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V. P. JOURNAL.

VOL. II.]

JUNE, 1885.

[No. 12.

WE have again swung around the circle of our oscillation, and are about to begin anew the circulation of another year. We have passed through two years of incipency, and with each progression have become, we hope, more definite and regular in our movements. The second year closes with us now, and with our next edition we open Volume III. Journalistic life in Canada is precarious: it would seem, judging from past experience and the nature of the most successful literary work, that nothing but political journalism can be made a financial success. But experience must teach whether this is well founded and whether we have presumed too much on our own abilities and prospects. Journals of various kinds have flourished and disappeared, and yet we in our presumption have made our venture. We started with one hundred and fifty promised subscribers; at the commencement of our third year our monthly circulation is six hundred. We are growing—slowly, perhaps, but surely—and we presume still further upon our readers to continue our work. We started with “a local habitation and a name;” but we have endeavored to make the former more comprehensive, and now we beg leave to broaden the latter. With this number the V. P. JOURNAL ceases to exist, but merely in name; for next month we introduce ourselves—the same journal, the same management, the same editor—under a new name. The christening was a question of perplexity; the re-christening has been one even of anxiety; but for various considerations, which will doubtless present them-

selves to our readers, we have decided to take the step, and we take this opportunity of announcing that next month you will not receive the V. P. JOURNAL, but, in its stead, KOSMOS. In widening our title and scope we hope that the friends of the JOURNAL will not forget their old friend with the new name, and will considerately and heartily welcome KOSMOS.

BEST ENGLISH.

“It is doubtful if there are fifty men in the United States who speak and write the English tongue correctly.”

THE above extract from the *Graphic* carries its own proof that the number should have been limited to *forty-nine*. Following the best authorities, the critic of the *Graphic* should more correctly have said: “It is doubtful *whether* there are fifty men in the United States who speak and write the English language correctly.” Ayres, in his *Verbalist*, says: “*Tongue* refers especially to an original language, as ‘the Hebrew tongue.’ The modern languages are derived from the original tongues. If this be correct, then he who speaks French, German, English, Spanish, and Italian may properly say that he speaks five *languages*, but only one *tongue*.” To further restrict the terms to modern usage, it would be more proper to say that we *speak*, not *write*, a tongue. But this distinction cannot always be enforced.

If the above estimate be correct, and we are forced to believe it, what a deplorable confession to be compelled to make. Not fifty out of fifty millions can use their *native* language correctly! In this non-classical country it would be unsafe to say that fifty can write grammatical Latin, but among the learned it would seem that pure Latin is almost as common as pure English. The distinguishing characteristic of our language is its copiousness, its adaptability, its flexibility; but when unguarded this use may become the means of the greatest abuse. The looseness of the language of the general public is owing to

the looseness of the modern teachers of English. The foundation and the development are of three sources—the public press, current literature, and the public school teaching. The newspapers of Canada are almost wholly a mass of illogical, ungrammatical English, which teachers and students should criticize keenly and unsparingly. We can correct faults in ourselves by criticising them in others; and a useful study for our high schools would be a weekly, if not daily, criticism of the contents of daily and weekly papers. The literarians themselves should blush at many of their productions. Professing to be superior to the reading classes, they should devote more time to the careful study of the implements of thought. The remedy lies with themselves. But the basis of all education is laid in the school; there, and there first, should the renovation be commenced. The first and foremost requisite of a teacher in *any* department should be a thorough and accurate understanding of the language in which all information is conveyed, and through which all thought is developed. The reform is progressing, but yet slowly.

Correct thinking goes hand in hand with correct expression. He who truly understands his thoughts will never lack words to express them; but just as true is it that he who cannot express himself accurately cannot be said to think accurately. Language develops thought just as surely as thought develops language.

A reform is commencing in English spelling—may it progress; but may, also, the reform in the *use* of the language be more rapid.

Richard Grant White, one of the small class of reformers, and one of the few standard authorities in English, has just passed away, and left a vacancy into which not one but a hundred should step and help carry on this work. The multiplicity and magnitude of the English is its greatest danger. It presents a field of study superior to that of any other language, dead or living, and the superintendents of education seem to be too slow in appreciating it, or rather in enforcing their ideas.

Some have suggested the foundation of an English or American academy—a court of appeal and decision similar to the French Academy. Such a movement must necessarily accomplish some good, though it is doubtful whether such an institution could ever assert the supreme authority of its model. Whatever may be done by the nation as a whole, the remedy must, to a great extent, lie with individuals, and be accomplished through individual study.

To show that we are not misrepresenting in our statement about the impure English of newspapers, we append a few clippings from the city papers of Toronto made by us in glancing over them:—

“Mr. Taylor, of the Morse Company, hearing that each man of the Queen’s Own Rifles and the Royal Grenadiers had to provide *their* own soap, generously donated sufficient to supply each with a cake of toilet soap, which *were* distributed in the morning prior to departure.”

“If the rebellion *only* succeeds in giving our English contemporaries some much needed information about the country, Riel, after all, will not have lived in vain.”

“We have tried to always be just to the Army. We have frankly testified that they *have* reached many outcasts, and been the means of saving them. But the Army *has* done a *good* many other things that *cannot be thought good*.”

“Such an absolute and arbitrary power would be greatly the better of some very decided modifications and restrictions.”

“In fact, the situation *generally* must be summed up as more threatening than it has been at any previous stage.”

“Few have faith in any such rapid filling-up of the North-West as may make the great highway successful within twenty years.”

“What *has* the Prince of Wales ever done to justify his being *saluted* with hisses and groans and riots when he *came* on a friendly visit to Ireland? Is there any *possible* good *likely* to result from this disloyal and dastardly conduct.”

Had we space we could append examples of incorrect English from some of our educational journals, but we must close for the present. As a final proof of our position we add a clipping from a weekly newspaper that has just been issued in one of the most intellectual towns of Ontario:—

“With its unfairness and untruthfulness whenever it is irritated by seeing any Conservative obtain an appointment which it hungrily craves for its own friends, the *Globe* makes a calumnious attack upon Mr. S.”

WHO ARE YOU?

EVERY man has attended his own funeral, and several times at that: his whole life is a funeral procession from the cradle to the grave into which is laid, at last, the worn-out framework that he has for so many years been dragging about with him. A German histologist says that our brains change completely every sixty days. A rather rapid change, this seems; but, even so, some minds seem to have the start of the brains. Taking this calculation as true, every man has six new brains each year, and three hundred and sixty in the allotted time of life. During the same period he has possessed at least ten different bodies. We think through our brains, but sixty days ago we thought through a different brain from that which now gives expression to our thoughts. Ten years ago we walked about, but with a different head, body, and pair of legs from those which now we call ours. To-morrow some brain will be dead and gone, some new developed; to-morrow some muscle will be weakened, some new strung to carry our burdens: we will be but a part of what we are to-day. Ten years hence, and our whole system will have followed that other system which ten years ago disappeared, and sixty of the delicate organisms of brains will have lived, acted, and died. We are growing, but we are dying; we are appearing, but we are as truly disappearing. Disappearing—but where, how, whither? Every pore in the body is a miniature sewer to carry off the dead and useless matter from the body into the atmosphere about us. Nature has provided us with millions of these little aqueducts, and demands of us that we keep them free and clean, in order that in the midst of death we may continue to live.

Those who believe that the actual material bodies will be hereafter resurrected are asked to explain which body of the ten, and which brain of the three hundred and sixty, will be resurrected. Is it the undeveloped body of childhood, the strong, muscular body of manhood, or the frail frame of old age that will be the habitation of the soul hereafter? In the

great majority of cases the body that is buried is the least desirable of the succession; and of the others many have been changed and re-developed into component parts of other bodies.

Your body has disappeared—died—ten times, your brain three hundred and sixty times, and yet at sixty years of age *you* are still alive. That which is dead cannot be alive: surely, then, the body and brain are not you. What is the you, the living you, that has inhabited ten bodies and thought through three hundred and sixty minds? This living, developing, undying part must be the immortal part, must be that which constitutes the *man*. The brain, the body, the corporeal life which man has cannot be he; but the conscious, the thinking, the ever-living *I*—this must be the man.

For a moment resolve yourself into a spirit: let your imagination have free play, and look upon yourself, or rather upon yourselves. A strange company is the group of ten—babe, child, youth, man. Gaze upon their faces, and read the markings of time, the successive deepening and wrinkling of each ten years—a family likeness stamped upon them all. Some you recognize, and smile at their pleasant faces; while from others the looks of sadness and dejection speak of memories that you fain would bury. Hope and despondency, strength and weakness, truth and dishonesty, sit side by side. The wondering eyes of the babe look up into the face of the aged man, and call forth tears of repentance: dishonesty would hide his shrugged shoulders and downcast eyes from the clear gaze of truth; and the strong, hopeful figure shudders at the disheartened companion at his elbow. There they are, a most peculiar company, the history of a human life, whose study is reserved for the years yet to come.

Scan them carefully, and review your life history. Not one is you, but all are you, and yet not you indeed: they were all *yours*, but they are not *you*. Who, then, are you?

CONVICTION is useless till it be converted into action.—*Carlyle*.

THE CHINOOK WIND.

THE winter climate of the strip of tableland and prairie lying just east of the Rocky Mountains is far milder and more varied than that of Manitoba. Except British Columbia, it is the only part of Canada where horses and cattle can shift for themselves, and yet come through the winter in good condition, and this is owing mainly to the warm westerly winds called chinooks.

After a longer or shorter siege of intense cold a change comes. A long, strange bank of clouds rises over the mountains and advances toward the plains, and suddenly out of the passes blows a strong, warm wind, a beneficent fairy from the mild Pacific, sweeping away the snow with its magic wand, and sending the mercury up fifty degrees in an hour or two. Smiling spring wrests the sceptre for a time from cruel winter. As one recedes from the mountains, however, the effects of the chinook grow less and less perceptible, and are at length entirely lost. As one advances up the passes, also, the west wind, which blew violently at the mouth, gradually loses its force, and well up among the mountains is no longer felt as wind, though a peculiar mildness of the atmosphere indicates its passage overhead.

Since the wind from the Pacific must cross three or four hundred miles of intensely cold snow and glacier-covered mountains, many have thought it impossible that it should still have warmth enough to melt the snow when it reaches Calgary or McLeod, and have looked for some other explanation. There is no doubt, however, that the chinook does cross the mountains and issue from the passes, so that no explanation can be accepted which does not accord with these facts.

A little thought on the physical properties of gases makes the matter clear. It is a well-known law that heat is rendered latent when gases expand, and may be recovered when they are compressed. By compressing air powerfully under a piston, heat enough may be set free to set fire to tinder.

The warm moist winds from the Pacific sweep up against the mountains, are milked of their load of moisture by the icy summits, and thus gain the latent heat of the watery vapor, which falls as snow. They grow rarer and rarer as they rise above sea-level, and become correspondingly colder; apparent heat becoming latent and serving to keep the molecules of air asunder. When the mountains are crossed the air descends, is condensed, and giving out the heat which had been latent, becomes once more a warm wind.

The west wind which blows keen and icy on the mountain tops, by sinking a few thousand feet becomes balmy and spring-like. The very same air which is below zero at the summit, two or three hours later is thawing the snow on the plains and uncovering for the cattle their winter pasture.

A RACE OF MUTES.

GERMAN scientists have long been famous for their elaborate collections of statistics, and for the general laws and principles deduced therefrom. But, gradually, the scientists of other countries are awakening to the necessity of such method of pursuit and the great results to be attained by this inductive line of work. Prof. A. Graham Bell, the inventor of the telephone, has been of late studying the conditions and relations of deaf-mutes, and from his very full collection of data has derived some interesting and startling conclusions in reference to the possible formation of a deaf variety of the human race in civilized countries. To put Prof. Bell's arguments before our readers, we cannot do better than reproduce them as they are concisely stated in *Science* :—

1. "That there is a marked grouping of deaf-mutes into families, certain surnames recurring frequently, and that the proportion and number of congenitally deaf-mutes has increased in America, therefore the cause is probably an increasing hereditary tendency. 2. That of the deaf-mutes who marry at the

present time not less than eighty per cent. marry deaf-mutes, while of those who married during the early half of the present century the proportion who married deaf-mutes was much smaller. 3. That children having deaf-mute relatives are more likely to be congenitally deaf-mute than the children of the people at large (to illustrate this fact he gives detailed accounts of several families). 4. That the indications derived from the study of the actual census tables are that the congenital deaf-mutes of the country are increasing at a greater rate than the population at large, and the deaf-mute children of deaf-mutes at a greater rate than the congenital deaf-mute population. 5. That the intermarriage of deaf-mutes is mainly fostered by bringing the deaf-mutes together in institutions, and isolating them thereby, and by teaching them a language (of signs) the people at large do not use."

The benevolence of the State is, then, by endeavoring to relieve the monotonous life of the deaf-mutes, only stimulating the development and the increase of the tendency towards impairment of the senses, and is binding itself to a rapidly increasing labor and expense. What the results may be can be determined only in the course of the next generation; but unless the increasing population thus growing up in our midst be made self-sustaining, and some other counter influences be set in motion to counteract this hereditary trait, the State may find itself bound to the expenditure of an enormous amount of money, and the necessity of an equally enormous amount of time and oversight. Science has here stepped in and given the warning to the philanthropic statesmen. The facts cannot be disputed, and the deductions are only too self-convincing. For a country like Canada the effects will be exactly similar to those of the neighboring country. The congregating of large numbers of mutes in the same institution, the separation of them from the rest of the world, instead of abating the evil, would then seem to have the tendency of increasing it. Evil results spring thus from benevolent purposes.

Science has given the warning,—she must now suggest the

remedy; and well-intentioned but short-sighted legislation must wait the dictates of thorough scientific investigators. Formerly it was considered sufficient for the ideal politician and statesman to have a knowledge of classics and political economy; now it is demanded that political knowledge and legislation be based as well upon true scientific laws and principles.

A NEW PROFESSION OR CALLING.

PRESIDENT WHITE, of Cornell University, thus refers to a subject which will be of great interest to many young men now looking about for some line of work or some calling that is not at present crowded:—"The great extension, during the past few years, of companies for telegraphic and telephonic communications, electric lighting, electroplating, electrical propulsion on railroads, the electrical transmission of power, and of establishments for manufacturing electrical apparatus for these, has created a demand for men thoroughly versed in electrical science as experts, inspectors, managers, superintendents, and the like. Especially are men needed who can test and adjust instruments, as well as lay out and properly proportion the different parts of new establishments. The supply of such trained men is now, and will probably remain for some years, short of the demand. Salaries range from \$50 per month to \$5,000 or \$10,000 a year. There is abundant employment for competent young men at salaries from \$100 to \$150 per month as managers of telephone exchanges, testing officers of telegraph companies, electricians for electric lighting companies, and superintendents in charge of various 'plants.' The highest salaries will be obtained by the few who show marked ability in developing the application of electrical science, or in arranging and systematizing the workings of extensive systems. At present, while so much is in a tentative stage, the applications of electricity furnish a very attractive field to young men of well developed inventive powers, extended and disciplined

by systematic study and experiment. Among the more important aptitudes giving promise of success are a good degree of ability in mathematics, a taste for observation, and ability to grasp the principles of the physical sciences. The men who 'pick up' the profession rarely acquire the basis of mathematical and scientific knowledge requisite to the clear apprehension of their work. Such men cannot rise to the high positions in the profession except by acquiring, under great difficulties, the very knowledge for which the technical schools furnish special facilities. A very limited experience will enable the man who has a theoretical knowledge to do all that can be done without this knowledge after an experience of years."

WOMAN'S EDUCATION.

WE need offer no apology, either to the young ladies or to any of our readers, for quoting a few sensible remarks from the pen of Mr. Wm. Houston. In an article in the last number of the *Educational Monthly* he replies to a former article as follows: "I beg leave to dissent in the most emphatic terms from Mr. M's theory of what a woman's education should be. 'The age demands of the young lady that she should know something of music and painting.' I had hoped that at least one ladies' college could be found in Ontario which discountenances such absurdity. If a young woman is fond of music and painting, and has genius, or even talent for it, let her cultivate these delightful pursuits; but to require a woman to learn music who has no sense of time or tune, or to learn painting who has no sense of form or color, is, on the part of an educationist intelligent enough to know better, little short of criminal. The amount of misery inflicted on poor unfortunate girls through the agency of that instrument of torture, the piano, is incalculable; and to just the theory laid down by Mr. M. must be attributed an immense number of broken constitutions and shortened and blasted lives. For some young girls the proper

training is not artistic but intellectual. Instead of wasting several hours a day at piano practice they should be reading literature, under proper guidance of course, or pursuing science. Only by affording them opportunities of doing this can we get rid of that tiresome vacuity which is the great drawback of the social circle. The most accomplished woman is not the one that can best play a fantasia, but the one who can take her part most effectively and attractively in conversation." The idea that every young lady's *forte* must be developed from the pianoforte is as absurd as that every young man's ability should be developed by daily scraping upon the violin. Lytton has said that young ladies who have proved failures at everything else have been assigned the task of music. We think it is a failure of parental duty rather than want of brains.

"Let them not fear ; some said their heads were less ;
Some men's were small ; not they the least of men ;
For often fineness compensated size :
Besides the brain was like the hand, and grew with using."

WAR NEWS.

ARCHIBALD FORBES is the war-horse of war correspondents, and though now laid up at home and unable to ride over the burning sands of the Soudan, or, perhaps, more to his liking, along the Russian frontier, yet he is still living his old life over again and rousing the admiration of his readers by his articles. In the *English Illustrated Magazine* he gives a graphic account of the commencement of the fight for the Schipka Pass, during the late Turco-Russian war, his three days' ride to the telegraph office, his interview by the White Czar, and his return to the fight six days after his departure to find the old General Radetski "drinking his tea under a dropping fire." As a bold adventurer Forbes was unexcelled, as a military prospector he was unequalled, and as a writer he is inimitable. At this time, when "war corre-

spondents" are receiving their first training in Canada, it may not be inopportune to quote an interesting passage from the article referred to.

"When the ideal war correspondent shall manifest himself to an admiring world, among his attributes will be found the ability to do without sleep altogether. But that great creature's less-gifted precursors cannot afford to fly wantonly in the face of nature. They must sleep, and he is the wisest man who knows how to sleep strategically. What avails it a man that he should have kept awake for a week watching events, when nature peremptorily refuses to be denied just at the moment when it is urgent that he should be riding at best pace, or writing as swiftly as his pen will travel? The war correspondent is a failure who only sees battles; the complement of the reason of his being is that he shall describe what he has seen, and get the description printed in his newspaper with the least possible delay. To accomplish this when the conditions are arduous, it is imperative that he should economize his powers to the best of his ability. However thrifty he may be with them, he will find himself an old man while yet middle-aged. He must risk something to gain that modicum of rest and sleep which will enable him to endure strain and keep awake when the time comes for him to put forth every exertion of which he is capable, if he would succeed in accomplishing the great *coup* for the achievement of which the ambitious war correspondent lives his professional life. In my first campaign I should have been physically incapable of falling asleep while these gusts of firing came borne on the wind, as they soughed down through the trees on the foot-holes."

AMONG American place-names we have the following: You Bet, Popcorn, Wild Cat, Cab Run, Bake Oven, Big Coon, Barn Corn, Rawhide, Cat Creek, Dirt Town, Doctor's Town, Ivy Tavern, Cut Off, Big John, and Fish Hook.

AMERICAN COLLEGES AND UNIVERSITIES.

THE *Academy News*, of Michigan, gives the following estimate of the denominational colleges of the United States:—The Protestant Episcopal Church, 12 colleges, with an endowment of \$8,700,000. The Congregationalists, 28 colleges, with an endowment of \$9,000,000. Presbyterians, 41 colleges, with an endowment of \$7,000,000. Baptists, 46 colleges, with an endowment of \$10,000,000. Methodists, 52 colleges, with an endowment of \$11,000,000. The Roman Catholic and other churches are not mentioned here, but, added to the above, the whole would present a vast instrumentality brought to bear by the churches, mainly in the diffusion of higher education. Then look at the State grants made yearly to non-denominational colleges, which are engaged in a similar work. We have at hand only a few statistics of the Southern and Western institutions. The Missouri University receives from the State Government \$27,000 annually, Minnesota University receives \$23,000, Kansas University \$20,000, Iowa University \$20,000, California University \$56,600, Indiana University \$20,000, Louisiana Agricultural College and University \$10,000 each, Nebraska University \$30,000, Ohio University \$20,000, and Michigan University \$65,000.

The *Year Book* of the Boston University gives a very full statement of the standing of forty-five colleges included in the above fifty-two. The buildings and grounds are valued at about \$45,000,000; the endowments at nearly \$6,000,000; the debts amount to not quite \$350,000. Since their foundation they have graduated 154,000 students. During the past year 715 teachers instructed over 13,000 students. In addition to the above there are eight colleges for young women exclusively, sixty-nine classical seminaries, seven large medical schools, five law schools, six academies of music, and nineteen foreign mission schools, all under the direct superintendence of the Methodist Church North. In the South mention is made of fourteen universities, thirty-four colleges for young women, and twenty-

two mixed schools. The whole number of Methodist colleges and universities will thus amount to at least seventy-five, as statistics of many were not available at the time of compilation.

In conclusion we add a partial list of private donations to American colleges, compiled by the *New York Independent*:—Johns Hopkins gave \$3,148,000 to the university which bears his name; Judge Parker, \$3,000,000 in all to Lehigh University; Cornelius Vanderbilt, \$1,000,000 to the Vanderbilt University; Stephen Girard, \$8,000,000 to Girard College; John C. Green and his residuary legatees, \$1,500,000 to Princeton; Ezra Cornell, \$1,000,000 to Cornell University; Isaac Rich, \$700,000 to Boston University; Amasa Stone, \$600,000 to Alberta College; W. W. Corcoran, \$170,000 to Columbia University; Benjamin Bussy, \$500,000 to Harvard; Samuel Williston, William J. Walker, and Samuel A. Hitchcock, between \$100,000 and \$200,000 each to Amherst; Whitmer Phoenix, about \$640,000 to Columbia; J. B. Trever, \$179,000 to Rochester Theological Seminary; Matthew Vassar, \$800,000 to Vassar College; Gardner Colby, \$170,000 to Colby University, and \$100,000 to Newton Theological Seminary; J. B. Colgate, \$300,000 to Madison University; George I. Seney, \$450,000 to Wesleyan University, and the Crozer family, have given \$300,000 to Crozer Theological Seminary.

THE tendency of the masculine element is centrifugal, to boundless exploration, to endless change, to the nomad life. The feminine is the centripetal force, that has made the family, the tribe, the community possible. This element is not necessarily in the form of woman; it predominates as well in the most refined, spiritual, scholarly man; it is the repository of the religious sentiment, the conscience of the race. Its voice, sweet and clear, has been heard in all ages, above turmoil, conquest, and persecution; but its protests against violence and injustice have been too often unheeded and forgotten.—*E. Cady Stanton.*

STRANGE, BUT TRUE.

IT is well for the world, and best for ourselves, that none of us have the ordering of the world at the present, or the creation of new systems of worlds. We often talk of the growing independence of man, the flights of genius, the intrepidity of the mind, the soaring of the soul; but when we speak of our material nature we must choose more restricted terms, since as an animal man is but little above the other material parts of nature. Let us look at the body for a moment. As a portion of matter it is subject to the material laws as truly as the blocks of wood and stone about us. We are bound down to a globe of earth, water and air, above which we cannot rise. Imagine the full moon to be inhabited by visible men. What a strange sight it would be—heads out, feet in, some walking along the upper rim, others apparently head downwards, fastened on securely to the same sphere; none falling off into space, but all attached as though to a magnet. Magnify the moon to a globe twenty-five thousand miles in circumference; upon it place fourteen hundred million human beings, red, white, black, brown, and copper-colored, and you have the earth. Why do we not fall off? If we are on top why do not those below us drop off? We go to the other side of the world and ask them why, and they, with astonished looks, ask us if we would have them fall *up*? They have as much right to stand upon the earth as we, and should any of us fall off we ask ourselves, Whither would we fall? Into space; but space is anywhere, that is, nowhere; and if we fall we must have some place for lighting upon ere we hazard the leap. But much as some would, perhaps, like to try the realms of space, we cannot go—we are bound down. We take a leap—up six feet high we go after a mighty effort—and down we come again with a shock that leaves no doubt of the certainty of our destination. What brings us down? The force of gravity—the same force that binds us all to the old earth. Every particle of matter attracts every other; and because, since we are so near, the at-

traction of the earth for us is greater than that of the sun, moon or stars, here we stay, and here we must stay until some force superior to this shall draw us towards another way, and allow us to leap off to some other planet.

The mind sets in motion some muscles and levers in our body, and the foot rises, but gravity pulls it down again; and thus we walk along the earth a complicated piece of machinery, blood keeping up the quantity of heat and energy, the heart regulating the supplies, mind directing the movements of levers and cranks; but everything bound together by this wonderful, universal, but mysterious force of attraction.

In walking over the earth our feet move on a circle whose radius is about four thousand miles, while our heads move in circles whose radius is longer by five or six feet. As a mathematical certainty, therefore, our heads must move more rapidly and over longer distances than our feet. Problem: In an average lifetime, how much farther will a man's head have travelled than his feet? The feet thus transport a burden over a greater distance than they themselves traverse. Many littles will in sixty years amount to much,—calculate and prove it for yourself.

If a pail be almost filled with water and swung around quickly the water will not fall out, but will press against the bottom of the pail even when inverted; if a grindstone be turned rapidly the water will fly away from the grindstone; if a sling be twirled the stone will fly away from the hand. This outward tendency is called the centrifugal force, and is always generated whenever any body is moving in a circular direction. Principles manifested on small objects hold good in the greater worlds. The earth circles around the sun, held in its place by an invisible chord—the force of gravity. If that chord were to break, if the attraction of the sun were to cease, the earth would fly off through space at the rate of about one million miles per day. But we do not wish to arouse useless fears, therefore we will not now deliver our “probabilities.”

But the earth revolves upon its axis one thousand miles per

hour, a high rate for this fast age; yet science teaches us that we are really slowing down, that the old earth moves more tardily each succeeding year. However, though we are entirely unconscious of this rapid whirling, there is sufficient energy to hurl us all into—well, into space, if not into the next world—if the machinery were suddenly to become clogged up. Let Artemus Ward enlighten us. He was not a recognized scientific authority, but yet in many things we must respect his presentation of truth.

“Supposing the earth to be suddenly arrested on its axis, we all—men, women, children, horses, cattle, sheep, donkeys, editors, and members of Congress—with all our goods and chattels, would be thrown off into the air at a speed of one hundred and seventy-three miles a minute, every mother’s son of us describing the arc of a parabola, which is probably the only description we should ever be able to give of the affair. This catastrophe, to one sufficiently collected to enjoy it, would doubtless be exceedingly amusing; but as there would probably be no time for laughing, we pray that it may not occur until after our demise, when, should it take place, our monument will probably accompany us.”

Let us not fear such a catastrophe; we will in all probability slow down with the earth, and when the old worn-out sphere shall have barely enough revolving energy to turn lazily upon its axis, and to wobble about the sun, we will be so accustomed to the slow round of monotony as to be unaffected. This slowing up of the earth is not merely fanciful; the moon has long since ceased to turn upon its axis, presenting ever the same barren face to the earth, and rotating only once with every monthly revolution around the earth. The cause of the earth’s retarded speed is easily accounted for. The sun and moon by their attraction draw the movable waters into great protuberances or tidal waves, holding them in place while the great solid globe revolves beneath. The waters thus act as a tremendous brake upon the revolving sphere, and must gradually cause a slackening of speed. Friction of earth, air and water will thus at last produce the same effect upon the earth as they have upon the moon in ages long gone by, when air and water existed upon its surface.

Acting upon every body are two forces: the attraction of the earth pulling down towards the centre, and the centrifugal force produced by revolution, tending to throw away from the surface. The difference between these two constitutes the weight of everybody on the earth. Imagine the wheels of revolution, by some mysterious cause, to be suddenly increased in motion,—the centrifugal force would thereby increase, and bodies would become correspondingly lighter. Faster and faster let the earth revolve,—at last a time would come when men would have to cling to earth to prevent themselves from being hurled up into the air, from dropping up into unknown space. If the revolution were seventeen times faster than it is at present, men, houses, oceans would be of no weight, and would fly off into space followed by a long train of dust, dirt, and rocks; a dissemination of the surface material through the interplanetary space, a reversion from cosmos into chaos. What a strange exhibition that would be, a confusion worse than that of Babel, a scattering before which an equatorial tornado would sink into obscurity; men winging their way through space in all directions, until, coming within the attraction of some other planet, they would sail around these bodies like miniature satellites, perhaps for ages, or perhaps to be drawn gradually nearer and nearer to their surface until some day they would drop upon their crust and find themselves landed, somewhat surprised and shaken up, as citizens upon another world, among beings strange and mysterious but as truly inhabitants of the universe as themselves. It is not within the power of any enterprising American to plan such a holiday trip, however, and we can therefore jot it down as one of the “improbabilities.” We may rest assured that our bodies are not destined to enjoy such an excursion, and the beauties of other worlds and of sailing through free space will never be ours, at least *in corpore*.

Instead of increasing the centrifugal force must gradually diminish, and weight will increase proportionately; those who come after us will be pulled down by heavier weights than we, will breathe a heavier and thicker atmosphere, and be sur-

rounded by a world more cumbersome than the present. Unless they develop their muscles and bodies proportionately, we cannot but conclude that they will be more impeded than the citizens of the enlightened nineteenth century.

As we go north we come upon circles of revolution successively shorter and shorter, and therefore upon objects whose revolution proportionately decreases; in going from the equator to the poles the centrifugal force gradually diminishes to zero, since there is no revolution whatever at the poles. If we were to take a tramp towards the poles, therefore, we would find our bodies increasing in weight, and all our burdens proportionately heavier. The weight would be, further, slightly increased by the peculiar shape of the earth, as on account of the flatness of the poles the objects on the surface there are nearer the centre of attraction than objects at the equator.

One more consideration and our wanderings must cease. Man's right arm, right leg, and right muscles, in general, are more fully developed than those of the left side. The result is that he reaches farther and steps farther with the right side than with the left, and goes through life with the general tendency to move towards the left. He walks sideways along great circles, and, if lost in the woods, or upon the prairie, will, in many cases, return upon his own footsteps.

Let us recapitulate: Our heads travel farther than our feet; our right side tends to travel farther than our left; our bodies increase in weight as we proceed away from the equator; the general tendency of the world is to slow down and bring all objects into a state of sluggishness. Many other conclusions we might draw, but we leave them to the imagination of our readers.

COMMITTED.—“Vat a monster language!” said a Frenchman. “Here I read in ze newspaper zat a man commits murder, was committed for trial, and zen committed himself to a reportair. No wonder everything is done by committees.”

THEISTIC EVOLUTION.

E VOLUTION is everywhere in nature. It is seen in every germinating seed, in every swelling bud, in every opening flower touched into loveliness by the sunshine. All through the spring and summer the processes of evolution go on before our eyes. We see it through all the brute creation in the stages of their life and the processions of their generations. "The child is father of the man," and the successions of the children of men manifest the same truth. When geology stood at the noon of time and opened the portals of the past, men found themselves gazing into a measureless expanse where order had been brought from chaos, and from a formless void had come the earth and the stars. Life in its first appearance was seen to be of the lowest forms; and that for countless centuries there had been a steady upward march that indicated a continuous development. At last the summit was reached, and man, the crowning glory of the material creation, appeared upon the scene wearing the diadem and wielding the sceptre. As in a luminous hour there flashed the truth to Newton's mind that the same power which drew the apple to the earth swung with sinewy arm the stars of heaven, so flashed the thought that the same law which gently opens the violet's petal has reached through all the ages and moulded all the forms of life. In that hour, with brow bathed in light, man stood on holy ground and saw the sublime vision of the method and manner of nature's mighty artificer. How, beginning with formless void, there had developed an orderly world; beginning with life in its lowest forms, there had been a constant tread upward through the weary ages till the loftiest summit was reached; beginning again with the spiritual at the lowest point the eternal progression goes on higher and higher till lost in the blaze of light, as the eagle, soaring to the sun, fades to the watcher's eye.

Atheism, driven from every other position, flitting on weary wing like Noah's restless dove, saw this theory launched and immediately made it an ark of refuge, and from the mainmast

flung out to the breeze the black flag. Professing to have discovered it they flaunted the method of creation as proof that there was no Creator. Having found tracks they declared that nobody made them. Seeing the temple in its exquisite beauty, and finding the implements, they asserted that the material and the tools had been thrown in a chance collision, and the building had reared itself. Theology, seeing the theory in bad company and flying an enemy's flag, grew suspicious. Finding grave weaknesses and defects, and that it was in apparent conflict with revelation, denounced it. Scarcely a pulpit in the land but has hurled anathemas against it. Scarcely a platform but has tried to grow witty over the polywog wiggling into a monkey wriggling into a man. But even though hugged by materialism, lampooned by the platform, trip-hammered by the pulpit, the theory wouldn't die. Since it won't give us an opportunity to shed our happy tears at its death, and with glad hearts to join its funeral procession, but seems determined to live and protrude itself in every department of knowledge, it becomes an imperative duty to examine its right to life. It is of the utmost importance that we be right in our views of a theory which threatens to unsettle beliefs, affect the interpretation of scripture, and modify doctrinal statements. We have nothing to fear from the most searching enquiry. We do not fear for the Bible; that is sustained by the intuitions, the understandings, the experience and the history of humanity. It is confirmed by the keenest investigations through all the domain of human thought and all the range of human research. We do not fear for evolution. If it be false, the intenser the light the more complete the exposure; if it be true, it is of God, and must be in perfect harmony with revelation. There seems little room to doubt that evolution of some kind, according to some law as yet imperfectly understood, is true. "It is sustained by the almost unanimous suffrages of the scientific world, and these are based on a diversified array of evidence in the light of which all incredulity shrinks away." There is every probability that evolution is a truth. If so it is a truth

as divine as holy writ. It is a revelation of the Divine Mind, and the same Perfect Being has made no conflicting revelation of Himself. Evolution disturbs no doctrines held by the Church, it shakes the forms only in which they were held. If truth be not bound fast to the form it will not suffer, but "every wave of additional evidence will wash something from the faith which pins itself to the immovable anchorage of the forms of ideas." "We are as near to heaven by sea as by land," said Sir Humphrey Gilbert to his trembling companions in a terrific storm at sea; so we may stay our tremors by the reflection that we are just as near God by evolution as by special creation. The agency of God in creation can never be negatived nor obscured, but only more clearly revealed by the unveiling of the process by which He works. There is nothing in evolution to alarm if we do but follow the steps of the pilgrim Christians, when, amid the glittering tinsel of Vanity Fair, they looked aloft and said, "We buy the truth." A wise man when dealing with a certain startling innovation that was shaking the ancient faith to its very centre advised care. "For if this counsel be of men, it will come to nought; but if it be of God, ye cannot overthrow it; lest haply ye be found to fight against God." And he who denounces evolution has need to be very sure that "this counsel" be not of God. Certainly he who hazards the credibility of Scripture on the untruth of evolution assumes a daring responsibility. There are three classes of evidence upon which this theory bases its claims for acceptance. 1st. All living beings, from the animalculæ up to the man, show a connected resemblance of forms that indicate a continuous development upward, and warrant the thought of a steady growth. They appear as they would have done if one race had been evolved from another.

2nd. Each individual begins life at the very lowest form, and in embryo develops upward through all the species below it. A man by turns has the plant-germ, the protozoas the mollusc, the articulate the vertebrate—fish, reptile and mammal.

Each being does spring from forms common to all the races below it, and pass through these forms up to its own.

3rd. The existing orders of life are proved by orders in the rocks to have developed progressively in time, the lowest forms being of the earliest date, the highest forms belonging to the latest periods. Life has thus appeared on the earth in the order it would have done if each higher race had developed from a lower one. Evolution certainly seems to have been the order of nature.

Why should we not believe that such has been its method? The arguments brought against it moreover "do not in any case measure the weight of the general mass of evidence, nor enter upon any earnest and scientific invalidation of any class of evidence."

It is said to shut out God from creation and to be essentially atheistic. The question of origin it does not touch. It says nothing of the cause, but simply points out the method by which the work was done. If it is a law it is a law of God, not of the scientific explorers who have unveiled it, and is no more atheistic than is gravitation or chemical affinity. It is not a power, it has produced no power; it is a law, and a law is simply a mode through which force acts. Atheistic evolutionists were not made infidels by evolution, but illegitimately used evolution to support their infidelity. The question of the Builder is left untouched, the manner of building only is new. This world to the devout evolutionist as well as to the believer in special creation is a magnificent palace of three stories. The basement is the home of the material only, on the ground story natural life resides. The top story with a dome-window is the dwelling-place of the spiritual. You listen at the basement and hear the stone saying, "There is nothing higher than the mineral; I have groped and peered and examined, there is nothing higher;" and the crystal answers, "If there is, we don't know, and can't know." You listen at the ground floor; through the window is a wide sweep of vision. The great world stretches away in the distance, but no blue of sky is seen. You

can see all around, but you can't see up. The materialist says, "There is depth and length but no height; I have examined, I can see down and out, but there is no up." The agnostic answers, "If there is, we don't know, and can't know." You go up to the third story. There is the Christian gazing out of the dome-window upon the burnished sky that glows as if of beaten gold. The setting sun floods all nature and seems as if the pearly gates had swung ajar and the celestial glory were streaming out upon the lower world. When the evening veil is drawn he sees the deep blue above and the gleaming stars—those forget-me-nots of God—and says, "There is height as well as length and depth. There is mineral and life and spirit. I can see down and out and up."

There are certain missing links that are said to be necessary, and that evolution cannot explain the origin of species. If in a chain of twenty links I find the first eighteen and the twentieth, I am willing to take the nineteenth for granted. The origin of species is a question for the trained naturalist. I am not competent to discuss it. All that can be said on either side at present is that it is not proven. Two things seem clear to me. First, that experimenting now must be of too narrow a range to prove the impossibility of the transformation of species. Second, if this could be shown it would still be necessary to prove that, just as the individual at later stages of life loses certain functions when no longer needed, so the race of life may not have lost that function when it has ceased to be needed. Evolution is said to be in conflict with the Bible. If the conflict be really with the Bible, and not with our views of it, the objection would be fatal. We need to go carefully here, for we remember the thunderbolts hurled at poor old Galileo's head. Within our day the Bible was supposed to teach that on Monday God called out of nothing and made this globe. On Tuesday He called for light. On Wednesday He made the vegetable kingdom. On Thursday He made the sun and stars. On Friday He made animal life. And on Saturday He made man. On Sunday, having done a good week's work,

He rested. When geology asserted that creation had occupied not six days, but untold ages, there was great commotion. The whole Bible was supposed to be assailed. When shells were shown in the rocks men answered scornfully, "Couldn't God make shells?" "But there are the tracks and the remains of the animals," it was said. "Couldn't God make tracks, if He wanted to?" was indignantly answered again. Now geology is looked upon as a strong buttress of Scripture. "It is a singular fact," says a recent writer, "that whenever we find out how anything is done, our first conclusion seems to be that God didn't do it." I can see nothing in evolution more than in geology which the Bible has to fear. Scripture opens and closes with two glowing pictures. Genesis and Revelation are sublime visions of the past and the future as far as relates to man. We might as well try to take literally all the gorgeous imagery of the Apocalypse, with its horses, trumpets, and vials, as to interpret literally the first chapters of Genesis. Geology compelled us to see with regard to time that "a day with the Lord is as a thousand years," and that the record of Genesis is a picture. Evolution asks no truth to be given up, no doctrine to be shaken—only that a proper view be taken of a vision which will no more stand literal treatment than will the Apocalyptic one of Emmanuel riding down from heaven on a white horse. Evolution knows nothing of creation or of the Creator. The Bible says nothing of the time or of the manner: whether man was created in five minutes or five hundred million years; whether, Minerva-like, he sprang suddenly into being, or whether the negro version be correct, "De Lord made man out of wet clay and leened him against de palins to dry." The Bible, with majestic voice, declares, "In the beginning God created the heavens and the earth. And God said let us make man in our image, and in the image of God created He him." Evolution answers, "I am the law by which all things were made. I am the method by which man was created." With blending voices they strike the same note of harmony and breathe forth the music of praise. The creation of woman

from man's side is said to be in fatal conflict with evolution. I confess I do not know what the account in Genesis means. It is a vision which I can no more explain or understand than I can that of the scarlet woman in the Apocalypse. I could as soon accept a literal interpretation of the one as of the other. To me it is a bolted door leading into an unexplored realm of biology. It is the reflection of some great truth that has not yet risen above the horizon, whose shadow falls back over the ages. The distinction of the sexes is but an incident in the upward development of life. It points us back to the time when there was no such division: with the higher development of life it appeared. When the work of evolution is complete it shall disappear. In the higher Eden they "neither marry nor are given in marriage, but are as the angels of God."

It is said again that the Bible views the fall as a great moral catastrophe, and teaches the doctrine of original sin, while evolution views the fall as a fall upward, and teaches the steady advance of the race. The great trouble is that we derive our views and theology of Eden much more from Milton than from the Bible. If we lay aside our prejudices and candidly compare, we find here, as elsewhere, no real conflict. Evolution teaches that the dawn of physical life began at the lowest possible point and developed up to the highest possible point. Man was the goal aimed at from the first, and beyond which it could not go. When the limit was reached the Bible describes a new departure and says, "God created man in His own image and likeness." God is a Spirit. A likeness of Him must be spiritual. We see man, then, at the highest summit of physical development entering upon spiritual life, not as Milton represents, at the highest stage, but as the Bible represents, at the lowest dawns, so low that the record declares that he didn't know good or evil. Unfallen Adam had perfect innocence, but no virtue; for virtue is innocence tried, and he had never made a moral choice. Sinless and pure he enjoyed to the full the favor of God. It was the infant stage of moral life, with the government of infancy, where no appeal to love or reason

was ever made. Had man remained unfallen his development would have been with strides of which we can form no conception. At the first moral choice he fell, and falling forfeited the favor of God and entailed to all his children a fatal bent to sin; made slow and painful their upward development, and opened the easy way for a degeneration appalling and eternal. As God sits on the throne of the universe, and all forces are but liveried servants, so the human spirit was intended to wear the crown, and the body, with all its forces, to move in sweet obedience to its will. The fall lifted these brute forces to the throne and enslaved the kingly spirit. The fall, foreseen and provided for in the counsels of eternity, seems an incident, perhaps a necessary one—who can say?—in the moral development of the race. According to evolution, our ascent ought to have been easy and natural, as the growth of a child to manhood. What a lurid light is thrown upon it by the agony and strife of our climbing. The sad, despairing wail of the seventh chapter of Romans voices the cry of the painful evolution of a fallen race: "O wretched man that I am, who shall deliver me from the body of this death?" and revelation, beholding a coming Deliverer, cries, "I thank God through Jesus Christ my Lord," and the voices again chime music.

In the account of his creation the human creature is revealed in the circle of his relationships. His body is seen to have sprung from the dust, and his soul to have been the offspring of God. Henceforth the Bible deals with the unfolding of man's spiritual nature. The story of the temptation and the fall is not a literal description, but a pictorial presentation of great spiritual truths revealed to us in a concrete setting. We need carefully to distinguish between the truth and the form in which it is conveyed. Too often, Nicodemus-like, we grasp the letter and the form, and lose the spirit and the life. Inexplicable difficulties are involved in a literal interpretation of the story of the temptation and fall. "Jehovah walked in the garden in the cool of the evening." What does the "cool of the evening" mean to a spirit? What does walking mean to

Him whose presence fills the universe? Are we seriously to entertain the idea that that tree was a vegetable product in whose forbidden fruit there lurked the poison of death, and which, eaten, conveyed the consciousness of guilt and the knowledge of good and evil? In what order and genera could we place the tree of life whose blessed clusters were a universal panacea for every ill and ache that man is heir to, and which conveyed to the happy recipient the physical basis of immortality? Is it in harmony with the Divine procedure, and with the character of the Eternal One as revealed to us, to make the issue of a prospective world turn upon what was itself a harmless act? We see two prattling children in the infancy of their experience swinging through space on this lonely world, the only ones in all the universe who could look up and say, "My Father." Are we to conceive of God, more loving and tender than a father, putting tempting fruit within their reach, bidding them not to touch it, but leaving them to be overborne by a superior intelligence, and then thrusting them forth, orphaned and houseless, under a withering curse that should fall upon themselves and all their hapless children? If such were done by earthly parents the moral sense of the community would be outraged. We lose no fact, we loosen no doctrine, if we hold fast to the great truths and view the local coloring as the medium of their revelation. The tree of knowledge of good or evil stands as the symbol of sin. Sin is disobedience to God. In sharp contrast stands obedience, symbolized by the tree of life. The tree of knowledge is forbidden; the tree of life is allowed. The former forebodes death; the latter ensures life. When sin entered, the tree of life was no more allowed to man, for "the wages of sin is death." All this is but the physical presentation of the fundamental principles of the moral world—life and death as the issues of moral trial—obedience linking us to life and immortality, and disobedience to a death which is found in the forbidden fruit, upon which it spends its desires. As the work of grace unfolds itself we find the tree of life once more taking its place in Scripture imagery, its fruit being for

the healing of the nations. In a blessed sense an obedient soul is a paradise where God walks in the cool of the evening, and the voice of love calls to divine communion, out of which, in an awful sense, sin drives us as out of an Eden—out from its blessed fruits and fragrant flowers, out into the barren and shelterless wastes of a spiritual wilderness—while an angry conscience as a sword of flame whirls every way to prevent a return. There is development in the revelation of the truth. First, there is the shadow, and then the substance. All the truths of the Old and New Testaments were contained in germ in Genesis. The unfolding was little by little. In antediluvian times the light was like that of the dawn. The truth shone a little brighter on the altars of the patriarchs. It was unfolded a little more in the vision of the prophets; was exemplified at the ceremonial of the temple. It came in its fulness with the Master. The Scriptures reveal to us the moral evolution of the race. For two thousand years it was in infancy; during the patriarchal dispensation its school was the nursery, and its parents the teachers. Then the law was given as a tutor to train and discipline till the race should matriculate into the university of Christianity. Upward since then through its classes to graduate into the great life hereafter of the spiritual, the religion of to-day is of a loftier and better type than the world has ever seen before, but it falls far short of the New Testament standard. Through years, if not ages, must the work go on before the Churches shall become all spiritual and pure. The Church of to-day dwells in the shadowy wilderness, but it is ascending the sun-lit mountain ranges of godliness. Not that every step is higher; as it mounts it has to cross valleys deep and wide, but upon the whole it is rising higher, and is on the stairway "that slopes through darkness up to God." The race began with the lowest forms of animal life. Evolving higher and higher through untold ages, it reached at last the highest possible form. Then with a new creation it began at the lowest point of moral life, and, according to the working of the Divine Spirit, evolved higher and higher till it reaches perfect spiritu-

ality, and then dropping off the animal it evolves upward in the spirit realm, through ranks, through heavens, for aught I know, approaching through endless time and limitless space an infinite God.

Men talk of evolution belittling man. To me it magnifies him. I stand with face to the past and wonder and adore. I see this earth, like a glorious palace, being reared through the mighty ages, and I ask, What means this? From beneath comes the voice of geology, chiming in harmony with the voice of revelation from above, "It is being made for man." I see tramping through the eras a numberless host, beginning low but going higher and higher, and I ask, What means this? and evolution from below and revelation from on high chime music as in concert they say, "Thine eyes did see my substance, yet being imperfect; and in thy book all my members were written, which in continuance were fashioned, when as yet there was none of them."

We stand to-day with face upward. We are what we are by the grace of God working by evolution. The power working according to the law of evolution, which Huxley says is an unknown force, but which we reverently call God, "worketh in us both to will and to do of His own good pleasure." We are, therefore, to work out our own development with fear and trembling in accordance with the shapings of this indwelling spirit, till we come at last to attain to the spirits made perfect according to the evolution of life, through Jesus Christ our Lord. We have come over a weary road. In our own individuality we have passed through every stage of development from the mollusc to the vertebrate, from the fish to the human. We stand here to-day. As we look to the future we see a higher life and a more glorious home in that spanless city where shines unclouded light, and we exclaim, "Now are we the sons of God, and it doth not yet appear what we shall be."

J. W. ANNIS, B.A.

AN action and not a thought is the end of life.—*Aristotle.*

NOTES.

THE graduation class of Victoria numbered 102, nineteen proceeding to the degree of B.A., four to B.D., three to LL.B., nine to M.A., sixty-two to M.D., four to D.D., and one to LL.D. The last five degrees and the nine of M.A. were honorary.

THE popularity of subjects at Toronto University can be clearly judged from the comparative standing of the honor departments during the present term. In the four years the number in each department is as follows:—Classics, 66; mathematics, 44; physical science, 5; natural science, 25; modern languages, 88; metaphysics, 102.

THE Science Association of Victoria University held its tenth annual meeting on Tuesday, May 12th, on which occasion the Presidential address was delivered, in Faraday Hall, Cobourg, by Rev. J. W. Annis, B.A., of Barrie, on the subject, "Theistic Evolution." The chair was occupied by Mr. C. A. Masten, of Toronto, and a very flattering vote of thanks was moved by Dr. Burns, of Hamilton, and seconded by Rev. T. G. Williams, of Brockville. The address appears elsewhere in this number of the JOURNAL.

A CORRESPONDENT to a German scientific magazine says that at Hong Kong there are at present in operation three large sugar refineries, a spirit distillery, a cordage mill, and an ice factory. In construction are large glass and iron works, and an arrack distillery. Chinese themselves carry on woollen and cinnabar works. At Shanghai was lately erected a large paper factory, producing two tons daily from rags, and worked by Chinese themselves. The correspondent thinks that there is fear of English trade being lessened in the East.

REV. CHARLES EBY, M.A., is here from Japan, and has brought along with him the first Japanese student who has ever come to this country for an education. The son of wealthy parents, Mr. Kono has come to prepare himself for business and politi-

cal life in his own country. He is at present preparing at the Cobourg Collegiate Institute for the arts course of Victoria College. When he is ready to enter the University in all probability there will be ready for graduation Mr. Robert Steinhauer, a Cree from the North-West. These two young men will prove ornaments to the educational institution under whose care they are trained.

“THREE ESSAYS,” by Herbert Spencer. Price 10 cents, post free. J. Fitzgerald, publisher, 393 Pearl Street, New York. “The essays contained in this number of the Humboldt Library of Science (No. 68) are ‘Laws and the Order of their Discovery;’ ‘Origin of Animal Worship;’ and ‘Political Fetichism.’ These three essays exhibit all the characteristic qualities of Herbert Spencer’s style. The first of them, that on ‘Laws,’ is accounted among the most broadly philosophical of the author’s minor essays. The other two exhibit Spencer’s views upon the origin of religious ideas and upon political science.”

ON January 24th, 1884, a young man nineteen years old shot himself through the centre of the forehead, the bullet piercing the brain. Being taken to the Bellevue Hospital, New York, the patient’s scalp was shaved and a staff of skilful surgeons probed for the bullet. After four hours’ work spent in locating it and in stopping the hemorrhage it was found in the rear of the brain and successfully removed. The patient has recovered, and is now but little the worse for having performed this experiment of sending a leaden bullet through his head and brain. The operation is certainly one of the most famous ever performed in America, if not in the world, reflecting the greatest honor upon the skill of the surgeons, and speaking highly for the vitality of the subject.

“THE BLACK DEATH: An Account of the Great Pestilence of the Fourteenth Century,” by J. F. C. Hecker. Price, post free, 15 cents. J. Fitzgerald, publisher, 20 Lafayette Place, New York. “Hecker’s Memoir is the standard authority on the

history of the Black Death, doubtless the most destructive pestilence that has ever scourged the human race. Its victims are reckoned to have exceeded fifty millions of people. In China 13,000,000 are said to have died, and in the rest of the East nearly 24,000,000. In Europe, London alone lost over 100,000 souls, or considerably more than one half of its population; the proportionate loss of Italy was the same, about one half; and Germany is calculated to have lost one million and a quarter. On a moderate calculation, it may be assumed that the victims of the Black Death in Europe numbered 25,000,000."

CLASSICS AND SCIENCE.

"CLASSICAL learning can afford to smile at liliputian onslaughts, and pass on her way unmoved. She will in the future, no doubt, number fewer *dilettanti* among her votaries; but she will have more serious students. Hitherto her development has been one of continuous progress, and there is no possibility of this development being checked. And in proportion as the spirit in which the whole study is conceived becomes wider, and the spirit with which the work in each department is carried out becomes more scientific, so will the progress be greater. There should be no jealousy between so-called scholars and so-called men of science. Let the scholar remember that he, too, is a man of science if he studies in a scientific spirit; let the man of science remember that he, too, is a scholar, for he studies in the greatest of all schools—the school of Nature. And let them both remember that when England for a short space reigned supreme in classical learning, she was also supreme in science; that the days of Bentley were the days of Newton; that Bentley did not disdain to become Newton's disciple; and that it was partly owing to Bentley that we had a second edition of Newton's 'Principia.'"—*Arthur Tilley, in the National Review.*

ANIMALS AND PLANTS.

WE take the following abstract of a lecture by Dr. Dallinger, of England, from the *York Herald*:—

The Rev. Dr. Dallinger, who was well received, said that without question biology was in the highest sense a science. Its effects had a decision and value unrivalled, and from them people were bound to see that the old landmarks of division between the two great so-called kingdoms—the animal and the vegetable—were altogether broken down. The old position was long maintained between these so-considered divisions, but the great living series could no longer be held to exist. They could not, as kingdoms, be properly separated any longer, but were practically merged into one organic whole. To the popular mind, however, this might for a while appear somewhat arrogant. If the animal kingdom could be laid side by side with the vegetable kingdom it would be seen that there was no feature belonging to the one which was not in some sense shared by the other. Locomotion, for instance, was held to be a distinguishing characteristic of animal existence, but not to be a feature characteristic of vegetable life. But that was by no means a universal fact. There were animals that were as incapable of moving as the trees of the forest. The coral animals and some of the sponges, for example, were as fixed as a rock. There were, on the other hand, vegetables known to microscopists which moved with the freedom and swiftness of the swallow. If people watched the characteristics of ordinary plants they would be impressed with their activity. If they studied a climbing plant from the time it sprang from the ground they would find that the young shoot performed slow gyrations in the air until it had secured its natural support. Certain climbing plants running up a wall would carefully avoid other similar plants which they disliked. Other climbing plants in the forest would run along under the ground for miles until they found the root of the tree which they liked to attach themselves to, and then they would grow until they

reached its branches. After dwelling further on the nature of plants the lecturer commenced to explain the characteristics of specific plants. Sensitiveness, or susceptibility to impression, had, he said, been supposed to distinguish the animal, and to be wanting in the plant; but it was not so. He could show instances of sensitiveness in plants which were wholly unparal- leled in either animals or man. Taking the mimosa, for in- stance, if a person breathed upon it, or touched one of its leaves with a speck of acid, or placed it in the focus of a burning glass, its leaves and arms would approach each other, and the whole branch would droop. For plants, as well as animals, sleep was provided; and there was not much difference between the sleeping and waking lion and the sleeping and waking mimosa. Plants, too, could be intoxicated, and paralysed with opium or chloroform, or killed with an electric shock. If an animal breathed, there was a sense, in another way, in which a plant breathed also; and if an animal ate, and by special organs digested living or organic material, the plant, it was now placed beyond cavil, did likewise. The last stronghold of those who contended that the animal was different from the vegetable world was that the animal could not be fed upon, or supported by, non-organic food, but only by highly complex materials that had lived. It was contended, on the other hand, that vegetables could produce their own nutrition from the soil and the air, and that in this there was a very essential difference between the two kingdoms. But this position was at best feebly held, as everybody knew that man and beast liked salt, which was non-organic, whilst plants (such as the mistletoe), had been known which could only grow upon the highly-complex juices of the tree on which they were parasites. The mistletoe was incapable of providing food for itself out of inorganic elements. It had been shown that plants were, in a certain sense, epicures; and that they slaughtered and devoured insects in a remarkable manner, whilst they had almost a Briton's taste for roast beef. The sundew, he explained, was found in a soil which afforded it very little or no nutrition. But in its tentacles hundreds of

thousands of flies fought their last battle. Insects of all kinds alighted upon the glossy particles, and their legs or wings became entangled in a sticky or mucilaginous substance, which held them fast. The tentacles then began to curl one after the other until the whole group had curled over the body of the insect; and they never uncurled until the insect had been digested and entirely absorbed into the substance of the plant. The sensitiveness of the tentacles was almost inconceivable: the tiniest insect incited them to action. Indeed, the minutest particle of cotton—only an eightieth of an inch in length and weighing less than the 8,000th part of a grain—caused a perfect bending over of the tentacles; or a particle of human hair of the most infinitesimal dimensions and weight had been known to have the same effect. The actual pressure by a hair which would incite the actions of the viscid fluid could not be greater than the 1,000,000th part of a grain; yet if a person took a particle of hair forty times as large and placed it on the human tongue its presence could hardly be conceived. The lecturer next explained some of the tests which had been employed by Darwin, by which he showed the sensitiveness of plants to be remarkable. If one took particles of cinder, or glass, or cork, or any other non-nutritious substance, and placed them upon the leaves of the sundew, they would either be absolutely rejected, or, if the plant were extremely hungry and were thus tempted to put out its tentacles and taste them, they would be refused. Roast beef, mutton, or chicken, however, placed in particles on its tentacles, would be digested and assimilated throughout the system of the plant. He used the word "digested" very deliberately, because it was in the strictest sense a fact. It had been proved by a learned German that the digestion of the plant was precisely similar to that which took place in the bodies of animals. It might be imagined that this was an exceptional case—almost a freak of nature; but it was not so. On the contrary, carnivorous plants abounded everywhere. One of the most remarkable of the species, as well as one of the most beautiful, was "Venus's fly trap," which captured flies, when they pitched on it, with lightning swiftness.

He then gave a long and interesting account of other plants, and said that so necessary were insects to plants that the extinction of the former would lead to the extinction of the majority of the most beautiful vegetable specimens, and *vice versa*. He likewise explained how insects fertilized plants which were incapable of fertilizing themselves or each other by conveying the "pollen" from one to the other.

FASHIONS IN HELL.

"**I**F at times I know not what to do with myself, I show myself in the Row; for, of course, that too is here—Hyde Park, Champs Elysées, Prater, Unter den Linden, Corso, Prado, all in one. And upon my word I do not think there is much difference between these fashionable resorts upon earth and their semblance here; I mean so far as what the world pleases to call style is concerned. We can scarcely outdo the world in that respect, but we have far more variety; for with you but one fashion can prevail at a time, whereas here all fashions flourish—all the nonsense of centuries combined: just think of that—all the inventions of *la mode* brought together, say of a thousand years! Could there be a more absurd picture, taking the fashion of dress for instance? Whatever gloom or wretchedness be upon me, I assure you I laugh right out at the sight—folly convicted out of its own mouth as it were. Just stop for a moment and imagine the effect: women covered to the neck with flounces and furbelows on the one hand, or half-naked on the other; puffed out to deformity here, tight as pump-handles there; bonnets like coal-scuttles here, bonnets like cheese-plates there. But who could name all their nonsense of farthingales and stomachers, ruffles and laces, crinolines and high-art styles, fancy costumes and divided skirts, not to mention chignons like the very towers of Babel, and simpleton fringes, and what not? Imagine, then, I say, the fools of ten years only brought together, and try to think of the fools of ten centuries! And then to believe any one fashion beautiful, any of them dictated by the 'good taste' to which they all pretend."—*Letters from Hell*.

WONDERFULLY MADE!

THE doctrine that the bodies of all the higher plants and animals are aggregations of myriads of minute, and in many respects independent, cells, had its origin some fifty years ago. Though now universally accepted by biologists as an essentially correct generalization, it has not yet become one of those scientific facts widely known to, and accepted by, the general educated public. To the "average man," the proposition that his body is a collection of thousands of microscopic masses of living matter, each of which lives its life in more or less harmony with the rest, but to a great extent without any reference to them, is an astounding one. He finds it nearly impossible to realize that in certain respects he is rather a nation than an individual; that his bodily life is the algebraical sum of the living and doing of hundreds of thousands of cells, much as the vitality and activity of a nation is the resultant of the actions of all its inhabitants. His physical life is to him an entity. In consequence, there is nothing which the physiologist finds it harder to make comprehensible to the laity than that a frog, as a complete animal, may be killed by destruction of its nervous system, yet most of its organs remain alive for hours; also the fact that it is not only possible in many cases to isolate particular organs or cells, keeping them alive for study after killing the rest of the plant or animal, but that this is even necessary, if the working of any complex organism is to be really understood. This popular ignorance, like all ignorance, has evil results. Much of the disquietude which many persons now feel in regard to physiological experiment is due to the fact that they do not realize that experiments on living hearts or muscles are usually carried out on animals which, as a whole, have previously been killed by destruction of the brain.—*Science*.

THE bloom on the cheeks of the bride is often spirited away to the husband's nose.

TRUE PATRIOTISM.

THE sentiment which Mr. Ferguson extols in prose and verse (love of country) is in its present phase and intensity the peculiar offspring of the great disruption of European Christendom caused by the Reformation, which called the centrifugal forces powerfully into play, gave birth to the most vehement antagonisms, and produced a great development of everything that awakens the sense of nationality. But the process is being now in some measure reversed, and the cosmopolitan influences of science, literature, industry and philanthropy are building up on a different, a broader, and perhaps a more solid basis, something like the ancient confederation of Christendom. As the rivulet of patriarchal and tribal allegiance found their river in nationality, the river of nationality may in course of time find its sea. But love of country will last our time, and continue probably for many ages after us to be the source of characters and actions higher at least than those which are produced by the love of self.

The chief use of recalling the history of the sentiment is to remind us that it is not a primary but a secondary virtue, and when it usurps the place of a primary virtue is apt to become a vice. If anyone doubts this let him take a course of French Chauvist writers, beginning with Thiers, and not forgetting the most popular historian of France, M. Martin, who has completely supplanted by his worship of French aggrandizement the unpopular moderation of Sismondi. "My country, right or wrong," is a maxim of devils. It is also a maxim of fools; for a nation which systematically acted on it would soon unite all other nations against itself. Some words of Mr. Ferguson may be construed as countenancing a heresy of which Canada seems to be the special seat. When any man tells the simple truth about this country or anything in it he is at once taxed in certain quarters with lack of patriotism, and, if the critic is in a state of excitement, with treason. We are to put our fingers on our lips and allow people to be deceived, perhaps

swindled, in our name. This is offering the country, as Bacon says dishonest orthodoxy offers to God, the unclean sacrifice of a lie. Sentiment can be healthy and enduring only when it is the genuine glow of reason and morality.—*The Week*.

CHAFF.

IN selecting a wife be sure and select one that will wash.

YOU cannot run down a person unless you follow at his heels.

SOME people are not happy unless they are comfortably uncomfortable.

A TRAIN of pure thought will run only on the track of a well guarded mind.

THERE are hosts of people who never lead except in their own funeral procession.

EXAMPLE has done more to educate than preaching, although preaching formulates example.

SUCCESSFUL editors credit their brethren's original ideas, but not their bad paying subscribers.

WHEN lawyers fail to take a fee,
And juries never disagree ;
When politicians are content,
And landlords don't collect their rent ;
When naughty children all die young,
And girls are born without a tongue ;
When preachers cut their sermons short,
And all folks to the church resort ;
When back subscribers all have paid,
And editors have fortunes made :
Such happiness will sure portend
This world must soon come to an end.

—*Gossip*.

SOME persons never have any peace of mind except when giving others a piece of their mind.

A TELEGRAM received lately read as follows: "Reported rebels defeated our men mowed them down like sheep." It reminded us of the old oracle, "*Aio te Romanos vincere posse.*"

My love is posing—nay! she is dozing—
 In yonder hammock, 'neath the tree;
 A nodding poppy, caressed by a zephyr,
 Just at her feet enfolds a bee;
 That winged bandit—see him fly!—
 Hath stolen nectar? Shall not I?
 "What hast thou done? Ah, me! ah, me!"
 My dear one cried, lamenting.
 I quick replied, repenting:
 "Ah! sweetest bliss! I stole a kiss—
 One little kiss!—was that amiss?—
 As thou wert posing—dreaming—dozing
 In hammock here beneath the tree!"
 The poppy raised its sleepy head,
 Its silken petals blushing red.
 My love's face was suffused as though
 Her very blood would burn it.
 In anguished guise, with whisper low,
 She sighed: "Ah, sir, return it."

—*Ex.*

SOME one has said, "The Aristotelian theory, that nature abhors a vacuum, appears to be a universal belief, and all are laboring to fill up the realms of space with mouthfuls of spoken wind."

OFFHANDED OBSERVATIONS.—There were present men booted and spurred on the one hand, and women lightly clad in dainty slippers on the other—each enjoying the festivities to their fullest extent and also to their own satisfaction.—She was blind on the one hand; her sister was quite bald on the other.

OUR parliamentary debates and criticisms of political opponents remind one of a traveller's description of Washington Territory—"Every brook is a river, every pond a lake, every hill a mountain, every rock a gold mine, and every man a liar."

DURING a dense fog a Mississippi steamboat took landing. A traveller, anxious to go ahead, came to the unperturbed manager of the wheel, and asked why they stopped. "Too much fog. Can't see the river." "But you can see the stars overhead." "Yes," replied the urbane pilot, "but until the biler busts we ain't going that way." The passenger went to bed.

A FRENCHMAN in conversation with an Englishman says: "I am going to leave my hotel. I paid my bill yesterday, and I said to the landlord, 'Do I owe you anything else?' He said, 'You are square.' 'What am I?' He said again, 'You are square.' 'That's strange,' said I; 'I lived so long I never knew I was square before.' Then, as I was going away, he shook me by the hand, saying, 'I hope you'll be round soon.' I said, 'I thought you said I was square. Now you hope I'll be round.' He laughed, and said, 'When I tell you you'll be round, I mean you won't be long.' I did not know how many forms he wished me to assume; however, I was glad he did not call me flat."

VARIOUS modes of courtship are tersely expressed by the *Boston Courier*:—"The tailor presses his suit. The shoemaker lays his awl at her feet. The blacksmith strikes the iron when it is hot. The carpenter says her society adze joy to his existence. The woodchopper offers himself as her feller. The mason believes his chances rest on a good foundation when he informs her that refusal would be mortar-fying to him. The sailor first ascertains how the land lies, then approaches her when she's in stays and informs her that she's in need of a first mate. The dairyman declares that he is bound to heifer, and can love no udder. The furniture dealer is so much in love with her that he is willing to accept her affection on instalments, one-tenth down. The poet woos her with a sonnet, and

her big brother starts out in search of him with a shotgun. The 'funny man' approaches her with jokes and puns and has the dog set on him and loses the skirts of his swallow-tail. Finally the champion roller skater rolls into her good graces and she elopes with and marries him." To the foregoing our contributor adds:—The newspaper man selects his subject, determines to lead a respectable life, leaves his office to the devil, and goes off to interview the father with a sanctum-monious air. He lays the matter carefully before him and offers proof of his devotion. Having thus arranged his case in good form he goes to press confident of the issue.

AH, our slang! American slang!
 Filling the air with its Homeric twang!
 Strewing our English with beautiful flowers,
 Bracing the "varsity" man till he towers
 Quite in advance of the Vassar girl's powers.
 Thus in our slang—such *awful nice* slang—
 "I'm *dreadfully, fearfully* weary," he sang.
 And thus in the *terribly sweet* hush of repose,
 We trust he'll find rest from his *exquisite* woes.
 Slang! slang! slang! slang! musical slang!

—*Ex.*

SELECTIONS.

THE entire difference between education and non-education (as regards the merely intellectual part of it) consists in this accuracy of reading. A well educated gentleman may not know many languages,—may not be able to speak any but his own,—may have read very few books. But whatever language he knows, he knows precisely; whatever word he pronounces he pronounces rightly; above all, he is learned in the peerage of words; knows the words of true descent and ancient blood at a glance from words of modern canaille; remembers all their ancestry—their intermarriages, distant relationships, and the extent to which they were admitted, and offices they held,

among the national noblesse of words at any time. But an uneducated person may know by memory any number of languages, and talk them all, and yet truly know not a word of any; he has only to speak a word of any language to be known for an illiterate person.—*John Ruskin.*

My neighbor's faults I see—and yet
My own delinquency forget.
I have a standard high, you see;
The dust for him, the sky for me.
To my own errors blind, my sight
Another's faults can see at night.
O, that I had the grace within
My heart for love—no place for sin.

—*Worthington's Annual.*

A GREAT service would be done by any man who would analyze the legislation, say of the last half century, and compare the expected results of Acts of Parliament with their proved results. He might make it an instructive revelation by simply taking all the preambles, and observing how many of the evils to be rectified were evils produced by preceding enactments. His chief difficulty would be that of getting within any moderate compass the immense number of cases in which the benefits anticipated were not achieved, while unanticipated disasters were caused. And then he might effectively close his digest by showing what immense advantages have, in instance after instance, followed the entire cessation of legislative action; not, indeed, that such an accumulation of cases, however multitudinous and however conclusive, would have an appreciable effect on the average mind. Political fetichism will continue so long as men remain without scientific discipline—so long as they recognize only proximate causes, and never think of the remoter and more general causes by which their special agencies are set in motion. Until the thing which now usurps the name of education has been dethroned by a true education, having for its end to teach men the nature of the world they live in,

new political delusions will grow up as fast as old ones are extinguished. But there is a select class existing, and a larger select class arising, on whom a work of the kind described would have an effect, and for whom it would be well worth while to write it.—*Herbert Spencer.*

“It’s wiser being good than bad ;
 It’s safer being meek than fierce ;
 It’s fitter being sane than mad.
 My own hope is, a sun will pierce
 The thickest cloud earth ever stretch’d ;
 That, after Last, returns the First,
 Though a wide compass round be fetched ;
 That what began best can’t end worst,
 Nor what God blessed once prove accurst.”

—*Robert Browning.*

A SHORT SERMON.—You are the architect of your own fortune. Rely upon your strength of body and soul. Take for your motto Self-reliance, Honesty and Industry ; for your star, Faith, Perseverance and Pluck ; and inscribe on your banner, “Be just and fear not.” Don’t take too much advice ; keep at the helm and steer your own ship. Strike out. Think well for yourself. Fire above the mark you intend to hit. Assume your position. Don’t practise humility ; you can’t get above your level ; water don’t run up hill ; pull potatoes in a cart over a rough road and the small potatoes will go to the bottom. Energy invincible, determination with a right motive, are the levers that move the world. The sure art of commanding is to take a fair share of the work. Civility costs nothing and buys everything. Don’t drink. Don’t smoke. Don’t chew. Don’t swear. Don’t gamble. Don’t lie. Don’t steal. Don’t deceive. Don’t tattle. Be polite. Be generous. Be kind. Study hard. Play hard. Be in earnest. Be self-reliant. Read good books. Love your fellowmen as well as God. Love your country and obey the laws. Love truth. Always do what your conscience tells you to be a duty, and leave the consequence with God.

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