



# The McGill

Redpath Library

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### EDITORIAL

CONSTANT dripping, though a monotonous process, is reputed to have its effect even upon the hardest material. Consequently we offer no apology for again reverting to a subject upon which we have frequently had occasion to express our views. Our entertainment society, which, dissatisfied with a name bearing some relation to its purpose, takes a scarlet key as its symbol and its title, has recently announced its intention of decking out its members in "some kind of insignia which any visitor should easily recognize"—apparently to take the form of a large key—and has further urged the importance of every member "on duty" (a term significant of the change that has come over our hospitality) wearing "a distinctive sweater, with an embroidered badge or special hat." The Society has also decided to hold a *thé dansant*, ostensibly as part of its function of entertainment, but really in order to raise money, although it has already been granted the full amount of the funds formerly devoted to entertainment purposes.

We have no quarrel with the society for the mere raising of extra funds, though we question whether it would not be better to ask for a grant outright from the Students' Society. It is obvious that if McGill is to entertain more lavishly, she must pay for it. But we have not seen one argument in defence of the pernicious idea that a distinctive dress is a necessity—save the questionable one that it is done at Dartmouth. Shriners and Ku Klux Klansmen need a farcical uniform, for their dress is but a symbol of their irrationality; athletes need a special costume, for the ordinary clothing of man is not designed for hard physical exertion. But there is no conceivable justification for dressing in special sweaters and hats men whose sole duty is that of putting strangers at their ease. We hope that the members of the Society will refrain, at this early stage of their official existence,

from making themselves and the University look ridiculous. If they must wear a scarlet key, let it be on a key-ring and not in a button-hole.

.....

THE *McGill Daily* is to be warmly congratulated on the establishment of a weekly column of "Collegiana". The various exchanges that come into the Daily office provide ample material for an entertaining and instructive series of pointed paragraphs. The excellent examples published to date seem to prove that after all there is a good deal of truth in the statement handed out last year by a prominent McGill undergraduate in an address before the local Babbitts who were cajolingly informed that "the college man of to-day is the Kiwanian of to-morrow". We are glad to observe that the Daily's junior Mencken will not hesitate to expose some of the many examples of red-and-white Rotarianism unconsciously exhibited in the news columns of his own paper or the lectures of his own professors.

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We wish to extend a hearty welcome to the British debaters, and regret that we go to press too soon to allow an account of their debate with McGill appearing in this issue. An article will be devoted to it in our next number.

#### The McGill Fortnightly Review

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MSS. may be submitted personally to any one of the editors, or mailed to The McGill Fortnightly Review, Apt. 16, 989 Atwater Ave., Montreal. Unsuitable contributions will be returned.

## Universities

A. P. R. Coulborn

PROFESSOR Basil Williams, in his inaugural lecture delivered before the University of Edinburgh on Oct. 14th 1925, said "Perhaps . . . the greatest benefit the university teacher can confer on his students is to encourage in them a highly critical attitude to the words of even the most venerable professor. . . . In this way the study of history can powerfully help what should be one of the chief functions of a University, to see that it sends forth not a man nor a woman into the world of the kind that goes about saying that a thing is so, because they read it in a book or a newspaper, or because so and so said it." Professor Williams' lecture was entitled "The Value of History", and he was concerned in his words quoted above with the value of history in adducing the critical attitude, but they might well be applied to the whole curriculum of studies in a University. It has been well said by the few wise amongst us that the graduate of a University need know not one single fact more than he knew when he sat for his Matriculation. What his period in the University should do for him is to show him how to think.

If, then, we agree that the University man is the thinker, what shall we conclude of his destination after leaving the University, and what of his work while he is there, and what—most important of all—of the manner of man he must be to enter the University? To answer these questions we must remember the place of the University in the community: it is that corner in which should be found the highest learning and thought which the community is capable of producing: it must be a nursery for the quintessence of wisdom: otherwise it has no *raison d'être* whatever. It is merely a school if it produces business men, practical engineers, and the rest of the rank and file: it is only by courtesy that we allow that it may house for a time the leaders in the practical walks of life. It produces primarily thinkers, and the rest must take second place. The ordinary citizen professions—perfectly admirable and essential in their way—require a different order of training to that which the pure thinker needs, and this training they receive in schools which teach facts and technique. A University is apart from all this, and unless it is kept so, it ceases to be a University.

One of the greatest tragedies of the age—a tragedy far more calamitous in America than in Europe—is to see Universities trying to be schools at the same time. The two ideas are utterly and fundamentally different and attempts to combine them lead to the impairment of both. In the first place the real students, who come to the Universities to become thinkers, are necessarily in the minority, and the result of losing sight of the fact that they alone should be considered, is that the energies of the teachers in the University, and the University's money are wasted on providing "schooling" for the other element. The highest injustice—it amounts indeed to fraud—occurs when the latter receive degrees from the University of equal value with those which the real students receive. Who will desire to become a Bachelor of Arts if he knows that half the clerks in the local insurance firm are Bachelors of Arts? The clerks may be excellent fellows: we could not do without them, but is it fair to the

thinking student, to allow the outside world to think that the clerks are upon an intellectual level with him?

This may sound like a plea for the conversion of Universities into close corporations consisting entirely of a caste of "intelligentsia". It is not that in the least. By all means admit to the University all who can shew that they are intellectually fit to be there, irrespective of what they wish to devote themselves to after their undergraduate course, but let it be clearly understood that those who come with the ultimate intention of leaving the halls of thought will not learn in the University the technique of a trade; they may go to technical schools for that. They should by all means be welcomed to the University, for they will in later life be the links between the University and the outside world. Thought is nothing if it can have no connection with the world at large, even if its only connection be to provide intellectual pleasure. The ordinary citizens who have come to the University for a space before entering upon their ultimate vocations are the very people to interpret between the two worlds, but the whole purpose of their coming to the University and the whole purpose of the University's existence is lost if their presence distracts it from its proper pursuits. They come as guests to a foreign land, and when they are in Rome they must do as the Romans do: that the Romans should begin to do as they do is an abdication of the position of Rome.

Medicine, Law, Applied Science are not University subjects. McGill recognises this by separating them off from Arts, where alone is to be found true academic life; but even in doing this McGill sacrifices her place as a pure University—in company with nearly all other Universities: there are really few true Universities today. Within the Arts Faculty we have combined pure Arts and pure Science, which should form the Faculties of a true University. But worse than this, the way in which subjects are taught in general is a proof that they are not intended in the first place for thinking students at all. To take only one instance; there is a serious danger for the moral criterion to creep into the judgment offered in the lecture-room upon the great figures of the past, be they *littérateurs*, scientists, philosophers, historians or what not. In his lecture on the "Science of History" James Anthony Froude said, "An inferior artist. . . . if he is a better kind of man, . . . will force on nature a didactic purpose; he composes what are called moral tales, which may edify the conscience, but only mislead the intellect." And again, referring to Lessing's "Nathan the Wise" which had the moral purpose of teaching religious toleration, he says, "The doctrine is admirable, the mode in which it is enforced is interesting, but it has the fatal fault that it is not true." The professor who indulges in this moralising is misusing the medium of the lecture room in precisely the same way as Lessing misused the medium of the theatre. But this is not as a rule the professor's fault: he knows that he has before him a set of young men and women, the majority of whom do not think, nor are they learning to think. They have not the critical point of view—for after all criticism is a very large element in thought. The professor knows that his audience will not criticise his words: if he does not infuse the moral tone, he will be misunderstood. He makes the best of a bad job: he sacrifices the minds of the students to their souls.

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## On Debates at College

Stephen Leacock

IT has been suggested to me by the editor,—or rather, I suggested to him,—that there might be room in these pages for an article from me on college debating. It is a subject in which my interest was first enlisted forty-one years ago, when I took part in a school debate to decide the question whether Louis Riel should be executed. My colleague and I argued that he ought to be. We won the debate and Riel was duly hanged. This initial success has impressed me with the immense influence that can be exercised by college debates if properly organized.

But it is my opinion that the great majority of college debates, as conducted on this continent, start from an entirely wrong point of view. A debate ought to mean a training in the art of speaking in public. There are plenty of other exercises in college which supply a training in collecting and memorizing facts, plenty of other things which involve profound study in the bowels of the library. The whole point of debating at college lies in teaching the students to speak in public. This is an art exactly on a par with swimming. It lies within the compass of everyone up to a certain degree. Everybody can swim if he learns, and nobody can swim without learning. Everybody can speak, more or less readily (probably less) if he has had practise. And nobody can speak without it.

It is sometimes thought that to some people speaking is a natural endowment. But this is only true in a limited way. I am reminded here of the case of a young Scotch boy whom I had in my employ at Orillia. He fell off my launch into the lake and after he had been fished out someone asked him if he could swim. He answered that he could *not* but that he had "learned the motions of swimming" in a Scotch country school and was "intending to put them into practise." The application is obvious.

On the other hand whenever a college debate is organized, especially an intercollegiate debate of importance, it is taken for granted that what is mainly needed is a vast apparatus of *facts*. Some huge subject is selected, as broad as the continent and as comprehensive as the census. "Resolved", it runs, "that the state ownership of railways has proved a success."—"Resolved that the operation of direct legislation in the State of Oregon does not justify its extension into Saskatchewan".—"Resolved that the operation of light, heat and power companies under franchises is inferior to direct municipal control." These subjects selected, the two college champions descend into the bowels of the library. They must lose no time. The great debate is only three months off. They disappear from sight. Their absence from classes is excused in a hushed whisper. They are *preparing for a debate*. As beside their activities a brooding hen and a maternity hospital are not in it for expectancy.

From time to time word comes up to the outer world of their progress in preparation. It is rumored that they have unearthed some fine material on the Prussian Railways. It is said Professor Stodge has found for them the entire corporation reports of the city for seventeen years. It is known that they have

written away to the Secretary of State of each of the nine provinces and the forty-eight states, and that the college postman staggers under the "material" that comes in.

The great day arrives. The "champions" are hauled up from the library. Their myopic eyes blink in the light. They look a little pale. But what of that,—they are "prepared," they are stuffed full to the hatches with a cargo of information. Carry them gently to the debating room or we may spill some of it. The great moment comes. The debaters stand up in their black gowns and their little white ties with each in front of him enough water for a poker party and enough books for a budget speech in parliament. And then,—twenty minutes! Twenty little minutes! And two minutes more for rebuttal! Twenty minutes to argue out the intricate economics of a continent, and two minutes to "rebut" all North America. Twenty minutes to exhaust a subject where twenty years is all too few. And the victory goes to whichever side has more completely swallowed the census and makes a longer array of citations of statistics.

Note further that the preparation itself, imposing though it looks, is a mere nothing. What can these two champions know after all, on a huge subject with only three months of preparation? They have merely touched the surface of it. Their knowledge would not enable them to write an intelligent page about it. They have merely wasted their winter and hurt their health. They ought to be taken somewhere and given a glass of beer and a sausage.

The proper method should be the exact reverse. The subject should be, if possible, one in which the student takes a real interest, something that has come into his life and about which he really wants to talk. Who cares about the state railways,—except Sir Henry Thornton. Leave them to him.

I admit that the most attractive subjects would represent forbidden ground,—such as:—"Resolved that the lectures in this university are on the whole not a help to the human mind." But at least the point is clear that the subjects should be of real, ordinary, everyday interest to the student,—not to someone else altogether.

Now there are admirable subjects lying all around us without worrying over the state railways,—subjects which are so wide and so important that they defy the exhaustive preparation of Professor Stodge and his two champions. For example: "*Resolved that the influence of motion pictures is bad.*" But our American students have become so badly damaged by the "preparation" idea that the moment this subject is propounded to them, they at once rush to a professor and say "Where can I get a book on that?" Or perhaps a little later they announce with joy,—"I'm all right. I've found an article on it." For this attitude of mind there is no fit comment but the exclamation "Help."

The real preparations for that debate or for any other properly planned debate is to *think* about it, to get keen about it, to turn it over in one's mind. Any facts that are *wanted* will then appear and can be looked for. The debater will begin to think "I wonder how much money is spent upon moving pictures?" When he has *thought* that he is in a position to go and hunt it up. But not before. And any student who can't

(Continued on next page)

## The Defective Executive or Soaked in System

F. R. S.

The defective executive sat at his desk in the Union. Great beads of perspiration were forming on his imperious brow, for he was evolving a scheme whereby all information received during lectures might be pooled and reissued in the form of cheap sets of notes.

In a corner of the room sat his right-hand man, Cardin Dex, busily engaged in calculating, from a file of pink cards, the exact degree of partiality amongst the Partials.

"Card, old man," said the D.E., "I can do no more of this at the moment. I am depressed; I need stimulus. Read me the list."

Cardin Dex knew what was wanted of him. The defective executive needed inspiration. He should have it. Picking up a sheet of official letter paper he read in a voice practical yet proud:

"Students' Council of McGill University, controlling:—McGill Union, McGill Annual, Students' Directory, Literary and Debating Society, Players' Club, McGill Daily, McGill Handbook, Red and White Revue, McGill Canadian Club, Scarlet Key Society, Employment Bureau, Musical Association, Choral Society, Mandolin Club, McGill Music Club, Rooters' Band."

Long before the list was finished the face of the D.E. was glistening with such a glow as to appear positively globular.

"That is us", he cried. "We are it. Card, you are a trump. I am ready for anything now. Show me a *Daily*."

Seizing the jocular journal from the jocular-journal stand at his side he proceeded to get all student activities under his thumb. Suddenly he leaped to his feet, careless even of losing control of the activities.

"A crime" he hoarsed, "a crime within our very gates! Listen!" He read from the open *Daily*:

STOLEN OR LOST  
MAJOR A WARD.

Dropped after Presentation.

"A Major, stolen from McGill! This is terrible. A Colonel would not have been so bad, but a Major—"

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### On Debates at College

(Continued from page 47)

*think* ought not to be a *champion*: he should study to be a professor.

I have said enough. I must not over labour the point. A subject of interest, defying exhaustive statistical treatment, relatively short notice, *thought* rather than collection of material, the attempt to *speak* what is in one's mind not the repetition of what came out of someone else's,—these are the things that make a real debate.

May I add a last word of something like apology. I have to admit that since that debate at Upper Canada College when the Hon. Hal McGiverin and I hanged Louis Riel, I have never debated again. I am resting on my laurels. For after all, that school debate was a model. The subject was announced in the morning, we "prepared" it over our midday school dinner, the debate was held in the afternoon and Riel was hanged almost immediately.

Is there no one on whom we could debate at McGill in the same way?

terrible! He must have fainted after some official presentation or celebration, and then been kidnapped."

He fell back into his swivel chair, which began to revolve violently with the whirling of his super-efficient brain.

"Who is Major Ward?" asked Card innocently.

"Don't ask irrelevant questions, Card; this is no time for thought. We must act. We must find out what presentations or celebrations there have been, and who is the likely kidnapper."

He pressed three buttons simultaneously with the little finger of his left hand. Three Scarlet Key officials appeared. The D. E. issued orders with such rapidity that Card was unable to enter them upon the yellow order-forms. The officials vanished as completely as the Lord Rectorship.

For a moment all was silent. Then a voice was heard outside the door repeating the numbers 95-73-6-81, the door was flung open, and a man entered in a series of short, sharp rushes. He was heavily padded, and wore a nose-guard. He looked up. It was the manager of the Cup-it-all theatre.

"Good," said the D. E., "you have come rapidly. Tell me, has there been any further presentation of Cups by Harold Lloyd recently?"

"I guess not", said the Manager.

"That will do". He was instantly tackled and shot down the discarded-cup shoot.

Scarcely had the door closed before a shout of "William, William" resounded down the passages. Then the door re-opened, and a heavy figure bounded in. He glanced round the room as though it were somehow familiar. It was the Head of the Economics Department.

"Commendable promptitude", said the D. E. "Kindly inform me if any of your students, when not engaged with Adam Smith, have shown a particular interest in Stevenson's 'Kidnapped'?"

"I rather suspect," replied the heavy Head, ignoring the question, "that someone is attempting to parody my 'Defective Detective'."

Before he could get any further he was hurled into a corner and buried under a heap of questionnaires.

A panting was heard outside. Then the door opened a third time and a huddled form rolled onto the carpet. It unrolled and lay prone. It was the Leader of the Conservative Party.

"Mr. Meighen, we of McGill, nay we of this unvisited Province, will not lightly forget this kindness. Have you, by any chance, held any official celebrations at Ottawa recently at which McGill men were present?"

"No, by the Three Votes, No!", said the prostrate politician.

"Roll him out", ordered the D. E. It was done.

"Card, outside help has failed. We must help ourselves, like good executives."

They set out to look for clues.

They thought they saw beauty in the McGill Gates. They didn't. There isn't any.

The D. E. went down on his hands and knees and began to examine the avenue. Cardin Dex followed suit. Then other students, out of the sheer habit of following defective executives, did the same. Soon a great crowd was crawling up the avenue. Professors joined in behind when the movement was sufficiently large. In the extreme rear were the editors of the *Fortnightly* in a compact row, noses in the air. All McGill was crawling.

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## Science and Belief

J. A. Taylor

IN his preface to *What I Believe* (Kegan Paul & Co. 2/6) Bertrand Russell writes, "In this little book I have tried to say what I think of man's place in the universe," and of his possibilities in the way of achieving the good life. In *Icarus* I expressed my fears; in the following pages I have expressed my hopes,—in human affairs we can see that there are forces making for happiness and forces making for misery. We do not know which will prevail, but to act wisely we must be aware of both." This passage illustrates admirably the purpose and mental attitude with which these two books were written.

In such works as *What I Believe* perhaps the greatest difficulty for the author lies in the fact that most of the subject-matter is essentially controversial in nature. It is, needless to say, this very fact which makes the conclusions arrived at articles of belief. The state of knowledge, at present concerning man, and the relations of man to nature and to his fellow men does not permit of the acceptance of anything more than the most probable solution to these problems as grounds for belief concerning them. On the other hand, however, it enables us definitely to rule out many beliefs, fears, and superstitions that in the past have only added to the confusion and degradation of mankind. Yet it is reasonably certain that a large proportion of the readers of this little book will not agree with its author as to what beliefs fall into the latter category. Bertrand Russell is a rationalist, and an exceptionally brilliant and capable one. It is impossible for any one out of touch with modern developments in philosophy, mathematics and even psychology, to appreciate the value of his contributions to these different fields of research. Yet in spite of the unique place that he occupies in man's quest of truth, many of his conclusions will be repudiated by those of the orthodoxy, who, we are told, claim to have a firmer ground for belief in faith, and the authority of revelation. However, it is not given to all of us to be certain and happy in our choice between two such grounds for belief.

It is claimed by some that not only the incomplete knowledge that we do possess, but even the nature of the knowledge process itself, is incompetent to grasp or describe the reality in which we find ourselves. Many, on the other hand, cannot find any justification for this supposition. The enormous increase in human knowledge in the last few hundred years has not only completely revolutionised our inherited ideas of the universe, and our mode of living, but in so doing has repeatedly achieved the impossible, has again and again transcended imposed "limitations" of the mind.

If therefore in our attempts to fathom this reality we do not get to the bottom of its nature, we can either fold our hands in passive resignation, and call it a mystery, or we can go on sounding, for after all we might touch bottom here and there. In the former case our peace of mind demands that, in our idleness, we trust in a Pilot, who does the most difficult part of the work for us and who, we believe, can fathom or even *direct* the nature of things. We then steer the ship on His bearings. In the latter case we are too busy with chart and sextant, to worry about sharks or salvation. Swinging the lead brings its own reward in the exhilaration of gaining a yard. Here our beliefs involve action rather than submission. Only two are necessary. (1). Our faculties can resolve the order

of nature to a practically unlimited extent. (2). The fact of volition conditions the course of events. These are grounded in experimental verification, which is the strongest foundation upon which any belief can rest. So long as we persist in making mistakes at the wheel, the rocks that we encounter *en passage* can not call our faith in question; *e. g.*, the allegation that the late war involved the failure of Christianity as a civilising influence is often answered by the assertion that Christianity has not been given a fair trial. We have but to choose, and diligently steer. It is only the insincere ones who try to follow now one course, now the other that have reason to fear the outcome. The prevalence of moral and intellectual dishonesty in human nature does greater harm than any that might be attributed to the more radical of the views expressed in *What I Believe*. A man who publicly repudiates the Agnosticism to which he has privately given assent, rather than, as he thinks, violate his reason, is on a par with the one who denies the existence of the God, affirmed, as he believes, by his own religious consciousness, and by the works he holds sacred, in order to gain wealth and power.

It would be futile for me to try to criticise Bertrand Russell from either point of view, concerning his beliefs. I will confine myself therefore to the expression of some of those ideas and speculations which the less controversial parts, as expressing deductions from known facts, have suggested.

### *Man's Place in Nature*

"Physical Science is thus approaching the stage when it will be complete, and therefore uninteresting. Given the laws governing the motions of electrons and protons, the rest is merely geography—a collection of particular facts telling their distribution throughout some portion of the world's history." (page 10.)

Soon after the publication of Newton's *Principia* when it was found to what astounding exactitude the motions of the extra-terrestrial bodies could be explained, and even predicted, by means of Newton's Universal Law of Gravitation, an eminent physicist voiced his belief that the science of physics was almost a completed system. Again, a short while before Sir Humphrey Davy showed, by rubbing two pieces of ice together, that heat was not a subtle fluid called "caloric", but a mode of motion, another renowned research worker complained that there was nothing new for him to discover. Before the Michelson-Morley experiment was thought to give a definitely null result, *i. e.*, no difference in the velocity of that light which, sent out from a moving source, travels in different directions,—a very similar belief was prevalent among scientists that the last word concerning mechanics had been written. In fact, before the atoms of matter were resolved into electrons and protons as localisations of electrical energy in "Space," the hypothesis of "Materialism," founded ultimately on the "Diakosmos" of Democritus pretended to a reduction of the material world, in the last analysis, to the "ultimate particles" of matter, or atoms, and their motion as described by the laws of mechanics. Since then the Relativity theory, a consequence of the above property of light, has overthrown the fundamental physical concepts of absolute space, time, and motion, altogether. Again, following up the fashion set by the Quantum theory, there is a movement on foot in modern physics to re-establish a corpuscular or dart-like theory of the nature of light, which is very similar to Newton's original theory. At the same time the wave theory

of light, as well established as any physical theory, still holds the field. Now there is direct experimental evidence for both of these theories, and yet they have so far appeared as incompatible. This example alone should suffice to assure us that the physicist will not be denied "The passionate delights of incomplete discovery." (page 11).

However there is another angle from which this view can be attacked. At present the physicist has not quite got "The laws governing the motions of electrons and protons," particularly those of the latter, but, even supposing he had, and in addition the complete geography of their distribution—"written down in a big book at Somerset House with a calculating machine attached, which, by turning a handle would enable the inquirer to find out the facts at other times than those recorded," even then it is doubtful if he could describe or predict a single event. In spite of the great Laplace, who I believe originated this logical fairy tale, there is at least one great factor which appears to have been neglected in the vastness of this view, and strange to say it is that in which Laplace was also the greatest pioneer, namely Probability. Even considering the development to which the theory of probability may some day attain, it appears as incompetent to predict the configuration at any future time, resultant from a given configuration of, successively, the electrons and protons in the various atoms, of these atoms in the various molecules, of these molecules in the latter-system of a crystalline substance or as dissociated in solution, or as combined in exceedingly unstable and complicated colloids, proteins, protoplasm, cells, and so on, such as occur in highly organised living bodies. The numbers of these ultimate constituents of matter in a single living body are quite inconceivable to the human mind, but the interactions possible not only at the respective organization-levels, but between these various levels themselves, present an unresolvable infinity of possibilities, and while the body, on analysis, may not ultimately consist of anything but these physical constituents, nevertheless the respective levels of organization and degrees of complexity may be such as to defy any treatment from the Calculus of Probabilities. In addition there seems to be adequate grounds for supposing that certain successive levels of organization may be equivalent to successive new factors determined in each case, not merely from the configuration at particular instants, but dynamically by the mutual coordination of the respective units. It is the belief of scientists that an explanation of the properties of the resultant in terms of the constituents and of their organization will ultimately be found, but at these successive levels of organization there is no sort of parity between the properties of the components and the properties of the resultant, and if we ignore the suggested intrusion of subtle forces such as the "Atomic Volition" of Lucretius and the "Elan Vital" of H. Bergson, etc., of which no indications have yet been discovered, we are bound to admit that the properties of the resultant are factors which do not inhere in a mere collection of the constituents, but in their organization. It may be that in the brain the highest form of such organization goes on, and such coordination on a grander scale may be the physiological correlate of thought. A propos of Bertrand Russell's remarks as to the impossibility of one man playing a football match, I might add that a mere collection of men would be equally useless; which fact is more significant.

A consideration of the primary organization-levels of matter will illustrate these points. All atoms may be resolved into electrons and protons, and a secondary unit, the alpha particle, which consists of two electrons and four protons. The proton is the nucleus or core of the hydrogen atom (atomic number 1) and the electron is its satellite. The alpha particle is the nucleus of a helium atom, (atomic number 2) which has two electronic satellites. Now the properties of say the hydrogen atom bear no simple relation to the properties of the constituent proton and electron as free. Again in a comparison of the hydrogen and helium atoms the properties of the latter can not be explained or deduced by considering merely the addition or collection of four atoms of hydrogen either of their properties or as physical entities, although the number of constituents is correct. The helium atom is as differentiated from the hydrogen atom in its properties as their respective nuclei, are. However the properties of the atoms are to a marked degree a function of their constituents as can be shown by arranging all the elements in the order of their atomic numbers, when the periodic variation of certain properties becomes evident. This goes to support the scientist's belief in his ability to ultimately explain the properties of a substance. Consider a simple case of the interaction of the atoms, say of hydrogen and oxygen, whose structure we know thanks to Niels Bohr and others, in the formation of a molecule of water; and the attempt to describe the various states of aggregation responsible for the corresponding physical and chemical states met with. This description, quite apart from any explanation, is quite impossible at present, although much progress has been made. Indeed it may be of small consequence that it remain so, for we do not obtain our knowledge of the respective organization-levels in this way by synthesis, but directly, and perhaps the only important function such a synthesis could perform is to disprove the action of any metaphysical force, such as those already referred to.

We must conclude then that the factors represented by the terms "atomic force", "molecular force" etc., which are descriptive of these organization levels, further complicate matters. The equilibrium for example governing the structure and the grouping *i.e.* the chemical and physical isomerism, of relatively simple organic molecules, is most delicate. It is the purpose of Stereo- and bio-chemistry to investigate the factors determining such and similar changes in the highly differentiated organic compounds in the living body. The identification of such factors may go far in explaining neurological phenomena, and as the consideration of the more reflex type of action gives way to the consideration of the less, we may invade the very citadel of the mind itself.

There is one more point that can be made. If "Electrons and protons, like the soul, are logical fictions—and not a single persistent entity" (page 17), then it is very difficult to see, no matter how many books there may be at Somerset House, or how fast our complicated calculating machine works, how the events so described or predicted could be anything else than a greater logical fiction. I hope this will acquit me of any disrespect to Laplace in referring to his logical fairy tale.

"There is one simple test by which all the (metaphysical) arguments (for the immortality of the soul) can be demolished. They all prove equally that

## Silver Birch

**D**ELICATE bender over pools,  
 your body is as white and  
 as slender as a girl's.  
 Stooping a little, you stand  
 by a wide water, or droop  
 forward letting your long hair  
 drip slowly into the water.  
 It is you who share  
 with some women the power of bending  
 beautifully to strange beauty, of  
 leaning lightly in hiding hair  
 over a wide water or an infinite love.

S.

## The Defective Executive or Soaked in System

(Continued from page 48)

The D. E., unconscious of the commotion behind, led the procession up the avenue, along past the Redpath, down McTavish and west on Sherbrooke. When he reached the open mouth of a line of unalaid drain-pipes he entered it, piping-hot on the scent.

Squads of police were now marching beside the undulating throng, keeping the students in line and preventing the professors from jostling one another. The McGill yell was started, but every one forgot the answer to "What's the matter with Old McGill?"

After the seventeenth drain pipe the D. E. stood up, baffled. Suddenly he saw that crawling things were issuing in a steady stream from the pipes. McGill students, in fact, were being turned out like sausages. Rage overcame him. Then he reflected that this was true of all American Universities, and he controlled himself before he spoke.

"It is necessary", he said, "again to remind the student body that under no circumstances may a parade be held unless permission has first been obtained from the Students' Council and proper supervision provided. Offenders will be summarily dealt with."

A tremor ran down the horizontal backbones, spreading from man to man. In three minutes it had reached the Editors of the *Fortnightly*, who instantly took out pens and paper and began to write editorials attacking compulsory lectures, the Scarlet Key Society, and organized activities. Then the entire procession broke from the pipes and fled like frightened rats down the side streets. Not a man was left, save an over-large professor, stuck in the third pipe, raked fore and aft by excited policemen, and the Editors of the *Fortnightly*, still writing furiously.

"On, Card, on!" cried the D. E.

An idea had just struck him,—one of those ideas that are far too simple to be discovered immediately by great executive minds. He would find out who sent the notice of the crime to the *Daily*.

They hurled themselves into the *Daily* Office, overturning a sleeping editor whose unconscious mouthings were being put into shape by an assistant for the editorial of the next issue.

"Has it come?" asked the D. E.

"Winter has come", mumbled the editor.

They found the clue. It read:

STOLEN OR LOST  
 MAJOR AWARD.

Dropped after presentation.

Cardin Dex was the first to understand. "Some other defective executive dropped his major award after the presentation the other day", he said, "and inserted this facetious notice. MAJOR AWARD is a *Daily* misprint."

"Is it possible", murmured the D. E. dumbfounded.

He slunk back to his office, his face, now excoriated by the excursion, appearing more than ever ready for instant execution. He thought of the Manager of the Cup-it-all, headfirst down the discarded-cup shoot; of the Head of the Economics Department, smothered under the pile of questionnaires; of the Leader of the Conservative Party, still unrolling.

All to no purpose.

"Card", he said, "I am depressed. Read me the list, starting from the bottom."

Card began, in a voice sombre but still superior: "Students Council of McGill University, controlling: Rooters' Band. . . ."

He stopped, petrified. The defective executive had slipped into the waste paper basket, stone dead.

The post-mortem showed that his entire System was varicose.

F. R. S.

## Universities

(Continued from page 46)

This brings us to the crux of the matter. Those students who force any cautious professor to moralise should not be in his lecture room at all. Our present system admits those who are not even to be leaders in the citizen world, but its rank and file. At their schools they learn strings of facts—facts—facts—with no meaning,—and then pass their Matriculation! Then the unfortunate University, having begun wrongly, slips into the abyss: it has taken unto itself school-children: in its kindness of heart it bears the consequences of its own error and continues to treat them as school-children. But how woefully it wrongs those others who are not school-children, and did not come as to school! Compulsory lectures, no less than moralising lectures, proceed from this same bad start. Crammed examinations come from it, and all the school-childishness of student "activities" comes from it. McGill, however, is on the right track, in raising the standard of Matriculation. But something more drastic than this is necessary. We have at present a system of "student advisers", to whom the student is handed over after he enters the University. It would be a great and glorious thing if this proceeding could be placed anterior to admission to the University, and advisers could advise the faculty as to whether the student should be admitted or not. Only in such a personal way can the true fitness of a prospective student be discovered. Then will each successful student feel safe in his position and professors may devote themselves single-heartedly to their subjects, and may preface their lectures somewhat as Dr. Stephen Leacock does his elementary economics course, when he says something like this, "Those who have come here in the hope that economics will teach them to make money will be badly disappointed. Economics is a science."

### Science and Belief

(Continued from page 50)

#### Immortality

the soul must pervade all space. But as we are not so anxious to be fat, as to live long, none of the metaphysicians in question have ever noticed this application of their reasonings." (p. 18.) Again, "God and immortality, the central dogmas of the Christian religion, find no support in Science." (p. 13.)

Concerning personal immortality, if a subtle entity, or factor does intrude into the mere material make-up of a man, apart from its organization, such as a character "force" or the free will of a metaphysical "soul", and which survives the bodily dissolution, then this may experience personal immortality in the popular sense. At present however the existence of such is a gratuitous assumption that finds no support from the experimental sciences. They have failed to discover any indication of it, and the attempted proofs of spiritists and psychic research workers have so far not been convincing. However there are three other senses in which mankind experiences survival which Bertrand Russell has not mentioned, but which appear to me as legitimate.

- (1) In the purely physical sense.
- (2) In the biological sense.
- (3) In the persistence of "Action-patterns".

(1) The principles of conservation of Matter and Energy demand that not only the constituent matter, but the energy associated with it, and to which it is ultimately resolvable, persists through the disintegration and transformation that we call death. This is the only case that necessarily involves immortality. Dr. A. S. Eve, the Director of our own Macdonald Physics Building has calculated that "you have probably within you about a million water molecules which belonged to Caesar at the moment of his death." This is equally true of any of the celebrities of ancient times, even perhaps of the Teacher of Gallilee. We also have a certain affinity with Dame Nature. "The molecules of water in our blood have thus visited—many of them often—all the oceans and continents, ascended as vapour, drifted with the clouds, fallen as tropical rain or arctic snow; they have formed an ultimate part of countless living things animal and vegetable, for a period which may be as great as a thousand million years."

(2) In the event of a person having children this person persists, in some sense, in them. The minimum of persistence is that of his chromosomes. Thus survival in the biological sense is guaranteed to a person whose descendants continue to have children. The survival of our distant primitive ancestors inheres in our own organisms, and as long as mankind inhabits the earth they will possess this type of survival. In fact many would agree that the persistence of that complex which determines a chromosome for some millions of years is practically equivalent to its immortality.

(3) The results of the creative acts of the individual, either in the world of thought, of Art, or of events, persist and the persistence of these "action patterns" as I shall call them seems to have a decreasing force in the three cases. Then inasmuch as these action patterns express, or are a function of, the individual personality, it persists in them, e.g. to many, Plato is a well defined personality, and although these people would not recognise his voice if they heard it, yet they have a greater insight into his character and his thought than had many of the people of Athens who actually conversed with him about 2270 years ago.

### Summer Warning

WHEN one fat bee can fill an afternoon  
With the last letter of the alphabet  
There is some little danger to be met  
In gardens or in clover or in June.

Pray not too long before a garden god  
Nor mark the shadow pausing on the dial,  
Trap no stray sunbeam in a crystal vial  
Nor rest enraptured of the easy sod

For languidly June loiters in the lane:  
Some sultry summer she will wax so slow  
That viscous time will pause, will cease to flow,  
And the rebellious afternoon to wane,

And you'll be prisoned in an attitude—  
Poised to a flower bell or on an urn  
Draped tragically—awaiting the return  
Of cooler dynamism and a moving blood.

Vincent Starr.

The result of the labours of scientists, and some philosophers, is a particular and, it seems, a peculiar case of this. Inasmuch as their work is impersonal and universally valid they lose their individuality by immersion in an impersonal thought-pattern and the more so the more this thought pattern approaches to immortality. The present system of science is a coherent Synthesis of such thought-patterns all determining and at the same time supporting each other. Nevertheless the great men of science usually have great personalities which also survive in the former sense.

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