

frequently using words and ideas that bore no relation to the mental development of the children. He advocated more attention to methods of presenting the matter of geography.

Among many aspects of the subject on which Prof. P. Geddes touched was the necessity for travel, for student and teacher alike, in order to broaden the outlook and bring the study of geography into touch with realities. Geography that relied solely, or even mainly, on maps was as lifeless as anthropology which depended solely on skulls.

Centenary of McGill University, Montreal.

McGILL University of Montreal, which has just been celebrating the centenary of its foundation, has shown of late a capacity for attracting prodigious benefactions, such as may well excite the envy of less fortunate institutions even in America. A gift of 1,000,000 dollars from the Carnegie Corporation, New York, "in recognition of the noble and devoted service and sacrifice of McGill towards Canada's part in the Great War," was followed by subscriptions last year by citizens of Montreal and graduates amounting to more than 4,000,000 dollars, a grant of 1,000,000 dollars by the Quebec Provincial Government, and 1,000,000 dollars for medical education from the Rockefeller Foundation of New York. To few institutions has it been given to receive within a short space of time such magnificent tributes from such various sources.

The University was founded by the Hon. James McGill, a leading merchant of Montreal, who died in 1813. Among the principal events in its history are: the opening of the Peter Redpath Museum, 1882; opening of Royal Victoria College, founded and endowed by the late Lord Strathcona as the Women's Department of the University, 1899; opening of Macdonald College, founded and endowed by the late Sir Wm. C. Macdonald, including the School of Agriculture, School for Teachers, and School of Household Science, 1907; gifts of estates valued at 1,117,640 dollars by Sir Wm. C. Macdonald, and of 1,500,000 dollars by various donors, chiefly Montreal citizens, 1911.

Of McGill's two most important professional schools, the Medical and the Engineering, the former will itself soon be able to celebrate its centenary, its first session having been opened in the Montreal Medical Institution in November, 1824. Engineering courses were first established thirty years later. They are now organised on a system thus described by the principal, Sir Arthur Currie, in an address delivered at the Congress at Oxford last July: "Four academic sessions of formal instruction, with the accompanying laboratory, drawing-room exercises, and shop-work, alternating with three summers of practical experience in some branch or branches of the work of the student's future profession." Among recent developments in the advanced courses in chemical engineering is the provision for instruction in the technology of the paper industry, for which the Government Forests Products Research Institute, adjacent to the University, affords special facilities.

Canadian Insect Pests.

IN the Report of the Dominion Entomologist and Consulting Zoologist for the years 1917-18 the late Dr. C. G. Hewitt presents a record of much useful work carried out on behalf of the Canadian Government. During the two years under review

the work of controlling the brown-tail moth in Nova Scotia and New Brunswick is regarded as satisfactory, but it is solely due to the careful scouting for, and destruction of, the winter webs during each winter. The control of several indigenous insects is being attempted by means of the introduction and dissemination of their parasites. The "mussel scale" is largely preyed upon by the predaceous mite *Hemisarcoptes malus*, and colonies of the latter have been liberated in infected orchards; the future of the experiment will be awaited with interest. The cabbage-root maggot continues to extend its ravages, and not only was the value of tarred felt-paper discs again demonstrated, but promising results were also obtained with bichloride of mercury. A remarkable and extensive outbreak of the sugar-beet webworm, *Loxostege sticticalis*, occurred in the Prairie Provinces. The millions of migrating caterpillars caused much alarm among the farmers, but, as usual, they confined their attention in the fields to weeds, and the only cultivated crops attacked were garden plants. Owing to the increasing prevalence in many parts of Canada of insects affecting livestock, special attention is now being given to these pests, in conjunction with the Health of Animals Branch of the Department of Agriculture. A joint study has been entered upon with reference to the bot-flies of horses, and many new facts have been discovered relating to their life-histories from the point of view of preventive measures. Entomologists will also be interested in the plans of an underground insectary which are appended to this report. It is hoped by such a contrivance to overcome the difficulties in conducting investigations on soil-infesting insects, particularly during the high temperature which prevails in the summer months.

University and Educational Intelligence.

CAMBRIDGE.—Dr. O. Inchley, St. John's College, has been appointed assistant to the Downing professor of medicine, and Mr. C. Warburton, Christ's College, has been re-appointed demonstrator in medical entomology.

GLASGOW.—The University Court has appointed Dr. Percy A. Hillhouse to the John Elder chair of naval architecture and marine engineering in succession to Sir John Biles, retired. Prof. Hillhouse was appointed in 1898 the first European professor of naval architecture in the Imperial University of Tokyo. Since 1907 he has been the chief naval architect to the Fairfield Co., Govan. The Court has also promoted Dr. William J. Goudie from the lectureship in heat engines in the University to the newly established James Watt chair of the theory and practice of heat engines, endowed in commemoration of the James Watt centenary by the Institution of Engineers and Shipbuilders, Glasgow. Dr. Goudie was formerly reader in the University of London.

The University Court has appointed Dr. G. W. O. Howe, head of the department of electrical standards and measurements at the National Physical Laboratory, to be the first James Watt professor of electrical engineering in the University of Glasgow. From 1909 to 1921 Prof. Howe was assistant professor of electrical engineering in the Imperial College of Science and Technology (City and Guilds), South Kensington. He is recorder of the Engineering Section of the British Association and editor of the *Radio Review*. The new chair was one of those endowed by the Institution of Shipbuilders and Engineers of Glasgow in commemoration of the James Watt centenary.

LIVERPOOL.—The University has been bequeathed the sum of 20,000*l.* by the late Mr. Richard Braithwaite, of Liverpool.

MANCHESTER.—Dr. J. K. Charlesworth has resigned the senior lectureship in geology as from December 25, 1921, upon his appointment to the chair of geology in the University of Belfast.

The following appointments have been made:—Mr. J. S. Wrigley, assistant lecturer in engineering; Dr. R. A. Webb, demonstrator in pathology; Mr. J. H. Blackaby, assistant lecturer in physics; Mr. Arthur Adamson, lecturer in physics in the faculty of technology; and Mr. H. N. Mercer, assistant lecturer in physics in the faculty of technology.

OXFORD.—The following elections and appointments have been made at Balliol College: Dr. J. W. Nicholson, lately professor of mathematics in the University of London, King's College, to a War Memorial Fellowship as tutor in mathematics and physics; Mr. A. O. Ponder, Rhodes Scholar, to a lectureship in chemistry, and Mr. C. R. Morris to a lectureship in philosophy.

SHEFFIELD.—The following appointments have been made by the Council: Mr. H. P. Lewis, assistant lecturer in geology during the absence of the professor; Mr. E. H. Eastwood, demonstrator in pathology and bacteriology in succession to Dr. N. E. Challenger; and Mr. A. J. Chappell to be assistant lecturer in mechanical engineering.

MR. L. BOLTON, winner of the 1000*l.* prize offered by the *Scientific American* for the best essay on Einstein's theory, will give two lectures on "Relativity" at Birkbeck College, Fetter Lane, E.C.4, on Mondays, October 24 and 31, at 5.30. Admission is free, without ticket.

In connection with the paper-making classes at the Battersea Polytechnic, a film showing "The Manufacture of Newspaper in Canada—from Standing Timber to Finished Sheet," will be displayed under the auspices of the Technical Section of the Paper Makers' Association of Great Britain and Ireland on Monday next, October 24, at 7.15 p.m. Admission is free to all interested in the paper trades.

THE first Report of the British Association Committee on Training in Citizenship has been published in pamphlet form, and can be obtained from the Secretary, 10 Moreton Gardens, S.W.5 (single copies, 1*s.* each, 9*s.* per dozen, 3*l.* per hundred). The report contains the syllabus of a text-book of civics, Lord Lytton's scheme for organising regional study, notes of lessons on regional survey, and schemes for training adopted in some county council schools.

In celebration of the four hundredth anniversary of Cambridge printing a dinner will be given by the Vice-Chancellor and the Syndics of the University Press on November 10 in the hall of Corpus Christi College. It is stated in the University Calendar that the rights of the University in connection with printing date from 1534, but the acquisition of the present site of the Press began in 1762 and the erection of the existing buildings in 1804. The building known as the Pitt Press, which faces Trumpington Street, was completed in 1832 from part of the funds raised to establish a memorial to the younger Pitt. With reference to the early date at which the University acquired printing rights, it is interesting to note that it was only in 1476, about sixty years previously, that William Caxton set up the first printing press in England, in the precincts of Westminster Abbey.

NO. 2712, VOL. 108]

Calendar of Scientific Pioneers.

October 20, 1896. François Félix Tisserand died.—Prominent among French astronomers of last century for his researches in mathematical astronomy, Tisserand was called to the Paris Observatory by Leverrier, in 1878 succeeded to Leverrier's chair in the Academy of Sciences, and in 1892 followed Mouchez as director of the observatory. It has been said his "Traité de Mécanique Céleste" is worthy to stand beside the "Mécanique Céleste" of Laplace.

October 20, 1894. Charles Carpmal died.—A fellow of St. John's College, Cambridge, and a writer of mathematical papers, Carpmal settled in Toronto in 1872, and became head of the Canadian weather service. In 1885 he was President of the Canadian Royal Society.

October 21, 1886. Frederick Guthrie died.—Trained in England and Germany as a chemist, Guthrie turned his attention to physics, became professor at the Royal College of Science, and in 1874 took the initiative in founding the Physical Society.

October 22, 1871. Sir Roderick Impey Murchison died.—Originally a military officer, Murchison began his career as a man of science at the age of thirty. A great geological observer, his name is especially associated with the Silurian system, and with the geological survey of Russia. He foreshadowed the discovery of gold in Australia. In 1855 he succeeded De la Beche as director of the Geological Survey of Great Britain, and he was the founder of the chair of geology at Edinburgh.

October 23, 1841. Johan August Arfvedson died.—A member of the Stockholm Academy of Sciences, Arfvedson wrote much on minerals, and in 1817 discovered the metal lithium.

October 24, 1601. Tycho Brahe died.—Noble by birth and rich by inheritance, Tycho alienated his family by his devotion to astronomy, but secured the friendship of Frederick, King of Denmark, who gave him the island of Hven, and enabled him to build the most splendid observatory ever seen. Here for twenty years Tycho and his assistants observed the heavens with an accuracy hitherto unknown. From various causes, in 1597 the observatory was abandoned, and Tycho migrated to Prague, where Kepler became one of his assistants.

October 24, 1655. Pierre Gassendi died.—Theologian, philosopher, mathematician, and astronomer, Gassendi was a provost at the cathedral at Digne, and in 1645 accepted the chair of mathematics in the College Royal in Paris, where he enjoyed a European reputation. He was the first to observe a transit of Mercury.

October 24, 1873. Frederick Grace Calvert died.—An assistant to Chevreul, and afterwards a manufacturer in Manchester, Calvert carried out many chemical researches, and to him is mainly due the use of carbolic acid as a disinfectant and for therapeutic purposes.

October 24, 1892. Robert Grant died.—The author of a valuable history of physical astronomy, Grant, in 1859, succeeded Nichol as professor of astronomy at Glasgow. Among his labours was the compilation of two catalogues of stars, one published in 1883, containing 6415 stars, and the second, published in 1892, containing 2156 stars.

October 25, 1647. Evangelista Torricelli died.—The first to demonstrate the pressure of the atmosphere and the inventor of the barometer, Torricelli after the death of Galileo in 1642 became mathematician to the Grand Duke of Tuscany.

E. C. S.