

trial following a study of the periodic system, the final finding that the lead derivative would solve the problem being predicted beforehand. To-day 'ethyl' is added to seventy per cent of all the petrol used in America, and the increased horse-power thereby generated amounts to a very large figure. In a characteristic address given at the time of receiving the medal, Dr. Midgley told the story of his more recent discovery of a compound of carbon, chlorine and fluorine,  $\text{CHCl}_2\text{F}$ , to be used as a refrigerant, which is non-toxic and non-inflammable. Apparently he was told of the need for a new refrigerant over the telephone, and with the aid of two colleagues, the use of a chemical library and some deductions from the periodic table, arrived at the probability that the above fluorine compound might prove non-toxic and suitable. Small quantities were prepared from various samples of available starting material. The first batch was pure and proved non-toxic; in the others the raw material proved to be contaminated and gave toxic products, which, however, could be purified when this fact was realized, and became non-toxic. Three days' work sufficed to solve the problem and to give the refrigerating industry a new material which is expected will prove of outstanding importance in its development.

#### Gottfried Treviranus (1776-1837)

GOTTFRIED REINHOLD TREVIRANUS, the eminent physiologist, the centenary of whose death occurred on February 16, was born at Bremen on February 4, 1776. He studied medicine at Göttingen, and while an undergraduate wrote an essay on nerve power and its method of action. He qualified in 1796 with a Latin thesis on the reform of physiology, and settled in his native town where he was made professor of mathematics and medicine in 1797. The rest of his life was divided between the practice of medicine and scientific research, though the latter claimed most of his attention. His medical publications were of little significance, being chiefly concerned with the prevention of salivation in the mercurial treatment of syphilis and animal magnetism in Bremen. On the other hand, his biological work was of considerable importance, his principal publications of this kind being entitled "Biology or the Philosophy of Living for Natural Philosophers and Doctors" (6 vols., 1802-22) and "Manifestations and Laws of Organic Life" (2 vols., 1831-33). In addition to physiological research, he devoted special attention to microscopical anatomy of invertebrate animals, especially molluscs and insects. In collaboration with his brother, Ludwig Christian Treviranus, a well-known botanist and medical man of Bonn (1779-1804), he published four volumes of miscellaneous work on anatomical and physiological subjects (1816-20).

#### Auroral Display and Radio Disturbance

THE probable occurrence of an aurora on January 7, twenty-seven days earlier than the notable display on February 3, as recorded in last week's issue of NATURE (p. 277), is confirmed by Mr. W. N. Craig, of The Manse, Fortrose, Ross-shire. On January 7,

between 16½<sup>h</sup> and 19<sup>h</sup> U.T., Mr. Craig, who was listening on the 14 Mc. amateur band, found that reception from long-distance stations in South Africa and on the west coast of America, which was good at first, suddenly deteriorated at 18<sup>h</sup> 40<sup>m</sup> so as to render the signals practically unintelligible by "a very rapid flutter". At 19<sup>h</sup> 30<sup>m</sup>, Mr. Craig, on looking outside, found that a conspicuous auroral display was in progress. An arch extending from north-east through north to west was beginning to break up into a series of streamers, and at 19<sup>h</sup> 45<sup>m</sup>, after an apparent increase in auroral activity, a corona formed for a few minutes a little to the north-west of the zenith. The display then decreased rapidly, but was partially renewed as a quiescent arch extending from east-north-east to west-north-west from 22<sup>h</sup> until after 23½<sup>h</sup>. As mentioned in the previous note, the magnetic traces on January 7 recorded at the Greenwich magnetic station at Abinger show distinctive movements between 19<sup>h</sup> and 20<sup>h</sup> U.T. The extreme ranges, occurring at about 19<sup>h</sup> 32<sup>m</sup>, indicate a local increase in the intensity of the earth's magnetic field of about 130  $\gamma$  accompanied by an easterly swing in declination of about 20'.

#### Science and Building Exhibition

THE Science and Building Exhibition which is to be held on March 1-25 at the Building Centre, 158 New Bond Street, London, W.1, is being arranged at the invitation of the Building Centre, by the Department of Scientific and Industrial Research. The object of the Exhibition is to illustrate the work being carried out by the various organizations controlled by the Department, or associated with it, of interest to the building industry. The exhibit provided by the Building Research Station will deal with such subjects as concrete, plastering materials, fire resistance, bituminous materials and building units for walls and roofs, an exhibit by the Fuel Research Station illustrates work on domestic heating. The Forest Products Research Laboratory is dealing with wood preservation, dry rot, resistance of timber to abrasion, timber seasoning and insect damage. Interesting exhibits are being shown by the National Physical Laboratory on illumination in buildings, acoustics and engineering investigations such as wind pressure on structures and mechanical tests on structural steels, etc. The exhibit by the Water Pollution Research Board and the Department's Chemical Research Laboratory deals with water softening, the removal of dissolved salts from water and contamination of water by lead. British marbles will be dealt with in an exhibit provided by the Geological Survey of Great Britain. The Industrial Research Council of the British Iron and Steel Federation will show models of steel-frame buildings intended for working-class flats, and the applications of foamed slag as an aggregate for lightweight concrete. An exhibit by the Non-Ferrous Metals Research Association deals with galvanizing and zinc coatings, and recent investigations on the frost-bursting of water pipes. The Cast Iron Research