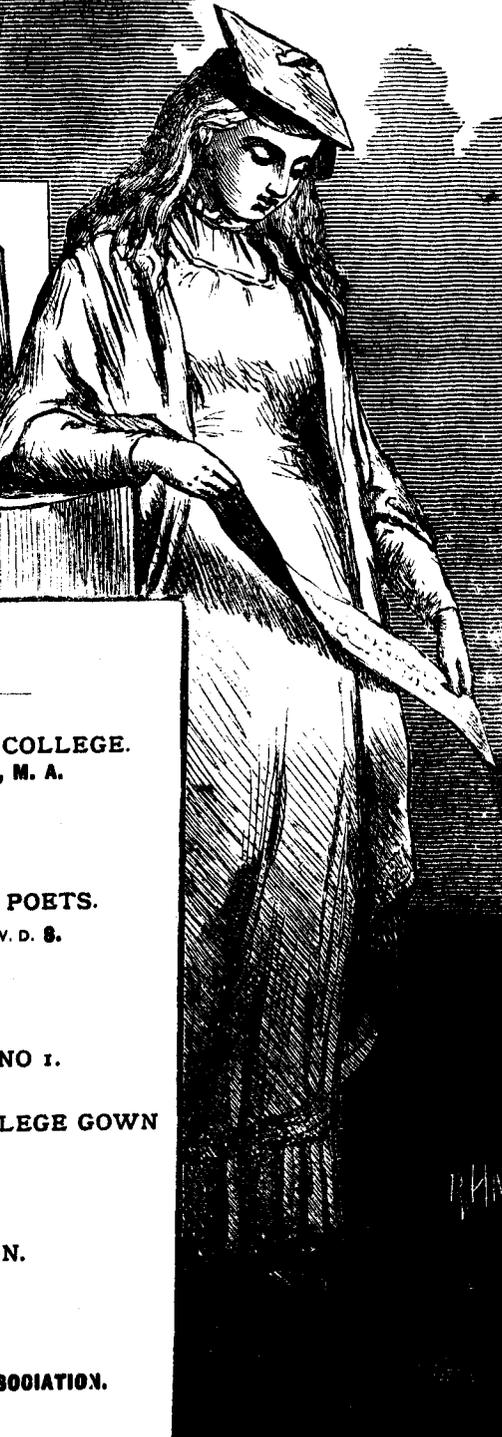
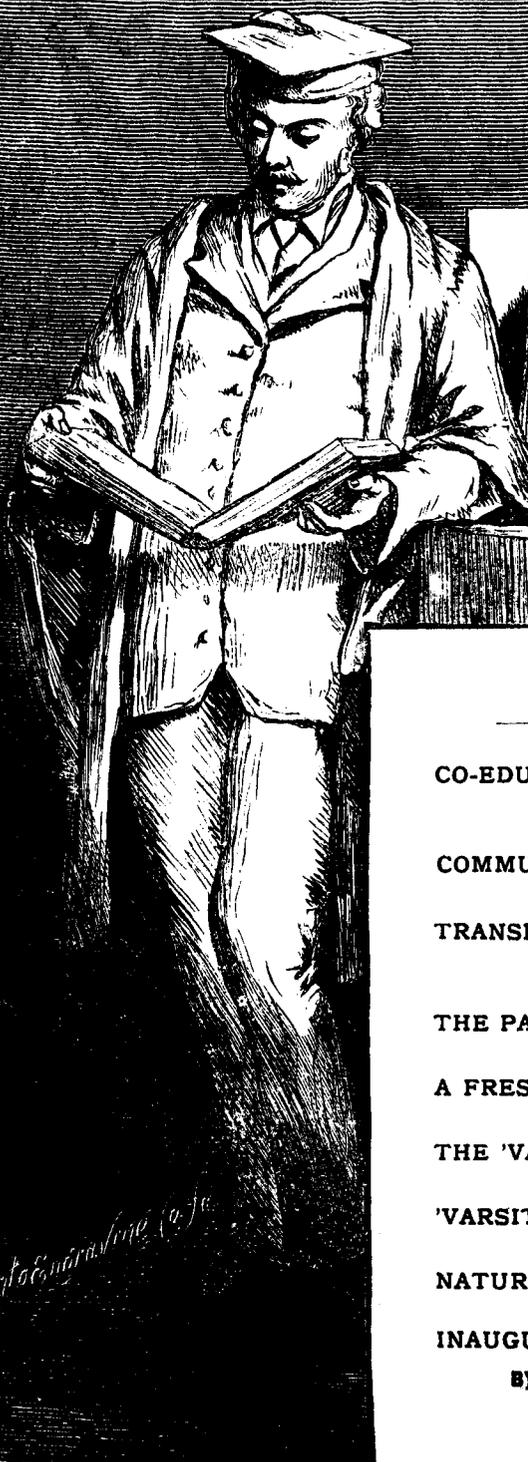
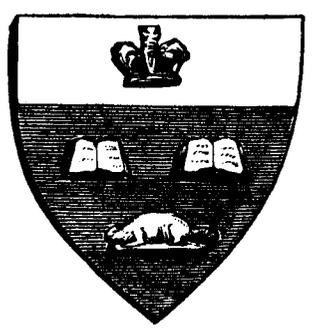


THE VARSITY



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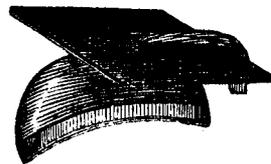
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THE 'VARSITY:

A WEEKLY REVIEW OF

EDUCATION, UNIVERSITY POLITICS AND EVENTS.

Vol. 1. No. 5.

November 13, 1880.

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CO-EDUCATION IN UNIVERSITY COLLEGE.

The paragraph devoted to this question in the November number of the *Bystander* must be my excuse for reverting to it in the *'Varsity*. In my former contribution, I took the ground that young women who are undergraduates in the University of Toronto should be allowed to attend lectures in University College if they desire to do so, and I propose now to enforce this view by a few additional considerations.

We are all interested in knowing what an educationist of such eminence as Prof. Goldwin Smith thinks about any educational problem, but I humbly submit that, in discussing University topics, he would do more good if he would master for himself, and impress on his readers, the distinction between 'Toronto University' and 'University College.' He would not confound 'Victoria University' with 'Owens' College,' and if he were to do so in discussing matters connected with either of them, he would inevitably land himself in confusion, as he does in the paragraph above referred to. It is not correct to say that, 'at Toronto University the co-education movement has come to a crisis,' for, as a matter of fact, the question of co-education has been so successfully fought out in connection with the University, that the softer sex occupies the more advantageous position of the two. Not only can girls come up, as of right, to every examination open to boys, but there are special local examinations instituted by the Senate for girls, to which boys are not admitted. Believing this arrangement to be unfair to the boys and objectionable on other grounds, I hope to see the local examinations thrown open, before long, to both sexes, but meanwhile I am safe in saying that, in so far as the Provincial University is concerned, the advocates of women's rights have nothing more to ask.

If any one is disposed to say that this confounding of the University with the College is a trifling matter, I answer that it can easily be shown to be nothing of the sort. Those who have, for some years past, been striving to remove the obstacles from the path of girls who are seeking to procure a higher education for themselves, knew perfectly well what they were about. They knew that it would be much easier to pave the way for their admission to the University examinations than to the College lectures, and, as the institutions are quite distinct in their academical management they naturally and properly attempted the easiest part of their task first. Their success there will only embolden them to press the case still further, until girls are either admitted to University College or have provided for their exclusive use a similar institution. Any person who knows much about the politics of Ontario does not need to be told that the chances of seeing a College, the counterpart of University College, provided for girls is of the slimmest kind; and it is simply preposterous to say that, in view of this fact, the sex of an applicant must forever debar her from attendance at lectures in the only affiliated institution which teaches the University curriculum for the third and fourth years.

During the past five years a large number of young ladies have passed the junior matriculation examination and thus become undergraduates of the University of Toronto. Several of them have passed the first year or senior matriculation examination, and are therefore of second year standing, and one lady has passed the second year examination and is now in her third year. Since my former article appeared, I have been informed that she applied some time ago for admission to University College, and was refused on the ground that the Council did not consider it compatible with due order and discipline that young men and young women should attend lectures together. I can only say that I regret this decision very much for the sake of University College, no less than of those ladies who would, by attending it, be put in a much better position to earn their own living, as many of them have to do. The matter, however, is fortunately not likely to end with this one refusal.

Mr. Goldwin Smith says that if expediency is opposed to the admission of women to University College 'there can be no plea for it on the ground of right.' This is a most unfair statement of the case. How can it be known whether expediency is opposed to their admission or not until the experiment has been tried? The experience of other institu-

tions is of some value, but certainly that experience tells as strongly in favor of their admission as of their rejection. If women were admitted, and if their attendance were found to be incompatible with due order and discipline, there might be some ground for subordinating the 'right' of a class to expediency. Only a session or two ago, two young ladies attended Prof. Croft's lectures on chemistry in the School of Practical Science, and their presence in the lecture-room created no unusual disturbance. On the same plea Mr. Smith might as reasonably oppose the co-education of young men and young women in our High Schools, and yet I doubt if there is a High School master in the Province who would not prefer a mixed class to one made up of either sex alone, as a mere matter of 'order and discipline.' On this point I can speak from experience, and I am sure that many others will endorse what I have said. Nor is the citation irrelevant, for in attendance at the same High School are frequently to be found male and female students of all ages from twenty to thirty.

Mr. Smith correctly points out that the subject involves these three distinct questions: (1). Ought women to receive a higher education than they receive at present? (2). Ought they to receive the same education as men? (3). Ought they to receive it in the same place as men? In answering these questions he leaves it to be clearly understood that he would not be content with answering the last in the negative. He seems to think that because the sphere of woman's usefulness, happiness, and dignity is domestic, and not public or professional—life, a knowledge of classics, modern languages, natural sciences, mental and moral philosophy, or mathematics must in some way militate against her becoming a wife or a mother, apparently by giving her a dislike to 'matrimony and maternity.' It is difficult, in discussing of the simple question, whether female undergraduates of the Provincial University shall have a right to get their education in the Provincial College affiliated with it, to read such a sentiment with patience. Mr. Smith says 'the barriers of artificial privilege ought to fall,' and this is precisely what I am advocating. He must know that thousands of women are, at the present moment, engaged in public school teaching in Ontario, and yet he would debar them from the hope of rising higher in their profession. Unfortunately for some women—and these not the least worthy or honored of the sex—they are compelled to fight life's battle alone, and those who are opposed to the removal of one serious obstacle out of the way of this class may rest assured that some more valid reason must be given than has yet been given for the maintenance of this 'barrier of artificial privilege,' if its existence is to be long continued.

The legal right of any woman to be admitted to University College when she has complied with the Statutory requirements is a matter which will, in all probability, be determined some day by one of the Superior Courts should the Council persist in the refusal. On that aspect of the case I would like to say a few words, but the length of this article forbids.

WM. HOUSTON.

COMMUNICATIONS.

'UNIVERSITY OF ONTARIO.'

To the Editor of the *'Varsity*.

In the report of the Committee on Legislation, to be considered at the next meeting of Convocation, is to be found the following clause:—

"The Committee beg also to report that, as the University of Toronto is in fact the Provincial University, and is usually so designated, that it would be proper for its name to be changed to that of The University of Ontario."

The introduction of the second *that* in this sentence is evidence of the haste with which the Committee had dealt with the matter, but, without stopping to be hypercritical on a point of grammatical construction, I hope I may be allowed to say that, with all due respect to the members of the Committee, I think their recommendation a highly improper one. The only reason assigned for the proposed change is that the University of Toronto is the Provincial University and is usually so designated. This is quite true, but it appears to me no good reason

for the change. Are not all the great Universities in the world known by the names of the cities in which they are situated? We are all familiar with such names as The University of Oxford, the University of Cambridge, the University of London, of Edinburgh, of Glasgow, of Dublin, of Heidelberg, of Gottingen, of Berlin, of Dorpat, of Padua, but who ever heard of the University of England, of Scotland, of Ireland, of Germany, of Russia, or of Italy? The majority of the Committee are lawyers, and they know in their profession the value of precedents. What then can have induced them to depart from precedent and recommend the extinction of the good old name "University of Toronto," hallowed as it is to its thousand graduates by the prescription and the associations of thirty years, and the substitution of the placeless name "University of Ontario?" Can it be that they have been influenced by some element of that provincial jealousy of the Metropolitan city which would extinguish Upper Canada College because Toronto boys are educated there, which would prevent the erection of new Government buildings because the money must necessarily be expended in Toronto, which has no pride in the progress or the prominence of this beautiful city? I cannot but believe that the suggestion was made in mere thoughtlessness, and adopted without reflection.

At any rate, as an old graduate, I don't want the name on my parchments to be wiped out in this way; I don't want to feel that *Alma Mater* has been blotted out of existence, and her place taken by a step-mother who knows me not. I do therefore most sincerely trust that the Committee, on second thoughts, will withdraw the recommendation, or, if not, that my fellow-graduates will resist it strenuously and vote it down by an emphatic majority.

20th October, 1880.

AGRICOLA.

THE OTHER SIDE OF THE QUESTION.

To the Editor of the 'Varsity:

SIR,—'M. A.'s' paper on 'Convocation Membership' seems to me to call for some reply.

I would have preferred to see 'M. A.' sign his name to his communication, as, in my poor opinion, University men, writing on University matters, should write over their signatures. However, as your rules require names to be sent in with contributions for your columns, 'M. A.' is unquestionably a University man, and I am willing to meet him as such. It seems to me clear enough that, as Convocation has the power, under the Act, of 'requiring a fee to be paid by members as a condition of being placed on the register of members,' it can do what it has done, namely, require a fee to be paid for that purpose. But, to save quibbling, and so that there may be no mistake in the matter, and that your reader may know exactly what has been said, I will, with your permission, state what is the precise effect of our action. When it is understood very few will be found, I believe, to sympathise with the agitation it is sought to create, or even to comprehend it.

In the first place, any member can become a life member by paying five dollars, and then he will never have any more trouble. So far as he is concerned his cares are ended—surely, at a low figure. But, if a man does not care to become a life member; then his annual subscription is one dollar. This one dollar, is, it is true, required to be paid by the first of April in each year. But it is carefully provided that any member who forgets or omits to pay his one dollar can resume his privileges, including that of voting, by sending in his dollar any time in the year. Even at the time he sends in his voting paper, should he have been a non-payer for ten, fifteen, twenty years, and all of a sudden awake from his torpor and desire to vote, what has he to pay? All his arrears? No. What then? A dollar. That magic sum restores him to the charmed circle.

What, then, is 'M. A.' dissatisfied about? He admits, everybody admits, that some funds are required for expenses,—they must be met. How? 'M. A.' says, 'Send round the hat. Raise the wind by whistling for subscriptions.' No doubt money would dribble in as required; but will 'M. A.' seriously defend the plan?

'M. A.' seems rather afraid that this terrible fee will knock the flickering life out of Convocation. I use his own phrase:—If the candle is not worth a dollar a year to all the graduates in law, graduates in medicine, masters of arts, and so on, who make up Convocation, then the sooner the poor little light goes out the better. *Nomen et umbra sumus.*

If we are to make Convocation what it ought to be, it will not be by squabbling over an entrance fee. The question was fairly raised, fairly argued, fairly decided, and should have received its *quietus*.

We have plenty of other materials to consider on the 26th of this month, and I hope the graduates who attend will not allow their attention to be distracted from more urgent questions by any attempt to galvanize opposition to a system which is adopted by every association, society, or club, whether for religious, political or social purposes.

I am, your obedient servant,

R. S. KINGSFORD.

54 Avenue Road, Yorkville.

MEDICAL EXAMINATIONS IN GREAT BRITAIN.

To the Editor of the 'White and Blue.'

It may be of some interest to the readers of the 'White and Blue' to know how Medical Examinations are conducted in Great Britain.

The first part is, as in the University of Toronto, 'Written.' The papers set are, on the whole, very similar, with the difference of being more practical in their nature. There is more of the 'how' and less of the 'why' in British as compared with Canadian papers. The percentage is something over fifty, which, of course, must be made on every paper, and in many cases on every question.

The second part of the examinations is clinical. In this part the candidate is sent to the Infirmary—for that is the name generally used instead of Hospital—and shown a number of cases, Medical and Surgical, which he is to report upon. His diagnoses are to be made out and then the treatment indicated is to be stated. Great importance is attached to the manner of making these examinations, which must be so conducted in presence of the two examiners as to exclude every element of guessing. During this part of the proceedings the candidate is tested with the microscope in the examination of healthy and diseased tissues, deposits from urine, pus, and in fact almost anything that strikes the Examiner's curiosity. A large variety of medical and surgical instruments are shown, their uses asked for, the inventor's name, their length, and other details entered into. This part being over the third part comes on.

This is 'oral.' The candidate is ground by two men until they are either tired or satisfied. On each subject there are two different men. In this way the candidate is passed from room to room until the range of subjects is exhausted.

Each set of examiners are quite different from the others. The men having charge of the 'written,' 'clinical' and 'oral' examinations constitute three distinct staffs, and each act apart from the others, keeping their results quiet till the evening for summoning all up. The successful competitors are then called into a room, complimented, and their Diplomas presented.

I was up for examinations before the Royal College of Physicians, Edinburgh, and the Faculty of Surgeons, Glasgow; I was successful in obtaining the Diplomas of both places, namely, L.R.C.P., Edinburgh, and L.F.P.S., Glasgow.

In another communication I shall give some account of medical and clinical teaching. For the present I bid my former fellow students good-bye, wishing them all a happy and prosperous Session.

Yours very truly,

J. FERGUSON.

Edinburgh, 25th Oct., 1880.

THE COLLEGE GYMNASIUM.

To the Editor of the 'Varsity':

SIR,—In its first number *The 'Varsity* showed its appreciation of the necessity for a College Gymnasium, and I know of no better medium than its columns through which to appeal to the generosity and *esprit de corps* of the undergraduates of Toronto University.

That a public appeal should be deemed necessary to supply such an evident want shows a lamentable deficiency of spirit on our part.

No College in Canada or the United States, and very few of our High Schools, are without a gymnasium; and it is no small disgrace that University College, so far in the van in her facilities for medical culture, should be, through the apathy and short-sightedness of her students, so far behind the smallest of her sister colleges in facilities for physical culture.

The College Council have shown their anxiety to see a gymnasium by giving us a building and a grant of \$200, but conditionally. The conditions under which we may avail ourselves of this liberal grant are that, we collect and deposit with the Bursar the sum of two hundred dollars; more than this is annually required for our college games. When we have fulfilled our part we will have a building very conveniently situated, and \$400 placed at our control.

It is the intention of the committee to proceed at once to collect this sum and, it is to be hoped, they will meet with a ready response to their call from every student.

We must not forget that there is a limit to the patience even of a College Council, and the grant may be withdrawn, or, as is very probable, the space now allotted to us devoted to some other object.

Yours, &c.,

R. F. RUTTAN,

Pres. of Gymnasium Committee.

TRANSLATIONS FROM GERMAN POETS.

I. THE ERLKING.

[GOETHE.]

Who rides by night so fast and wild?
It is the father with his child.
He has the boy well in his arm,
He holds him fast, he keeps him warm.

Father: "Why hidst, my son, thy face in fear?"

Boy: "Seest thou not, father, the Erlking there?
The Erlking with his crown and train?"

Father: "'Tis but a mist-streak on the plain."

Erlking: "Thou lovely child, come, go with me,
Right merry sports I'll play with thee,
The gayest flowers my gardens bear;
Bright robes thy mother shall prepare."

Boy: "My father, my father, and dost thou not hear,
What Erlking whispers in my ear?"

Father: "Be quiet, pray, he still my child;
In the leaves rustle the night-winds wild."

Erlking: "Say, pretty boy, wilt go with me?
My daughters fair shall wait on thee,
With thee their nightly revels keep,
And rock, and dance, and sing thee to sleep."

Boy: "My father, my father, oh! seest thou not
The Erlking's daughter in yon dark spot?"

Father: "My son, I see full clearly; nay,
'Tis but the old willows that look so gray."

Erlking: "I love thee, thy fair form tempteth me.
Wilt not? Then I'll use force with thee."

Boy: "My father, my father, he seizes me now;
The Erlking hath done me harm, I trow."

The father shudders, he hastens on,
He holds in his arms his moaning son.
He reaches home in fear and alarm,
The boy was dead within his arm.

W. H. V. D. S.

OBSERVATIONS BY THE PATRIARCH STUDENT.

EVERY morning I see, passing my ranch, a lugubrious individual robed in a College gown. I want him to read the following sensible remarks from the *Acta Victoriana*, and be converted in the reading:—

"We think the time has come when this last 'relic of the dark ages' should be abolished. And indeed the only argument which seems to be advanced in favor of the costume is that it is a 'part of college etiquette.' What etiquette there is in this nineteenth century of modern civilization, in a four cornered black cap and a long, sable, seamless, shapeless robe, flapping and flapping and flying in the wind, would require the sensitive eye of Lord Chesterfield or some other master of etiquette to determine. Does not the student manifest sufficient etiquette in his upright conduct and gentlemanly demeanor in all his relations to college life? * * *

Can anything be said in favor of the utility of the costume. It conduces but little, if any, to the protection of the body. It impedes locomotion. It diverts the attention of strangers. It frightens the lower orders of animals. It is uncouth, un-fashionable, and altogether useless as an article of clothing.

WHERE! oh, where! is our Business Manager, Associate Editor, Personal Editor, Editor-in-chief, Financial Editor, Local Editor Exchange Editor, and goodness knows how many other highly-neededful personages whose sounding titles are so neatly printed in most University papers? To cover all our deficiencies in this line, I brand myself Editor Plenipotentiary, and—well, that will do just now. By next week I will have another for one of us, whom we have hitherto called 'Spot' in playful allusion to a speck resembling the proverbial mark on the tip of the tongue, which accompanies statements of a certain character.

THERE is a company in the Queen's Own Rifles to whose charge will be laid the souls of this regiment's officers. Countless emphatic ejaculations, though earnest enough, seem to produce no improvements. In the selection of its corporals, the other day, men holding sergeants' certificates were passed over to make way for successfully canvassed competitors. Evidences of the ill effect of favoritism in promotion have been numerous enough lately to call for its prompt suppression, since etiquette apparently offers no barrier to its progress. The crooked policy, of which this selection offers is an illustration, should be vigorously denounced. Efficient, painstaking, non-commissioned officers alone will produce the competent, hardworking commissioned officers of whom there is so much need.

THERE are eighteen Smiths, one Smyth, and one Smythe, graduates of the University of Toronto, and ten Smiths and one Smyth Undergraduates. Who says the ancient and honorable family of Smith is becoming extinct?

AN amusing story is told of a proctor at Cambridge, whose inclinations were of a very sporting type. Arrived in chapel one morning to

take the service, and, being short-sighted, he failed to perceive one solitary undergraduate who had taken up his position in an obscure portion of the building. He opened the book and commenced with 'Dearly beloved brethren;' then, finding the church, as he thought, quite empty he slammed his book, saying out loud: 'Well, I never expected to draw this d—— cover blank.'—*Sporting Times*

I AM an optimist, but I think the worst pessimism is preferable to the exaggerated optimism of the *Crimson*.—A position on a College paper is not only instructive, but is also accompanied by many pleasures which are looked back upon in after years as among the most enjoyable of undergraduate life. Now 'Spot' is an undergraduate of great 'influence.' When I saw him, three months ago, for the first time, he was a fair-haired youth, with blue eyes, fresh complexion and clothes of an unmistakably good cut; to-day a sallow, emaciated countenance, locks unkempt and grey, and disreputable rags give evidence of the havoc *Varsity* cares have played with his earthly bliss. By the way, the *Crimson* is head and shoulders above any University paper I have yet seen. There is a ripeness in its literary style which sets it apart from, and above, the deluge of boyish contributions one finds in the stack of exchanges.

"A MISS SHERPARD passed the second year examination at the University of Toronto last spring, and now applies for admission to the University College. She cannot complete the course entered upon in any institution devoted exclusively or partially to female education, and, therefore, asks to be permitted to attend lectures at Toronto University. The Council of the College have informed Miss Sheppard that they do not consider it compatible with due order and discipline that young men and women should attend lectures together. This strikes us as an injustice. What right have the 'lords of creation' to claim a monopoly of the educational advantages of this Province? The Government subsidizes an institution for the exclusive benefit of the male portion of the community where all the higher branches of a collegiate course are taught by experienced and qualified professors, and where special facilities, provided by the Province, are sought and enjoyed. Women, who are ambitious to 'drink deep of the Pierian spring,' and who have the ability to accomplish what they undertake, must content themselves with the opportunities provided by less favored institutions, or do without. Is this not class legislation? If the Council of University College cannot see their way to the admission of female students to the lectures of the University, on an equal footing with the male students, then the Provincial Government, which specially endows the institution, must provide other, and similar educational facilities for the sex now placed at such a decided disadvantage. We trust the women will insist upon fair play, and the press will support them"—*Belleville Ontario*.

I HAVE often been amused at the contention of some young men that they could live cheaper and better lives in a country town than in the city, and for this reason they preferred to study law in the former places. A graduate of the present year came across my path the other night and I questioned him on the point. He replied that it cost him a dollar and a half a day for beer the first two weeks that he was in the county town of ———, and that he spent nearly all his time 'bumming'—that is the word he used, if I recollect aright. Moreover he described his companions as 'bummers' all. This was not the first time in my varied student-life, both here and abroad, that the thought was forced home to me that a garret in the city was often more conducive to a steady and studious life than the limited circle of a small place, where every one knows you, where you are expected to do as others do, and where good fellowship is often more dangerous than desirable.

VARSAITY MEN.—I was on fairly intimate terms with the graduating class in Arts of 1880, and I still hear from its members from time to time. Of the fifty-three who then secured their B. A. hoods, at least seventeen have gone into theology, eleven are studying the law and the profits, the same number is teaching, merely as a stepping-stone, however, three or four have bought scalpels, one has taken a farm, another aspires to be an editor, two or three have turned commercial, and the others are gentlemen at large. Mr. W. A. Shortt and Mr. W. Cook, B. A.'s of 1880, have lately returned from pleasant trips to Europe. They both entered the law society this week.

We learn that Mr. H. A. Fairbank, who was awarded the degree of B. A. at the late Toronto University examinations, and who is at present taking a course in chemistry at Ann Arbor College, Mich., will complete his education in medicine at McGill College, Montreal.

Mr. J. P. McMurrich, B. A., has been appointed assistant to Professor Wright, and is at present preparing specimens for the "chick."

Mr. Wood, of the third year, has just returned with Professor Macoun's party, after a five months' visit to the North West.

A FRESHMAN'S EXPERIENCES.

NO. 1.—THE COW.

One beautiful summer morning he arose with the lark, while the silvery dew drops still sparkled on the fresh green grass, and the sun was shooting up its golden shafts preparatory to rising from behind the distant hills.

The cook had gone far away to attend an Orange pic-nic, and his sister, who generally managed the lacteal department in his absence, was away too; and no one there but he—James Henry—could manipulate a large-boned, yellow cow. Throwing off his coat with exceeding nonchalance, and rolling up his snow-white sleeves, he set about collecting the necessary panoply for the attack. Grasping a coal scuttle for stool, and a large tin pail, he approached that cow and anchored on the starboard side, abaft the paddle-boxes. Now, as soon as that cow saw him nicely settled down for action, she just got up and walked calmly off to the furthest corner of the yard, whence she contemplated him with a happy wink and a pleased swing of her aft appendage. He felt a little riled, but being an optimist in politics, he smiled at this little discrepancy, and again approached her. He still believed in the eternal fitness of things. His attention was again concentrated on her, but that square-rigged, spavined old cheese-box skirted round the yard like a fire-work till he finally resolved on scuttling her. This he did with the coal-scuttle, but, since then, that article has gone up to a higher sphere where they don't use coal.

After this she became docile and tractable, out of spite, and he again sidled up to her, when something suddenly lifted, and he went into a "committee of the whole" in a very nasty mud-puddle, whence, in season, he found it necessary to 'arise and report progress.' It was now evident to the most obtuse that that bovine was running things pretty much her own way, and all his old pessimistic thoughts suddenly recurred. At last he got her moored, took a half-hitch round one of her pendants, and pulled like a house-a'-fire, till that osseous old brute gave him a wipe in the mouth with a soiled tail, put her foot calmly in the pail, and walked majestically away. He then went into the house, got a double-barrelled gun, and returned. I've no doubt there was a business air about him then, for she became reverent forthwith, and he opened out for a new trial. He'd just commenced, hand-over-hand, dog-fashion, when a lady visitor and her little daughter came out to see. He felt sad and pensive:

"Pretty bossy, isn't she, Maudie?"

"Yes, ma, pa had a tow once, but—"

"Get over there! you blasted old hay-condenser! you blam—whoa!!"

"Oh, ma, the poor tow didn't mean to do anything, did she, ma?"

"Take your prong out of that, you—— Stand still, will you!!"

He crawled out from under an old window-sash, with a large and varied assortment of manure diffused over his person, and all covered with milk, a dinge in his eye, and a lacerated nose. The cow was looking wild, with one foot through the coal-scuttle, which she sported as a kind of shirt-collar, while his new hat was trampled in the ooze, the milk-pail was a grizzled ruin, and the little girl and the little girl's fond mama were shocked. He had consulted that cow with a cord of wood, and called her very naughty names; so the little girl said he would go to the 'bad place,' and her ma said something didactic about cruelty to dumb animals. James Henry was going to say 'd—n animals,' but restrained himself, and went ruefully away.

THE DOLEFUL BALLAD OF THE 'VARSITY MAN AND HIS COLLEGE GOWN.

1.
It was a young man of the 'Varsity
Went through the Park to walk,
And he met, eftsoon, a fair ladye;
With whom he fain would talk.

2.
For oft, full many a goodly day,
He had met that maid before,
And every time engaged were they
For dances full a score.

3.
Arrayed in gorgeous coat and vest
Himself he proudly bore;
No other swell was dressed as well
When he met that maid before.

4.
Her father was a rich house agent,
(Old Jones, of Jones & Co.),
Oh, he had got the corner lot,
And of greenbacks a goodly show.

5.
"Now, greet you well! my dear Miss Jones!"
That 'Varsity man, said he;
"No! I will not be your dear Miss Jones,
Since that horrid black gown I see.

6.
At the weeds you wear all men would stare,
And scoff as you go by,
And the little boys and the gutter-snipes
Ask, 'How is that for high?'"

7.
"I wear these weeds, for, the 'Varsity,
It hath ordained so,
Because they were worn by the monks of old
Three hundred years ago."

8.
"With no such guy, through this good town
I'll walk!" Miss Jones did say,
"Nor to a monk in a sackcloth gown
Will I give myself away."

9.
She hath taken the cars for Toronto town
All on the Spadina track;
And, because he wears the sackcloth gown,
She hath given to him the sack!

10.
He hath taken the mitten, the willow he wears,
And the sack, too, he hath got;
Singing, "Woe! for the lack of the good greenback,
And Jones's corner lot!"

11.
And he wears that gown still every day,
Through King Street eke, and Yonge;
And this is the song he sings so gay,
All in ye Latin tongue:

12.
Circa meum pileum, circa meum pileum!
Fero virentem salicem pro anno et die—;
Et si quis interroget,
Causam perferendi;
Respondeo amicam meam deseruisse me.

13.
L'ENVOI.
Ye rulers that be in the 'Varsity,
To this grievous tale attend;
Whoso shall put down that doleful gown
Shall be the student's friend.

M.

'VARSITY SPORT.

ASSOCIATION FOOT-BALL.

KNOX COLLEGE AND UNIVERSITY COLLEGE.

After having issued several challenges, the Secretary of the University Foot-ball Association succeeded in arranging a series of matches, the first of which was played on the University lawn on Friday, last against Knox College. This, being the first match of the season under the Association rules, it attracted quite a number of spectators, who had no reason to feel disappointed, as some really-fine play was shown on both sides.

The game was commenced at about half-past four, the home team kicking towards the South. During the whole game neither side appeared to have much advantage. The Knox goal, however, had two or three narrow escapes, owing to the vigorous assaults of the University forwards. After half an hour's play, ends were changed, and the Captains agreeing to play for only twenty minutes more, the game was resumed. Both teams set to work with a determination to win a goal before time should be called. The last part of the game was characterized by quick and scientific play on the part of several players on both sides, the kicking of Mr. Broadfoot, and charging on goal of Messrs. Hughes, Miles and Milligan, of the University, being particularly noticeable. Before, however, a goal could be scored, time was called and the match ended in the usual 'draw.'

It is difficult to say which of the two teams was really the better, for, although the Knox men were much heavier than their opponents, the latter made up for their weight by their quickness in passing the ball to one another.

Besides those already mentioned Mr. E. Mackay (Half-back), and Messrs. Palmer and Elliott (Forwards) of the University team, distinguished themselves, while for Knox College, Messrs. McNair, J. S. Mackay, Ramsay and Dobson did some good work.

UNIVERSITY COLLEGE VS. TORONTO LACROSSE FOOT-BALL CLUBS.—
The first tie-match for the Dominion Association Cup was played last Saturday on the University lawn, between the above-mentioned Clubs. Notwithstanding that the Lacrosse men had not practiced this season, the fact that they were the holders of the cup last year raised some expectations of a close contest. Play was commenced at half-past 3, and, from the beginning, it was evident that the College team had the game in their own hands; and, although their opponents at first played with some vigor, they only once succeeded in forcing the ball past the College backs. In fact, the game was little better than a continuous assault on the Lacrosse goal. After an hour and a half's play, time was called,

the College team gaining a complete victory, having taken more goals than have ever before been gained in any match in Canada. Of the seven goals secured by the College, two were kicked by Mr. Palmer, three by Mr. Martin, one by Mr. Hughes, and one by Mr. Miles. Of the College players Mr. Hughes showed best form, and along with Mr. Miles played the best game ever seen in Toronto; Mr. Martin in the centre, and Mr. Milligan on the right side, played well. Messrs. Helmcken, Caven and Campbell, played best for the Lacrosse side. The following was the College team:—Mr. Nelson, goal; Messrs. Broadfoot and Houston, backs; Messrs. Laidlaw and Mackay, half-backs; Messrs. Hughes, Miles, Martin, Palmer, Elliott and Milligan, forwards.

* *

RUGBY FOOT-BALL.

—On Friday, the 29th of October, the 'Varsity team played Upper Canada College, fifteen a side, open formation, and were victorious by two goals and a touch down to nothing. On Monday, the 1st, a return match came off on the U. C. College grounds, eleven a side, when the University men were again victorious by one goal and two tries to one try.

* *

—On Thanksgiving Day a match was played with Hamilton, fifteen a side, open formation. The visitors tackled well and played a strong defence, but two tries to nothing lost them the victory. In justice to the Hamilton men it must be said that they were novices at the newly-adopted game.

* *

—Unfortunately the weather of Saturday prevented a satisfactory test of the relative abilities of these two teams, whose representatives, with their weights and field positions, are as follows:—

Ann Arbor. Forwards, Messrs. Chase, (captain) 178 lbs; Allen, (President Ann Arbor Athletic Association) 170; Horton, 155; De Puy, 150; Mr. Graham, 150; quarter-back, Mr. Barmour, 147; half-backs, Messrs. Calvert, 158; Johnson, 150; Brown, 165; Dott, 145; Back, Mr. Hathaway, 158.
University. Forwards, Messrs. Blake, 157; Morphy, 156; McCallum, 149; Macdougall, 153; Campbell, 150; quarter-back, Mr. Armour, 164; half-backs, Messrs. Keefer, 145; McAndrew, 164; Gwynne, 140; McKay, 140; Back, Mr. Helmcken, 165.

These weights give the visiting team an average advantage of $3\frac{1}{2}$ pounds. Messrs. C. C. McCaul, and F. F. Wormwood, acted as umpires, and Mr. P. D. Ross as referee.

Ann Arbor won the toss and chose the north goal, having their backs to the wind and rain, which for the first half gave them a decided advantage. At five minutes to three Armour kicked off, and Chase securing the ball got it some distance back again. McKay then got it, and made a good run before he was tackled by De Puy. Armour received it and passed it to Gwynne, who made a fair run, but fell into Horton's clutches. Here a scrimmage ensued, and Armour succeeded in getting through, but only to be caught on the other side, and here scrimmages became the order of the day. One fact was noticeable, that the University lost ground every time they passed the ball back, because of their determined opposition to kicking it. The ball was now worked down to within fifty yards of the University goal by Chase and Calvert, when Keefer got a chance for a run, but fell over the ball, and shortly afterwards Blake kicked it into touch. When thrown out, Blake got it, passed it to Keefer, who passed it to McAndrew, who made a pretty run up to centre field with it. Armour got it, and when tackled by Graham passed it to McKay, and a series of scrimmages ensued. Afterwards Armour passed it to Gwynne, who passed it to McCallum, who lost it, when Hathaway kicked it to Morphy. The ball now began to work well down to the home goal, Barmour and Chase assisting its progress, and Morphy and Campbell working well to prevent it. Here again the home team lost ground by passing back, the Ann Arbor forwards being so soon down on them. Brown got it, and gained some distance when he passed it to Calvert, who did likewise, and then Keefer got it, but was forced into touch by Brown. Gwynne got it from touch, but lost it to Dott, and a scrimmage ensued. Here McKay got a kick, and Dott secured the rolling ball, gained some distance, and then passed it to Graham, who passed it to Johnson, when Blake tackled him. McKay and Morphy passed it up field, when Brown got it, and tackled by Armour at the same time. Gwynne passed it to McAndrew, who made a second splendid run. The ball was again worked back, and a kick sent it to Helmcken, who slipped over it, but secured it in time to send it up field again. Here Johnson kicked it nearly fifty yards, bringing it into too

close proximity with the home goal. Calvert received it, but was tackled by Campbell, and again it went a short distance up field. Allan made a good kick, and the ball rolled into touch close beside the University goal line. When passed out Calvert rolled over with it beyond the line securing, for his side, the first touch down. Chase punted it out, Allen caught it, but failed in his try at goal. Again the ball was kicked, but was quickly worked back on the University goal, when Horton got a kick off Armour, which was well stopped by McCallum, when Johnson kicked it, Keefer missed it, and Chase ran on and touched it down. Allen made a magnificent kick and secured a goal. Half time was called, and the temporary shelter was apparently so enjoyable, that some of the Toronto men refused to leave it to resume play. Persuasion, however, brought them out, and this time they had the advantage of hill, wind and rain, which now seemed to come down with greater violence than ever. During the second half the condition of the men was pitiable, and the pluck which had so characterized the first part of the game, seemed to vanish. However, Morphy and Armour played well for their side, and Dott, Chase, and Horton for theirs, but all the efforts combined and individual, only seemed to keep the ball in centre field or its vicinity.

Early in the second half, Calvert received a kick for Allen, but the distance was too long. McKay got it, and made a good run, carrying it to centre field, when De Puy received and carried it back again. About this time the home team were forced to back down behind their goal for safety, but they afterwards carried the ball well down on the Ann Arbor goal. Dott again brought it up, this time to centre field, when time was called, leaving the visitors victors, by a goal and a try.

Of the players, the University were the best runners and dodgers, but the systematic play and frequent kicking on the part of their opponents, gave them the victory. No doubt the circumstances were extenuating, but it must be frankly admitted that the Michigan secured, on an equal footing, a fair victory over the Toronto team.

* *

—The foot ball match between Columbia and Harvard was played on Saturday, in New York. Columbia kicked off, but the ball was returned, and most of the game was played on the Columbia side of the field, Thacher making the first touch-down for Harvard in the first three-quarters, from which Keith kicked a goal. In the second three-quarters, Columbia played up better, Henry playing very finely indeed, but Harvard was equal to it, Boyd and Clark scoring a touch-down each, from one of which Keith made another goal, and Kent kicked a very pretty goal from the field. For Harvard, Atkinson, Thacher and Foster played well, and for Columbia, Burton and Henry. Owing to the state of the weather, the number of spectators was not very large. Mr. F. E. Cabot, '80, umpired for Harvard, and Mr. J. E. Cowdin, '79, refereed.—*Harvard Echo*.

* *

—The names of members of K. Company, are conspicuous by their absence from the list of prize winners in the Queens Own Rifles' athletic sports. A certain injustice was done the tug-of-war men. The shot fired, K Company pulled their opponents over the line, thus winning the third tie; but although they began pulling after the command, 'are you ready?' with no dissenting voices, yet on complaint of some of the A's men, they were compelled to tug over again.

NATURAL SCIENCE ASSOCIATION.

A special meeting of the Association was held on the evening of Thursday, the 4th inst., in the School of Science. In his remarks preliminary to his inaugural address, the President made reference to the power at present vested in the Literary Society, to dispose of the McMurrich Medal. He thought that the awarding of a prize for essays on scientific subjects should belong to the Association. So confirmed was he in this opinion, that he decided, should the Literary and Scientific Society offer any strenuous opposition, to duplicate the medal.

The word scientific, in the name of the last mentioned society, is a dead one, and out of its ashes, phoenix-like, has grown up the present Natural Science Association. Never in the proceedings of the Literary Society are scientific essays read, or debates on scientific subjects discussed, nor are the McMurrich essays ever read, except by those who award the prize. It is true, that in one single instance, the essayist was not an undergraduate in science, but this is the exceptional case, and, though such conditions would debar him from membership of the Association, yet his essay could be read before it, and his competition for the prize remain unfettered. The change is a desirable one, and we would be sorry to see any opposition to Mr. McMurrich's wishes, necessitate his duplicating his generosity.

After the inaugural address, a discussion arose as to "what constitutes a zoological individual." Mr. STEWART, in introducing the discussion, cited the various definitions given by HUXLEY, SPENCER, and others, but held that all were deficient, leaving unprovided for such cases as the progeny of the honey bee, and the plant-lice, for in the former the generation process is limited to the queen bee and the drones, and in the latter the single fertilized ovum gives rise to thousands of beings. The opinion, based upon the theory of evolution, that a simple unicellular animal is a primitive individual, which may become differentiated and combined, merging its individuality into that of a higher organism, —a compound individual,—overrode, he thought, most of the difficulties, but was not without defects.

MR. CRUICKSHANK maintained with SCHLEIDEL that the multiplicity of applications of individuality, was principally owing to the misunderstanding, that the individual is not a conception, but the mere subjective comprehension of an actual object, presented to us under some given specific conception. HERBERT SPENCER contends that a biological individual is a concrete whole, having a structure, which enables it, when placed amidst suitable surroundings and appropriate conditions, to continuously adjust its internal relations to external ones, so as to maintain equilibrium of its functions, in other words which enables it to live; but a slip from a geranium will grow just as well, under suitable circumstances, as its parent stalk, so that a plant may according to this theory, be made up of numberless individual plants. The speaker concluded that the word *Individual* could not properly be used in a strictly biological sense. MR. RUTTAN urged HAECKEL's definition; that there are three kinds of individuals, Morphological, Physiological, and Genealogical, as being free from all the objections urged by the other speakers. In opposition to HUXLEY's explanation, he referred to the willow, which, though it grows in all parts of Europe, yet is incapable of producing an ovum on that continent.

THE 'RESIDENCE.'

A propos of the 'Grand Remonstrance,' an article, has come out in the *Saturday Review* of the 16th ult., on College Expenses. It reveals the fact that the same state of corruption, on a far larger scale, exists at Oxford as in the Residence. It must be owned, however, that at Oxford they display far greater ingenuity. The 'bed-maker,' for instance, is paid there several times. First as bed-maker proper, second, under the head of general expenses, and third as waiter in hall. To say nothing of 'three or four pounds in private donations from each undergraduate.' Again, each undergraduate gives yearly £1.17.6. for dusting carpet and cleaning windows. And if the gnawing suspicion that the bed-makers dust the carpet, even if they do not clean the windows, be true, this is another remembrance for these useful officials. Besides other charges such as those for water, furniture, etc., it appears that the unhappy undergraduate is further subject to the playful vagaries of the indispen- sible bed-maker, the summit of whose ambition is not reached until he 'has sold his master's corkscrew to everyone on the staircase, including the original owner.'

It would doubtless be discouraging to the pious framers of the Residence system of board to find that at Oxford they so far outstripped them in ingenuity. But allowance must be made for the difference in age in the two institutions. Give the Residence time and there is every hope, if it continues its present rate of progress, that before long its system will prove, if not as ingenious, at least as effectual as the Oxford 'battells.' I will cite one out of many instances of its encouraging development. This year some four or five rooms are unoccupied. Accordingly the board has been raised from \$12 to \$13 a month. In other words, the owners of the occupied are obliged to pay board for the unoccupied rooms! And by following out the induction we arrive at the cheerful conclusion that in proportion as the number of residents decreases the rate of board increases. This is of course the direct result of the farming system. If the Steward received a fixed salary it would make no difference to him whether the Residence was filled or not. *Fraser's Magazine*, quoted by the writer in the *Saturday Review* thus briefly sums up the whole difficulty. Speaking of the cook, it says, "He is not paid a fixed salary by the College, but he pays himself by what he can make out of the confiding and comparatively helpless undergraduates. And here, we opine, it will be his interest to supply as little for the money as he conveniently can. This he has every encouragement and every facility for doing. He stands in the position of a tradesman with a monopoly and something more besides." These remarks show exactly the position of the steward of Residence.

A COMMITTEE APPOINTED.

The following communication was received by Mr. Armour:—

DEAR SIR:—

Concerning the petition of Resident Students, laid before the College Council on Friday last, I am directed by the Council to inform you that in reference to the matters of indifferent food and attendance, you are referred to the Dean, to whose province such affairs belong; and in reference to the matter of making the Steward a salaried official, the President, Prof. Loudon and the Dean have been appointed a Committee to report thereon.

You will lay this note before your co-petitioners.

Your obedient servant,

ALFRED BAKER, Registrar.

INAUGURAL ADDRESS.

GENTLEMEN,—Allow me, again, to thank you for the honor you have conferred upon me, in electing me as your President for the ensuing year. Coming in as successor to one with whom I have been so long acquainted, and for whom I entertain the highest respect, not only for his talents and abilities as a scientist, but also for the direction and scope of his work, I am constrained to say—which I do without any mock modesty—that I confess my inability to do that justice to the position, which he has done. I do not accord to him a greater love of the sciences than I possess myself, for the same feelings animate all our hearts for the studies and pursuits which science opens to us. But, fortunately for your late President, his course in life has allowed him to tread the path which charms us more and more, the further we journey on; while I, leaving the beaten paths of science with regret, have now for many years been wandering along the more arid highway of legal lore, and amidst the dusty tomes and weighty precedents of bygone ages, rejoicing when, from time to time, the engrossing attentions to my life work would allow me to stray, even for a short time, into the quiet and shady retreats along the pathway so unwillingly left. Divorced so long from scientific pursuits, I crave your indulgence while occupying the chair, and I feel that you will cordially extend the same to me, and I trust that, whether in the chair or out of it, you will always find me ever ready to do my part in helping on the work of the Society. You cannot over-estimate the advantages connected with your work, and its importance has always impressed me, especially when we have around us such a vast field for exploration, not only in this Canada of ours, but in the vast continent of which we form a part; whether it be in the range of botany, geology, mineralogy, or other kindred subjects, the field is but as yet simply entered upon and rich rewards in the future await the plodding and persevering student. Original research; not diffusive, but confined to some particular branch of study, is what we want at the present day. Active workers in every department, filled with love for the work, and given to minute and critical examination, not merely laboring to make facts bear out preconceived ideas, but from facts ascertained and proved, deducing necessary and logical conclusions. Such should be our work, such *shall* be our work if in this busy age, this practical age, we understand aright the responsibilities resting upon us in the pursuit of science.

But we must not overlook the character of this present century, which, whether the term be complimentary or not, has been styled the critical age, so far as regards matters bordering on the domain of what has been called the world of Religion, but the constructive age as regards practical science, the age of pulling down as regards the belief in those grand principles embodied in the oldest of books, and the age of building up as regards the practical work just referred to. Science *versus* Religion has become the key note that sounds from the battle-field of the scientific world, forms the rallying-point around which wages the war of Speculation and Truth, and it is this fact that has led me to crave your indulgence to a few thoughts, not original on my part or presented before you in any original manner, but compiled by me during my readings in connection with the first chapter of Genesis—the book of beginnings—and the story of creation as revealed in the same. I would that the critical were changed as regards religion, in the aspect of science, into the constructive, that union, not divorce, should be the grand characteristic of the age as regards science and religion, that the glorious harmony that is revealed in the study of nature's laws and products should be more and more recognized and felt to be a mighty force, a vital principle, permeating the whole ground covered by each. It is so easy to act the part of the critic—to call attention to the faults, the inconsistencies, the want of harmony, the unreliable data, the apparent incorrectness, to take the negative side of a question, to pull down and overturn without supplying anything in its place; but it is hard to be constructive, patiently and with care, assiduously, from personal notice and examination, to add to and augment, to increase and fortify. It requires a good mechanic, and time and money, to construct a locomotive, but a tramp may destroy the whole work in a moment by obstructing the track and throwing it off the rails. If I may be pardoned, therefore, in offering a word of caution I would earnestly say, let the constructive habit, be that to be donned by us, that we be among the number of those

Slaves to no sect, who take no private road,
But look through Nature up to Nature's God.

"In beginning,"—so runs the opening sentence of the oldest historical work in the world—meaning no time. Science takes up the refrain, and we enter on a field of investigation the magnitude of which we cannot sufficiently realize. We cut down a tree, and from the annular rings contained in the same, determine its age, so, in like manner, we dive into the inner recesses of this earth, examine its bands of rock to find its age, to find out its antiquity. We gain some information as to this head at our very doors. A short trip across Lake Ontario and we reach Charlotte, and a short sail up the Genesee river brings us to the falls of the same name. An examination of the rock, over which the mass of water is constantly tumbling, reveals the fact that it is wearing away under this constant friction at the rate of one foot in every four years. As there are 5,280 feet in a mile it necessarily follows that it takes the river to work back this distance no less a space of time than 21,120

years. The falls are now seven miles back from Lake Ontario from the point where the river first overflowed into its waters, and if the retrogression has followed the same rate throughout, the wearing away of this rock over this distance must have covered a period of at least 147,840 years and even granted that the rock was in places soft and friable, the lowest computation would give at least 50,000 years as a minimum period within which the operation had been carried on. We are thus brought face to face with the operations of nature during great periods of time, and to the value of such knowledge in determining the periods during which the successive ages of the world's history have developed themselves. Now let us consider what geology reveals to us from the rock book of Nature's history. What does it reveal to us of its beginning and subsequent advancement, what was the order of creation, and how does the information thus derived by science correspond with the description given to us by one to whom the science of geology was unknown? "Beginning"—this word carries us back to a period when there was a commencement, and what was that commencement?

It is valuable to note how almost every age and civilization had its idea of what this "commencement" was. The Egyptian had his idea of the beginning: a chaos, an intermingled condition of elements constituting heaven and earth. The Phœnician had his void—the deep—to potential power imparting form and law. The Babylonians believed in a chaos, and the Nineveh Tablets are very precise in regard to the same. Hesiod the poet, says, "In the beginning was chaos," and Ovid describes our earth at its beginning as a rude and unformed bulk. Science of the present day takes up these traditions, and, in the words of Prof. Taylor Lewis, says of the world's commencement, "It was without form and void. Without form referring to utter irregularity of dimensions and outward extent; and void, as to deficiency of gravity, denoting not so much an absolute but a relative want of weight, and adds, this language would describe a fluid or rarified condition, with an absence of all solidity or cohesion, or it may be a huge nebulosity that has been floating through space for millions of years." And this theory is now the one generally accepted, that, at this introductory part of its history, our universe was nebulous matter with little or no cohesion, without shape and diffused through immense space out of which has been constructed our globe and the other planetary worlds with suns and satellites that now form part of our solar system.

But you may ask. What is a *Nebula*? In a few words, as I have just indicated, a mass of vapour, a faint misty appearance like a fog as seen even yet in our stellar system, existing in a state of darkness: and so it lay diffused throughout space, a huge vaporous mass, with no light shining upon it, but the blackness of darkness itself—and yet out of this was to be evolved the *clear blue expanse of the heavens*, the brilliant sun—the earth with its variegated landscapes and the rivers and lakes in all their beauties. Now science informs us that our world at an early date was subject to an intense heat, that the shape of our world with its flattened poles and bulged out equator is similar to what would be the shape assumed by a drop of liquid matter rapidly whirling on its axis, and that, it would appear that the world was once in a state of vapour, became condensed into a molten state and subsequently became solidified and in time assumed its present shape. Now let us take two substances, a piece of steel, say a watch spring, and water, one a solid and the other a liquid. If we take the former in its solid state and heat it, it becomes a molten or liquid mass, if we heat it still further with a heat more intense it burns away or becomes vaporized, or changed into an invisible vapor. So with water; if we freeze it, it becomes a solid; if we apply an intense heat we vaporize it, and get an invisible vapor which we call steam. Now what we may do here with the above two substances could be done with the whole Universe, and the whole material mass could be changed into vapor by imparting a sufficient degree of heat, and so the converse of the rule must hold good, that if all matter were once in a state of vapour a process of slow cooling would in the most natural order of things account for the condition of our Globe as we now find it. Now to shew that there is a great deal of truth in this theory, we have only to consider our stellar system. By aid of the wonderful little instrument, the Spectroscope, we find that the sun has in its glowing atmosphere all the bodies which we find in a solid state on our earth, in a state of vapour. Our moon, small among the worlds, has cooled rapidly and is a waterless, lifeless thing. The world we inhabit has cooled slower, and is habitable; while Jupiter and Saturn, being very much larger, cool slower still, and are very much in the condition of steel while red-hot. Thus we get the Nebular Hypothesis, now generally accepted by all Scientific men, and in which we can see in our system the whole process still going on and forward. The 'coal sacks' in the milky way showing as the original nebulous matter without form and void, and dark. The Nebulae which have become luminous, the melted burning systems, and the gradually cooling planets. And now let us picture to ourselves the changes which at this period of its history the world went through. We see our world a revolving mass of gaseous matter, gradually condensing itself around a central nucleus. This vaporous mass (containing all the elements that now exist in the world; not only the solid rocks, but also those of the seas and atmosphere) whirls round about the centre of the still vaporous system, the atoms kept apart by the influence of heat, preventing not only mechanical but chemical combination. Now, as this journey is made, we know, from our distance from the sun, (some 95,000,000 miles) that in the course of its annual revolution around the centre—our sun—a distance is covered of some 570,000,000 of miles, and this long journey is through cold space. We may get some faint idea of the intensity of this cold by reading the accounts of those who have ascended great heights on the earth's mountain ranges, or have soared aloft into the blue vault of heaven in balloons, and we know that even in the Torrid Zone, at the highest altitudes the thermometer stands at zero. Could we ascend fifty miles above the surface of the earth, we would experience a cold so intense that we can have no conception of it, and it is estimated that the temperature of space is about 250 degrees below zero, and Rev. Dr. Barr in his "Eccle cœlum" estimates it 50,000 degrees below zero. You can now imagine what effect this intense cold would have upon this heated vaporous body, the heat is rapidly radiated into space, while the atoms gravitate towards a centre and soon form a liquid nucleus. As this process continues the globe becomes a fluid mass surrounded by a vast cloudy pall in which condensing vapours gather in huge masses, and amid terrible electric explosions, these vapours falling in acrid corrosive rains upon the seething molten mass, are shot up again into space in the shape of vapours. Thus darkness dense and gross would settle upon the vaporous deep only lit up as some of the more incandescent matter would burst through the slag, rapidly forming, or the electrical explosions would dart athwart the sky. By degrees the surface slag sets permanently and the covering remains in huge wrinkles—giving here an incipient mountain chain, and there a sea basin too shallow at first but rapidly deepening and now for unnumbered years the rain pours down. It was the storm epoch—and the epoch of pulverizing the surface of the rock. Things grew quiet, water remains in the hollows and pours down the mountain side, and one great ocean covers the world from pole to pole. The fire is got under, the hatches are battened down, and water is triumphant. We have

the chaos of boiling seas. Thus we have, in the changes I have thus indicated, a chaos of cosmic matter which we call nebula—a chaos of melted rock, and a chaos of corrosive rains, thick vapors, black skies and boiling seas:—

An earth, formless and void;
A vaporous abyss, dark at its very surface—
A universal ocean!

Pardon me, now, if at this stage I ask you to retrace our steps for a moment for the purpose of enquiring how, and in what manner, these changes occurred; what was the principle or force that set into active operation the molecules of nebulous matter, endowing them with the power to produce these results.

This enquiry brings us face to face with one of the great mysteries of the material Universe—namely *motion*. This principle cannot be explained—science can give no explanation—the most natural state of matter is rest, and unless some energy is imparted to it, it will remain forever in this condition, and yet to this dark, nebulous mass, resting in the immensity of space, certain potencies are imparted, certain vital forces by which the great mass is quickened. Whence came gravitation; whence came the impetus that set the original nebulous mass revolving around a centre; whence came those chemical affinities, so apparent to us, now magnetic and electrical action, laws of crystallization &c. We can only explain them by the theory of some outward interposition—some divine power came into play, brooding over this dark mass and imparting to cosmic matter those qualities to which I have just alluded, qualities which it did not formerly possess. As Dr. Carpenter observes, "so was the dead matter impregnated with vital forces, making it productive of higher forces, and so was it uplifted by these repeated impacts of Almighty power till it stands before us to-day the study of our philosophers and the wonder of our minds." Vital principles such as motion and gravitation imparted to the mass, created and developed chemical combination, and electrical action, and light, the first element of order and perfection is introduced. Light heat and electricity,—potent three. At first as the atoms acting under the new law, obeyed the same light as a faint Aurora would run through the nebulous mass, or if I may use a better illustration, light as a mild phosphorence, such as we may see emitted from decaying wood; but gradually it becomes brighter and brighter, until it assumed the light-giving proportions as we at present find it. Thus, in accordance with the Divine fiat, light appeared and the light after that never went out. Once, it was considered a standing argument against the Mosaic record that the author had falsified his record by speaking of the creation of light before the formation or setting apart of the sun, and yet science corroborates the truth of the Mosaic account that light existed, and was naturally created before the sun.

Thus up to this point we have traced the history of the world as embodied in the first record of the first creative day, and by the term day, I do not mean a solar day, "the obvious meaning of the author" as alleged by Prof. Tyndall, but the day which a critical examination of the term as used by Moses, shows to have been something very different namely, that each successive creation was a dawning out of the previous darkness and disorder. Each was a new morning rising upon an unfinished world. As we examine more and more into the domain of science, we are impressed with the fact that these dawns run on after their commencement parallel with one another, one is started and sent off in its plane of creation, then another is started and goes on side by side, the one keeping pace with the other, or as one author very succinctly puts it, the light making begins but is not completed till a firmament also begins, and while the firmament is preparing, the dry land begins to appear and vegetation to spring up. But both the upheaving of the dry land and the up springing of vegetation are in process when the sun first shines on the earth, and the creation of marine life begins almost immediately after vegetation appears, and a long time before all the new orders of vegetation are completed and so, through to the end. The successive creations are successive only as to their mornings, or their beginnings; one stands close behind the other, and they are going on side by side at the same time, so Moses leaves it. He closes no day's work by saying then came evening. He opens the morning and then starts the next day at its side.

Taking it for granted that the Nebular hypothesis is adopted, as I have endeavoured to explain the same, it naturally follows, that motion imparted to the mass, as I have already indicated, would lead in time to the breaking up of the large mass into smaller Nebulae, and these becoming detached, formed our stellar systems. The fragment that forms our solar system filled all the space now occupied and marked by the planets in their journey round the sun. Thus, a process of space making was instituted. As the great disc of nebulous matter whirled more and more rapidly in proportion as it cooled, and shrank it would throw off from its outer rim a ring of vapor.* After a time this ring would break and roll up into a huge vaporous ball, which at last became a solid globe, and so on, by the formation of another inner ring, until all the planets and stars of our system were born, and in the centre blazed the sun. Thus the original nebulous mass has imparted to it motion, and it becomes luminous. Acting under the new principles imparted to it, it separates into great masses, with spaces between. These great irregular masses of vapour take form, huge discs spin around, rings of bright vapor are thrown off, break, form worlds and blazing planets, and with their attendant satellites, pursue their journey round the sun.

TO MAIDIE B. B.

PASSED THE SENIOR MATRICULATION AT TORONTO UNIVERSITY, SEPTEMBER, 1880

Seen in the brilliant sunshine of success,
The summer days and winter nights of toil;
The ghastly hours illumed by midnight oil;
The weary study, dull suspense, the stress
Of thought that soon outwears hopefulness,
Have vanished utterly; and naught remains
But the proud record of the year's sure gains.
Take the glad greeting I can not repress!
Dear one, for thee, in all the woods about,
October flings her scarlet banners out.

Fenwick.

A. E. W.

—Educational Monthly, October

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