

the Manitoulin Island, and in fact, wherever the escarpment faces the north, and thus lay directly in the path of the southward moving glacier, we find the cliffs quite as abrupt as in the Nottawasaga district, where the ridge has an almost north and south course. Now it is evident that a force, powerful enough to chisel out the basins of the great lakes, would have broken down this barrier, or at any rate rounded its outlines into a general conformity with the slope of the country. But this is not the case, for the summit of the escarpment is almost as sharply cut as when first it left Nature's hand. That this elevation was prior to the complete retrocession of the water, is shown by the detrital mat which covers its surface at the loftiest points along its course. During this gradual elevation, but before the crest of the ridge emerged above the level of the lake, flotillas of icebergs setting out from the north-east side of Georgian Bay, crossed that body in a south-westerly direction, and between Cape Hurd, and the Manitoulin Island, kept grinding up and tearing away the rocky barrier, which was probably fractured or broken up here as in the Nottawasaga district, and in their further passage southward had a remarkable effect upon the floor of Lake Huron. To thoroughly understand this, some explanation must be given of the character and disposition of the Onondaga and Corniferous limestones in the western part of the province. The latter formation occupies a very large and important portion of western Ontario. Entering the province at Buffalo, it follows the coast line as far west as Long Point, then strikes across the peninsula in a belt from fifty to one hundred miles in width, and terminates on the shore of Lake Huron, between the townships of Bosanquet in Lambton, and Colborne in Huron: and reappears in the northern part of the peninsula, which separates lakes Huron and Michigan, where it attains an average elevation of two hundred feet. Beneath the waters of the former lake it forms a reef, running in a north-easterly direction from Point Clark, on the Canadian shore to Presque Isle, on the American, the average distance of which from the surface is about one hundred and twenty-five feet. The width of this shoal varies from five to twenty miles, and its course more definitely repressed is as follows. Beginning at Point Clark, it strikes due north for ten miles, then bearing more westerly makes a small loop to the east, but soon resumes its original direction. At lat.  $44^{\circ} 50'$ , long.  $85^{\circ} 35'$  the reef widens, and at the same time its course changes until it runs almost due west. This is the shallowest part of the lake: at one point, indeed, the water is only nine fathoms deep. At lat.  $45^{\circ} 5'$ , long.  $85^{\circ} 5'$ , the reef widens greatly, the southern portion running into the coast, while the northern passes up the straits of Mackinac. The soundings taken a few miles from the reef on the north side shows an average depth of three hundred and sixty feet. Directly off the nine fathom shoal, above mentioned the depth of four hundred and eighty feet is reached, and this gradually increases until at a distance of twenty-five miles, the greatest depth nine hundred feet is obtained.

Again the same formation extends north-east from Colborne to the Township of Bruce, a distance of 40 miles, and the Onondaga in a long narrow strip about ten miles wide lies between it and the coast line. This arrangement may be thus explained. It has been found that the rock matter of the Corniferous is much harder than that of the Onondaga: the latter formation being essentially composed of soft dolomitic limestone containing extensive beds of gypsum and rock salt, whereas the former holds a large amount of silicious material in the form of modular masses and interstratified bands of chert, and is very rich in silicified fossils. Now the denuding action of the great glacier along the valley of the ancient Mohawk, excavated the surface of the Corniferous to the depth of over two hundred feet between the Canadian and American shores: but this erosive action was much more strongly felt by the soft Onondaga, and in course of time a great difference in level arose between it and the adjacent Corniferous. At length the latter, having become so much higher than the formation to the north of it, acted as a rocky barrier in the way of the floating ice masses, making with their course an angle of  $60^{\circ}$ . Such an obstruction, although not formidable enough to completely bar their way, still tended to change the direction they were pursuing to one more in accord with its own. So we imagine, that the ice becoming jammed up against the reef, forced back the masses following, and caused them to change their course, and attempt a crossing further south. From this the following results have arisen. The border of the Corniferous was ground up under the mighty forces brought to bear against it, and fragments becoming cougealed in the icy foe, some were carried along until its final dissolution, and others dropped off here and there along the way. For this reason also we find the underlying drift so particularly rich in fossils, and the shores of the lake, rich in fragments of larger boulders disintegrated by the long continued action of the waves. In the second place, the icebergs and floes, owing to the change in their course, ground up and removed the superficial portions of the formation which lay in their new course; and by this means the Onondaga was stripped of its covering of

Corniferous over the area already mentioned, and a bay was formed between Point Clark and Point Douglas thirty miles apart.

[TO BE CONTINUED.]

#### COMMUNICATION.

To the Editor of the 'Varsity.

DEAR SIR,—I would like to express through your columns a sentiment which has now become pretty prevalent through the College; it is the postponement of the Greek play. Of course, there will be many opponents to this step, which several now think to be imperative.

The first reason I would mention for this act is the want of time of the actors, &c., on account of the May examinations, and the short time (seven weeks) between this and the end of March, the time proposed for bringing out the play.

Many of the actors have not yet begun to get up their pieces, and have only the faintest idea of what to do. The Glee Club have got up 12 pages out of 80, and that in the English. Yesterday they for the first time tried the Greek, when they managed to get an idea of two and a half pages.

In getting up the Harvard play they had rehearsal every day here beforehand for six weeks. The actors are practising once a week, and have only got seven weeks before them. I think that any person will admit that, to give a representation of this play and spend \$2,000 on it, and then to be a failure, would indeed be a disgrace to the University. My opinion is, that the representation should be postponed till next December, or perhaps February. In the meantime, the actors may be chosen; they will have plenty of time to read up their pieces and the characters they represent, and also improve their knowledge of acting. In addition to this, the Glee Club will have an opportunity of getting thoroughly acquainted with the music, the most important thing of all. Hoping that this will bring out some letters from the originators of the scheme,

I remain, yours, &c.,

JUNIUS, JR.

#### NOTICE.

The 'VARSITY is published every Saturday during the Academic Year, October to May inclusive.

The Annual Subscription, including postage, is \$1.50, in advance, and may be forwarded to MR. A. F. LOBB, University College, Toronto, to whom applications respecting Advertisements should likewise be made.

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All communications should be addressed to THE EDITOR, University College, Toronto.

Rejected Communications will not be returned, to which rule no exception can be made. The name of the WRITER must always accompany a Communication.

## UNIVERSITY OF TORONTO.

It has been decided to produce the *Antigone* in the original Greek, in the Convocation Hall of the University, during the month of March next.

The University Glee Club will sing the choruses, arranged to the music of Mendelssohn, and the characters will be taken by gentlemen connected with the University.

There will be two representations.

Applications for seats will be received from Graduates and Undergraduates up to the 28th day of February next, after which date other applications will be received.

Applications to be addressed to H. S. Osler, Esq., Secretary Finance Committee, from whom all information can be obtained.

Price of Tickets: Reserved Seats, \$1.50; Ordinary Seats, \$1.00.

MAURICE HUTTON,  
Chairman of Committee.

20th January, 1882.

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