

scientific cast. "Cable Traction for Tramways and Railways" is discussed by C. F. Findlay, C. E., a well known engineer, and his contribution contains much interesting matter regarding the use of cables for street cars in the large cities of the United States. Mr. Bayzand Ellington of London, Eng., writes on Hydraulic Lifts, and states that no precaution can eliminate considerable risk. We are pleased to observe a paper by Mr. Dowling, a student of McGill College, on Division D of the Ontario and Quebec Railway, giving a detailed account of the more interesting features of that portion of the line. Considerable space is devoted to astronomy. Dr. Johnson, of McGill College, describes in a pleasing manner what is meant of the transit of Venus and why it is so important to astronomers. He also appends a few notes on the preparations made at McGill College for observing it. The remainder of the Magazine is taken up with scientific odds and ends of varying interest and value. The Canadian Magazine rejoices in a perfect wealth of illustrations reflecting, on the whole, credit on the engraver. We notice two specimens of the typographical reproduction of photographs; one illustrating the various positions of the body of a soldier taking the *pas de parade*, the other representing three successive attitudes of a horse clearing a fence. They are somewhat blurred, but this we are told is due to the defect in the original stereotype. The Canadian Patent Office Record forms an appendix to the Magazine and consists of thirty-six pages of small type and illustrations, one hundred and forty-one in number. This part of the publication cannot fail to be of great interest to practical men. The prospectus states that "the efficiency and success of this Magazine, the only one of the kind in Canada, must depend upon the hearty co-operation and support of the public." The Canadian Magazine of Science deserves generous acknowledgement from those engaged in the various branches of science, and we think we may predict a successful career for it, since it is guided by energetic and competent hands. The subscription price is \$2.50 per annum, payable in advance, and the Magazine is published monthly.

WRITTEN EXAMINATIONS.

At this time of the year a few remarks concerning the system of examinations pursued at this and most, if not all, other Universities on this continent, will not be deemed out of place. That written examinations are unsatisfactory, few who are conversant with them will deny. We are all familiar with the statement made by many students after an examination: "I could have answered any other questions, but those or some of those put." The distrust, with which this complaint is generally received, is most unfair to those making it; for a little consideration will show that, were there not good reason for it, it would not be heard so frequently, nor from such a large number of students. Then again, we all know how prevalent are feelings of discontent, when the results of examinations are made known to those who have undergone them. The cause of all this dissatisfaction, while examinations are being held and after they are over, is to be found in the diversity of tastes, character and habits, which exists among professors and students alike. Thus, for example, some students find it difficult to be diffuse; others, equally difficult to be concise; some are careful and painstaking; others, careless; some, quick; others, the reverse. All these traits will appear in the answers given on an examination paper. Yet the careless student will not consider that justice has been done him, if, on account of his carelessness, he is given a low standing; and he is right. The slow student, also, is frequently aggrieved, because in his estimation sufficient time has not been given to allow him to complete his paper; and he is right. The student, who is diffuse, or he who is concise, will fare better or worse, according to the disposition of the examiner; both at different times will feel sore under a consciousness of wrong done them; and they are right. Examinations are not tests of character, at least such is not their professed aim. They are generally supposed to be a means of measuring the amount of knowledge a student possesses relatively to the other members of this class. This being so, there is no reason why students, whose character differs from that of their professor, should be made to suffer for it, as they undoubtedly are, under the present system of examinations.

For, as a rule, the more thoroughly at home a student feels himself to be upon a subject, the more careless and concise will be the answers given by him in an examination. Of course there are exceptions to this, but it holds good of the majority of the students. Moreover, the nature of the questions put has much to do with the answers given by the different individuals composing a class. Some examinations, it is notorious, are only tests of memory, not of knowledge. These give an undue advantage to students gifted with quick memories. Some, again, appear to have been set for the purpose of finding out the plodders among students. In these the questions usually have reference to facts, upon which no stress is laid in the text books, and whose small importance is shown by the slight reference made to them in the lectures. Such examinations are a god-send to those who read without judgment and spend much valuable time in committing trifles to memory. But even when the examination questions are carefully and judiciously chosen, the answers should not be considered individually; but each paper should be valued as a whole, and after a careful comparison with the others. The reason of this is simple. Every one, who has passed several examinations, is familiar with that curious mental phenomenon, which, at times, seems to bolt the door of memory upon a certain fact or

series of facts, with which, at other times, he is perfectly acquainted, and which, after the occasion for its use has gone by, rushes unbidden to the brain, with a startling vividness and appearance of reality. There are few, who have never suffered from this experience, which, indeed, is not confined to students at an examination, but is known to all classes, as, for example, when we strive unavailingly to recall a well-known quotation, an author's name, or even, it may be, a familiar face. Frequently recurring as is this experience, it is never so much so as in examination-time; and this, inasmuch as it must be fully recognized by all examiners, should render them exceedingly careful how they condemn a student for an apparent want of knowledge, which may be entirely due to the treachery of his memory.

Leaving the subject of the fairness of written examinations as we have them in McGill, let us look upon them in another aspect. Let us ask whether they help to render more efficient the machinery of a College, whether they are not a drag upon it, whether they do not tend to retard the advancement of learning. Students may be roughly divided into three classes—workers, non-workers, and half-workers. The half-workers are named last, because they always occupy the lowest rank, and are very frequently plucked. The workers are those, who read steadily all through the session, attend all the lectures, and, unless of a too sanguine temperament, take the highest places in the examinations. The non-workers attend about three-fourths of the lectures and spend the rest of their time amusing themselves. When the examinations are near at hand, they apply themselves to old calendars, from which they get a pretty accurate idea of the style of questioning of some examiners, and of the questions, that will actually be put by others. Thus prepared, they make the most profitable use of the time remaining to them, and always pass their examinations creditably, frequently being at the top of the ladder. The third class is made up of the weak-minded among students, of those who come to College with the best intentions, who frequently make good resolutions and as frequently break them, who work by fits and starts. Towards examination time, these students usually are very much alarmed, but become tranquil again through the use of the magic word *crum*. But day after day slips away, and they are always promising themselves to begin cramming to-morrow, until within a day or two of the first examination, when they set desperately to work, and by their very lack of coolness, destroy the small chances they had of doing well. Now, it may be asked, what has the system of written examinations to do with all this? It creates the second class, and demoralises the third. If, instead of having a students' standing dependent upon two written examinations, it could be made to turn upon two *vis à voce* examinations, or, better still, half a dozen of such examinations, there would not be nearly so much cramming, nor so much idleness, nor such temptations to be dishonest and dishonorable, for all these would be rendered impossible. Even the workers would be benefited by the change, for it is well known that they spend much time learning over and over again what they already thoroughly know, the reason being that they must be prepared to answer every possible question, in order to be sure of taking a high place. Furthermore, were oral examinations to be substituted for written ones, there would be much less room for discontent, since the questions could be made to cover a much wider range, and by increasing the number of examiners, the injustice to students resulting from the peculiar character of any one professor would be counteracted by the different characters of the others. The only objection, we can see, to the change, is the inconvenience necessarily attendant upon the oral examination of a large number of students; but when should convenience be considered before justice? So long as the present system of examinations remains in vogue, so long will there be jealousies, heart-burnings, and distrust of professors among the students, and men will continue to pass out of college with the same or even less knowledge than they had when they came in, to recruit the ranks of briefless barristers, starving physicians, and obscure clergymen.

HUNT.

WHAT I KNOW ABOUT STILL-FISHING.

III.

BY INEZ.

The reader will have observed that up to this point, I have exhibited a degree of patience under my misfortunes, that would have done credit to an A. 1 Stoic. When I now found my line firmly fastened in the branch and that all my efforts to disentangle it were vain, I selected as dry a position as possible and sat calmly down to contemplate the wild enjoyment in which I had been indulging. Was it wise thus to revel in the pleasure of the moment, forgetful of reaction and rheumatism? But such is life; in the excitement incident to the pursuit of pleasure, the future is forgotten. While I was thus musing I had an intimation that the dry position which I had selected was not liable to squatter intrusion, as the proprietors (to wit a colony of gigantic ants) were in active possession, and I accordingly adjourned in some confusion, with my hand upon my heart and the ants doing a "go-as-you-please" all over me. Having with considerable difficulty succeeded in disentangling myself from the ants, I turned my attention once more to the fishing line. There it hung neatly spliced to the bough, and all my efforts to shake it off seemed only to make it cling the