastase on a precursor of choline.

ALI MUSTAPHA: The action of the cholera vibriion on milk and choleraigen power.

GEORGES BLANC and MARCEL BALTAZARD: The influence of privation on the development of the virus of murin typhus in the flea (*Xenopsylla Cheopsis*).

ALEXANDRE BESREDKA and MICHEL BARDACH: The intra-cutaneous immunization of rabbits against epithelioma inoculated in the eye. Intra-cutaneous epithelioma, a benign tumour, acts as a true vaccine against epithelioma of the eye, a malignant tumour.