

is found to be radio-active, and from it the chlorid and the carbonate, both also radio-active, have been obtained. Early in his paper von Lengyel says: "It is obviously clear that the question of radium being a chemical element must be answered in the negative as soon as it is found possible to transform ordinary inactive barium into the radio-active variety." In closing he says that his researches "do not nearly suffice to decide the question as to whether radium is an existing chemical element or not, but these facts render doubtful the existence of radium."

FOLLOWING this work comes that of Becquerel, described in the last *Comptes Rendus*, in which similar experiments are repeated from a different standpoint. Uranium chlorid is mixed with barium chlorid, the barium precipitated by sulfuric acid. The barium sulfate thus obtained is more or less radio-active, but the radio-activity of the uranium salt left has diminished correspondingly. These experiments show the futility of trying to determine in this manner, whether the radio-activity resides in the uranium, or is due to an independent substance which is an impurity in the uranium.

J. L. H.

THE UNIVERSITY OF BIRMINGHAM.

THE report of the Executive Committee of the Governors of the University of Birmingham, dated May 31, 1900, relative to the recent development of the work in applied science and engineering and the use of the recent gifts of Mr. Carnegie and others has been printed for distribution to friends of the university and its extended work.

On May 12, 1899, the endowment fund collected by a canvassing committee amounted to £143,000. Mr. Carnegie, through Mr. Joseph Chamberlain, offered to contribute £50,000 for a special science department when a total of £250,000 should be pledged. This condition was fulfilled within a week. On February 28, 1900, the sum had become £326,500, and at the date of the report it was £327,468.

Mr. Carnegie requested Mr. Chamberlain to send a deputation to the United States which should 'report on its return what more is necessary, to give Birmingham a first-class modern

scientific college, modeled, as I have said, after Cornell'—intending, presumably, a union of literary with scientific and professional work, as is usual in American State universities, and with a well-developed 'practical' side—not necessarily big, but perfect of its kind.' Professors Burstall, Renwick and Poynting were accordingly sent. They visited several of the principal eastern colleges of the United States and Canada. They conclude:

"We desire to express our admiration alike for the high ideal of scientific education which is the aim in American universities and for the enthusiasm in all classes which renders it possible to approach so near that ideal. Everywhere we found that the wealthier classes realize the importance of university education and encourage the universities by generous gifts and everywhere, both by teachers and by students, these gifts are being used for higher learning and research."

They "believe that the system of engineering education existing at Cornell and other institutions we have visited and the system of Mining and Metallurgy at Boston and Montreal, all with their four year courses, are admirably planned and carried out." They advise their adoption including laboratories and workshops for instruction which they found "thoroughly practical and on such scale that the knowledge acquired there by the student would be of use in his subsequent professional life."

The proposed scale of salaries is very modest—£750 for professors, £300 to £400 for assistant professors, £150 for 'demonstrators' in science and instructors in shops, and £100 and £70, respectively for minor appointments. The investment of £155,000 is proposed in buildings and equipments for the new Technical College, and anticipates an annual operative expenditure something over £10,000 with a faculty of eighteen in all grades and presumably for a student body of about 200 in all classes. A 'commercial faculty' is proposed, consisting of three officers and involving an expense of £6000 in equipment and £2200 annually in maintenance.

A four-year's course is planned, in which the differentiation between the mechanical and electrical engineers will occur at the end of the

third year and between these and the civil engineers somewhat earlier. Mathematics and pure science and the modern languages will be given in the University proper. A good general education is expected to be secured in advance of entrance into the technical courses, which are made entirely professional, as is usual in law and medicine.

R. H. THURSTON.

THE PREVENTION OF HAIL STORMS.

MR. JOHN C. COVERT, U. S. Consul at Lyons, writes to the Department of State: An effort is being made in this section of France to dissipate hail storms by firing cannon at the clouds. Fifty-two cannon, manned by 104 cannoneers and their chiefs, have been distributed over an area of 2500 acres of rich vine land. For the expense of the experiment, the Government appropriated 2000 francs (\$386), the departmental council 1500 francs (\$289), the National French Agricultural Society and a number of wealthy wine growers added 12,000 francs (\$2316) and furnished fourteen more cannon. The Minister of War supplied powder for 2½ cents per pound.

A high point in the vine land to be covered by the experiments was selected as the central post of observation and a signal code adopted. When a shot is heard from the central post all the cannon are fired, at first twice per minute; more slowly after the first ten shots. I translate the report of the first firing at the storm clouds this season:

The farmers of Denicé were aroused at 1.30 o'clock on the night of June 5th-6th. The storm was very severe. The artillerists, from 40 to 50 strong, fired their guns and stopped the thunder and lightning. In the neighboring communes, the people saw columns of flames rise 300 feet above the cannon when the shots were fired. At several places, women recharged the cartridges.

The wine growers are organizing to attack the hail storms in many of the great wine-growing regions of France. The two experiments thus far reported are pronounced successful. A writer in one of the wine-grower's organs says:

The results obtained from these experiments

are such that organizations will be established at once in all the places that have heretofore been ravaged by hail.

I am told that the practice of shooting at the clouds was known in France over a hundred years ago, and that it originated in Italy. It is to be more extensively carried on this year than ever before.

BRITISH CONGRESS ON TUBERCULOSIS.*

It has already been announced in the *British Medical Journal* that a Congress on Tuberculosis is to be held in London next year. The date of meeting has been fixed for the last week of April. H. R. H. The Prince of Wales, is the President of the Congress, and among the Vice-Presidents are the Duke of Fife, the Marquis of Dufferin, K.P., Earl Spencer, K.G., Lord James of Hereford, Lord George Hamilton, P.C., Lord Reay, G.C.S.I., Lord Lister, P.R.S., Sir John Burdon Sanderson, Sir Hermann Weber, the Presidents of the Royal Colleges of Physicians and Surgeons, the President of the Royal College of Veterinary Surgeons, the Director-General of the Medical Department of the Navy and the Chairman of the London County Council. The President of the Organizing Committee is the Earl of Derby; the Chairman, Sir William Broadbent; the Honorary Treasurers, Lord Avebury and Sir James Blyth; the Chairman of the General Purposes Committee, Professor Clifford Allbutt, and the Honorary Secretary-General, Mr. Malcolm Morris. The Prince of Wales has consented to open the Congress in person. In order to make the Congress as comprehensive as possible every colony and dependency in the Empire will be asked to send representatives, and distinguished guests will be invited from Europe, Asia and America. Authorities in these and other countries will be invited to take an active part in the work of the Congress.

It is hoped that the Congress will be able to adopt practical resolutions which will serve to indicate the measures best adapted for the suppression of tuberculosis. The work of the Congress will be divided into Sections, as follows: Section 1 (State and Municipal). Presi-

* From the *British Medical Journal*.