

## THE I. U. D. L. CHAMPIONSHIP.

With the winning of the final debate against McGill our University added another to her extensive list of championships for this academic year. And it is a further source of gratification when we remember that this one is held by us now for the first time.

In the first series in November, McGill defeated Ottawa, while Toronto won from Queen's. The final contest took place at Montreal on Jan. 22nd, when our representatives, Messrs. McGregor and Dix, wrested the victory from the representatives of McGill.

The debate was held in Royal Victoria Hall, before a large and appreciative audience, amongst whom were a large number of the faculty. At no university in the league is a keener interest manifested in debating than at McGill.

The subject of the debate was: "Resolved, that Canada should seek to secure reciprocal free trade with the United States." The task of establishing the affirmative fell to the lot of Messrs. McGougan and Greenshields of McGill, while our representatives opposed the resolution.

Mr. McGougan, opening for the affirmative, took the ground that owing to the geographical relations of the two countries, the United States must be the natural market for Canada; that there is no natural inter-provincial trade in this country, and that under free trade Canada would flourish just as the different States of the Union have prospered. Even with a high tariff against her, Canada exported to the United States three-fourths as much as she exported to Great Britain.

Mr. McGregor, in reply, contended that along broad lines the productions of the United States and Canada were similar, and that they were competitors in foreign markets. By means of figures he showed that Great Britain rather than the United States was Canada's natural market, and that owing to the rapid development of transportation facilities, Canada was becoming independent of the United States. Further, reciprocal free trade with the U. S. with the industrial conditions as they exist in that country to-day, would mean the paralysis of Canadian industrial life.

The next speaker, Mr. Greenshields, held that free trade would open up a market of eighty millions of people for Canadian producers; that this would lead to a rapid development of our natural resources, and that with our cheap water power, Canadian industries could easily compete with those of the United States. This would not mean, nor even tend to, political union. Neither was it opposed to the idea of closer imperial relations.

Mr. Dix, who followed, pointed out the impracticability of the proposal from the standpoint of our international relations. It would mean discrimination against Great Britain, and a rearrangement of our commercial relations with those countries affording "most favored nation" treatment. Moreover, it meant an immense loss of national revenue, for which the affirmative had failed to make provision. He further showed that the time was inopportune for such a proposal, seeing that the whole trend of our national life was in another direction, that we were, for the present, pledged to fiscal peace, and that there was opposed to it a strong national sentiment.

The judges, W. D. Lighthall, B.C.L., F.R.S.C., Rev. Edgar Hill, M.A., D.D., Rev. H. Symonds, M.A., D.D., were unanimous in awarding the victory to the members of the negative. During the evening an excellent musi-

cal programme was rendered. Our representatives speak enthusiastically of the hospitality of "Old McGill."

## THE MATHEMATICAL AND PHYSICAL SOCIETY.

(Report of Meeting, Thursday, Jan. 28th, 1904.)

Those who neglected the opportunity of hearing Mr. Stupart, of the Dominion Observatory, in his address on Thursday afternoon, certainly missed a rare treat. The subject, "Some Problems in Meteorology," which was rather uninviting and promised to be somewhat technical, proved to be most interesting and instructive. He gave an outline of the daily duties of the observatories, telling how each morning reports of the barometric and thermometric readings, direction and velocity of the wind, etc., are received at the Observatory in Queen's Park from the thirty-six branch stations in Canada, are forwarded on to New York, for which they receive in return here in Toronto reports from sixty stations scattered throughout the United States. These afford a complete determination of the atmospheric conditions existing over the greater part of North America, and it is from these results, coupled with long experience and a natural aptitude for his work, that the forecast official makes the observations which appear in the dailies and on the weather bulletins. He made also some very interesting remarks upon the theories as to the cause and general behavior of storms, and stated that it was here that a University training in mathematics and physics could be very effectively brought to bear on the science of meteorology; in the study of the kinematics of the higher atmosphere might result an explanation of the abnormal course taken by some storms, and thus enable them to be successfully forewarned in the future.

In conclusion, he stated that, from the indications of recent researches in electricity and radio-activity, meteorology is soon to pass from the position of an empirical to the rank of an exact science, and that there is no doubt that in the near future it will be possible to prophesy weather with certainty, founded on strict scientific calculation.

J. S. Thompson, Secretary.

## RADIUM AND RADIO ACTIVITY.

The second in the series of lectures in aid of the Convocation Hall was delivered to a large audience in the Chemical Building on Saturday afternoon by Professor J. C. McLennan, on the subject of Radium and Radio Activity. The lecture was illustrated by diagrams and a number of interesting experiments with the Cathode and Roentgen rays and Radium itself, for the possession of which Dr. McLennan had to thank Mr. Wm. Mackenzie.

The lecturer referred to the old dream of the alchemists, so attractive to the mind of man, of turning the baser metals into gold and silver, and although the alchemists had failed in this and fallen into disrepute, the problem of the mutability of matter had not ceased to interest the physician and chemist. Now, in the discovery of Radium, we appear to be nearing a solution of the problem. In 1860 Faraday, and a little later, Meyer, suggested the theory that the atom was made up of much smaller particles of matter, and that the difference between atoms was due to the different combinations of these ultimate particles. Sir Wm. Crooks in 1880 discovered that when an electric current was passed through a partially vacuated tube, rays of light