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THE CANADA
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AND

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THE CANADA
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JANUARY, 1896.

NEWFOUNDLAND AND HER FUTURE.

C. OCHILTREE-MACDONALD.

A PROPOS of the development of the coalfields of Newfoundland by Canadian capitalists, it is worth noting that Captain Cook drew the world's attention to the wealthy coalfields of "Terra Nova" many years ago. For several years successively the great circumnavigator explored the shores of the island and he seems to have been wonderfully impressed with the coal. "There are in Newfoundland," he reported, "some wonderful coal mines, so rich in fact, that if the Crown would but grant leave to speculators to work them, their produce would be sufficient to supply all Europe and America abundantly; some are even so commodiously situated that the coals might be thrown directly from the coalworks themselves into the ships, as they lie close to the shore" (History of Voyages and Discoveries in the North, by John Reinhold Forster. Translated from the German). These coalfields are probably identical with those of Cape Breton. Cape Breton's coals drop into the Gulf between Scataric Island and Cape North and reappear on the coast of Newfoundland. The hypothesis is that the measures drop to the Atlantic again and travel along the range of mountains which con-

nects Newfoundland with the British Islands, under the surface of the ocean. However this may be, the coal is in Terra Nova and her coal bill of some \$200,000 a year to outside countries, will now be gradually retrenched and kept at home. Newfoundland will thus be about a quarter of a million dollars richer every year as time rolls on and the Nova Scotian mines will gradually lose their market down there. This is an important sign of the time of the island's development.

The smuggling of liquors, etc., into the country is an enormous loss to the revenue. Newfoundland has lost \$5,000,000 at the least through her smugglers, and if she does not stamp the pernicious practise out she will lose millions more and stay poor. It is interesting in these days of Prohibition talk and temperance work to notice that both prohibition and temperance laws are, at least, 250 years old down in Newfoundland. The Privy Council of England expressly forbade taverns; and in 1640 we find the Justices of the peace of the town of Exeter forwarding several petitions to the Privy Council from merchants and others interested in Newfoundland's progress complaining that taverns had

been set up "Whereby the fishermen wasted their substance and grew disorderly." The late disclosures of the smuggling ramifications suggest that "Prohibition" has been a failure down there to a large extent and reminds one that Eve was the first witness to prove that prohibition does not prohibit. The cue to Newfoundland's trouble is its absentee merchantism. Surrounded by enormous wealth she is poor. The codfisheries ("Newfoundland Beefsteak") yield \$5,000,000 per annum; the seals (harp and head not fur) yield \$500,000 and the lobsters about \$250,000 per annum. About \$9,000,000 worth of copper ore has been exported between 1854 and 1891—and the population is a mere 200,000 folk! This is an astounding record—there is little to surpass it in the world. Lord Bacon was Newfoundland's first "company promoter." In the prospectus of the company entitled, "The Company of the Planters of Newfoundland," he declared that the island "contained richer treasures than the mines of Peru and Mexico." The above record shows that practically and almost literally, Bacon was right. The interior is charming. Thousands of deer graze undisturbed in the vocal woods or dwell in sylvan peace in the natural parks sketched out by the delicate fingers of unimproved Nature. Hunting lodges and "shooting boxes" are springing up and tourists are flocking in. There never was a time when the name of "Newfoundland" was more appropriate. The old world has sailed around the coasts of Africa for centuries; peered into it with mingled curiosity and awe; planted settlements upon its edges. Only now is the Dark Continent being lit up by the light of modern progress. What Africa has been to Europe, Newfoundland has

been, in a degree, to the New World. The New World has sailed with the mariners of the old world around its coasts for centuries, peered curiously into its interior, planted settlements upon its edges. Only now is Terra Nova being opened out properly. Henceforth the island is in the community of nations of the New World. The old order of things is fading out, like a melting ice-berg. It is the old order of things that has kept Newfoundland poor. About £10,000,000 sterling, has been removed from the island by its merchants and transported to the green shores of England to support their role of "squires" and "county gentlemen," and the Island is consequently almost as weak and puny as she was at the start. It is thus an important sign of the time that contemporaneously with the rise of outside appreciation of Newfoundland's resources the old West of England "houses" should be collapsing, and a slightly better order of things coming into existence. It is high time. With all the enormous wealth annually drawn from the island's Fishpads, the condition of the people is most desolate. St. John's, the capital, is not even incorporated, and full many a Newfoundland mother could not explain to her pinched children the common delicacies of a Canadian workman's table without pictures of the food! Never having seen they could not understand an oral description of the comforts and luxuries of the humblest home in the Dominion. The first steps to be taken should embrace:

1. The incorporation of the capital.
2. The ballasting of the constituencies with municipal governments. Then by a natural sequence, the steadier equilibrium of public affairs would procure a more certain appreciation of the benefits derivable from union with Canada.

THE PASSING OF THE FAIRIES.

THE Fairies are to go! Her Majesty's Inspector has said it. True, no one has actually beheld them since the days of the Round Table, when, we are told:

Himself beheld three spirits mad with joy
Come dashing down on a tall wallside
flower.

And still at evenings on before his horse
The flickering fairy circle wheel'd and broke
Flying, and link'd again and link'd and
broke

Flying, for all the earth was full of life.

But though driven from the fields and woods, discredited yet not discouraged, the Little People have maintained their place in the nursery and schoolroom. Thence they are now to be dislodged. Into the dark caverns of the infant mind the bull's-eye lantern of the Inspector has been flashed, and the banditti lurking there, Robin Goodfellow, Puss-in-Boots, Tom Thumb, and Riquet of the Tuft are warned to move on. The clock has struck, and Cinderella must for ever resume her rags, the Sleeping Beauty must awake, Dick Whittington must put away his cat and become merely a Lord Mayor, the Wild Swans must fly away, the Ice Maiden must melt and be no longer seen! As at the moment of Christ's Nativity the false gods of heathendom are feigned to have passed away, with

A voice of weeping heard, and loud lament, so must the crowning of knowledge be attended by the expulsion of the fairies from the imagination of little children.

In an interesting lecture delivered at the College last Saturday, and printed in this number of the *Educational Times*, Mr. Holman delivered a vigorous attack on the use of fairy-tales in education. The race, it appears, has outgrown fairy-tales, and "to use them for early educational work is

practically to bring about a reversion to type." They express "the ideas of a profoundly ignorant primitive man, in conditions generally very far removed from those of the little learner." Again, fairy-tales are for adults, not for children, because "they are the prose-tales of the primitive adult, not the primitive child." It is pointed out that the moral teaching of some fairy-stories is very undesirable: even if the hero be a righteous person, "he has more often than not to lie, steal, cheat, and be an ingrate, to accomplish his noble ends." It appears, then, to Mr. Holman, that an edition of fairy-tales for School purposes may be called a "polite form of cannibalism. . . or an improved shorter catechism of idolatry." It would be wiser, he thinks, to stick to the truth, and train the infant mind on the wonders of science and the exciting episodes of history, or of fiction which, like "Robinson Crusoe," might conceivably be true. Fairy-tales hold their own, he says, simply through their charm of manner, their vivid dramatic setting, their simplicity and indefiniteness. Let us steal therefore their manner, and write true stories (if we can) in the old way.

We foresee difficulties: if the dramatic method is adopted in science and history, truth is apt to be rather highly coloured. One of the most successful experiments in this line was Kingsley's "Water Babies"; yet Mr. Laurance Gomme characterized this, even from the standpoint of science, as a book of "pernicious tendencies." It may be true that the facts of electricity and of light, and their modes of motion, may be made as interesting as the stories of the seven league boots, or Aladdin's carpet. The lecturer contended that they

are superior to these for educational purposes, because they are true. We venture to suggest that this begs the question. *Ex hypothesi*, we are not teaching either set of stories for the value of their facts, but as a method of awakening that wonder which is the source of all knowledge, the imagination and sympathy which lie at the basis of all science, all discovery, all poetry, all religion.

If the true stories of science and history be used in this way to awaken wonder, fairy-stories, that are beyond the sphere of experience altogether, will surely do it better than stories that awaken a wonder that is to be immediately stilled by a natural explanation. We doubt whether children ever really suppose these stories to be true, and the objection to a "magic wand" as an unscientific conception therefore falls to the ground. We would go further, and say that there is a danger in the reverse process, a danger in giving the child scientific explanations he cannot understand and ethical instruction to which he can only give a notional assent, of making him a little prig, that is, a little being inflated by notions, and not really trained by convictions and real knowledge. We are surrounded by mystery; it is not good even for adults to be always trying to solve the problems of the Universe. It may be as necessary for the child's spiritual nature that there should be a fairy-land, where all is unreal, unexplained, unmoral, as a land of prolonged slumber to which the needs of his physical nature invite him. There is, moreover, one ethical lesson that does underlie these tales, and that is that the animals are not merely an inferior race created for the service of man, but a world in itself, with its own needs, its own laws, and its own rights. Greater even than science or knowledge of nature is Nature herself. We all

know the saying about the difficulty of expelling Nature: she has a trick of returning. Expel "Reynard the Fox," and "Brer Rabbit" steps in; expel "Brer Rabbit," and, behold! "Hathi" and "Bagheera" and the rest of the jungle folk are with us. The vitality of fairy stories is perhaps an evidence of their being of some real service to the world.

What is to be substituted? "Let us keep the form but change the content," says the lecturer. "For 'Sinbad the Sailor' let us have 'Masterman Ready.'" Well, we will grant him that. Ourselves, in our gracious youth, have been held by the glittering eye of that old seaman. But for the old Greek legends the lecturer would substitute Mr. Smiles' "Self-Help." Shade of Matthew Arnold! We would commend to the lecturer his great predecessor's remarks on this subject, and especially what he says about the moral condition of the youth who was determined to *get on*, and said every day to himself, looking at his master's factory: "Some day I will be master of that concern."—*The Educational Times*.

All language and literature are full of general observations on life, both as to what it is and how to conduct oneself in it; observations which everybody knows, which everybody repeats or hears with acquiescence, which are received as truisms, yet of which most people first truly learn the meaning when experience, generally of a painful kind, has made it a reality to them.—*John Stuart Mill*.

Courage in all the worlds is the same courage. Truth before the throne of God is the same thing as when neighbor talks with neighbor on the street.

THE SCHOOLS OF SCOTLAND.

BY PRINCIPAL GRANT.

IN his excellent political "History of the United States," Dr. Goldwin Smith says: "Massachusetts led the world in the institution of common schools, to which all citizens were required to contribute and which all citizens were required to use."

I have no desire to take away glory from Massachusetts, but it is just as well that the old Bay State should not be arrayed in borrowed feathers. Scotland had common Schools, as well as Universities, before the Pilgrim Fathers instituted either. Even before the Reformation, the Universities of St. Andrews, Glasgow, and Aberdeen had been established, grammar schools existed in some of the principal towns, and the convents generally had schools attached to them. No provision, however, had been made for educating the bulk of the people. But the old system did wonderfully good work.

In the diary of James Melville, we have very interesting notices of the school in Montrose, in which he was a scholar, six years after the Reformation. "There," he says, "were a good number of gentle and honest men's bairns, of the country about, well trained both in letters, godliness and exercise of honest games." After describing how the scholars were instructed in Scripture, Catechism, Latin, French, etc., he goes on to say that they had their play, too: "By our master we were taught to handle the bow for archery; the clubs for golf; batons, for fencing; also to run, leap, swim, wrestle; everyone having his match and antagonist both in our lessons and play." Not a bad system of education, that! The Reformation in Scotland, however, went to the

roots of things. It was essentially a democratic movement, and in "Knox's First Book of Discipline" it was laid down that every church should have a school attached to it; that every notable town should have a college; and that the existing universities should be liberally endowed. The greed of the nobles prevented this grand scheme from being carried into effect, but the Church never ceased to press for it, even in the troublous times, which continued for more than a century. The Reformers were also anxious to encourage sacred music, and the first editions of the Scottish Liturgy (for the Church of Scotland had a Liturgy in the sixteenth and seventeenth centuries) have the Psalm tunes then sung attached to the Psalms. Early in the seventeenth century, the Church did much for the establishment of common schools, supporting them in some instances by fees and elsewhere by voluntary assessment, which the rich had to pay on penalty of being called before the Session; if the poorer people refused to pay their share of the assessment, they would be denied any charity if they should come to need relief.

In 1616 the Privy Council passed an act that in every parish where it could be done conveniently, a school should be established and a fit person appointed to teach the same, "upon the expense of the parishioners, according to the quality and quantity of the parish." This act was not fully carried out; but the Parliament of 1633 ratified it, the clergy followed it up; and soon after the revolution of 1688 (in 1696), the proprietors of every parish were compelled by law to furnish the means of education to every child. Not only schools but

houses for the schoolmasters had to be built. The General Assembly followed this by an act, instructing Presbyteries to see that the law was obeyed. From that day the poorest peasant in Scotland has had it in his power to give a good education to his children, and scholars went forth from the parish schools whose names became illustrious in science, industry, art and song. The superintendence of the schools was confided to the Church, which, as a rule, did its duty faithfully. As long, too, as it included the great mass of the population everyone was satisfied. In this century, however, social, industrial, and ecclesiastical changes called for an extension of the old system. Not only was there a considerable immigration from Ireland into the cities and manufacturing towns, but the different secessions from the Church of Scotland split the mass of the population into three churches, all Presbyterian, it is true, but none the less rivals on that account. In these circumstances, it was impossible that the parish schools should be left in the hands of the one church, which retained the name National, and which alone had the legal title to the name. The schools, had, however, been always national, and by the Education Bill of 1872, they were made the nucleus of the new public school system but they were to be governed, not by the Kirk-Sessions, but by school boards, elected by the rate-payers, and were to be supported by rates, wherever fees and the old endowments were insufficient.

The question of religious instruction in public schools came to the front at that time, and it was thought that the United Presbyterian Church, because of the strong stand taken by it against the union of Church and State, would oppose the inclusion of religion in the enlarged system of national education. It, however, took

up no such position, but declared in favor of the maintenance of "use and wont," that is, the teaching of the Bible and the Shorter Catechism in the public schools. Dr. Cairns and other eminent leaders of that Church, held that, while the State should neither enforce any form of religion upon children nor use public money in its teaching, the exclusion of the Bible from daily school lessons would be a great calamity. They held that liberty of conscience is sufficiently guarded when parents are allowed to withdraw their children from school at the hour of giving religious lessons. Many of the English dissenters took up a different position, because they believed that the Anglican Church had used, and would use, schools as a propaganda. Dr. Cairns, however, wrote to Dr. Dale, of Birmingham, that "We are not prepared for any enactment excluding the Bible from the regular hours, if the local board shall so arrange it. Nor are we ready to agree to any exclusion of the Catechism, provided it be restricted to the extra hours and protected by a conscience time table." He would not agree to relegate the Bible to extra hours. "I do not think," he says, "that the Bible should be thus treated by any Christian nation." Consequently, there never has been any difficulty, in practice, on this subject of religious education, in Scotland. There are separate schools established chiefly by Roman Catholics, and these are assisted by Government grants, which they receive in common with the public schools, on the reports of admirably qualified, independent inspectors, but they receive nothing from the rates.

In several respects the Scottish system differs from ours. (1) The old practice of appointing the teacher, "for life or fault" is still largely followed. Consequently, instead of having young girls teaching for six months

and replaced, perhaps after a considerable interval, by successors of the same kind, as is too often the case in Canada and the United States, Scotland has had for generations, teachers of the type of "Domsie," whose character has been so lovingly sketched by Ian Maclaren. (2) Far from having any of the dread of "overlapping," which seems to exist in our education department, boys in the great majority of parish schools, can be prepared for the universities, without the necessity of going away from home to a High School. Scotland is thus more democratic in spirit than Ontario. For it costs about as much for a boy to leave home and attend a High School, as it costs him, when grown up, to attend the University, and this cost dooms great numbers of clever boys to the limits of the "three R's." Our poor boys have thus less chance of getting a university education than Scottish boys of the same class. Not

only so, but the Scottish boys can also take all the time that is needed to get up Latin, Greek, and mathematics, instead of "cramming," for matriculation, by one or two years' attendance at a distant High School. (3) The old idea, that religious instruction was an essential part of education, still holds the field in Scotland. I am glad to know that the Kingston School Board is impressed with the same true idea, and that it is now taking full advantage of the liberty which the law allows in this regard. That is the best way of finding out whether or what amendment to the present law is required. The amendment which seems to me most required is to strike out the clause forbidding "note or comment." If the teacher cannot be trusted to ask or answer a question or give an explanation why should he be trusted to read a lesson from the Bible, or trusted with teaching from any book?

EDUCATIONAL REFORM.

DR. WM. T. HARRIS.

CAREFUL students of the history of education have noticed the fact that its reforms swing from extreme to extreme. At one time it will become the fashion to lay great stress on the training of the will. Schools will accordingly become places where children are submitted to semi-mechanical processes of discipline to the neglect of individual insight and ability to think. Gradually the pendulum will swing to the other extreme, and discipline will be neglected for the intellectual self-activity of the pupils.

At first view it is astonishing to see this incompatibility between will

training and intellectual development. Any one would suppose that the better the school as regards obedience to rule, the formation of correct habits and the subordination of selfish inclinations to the good of the institution, the better would be the intellectual progress. "Intellectual development must be based on moral character." It does not seem possible that there can be such a mistake as over-education in the direction of morality and good behavior.

And yet it has always happened that schools managed by pronounced disciplinarians become more or less mechanical in their methods of in-

struction and are prone to encourage verbal memorizing rather than original thought. This, too, is a matter of race.

The Anglo-Saxon everywhere permits greater freedom in action to the individual citizen than is found compatible with public safety among the nations of other race descent. Perhaps this is the reason why the elementary schools in English-speaking countries lay so much stress on order and discipline. There must be regularity, punctuality, and silence—prompt and willing obedience to command. This is carried to such an extent that the pupil is constrained to sit in a certain position, to rise and pass in military order to his recitation. Even his physical exercises are conducted like military drill, in concert, with careful attention to words of command.

The Anglo-Saxon prepares in school for a life of self-government by habituating himself to conform to strict rules of school etiquette. He is safe if left without police restraint when he grows up. His second nature is to combine with his fellow men and keep step with the rest. If he finds himself shipwrecked on a desert island with a few companions, or goes to a border land to dig gold he proceeds at once to organize a civil community. Where three or more are gathered together a local self-government is formed in their midst.

Local self-government seems to rest on mutual toleration of differences. And yet the typical school of the Anglo Saxon is strict even to the verge of tyranny. Is it necessary that the youth destined for a self-governing community shall prepare for it by forming habits of implicit obedience to authority?

Whatever answer we give to this question we cannot escape the admission that the Anglo-Saxon school

is possessed of a chronic failing. It always needs reform in its methods of instruction. For if the teacher is bending his exertion to secure this mechanical conformity to prescribed rules of conduct, he is more than likely to repress the tendency of the pupil to individual freedom of thinking. And thinking cannot grow except in freedom. The teacher will frown upon pert and capricious expressions of opinion that vary from the text-book. Differences of opinion from himself will be treated as rebellion against the constituted authority. Those pupils who reproduce with little variation the statements of the text-book—those pupils who parrot-like reproduce the expressed ideas of their teacher will be awarded the highest "marks."

The same training that suffices for the will when adopted as method of discipline produces second-rate intellects when adopted as the method of instruction. It forms a habit of intellect that seeks and finds authority and rests contented. The nature of the intellect, however, is to question authority and go behind it to find more ultimate grounds. It questions facts and dead results and goes beyond them for causes. It is the nature of intellect to ascend from things to their causes and to rest only when it reaches an adequate self-cause.

This is an age of science and of the conquest of nature for the service of man. Scientific method is rapidly coming into repute. It is hostile to the method of authority. It follows that the reaction against the old methods of instruction in the school is more pronounced than ever before. It takes the form of opposition to the use of text books; it prefers the oral method; it demands a substitution of natural science for language studies; it uses the developing method in place of memorizing the dead results

of human learning; talks much about studying things rather than words. It pushes forward the kindergarten and commends the method of Froebel, which relies wholly on the self-activity of the child. In the interest of childish needs and wants it recommends plays and games and occupations at building or construction. It adopts as its motto the adage of Comenius: "Learn to do by doing." It goes so far as to decry the mechanical methods of school discipline in the interest of arousing the intellect

to original efforts. It sacrifices everything to make class exercises interesting to the pupil, and the school a place of delightful self-activity and entertainment.

The intellect grows by mastering for itself the thoughts of others and by investigating causes and principles. But the will grows through self-sacrifice for the sake of wider and wider interests. It is possible, therefore, to have two lines of educational reform antagonistic, each to the other.—*The Public School Journal.*

THE PLACE OF ART EDUCATION IN GENERAL EDUCATION.

BY JOHN S. CLARK.

(Continued from last issue.)

Now, standing as we do to-day in the possession of this art legacy from the men of the past, can we rationally minimize it, and, as many of the educational leaders demand, consider the child merely as a particularly high differentiation of physical energies, the passive subject of nature, molded and played upon at nature's mercy? I tell you, Nay. We must see and own and practically act upon a truer conception of the mind of man, and upon such a larger vision of the place of man in creation's scale as was so strongly brought out by Dr. John Fiske at Harvard two weeks ago, in his Phi Beta Kappa address. Dr. Fiske then gave utterance to words that are to be forever memorable in the great discussion upon which thinking men are now entering with reference to man and his destiny in the light of evolution, and he has kindly sent me his exact words for use on this occasion. In speaking of psychological man and contrasting him with all that preceded him, Dr. Fiske said:

The physical variations by which man is distinguished from apes are not great. His physical relationship with the ape is closer than that between cat and dog, which belong to different families of the same order; it is like that between cat and leopard or between dog and fox, different genera in the same family. But the moment we consider the minds of man and ape, the gap between the two is immeasurable. Mr. Mitart has truly said that, with regard to their total value in nature, the difference between man and ape transcends the difference between ape and blade of grass. I should be disposed to go further and say that while for zoological man you cannot erect a distinct family from that of the chimpanzee and orang, on the other hand, for psychological man you must erect a distinct kingdom; nay, you must even dichotomize the universe, putting man on one side and all things else on the other.

It is this stupendous sense of the soul's reality—that is, its individuality and its self-activity—that we need to emphasize in these days of talk about the soul as merely a derivation from sense-activities.

Let me ask all those who believe there is nothing in the mind but the product of the senses, Whence came

these arts of man? Can you assume for their existence anything less than the existence in the mind of man of a creative power superior to the physical forces that surround him; a power which appropriates through the action of the senses these physical forces and transforms them for its own spiritual ends?

I desire to leave this point with emphasis on the fact that these arts of man are not mere incidents in his development; they are the sum of his existence, that "toward which the whole creation moves."

My next proposition is:

PROPOSITION IV—That every child is born heir to two world environments (the material world of nature and the spiritual world of man), and also the possessor of aptitudes for ever expanding creative activities of his own.

We have seen that man is surrounded by two great world environments. These two world environments act upon the child, each in its own way. The material world of nature, the world of cloud and rock, of multitudinous plant life and swarming animal life, makes constant appeal to the new human being, through his physical sensibilities and physical interests, as one who is the crowning product of its own marvelous cycles of evolutionary energy. On the other hand, the spiritual world of man, the world of the arts, makes constant appeal to the new human being, through his spiritual susceptibilities and spiritual interests, as one who is capable of all that the race is capable of, and, as a new being, has endless future possibilities of personal activity. The upward growth of this new human being we find dependent upon the relation or balance between his responses to the influences of these two world environments, and it is here that we, as educators, should take careful note of how these two environments affect the child. His animal nature obedient to the laws of natural evolution in the

physical world, is absorptive, selfish. It grasps. It appropriates for the good of self. This is nature's provision for the perpetuation of the race. His spiritual nature, on the other hand, obedient to the laws of spiritual life, is creative, altruistic. It gives. It makes for the good of others. This is the divine provision for the development of humanity. In so far, and in so far alone, as this spiritual response to, and utilization of, the influences of his spiritual environment predominate over his submission to the influences of his material environment, he grows toward that high human destiny which we can but faintly begin to forecast.

If it were true that children were only little animals, subject to nature's laws and possessing minds that work merely automatically under the outside stimuli of natural phenomena, it would be well enough to do, as many modern educators advocate,—simply surround the child with pleasing natural objects and trust their sensuous attractiveness will insure attention and observation, and that these will somehow of themselves evolve desire for what is truly best, and secure energetic action along right lines, toward high ends.

The unfortunate fact is, however, that, unless we make a strong appeal to children through the spiritual side of their nature, they are liable to respond only in terms of the animal. As most practical teachers know, we are likely to be brought up standing by the child's frankly materialistic measures of the universe. Those of you who have read the recent autobiography of Frances Power Cobbe will recall her experience when, returning to her country home for a visit, after several years of absence, she met a grown-up young man, who had been a pupil in the little village school organized and enthusiastically taught by herself.

"Well, Andrew," said Miss Cobbe, "how much do you remember of the lessons you learned at school?"

"Sure, miss," said Andrew, "I've forgot them entirely."

"Oh, but certainly you must remember something of them. Don't you remember about the earth and the sun and Mars and the other planets?"

Andrew scratched his head and light dawned upon his countenance.

"Yes, miss," he declared, "I do remember now. You laid them all out on the schoolroom table, and Mars was a red gooseberry and I ate him."

It evidently will not do to trust too far or too implicitly to the "automatic" transformation of sense-impressions into elevated thought.

Jacobi has truly said—"Nature conceals God : Man reveals God !"

Now is there any provision in the universe for helping to insure the predominance of man's spiritual development and his consequent progressive mastership of the material world?

There is : and this leads to the next proposition, one of the most significant of all the great significant truths of evolution :

PROPOSITION V—The period of infancy and youth, when the mind is especially susceptible to the influences of environments and when the active powers are most easily directed, is a special provision for the unceasing development of man's spiritual qualities and creative activities.

Dr. John Fiske was the first to point out clearly to contemporary thought the important fact that physical evolution had come to an end in the production of physical man ; and that further play of the evolutionary process must be sought in psychical man. He also pointed out how this psychical development was conditioned upon psychical or spiritual man making his physical being and his physical environment subject to himself. Dr. Fiske has also supplemented these important contributions to evolutionary philo-

sophy by another of no less importance—one which cannot be ignored in any attempt to place education upon a truly philosophical basis. I refer to his statement that the long period of dependent infancy and youth in the human child, as contrasted with the prenatal provisions for self-existence in the lower animals, is evidence of a distinct plan for the increasing development of the psychic life of the human race, through a special provision in the life of every individual of a plastic condition of mind, whereby the accumulations of every expanding human experience could be handed over from generation to generation through ever expanding faculties for self-activity in receiving, and then for ever expanding powers of self-activity in creating for the benefit of human life.

I cannot stop to discuss the immense significance of this evolutionary view of the psychic development of the race in its bearing upon education. If Nature's provisions in this respect mean anything, I do not think it will be questioned but that they are intended for the ever increasing development of the psychical or spiritual man rather than of the physical or animal man.

And this leads to my final proposition :

PROPOSITION VI—Education should be the fullest possible utilization of the plastic period of infancy and youth, not only for cultivating a knowledge of the child's two world environments for his own spiritual enjoyment, but also and emphatically for training to skill in the creative activities along art lines, as the highest contribution of the individual to social well being.

The best education means simply the best utilization of this plastic period of the child's life for the development and training of that in him which most deserves to be developed and trained.

I say "that which most deserves to be developed and trained," assuming

that not everything in the child's inherited make-up is of the same value. I take it to be a part of the responsibility laid upon mature men to weigh the various elements of human nature as fairly as they can, and learn to put educational emphasis on the more worthy of those elements.

In our lesser task of guiding the progressive development of plant and animal life, we have for a long time made some such selection. Man's effort has been, not simply to help the earth bring forth more flowers and fruit of precisely the same sorts as would grow without help, but to put his intellect and his will in co-operation with the powers outside him, so as to transform existing conditions of growth, to the end that still more beautiful flowers and even more delicious fruits may be brought into existence. Look at our greenhouses, our orchards, and our market gardens for the result. When the task set us is to help work out the Divine purpose in the higher development, not of vegetable or brute beasts, but of new human beings, there is not less but more need that we should consider deeply the animal nature of the child on the one hand, and his spiritual nature on the other, and how the former can best be utilized in the full development of the latter.

The supreme purpose of education, so far as that education lies within our control, should be the development of the child's capacity for unselfish creative activity and for spiritual enjoyment. The development of his other capacities should be treated with regard to the manner and degree of contributing toward this supreme end.

I intentionally use the term creation rather than expression when referring to the supreme form of human activity, because I believe we ought to keep in mind the thought that the highest activity goes beyond mere "expres-

sion" (*i. e.*, the mere statement of what is), and becomes "creation," that is to say, productive action: action productive of new things or new conditions. This is a point that I wish particularly to emphasize, the distinction between expression and creation.³

This idea of education as training for creative activity includes all that was best in our earlier notions of the purpose of education. It includes the acquirement of stores of knowledge; for, of course, it is only upon the basis of a knowledge of what *is* that man can proceed to make things or conditions better. It also includes the development of individual power, because, of course, the man who can command himself is the only one who can effectively command matter or force. But the mere "acquirement

³This is not a mere verbal distinction. Man's most valuable and lasting work in any direction is work not merely expressing or stating facts that he has become aware of, but actually creating forth new facts. The dramas of Shakespeare are not simply transcripts of things that the author knew to have actually happened to particular people. They are a new created world wherein human character and human life show themselves even more clearly and more truly than most of mankind ever see with their own unaided eyes in the thick of common happenings. The symphonies of Beethoven are not simply expressions of what the composer had heard from winds and birds and running water. They are the positive creations of a self active soul grasping the laws of harmony that are so faintly hinted at in nature, and embodying forth ideals of tone and rhythm that never had taken form without the composer's genius as a cause. The Parthenon with its sculptures was not simply a marble statement of the laws of gravity and of the religious and political opinions of the Athenian state—a material expression of existing facts. It was the bringing forth into visible and glorious existence of an entirely new creation; something that had not existed in the marble quarry but only in the constructive artistic imagination of man—imagination so strong, so clear, so high in its reach that it could and did command matter to its obedient service.

of knowledge" may be as worthless as the accumulation of gold pieces in a miser's strong box, and the mere "development of power" may be as worthless as the development of power in a finished engine that stands unconnected with any sort of working machinery. The new ideal of education as training for creative activity includes both the effort after knowledge and the effort after power, and adds to these a purpose. That purpose is the active betterment of the world and the progressive elevation of human living.

And this view of education necessitates direct training, not only for creative thought, but also for skill in creating forth the best embodiments of such thought. It implies, not simply keeping the child's senses tickled with a succession of novel and pleasant impressions, which he may express or record in any fashion that comes easiest, but also in giving him such opportunity and such guidance in creative activities that he may gradually attain to self-command in these activities; that he may learn to respect positive standards of technical workmanship, and also learn to hold himself sturdily up toward them in his own endeavors.

Now I do not wish to be understood here as overlooking or as crushing out the element of the child's instinctive interest. I believe we ought to study very thoughtfully and very sympathetically the natural, instinctive interests and desires of the child, in planning and conducting educational work. But I believe that we should study these interests and desires, not just for the sake of following their indications of "the line of least resistance," but also and much more for the sake of *utilizing them as means whereby to lead the child out of his present animal self up to a still higher and better human self.* As grown-up men and women our-

selves, we simply must believe that our measures of life are, on the whole, juster and truer than the child's own measures of life; else life itself is a hopeless anti-climax, the dreariest of illusions. The child would naturally prefer to possess a juicy apple to-day rather than to possess

"The Lord Christ's heart and Shakespeare's brain"

next week; but that is no proof that good things to eat are truly more worth while than wisdom and righteousness. No. What we have to do is neither to impose our own wills arbitrarily and absolutely on the child's will, nor yet to fold our arms and indolently let him have his head in any direction and to any extent he likes. Ours should be the more difficult but much more honorable task of recognizing his feelings and impulses with ready sympathy; of bringing to bear upon those feelings and those impulses such spiritual influences as will combine with the influences of his natural environment; of developing right powers and habits and encouraging right activities, and of giving him all the direct positive practice and training that we can give in the typical creative activities, to the end that he may have, not only desire to create, but also power to create forth in terms of art; that, besides having good intentions, he may actually do good work.

The desirability of training a child's powers of appreciating and enjoying what is noble and beautiful in both the world of nature and the world of art, which embodies so much of men's best thought and experience, hardly needs argument. Whether regarded by itself, as providing the child with an elevating mode of occupying leisure hours, or regarded as a step toward positive creative activity on his own part, such training, if wisely conducted by tactful guidance rather than by prescription and rule, may and

should be a fruitful means of rounding out character in a wholesome, healthy fashion, and providing beforehand resources of true refreshment and lofty inspiration. Such resources of appreciative power are needed both by the artist and by his public; by the man of leisure and by the humblest workman. Indeed the balance of need lies with the one whose life is to be almost full of commonplace toil, if the improving industrial conditions which give him increasing hours of leisure are to actually make his leisure spiritually profitable to him.

We have hitherto spoken of art in its largest inclusive meaning, comprising all literature, music, painting, sculpture, and architecture. What is true of art, as a whole, in its bearings upon the life of the race and the education of the individual, is true of the particular lines of art which are usually referred to when we speak of art in education. Art in this sense is understood as applying to modeling, drawing, and coloring with their special functions in decoration, illustration, and sculpture, painting, machinery, and building construction and architecture.

Now there are two great obstacles in the way of the establishing of true art education in our public schools:

First. The mistaken and belittling notions about art and art education, which prevail to so great an extent among professed leaders of educational work, as well as on the part of the public.

Second. The unfamiliarity of the rank and file of teachers with the subject-matter and methods of true art instruction.

Now as to the first obstacle, many educators, when they speak of art, mean merely graphic expression, mere diagramming of imitating as a means of stating information. When they speak of art instruction they mean

merely encouraging children to make maps, diagrams, and sketches or models in connection with their lessons in arithmetic, geography, physics, and natural history. These apostles of "free" art practically take the ground that the average child can drop into art, as Mr. Wegg dropped into poetry, "in a friendly sort of way," and that, if he is just given clay, a pencil or brush and a piece of paper and urged to draw or model whatever he happens to see, just as he happens to see it, the result is *art*. This is just like giving the untrained and illiterate child paper and pen, telling him to write whatever he thinks about whatever he pleases, in whatever way occurs to him, and calling the result literature. Now everybody would recognize the absurdity and futility of this latter procedure. We all know that the child cannot by himself evolve good literary taste and good literary style out of his own crude, desultory thoughts, plus a sheet of paper. There is no such short cut to literature. He must indeed write and write and keep on writing, but above all he must read and be taught what to read; his mind must be fed from the fruitful store of good literature which already exists, the legacy of accumulated ages of human culture.

Now it cannot possibly be our best plan to-day to ignore all the progress of the past, and make each child laboriously work out all over again the whole history of civilization, Dark Ages included, when he ought to be let into his birthright as "heir of all the ages." A broader and clearer appreciation on the part of educational leaders as to what art itself means as a factor in developing the creative power of the child, and what it stands for in social life to-day, is the first requisite for the success of art education as a part of public education. As evidence of how this great subject

is ignored, we have only to refer to the reports of the Committee of Ten and the Committee of Fifteen; and further I am not aware of any scheme of correlation of studies in which the subject is, in any way, adequately recognized.

But I believe a change is coming. Sooner or later it will be seen and practically recognized that what man has done in his arts is to a young mind in the formative stage what fertile soil is to a young plant. And when that time comes, men will no longer try either to cultivate rose-bushes on a strictly primeval diet of granite, gravel, and rain, or to cultivate human souls on a strictly primeval diet of nature-study and untrammelled frolic.⁵

They will accept for the children under their care the advantages that lie in being heir of preceding ages, and use these advantages as a means whereby the new life may grow up to still higher forms of personal development and productive activity.

The second obstacle to be surmounted (the imperfect equipment of public-school teachers for carrying on art instruction in the classrooms) will be done away as far as and as fast as the leaders come to appreciate the

⁵I heartily believe in the introduction of various lines of nature study into the public schools. In city schools particularly such studies are an indispensable help in bridging the chasm between the child and his natural environment, and giving him at least a suggestive glimpse into the marvels and beauties of the natural world. What I do object to is the extreme ground taken by some educators (an extreme precisely opposite to that of the old-fashioned word-for-word text-book memorizing) wherein it is fancied that the study of nature is educationally all-sufficient; that language and number study can be sufficiently and successfully developed as mere incidentals to nature-study, and that drawing, used as the handmaid of the natural sciences, can constitute art instruction. Against this misconception of what art means, and what art study ought to be in a course of education, I believe a strong protest should be made.

true nature and importance of art as a fundamental feature of educational work. For the grade teachers of our American public schools are essentially capable and loyal. They are able and ready to learn whatever it is necessary for the good of the schools that they should learn. But they need definite assistance and guidance. Suitably planned courses of study will do much to help; courses arranged not hastily or perfunctorily by people with narrow views of the subject and with slight acquaintance with the experience of others in similar work, but thoughtfully and intelligently by persons who can comprehend both the physical nature and the spiritual nature of the child. Only those who are engaged in this work know how narrow are the limitations that surround them. The best that exists to-day is but a stepping stone to what should be done and what can be done as soon as a better understanding of what art means exists among the teachers. Rightly planned courses of study, reinforced by suitable working materials, and art examples, good and abundant, to which the children themselves may have ready access; the whole interpreted by a wise and sympathetic supervisor, who knows his subject, and who understands child-nature in hearty, affectionate fashion—I tell you, my friends, we have as yet seen only the beginning of what a power art education may and ought to be in the inward uplifting to useful and noble work of the successive generations of children who pass through the public schools of our land.

To summarize in a few words the points we have been considering, let us remind ourselves:

That evolutionary science, ontological philosophy, and empirical psychology, in their truest interpretations, practically agree in declaring that man is the highest of all finite

existences, from which proceed self-acting spiritual powers.

That the arts of man are the embodiment of these spiritual self-activities of the race exercised along creative lines; and that, being thus the highest activities of the highest of all finite existences, they should be constantly utilized in education, if education has for its distinct aim the development of what is best in the child both for himself and for the social life of which he is to form a part.

And now let me say in conclusion that, if I rightly apprehend current educational discussion, many of the schemes of correlation or of concentration, that are being advocated, are based mainly on the consideration of the physical environment of the child, the forces of which play upon the brain through the action of the senses, and hence are exterior to the child. The result of such schemes is to make the child largely the product

of his physical environment. As opposed to these more or less materialistic views of education, I suggest that we take as our center of thought the child himself, with a full comprehension of his creative spiritual nature, and then measure the relative values of educational subjects, according as they contribute to the development of his highest possibilities as a creative spiritual being. By so doing we shall see that the creative activities of the child form the real educational objective, and that the arts of man, as ministering to these activities, should not be relegated to any incidental place in the arrangement of studies, but should be practically recognized as the most inclusive, the most vital means we have for centering our educational effort aright; centering it with all its nourishment and all its inspiration upon the soul of the child—upon the child as the heir and the potential master of the world.—*Educational Review.*

EDUCATIONAL WORK IN CANADA.

IMPORTANT changes in our school systems are in the near future. Excellent in most respects as they are, still they contain elements of discord which must be eliminated. For years past the school question has been in a state at once unsatisfactory and disturbing. Our ways are not equal. Separate schools, accompanied by exemption from taxation, are granted to one sect and another is asking the logical question, "if due to one why not to all?" Accordingly, at a recent meeting of an Episcopalian Synod in Toronto two distinct proposals were brought forward to secure the extension of the privilege hitherto held exclusively in Ontario by Roman Catholics. The same purpose was exhibited by a majority

of the speakers on the question of schools when that subject was under discussion in the meeting of the Synod of the same Church a few weeks ago in Montreal. Changes of some kind will take place, and it is our duty to see that they are beneficial, not retrograde and injurious. Separate schools for all who demand them, means the destruction of our wide and liberal public school system and the establishment of a weak, injurious and ineffective system of denominational schools. To this we cannot believe the intelligent people of Canada will ever consent. Sectarians to whom the advancement of their ecclesiastical organization is of more value than the good of the commonwealth, may beg for state favors to

enable them to teach their limited views of religion, but they will probably supplicate in vain. The desire of the citizens is that we may advance, not recede, in this vital matter. In view of this manifest determination to improve our methods we again ask from such as object to secular schools a proposal which will do justice to all, and secure the best educational facilities. Here let me say what will in one sentence answer several objectors collectively. I do not affect to be able to propose a plan which will be an end of strife, but am endeavoring simply to present a method which will give the best education without doing an injustice to any. This I hold, purely secular schools would accomplish, and if any are so indolent or incompetent as to endeavor to obtain for their children the religious training they will not give let them pay for it as an extra, but receive no aid from the public chest to which all taxpayers, irrespective of their creed, contribute their proportion.

To still the unreasoning clamorings of bigoted sectarians who wish to draw money out of the taxpayers at large to pay teachers in separate schools for making the children as narrow as they themselves are, is to attempt the impossible. Deal justly with them and public sentiment will effectually silence them in the near future. Pardon me for saying that you prudently express what I will interpret as a fear in your first sentence in the editorial "The Secular School," in these words: "It is probable that in the long run the state will need to take its hands off education altogether, as it has had to do off religion," yet you add in the same article the wise suggestion in which you declare it probable that in the future the state will do no more than see to it that primary instruction is within the reach of all. This is one of the most important functions

of government, for when a state allows a man to grow up in ignorance it is guilty of a great political sin of leaving in its raw state the richest natural production to be found within its limits. The state should furnish educational facilities for all and compel all, with reasonable exceptions, to avail themselves of the opportunities afforded to transform the raw material of possible mental force into the manufactured article of an educated man.

A few words regarding the valuable article of Mr. MacMurchy, though it does not help to solve our problem as they who demand unconditionally that there shall be religious teaching in the public schools would desire:

1. The plea for the Bible which he presents is in favor of it as a text-book for teaching pure English. This is not the reason for which all the strife about religious teaching is forced upon us. It is the morality resultant that is the plea, not purely the value of the Bible from a literary point of view.

2. But do these extracts favor Bible teaching in public schools? Bunyan was not taught the Bible in public schools, and Ruskin, in this very quotation, uses these words: "My mother's list of chapters with which, learned every syllable accurately, she established my soul in life," etc. Here home-teaching is enthroned, and not a word about the value of the religion taught by the school-master.

3. The whole force of this able article by Mr. MacMurchy goes to prove that in the Ontario Protestant schools, where they have the Bible as a text-book, the pupils were more familiar with heathen mythology than with biblical knowledge. Mr. MacMurchy's words regarding his test of the knowledge of these pupils is a terrible indictment of the system of what is erroneously called teaching religion in public schools. He says:

"Judging from these results one might sometimes be in a little doubt as to whether these children have been brought up in Christian or heathen homes."

This testimony is disheartening to such as hold that the public school is the place in which religious teaching is a necessity. It furnishes too frequently a place for the consciences of negligent parents, while the children leaning upon this broken reed have to bear the consequences. To the writer it appears that in the near future Canada shall have the following dilemma forced upon her: All public

state-supported schools purely secular, with no aid to schools for sectarian teaching, nor tax exemptions for the supporters of such schools; or the destruction of our public school system, and a system of sectarian schools established. Which shall it be? If Manitoba would confine her public school curriculum to purely secular teaching and leave each denomination to pay for instruction teaching in its peculiar creed, if it desired such a school, her position would be unassailable from the standpoint of even-handed justice to all.—*Montreal Witness.*

PHYSIOGRAPHY AS AN ALTERNATIVE SUBJECT FOR ADMISSION TO COLLEGE.

LET us consider particularly the quality of physiography (or physical geography, as I should as lief call it), and its claims for the place in the high school course assigned to it in the tables of the Committee of Ten, report., p. 46, 47.

At the outset, it must be admitted that physical geography is to-day a discredited subject for an admission examination to colleges or scientific schools. It is an interesting subject, generally enjoyed both by teachers and pupils, but the examination upon it is not regarded as formidable. Students do not consider it a serious obstacle to their admission; professional coaches do not lay great stress upon preparation for it; college examiners do not give great weight to it. If this small regard for the serious nature of the subject, for the discipline to be derived, or for the importance of the tests set upon it, were a proper measure of the quality of physical geography I should not ask a place for it among the admission examinations; indeed, I should not then

favor its retention in the high school. The small regard for the subject is probably a correct measure of its value, as now taught; but this is only because the presentation of the subject is far below its deserts. When properly developed in the hands of competent teachers, and presented with suitable illustrative material, physiography deserves a place second to no other subject in the high school course, whether its value is measured by its inherent interest to high school pupils, by its broadening views of the world in which we live, or by its strength as a mental discipline.

These propositions find so undisputed a support from those who are familiar with the modern phase of physiography that I truly regret that the presentation of the case is not entrusted to a well-informed teacher of physics, of history, or of language. The physicist must rejoice to meet a subject in which his teaching finds so large an application. The historian must welcome a study that considers

so carefully the stage and the scenery of the theatre in which his plays are presented. The linguist must for the sake of his scholars be glad that they find in physiography a discipline so unlike that which his own lessons afford. But the fashion of the day keeps each of us in his own field. It is not from the mathematicians and the philosophers, but from the classical scholars that we learn the value of Latin and Greek ; so it is left to the geographers to advocate the claims of their own subject.

Geography being the study of the earth in relation to man, physical geography, or physiography, is the study of those features of the earth which must be understood in order to appreciate its relation to man. The essential characteristic of modern physiography is the replacement of the old-fashioned absolute or empirical descriptions of earth features by a rational and systematic treatment. Explanation of existing features as the result of natural processes is freely introduced in addition to description of the features themselves ; not, however, so much to gain an understanding of the processes as to secure an appreciation of the features resulting from the processes. The subject of course has its elementary, intermediate, and advanced phases, but throughout it is characterised by rational explanation as a means of approaching a closer perception of the facts of nature than can be gained by description alone. Consider, for example, the study of land forms. Studied in relation to time, the forms of the land to-day as well as in the past belong to geology or the history of the earth. But the same forms, studied in order to understand the world we live in, constitute an important division of the subject matter of physiography. The old-fashioned method of studying land forms was to describe them in abso-

lute terms, as if they had always existed, and to take practically no account of their development. This is unsatisfactory and insufficient. To be sure, a timid and incomplete attempt was made to explain certain elementary forms, such as sand-dunes, deltas, volcanoes ; but it was not perceived as a general principle that explanation greatly aided description, and that explanation of origin should, for this reason, be systematically extended over all parts of the subject. Physiography to-day should certainly not claim to understand the origin of every land form, but it may fairly claim to understand that its duty is to press vigorously forward towards a fulness of knowledge ; and, in the meantime, it may fairly claim to understand the origin of so many forms as to supply a large amount of rational study for the high school, or even for the college. Borrowing freely from geology—just as chemistry borrows freely from physics—physiography takes up various considerations about structures and processes, and many inheritances of the present from the past, not simply with the object of understanding these structures, or processes, or past conditions, but only as the best means of reaching the chief end ; namely, an appreciation of existing facts.

There are three chief divisions of the subject matter of physiography ; the atmosphere, the oceans, and the lands. Plants and animals and their distribution do not belong under physiography, and should not be introduced into the study except so far as they, like geological processes and structures, serve to aid us in understanding the existing conditions of the earth.

The study of the atmosphere, comprising the teachings of meteorology, in so far as processes are concerned, and of climatology,* in so far as average values of recurrent sensible con-

ditions are concerned, fully deserves recognition as an independent branch of physiography, so that it may gain half a school year for its own consideration. The last thirty years have seen a remarkable advance in this division of the subject. In the later high school years, after some study of physics, lessons from meteorology and climatology may be taught so as to present information of much interest, as well as training of much disciplinary value. The general circulation of the atmosphere is initially dependent on the distribution of temperature, but it reacts to modify temperature as well as to determine the occurrence of dry and rainy seasons and regions. When the correlations thus introduced are carefully studied and clearly understood, climatology loses the empirical quality that it long possessed and becomes a rational subject. Moreover, in the progress of this study, the pupil will be required to maintain in mind the successive steps of a somewhat elaborate argument by which a test is made of the validity of the explanations offered to account for the general atmospheric circulation and its associated processes. This is disciplinary in a high degree, and has the added advantage of illustrating a typical example of scientific method. I am confident that a course well developed from the teachings of meteorology, with due consideration of climatology, will commend itself strongly to teachers, scholars, and examiners.

The special subject of oceanography does not contribute largely to physiography, yet the temperatures of the ocean, as well as its waves, currents, and tides, are all interesting topics, capable of calling forth serious study, and leading to explanations well worth understanding. Less advance has been made during the last thirty years in the divisions of ocean-

ography here considered than in meteorology and in the physiography of the lands; but a considerable advance has been made in methods of teaching from which the subject should largely profit. It is worth noting that the division of physical geography including ocean temperatures, together with waves, currents, and tides, has, even in old-fashioned text-books, always been treated in an explanatory manner, as if it were a rational and not empirical subject. I desire, as has been already said, to extend this manner as systematically to the forms of the land as to the phenomena of the sea; and when thus fortified, physiography will not remain in the discredited position that it occupies to-day.

The atmosphere having been set aside under a special heading, and the ocean being properly regarded as a minor subdivision of the subject as a whole—however large and delightful a subject the ocean is to those who study it simply with respect to itself,—a considerable share of a half-year course may be devoted to the study of the lands. Inasmuch as a large part of all preliminary geographical teaching has been devoted to the lands, the scholar should enter their further study well prepared for rapid advance through their many interesting and important phases. The subject thus becomes so rich that I can only indicate its quality, and not its contents.

The first requisite of physiographic work is to recognize that the forms of the land which we see have come to be what they are entirely through natural processes; and these processes are chiefly of two kinds, the one elevatory or constructional, as I like to call it; the other degradational, or destructional. Every square mile or square foot of land surface stands somewhere in a cycle of change that has had a construc-

tional beginning, and that is advancing towards its destructional end. It follows, therefore, that every kind of land surface should be regarded in a sympathetic manner in order to perceive its place in its long cycle of life. We should look at rivers as rivers look at each other; we should talk of mountains as they speak to one another. Along with the intimacy of acquaintance thus cultivated, there comes a natural expansion of the terminology by which our conceptions of the subject are verbalized; and in this way, physiography emerges from the childish stage in which it would otherwise remain, when its various features are named only with such terms as we learned in early schooling. Throughout the study there is most excellent exercise of the imagination; for the mind has to picture the changes through which any given area has already passed, and is yet to pass, in order to see more clearly the form that it now possesses. There is need of a considerable continuity of thought, for the more serious consideration of the subject requires a deliberate discussion of a long series of changes in the process of land development. Many side issues turn off here and there from the main line of thought, involving much care to keep them clearly independent. There can surely be no lack of mental discipline in a study that is so far removed from an empirical method of presentation. Indeed, as I have already said, those who are familiar with the modern development of physiography have no hesitation in according it a high rank among school studies or in asking for it the accreditation that will come when it is placed on equal footing with other studies in the list of college admission examinations, as well as in the high school programme.

Physiography is not only worthy of

having a good place among high-school studies and of gaining a place among the subjects for admission examinations; it is one of those studies whose lessons are recalled with pleasure and profit in after life. Excepting the ocean, with which we have comparatively rare contacts, its other divisions, the atmosphere and the lands, are always with us. To gain an intelligent appreciation of the phenomena of the one and of the forms of the other is like gaining an understanding of an unknown language. An advancing young physiographer once said to me, after a visit to Niagara: "The region there seemed to be a great book, in which most of the visitors could understand only the pictures, but in which a knowledge of the development of land forms enabled me to read the text." Furthermore, it is through physiography that most of our people must gain their only introduction to the teachings of geology. Geology proper is not a good high school subject; many of its chapters involve more preparatory training than can be had short of a college class. Yet it would be unfortunate if the intelligent youth of the country had no opportunity of gaining at least a general view of the simpler geological principles; and for this reason alone it might be argued that some ideas of constructional and destructional processes, of the long lapse of time indicated by the structure and sculpture of the land, should be advisedly introduced in physiography.

Let me finally, before closing, consider briefly some of the advantageous reactions that would follow indirectly from the acceptance of examinations in physiography by our colleges and scientific schools. Understanding at the outset that the examinations should be serious affairs, the first beneficial result that they will secure will be the employment of

well trained teachers to take charge of the subject in the schools. There is no sufficient reason why the school teachers of physiography should not be as well prepared for their work as the school teachers of Latin, mathematics, or physics. are for theirs. Certainly, the examination papers for admission to college should be effectual barriers against scholars who had not been well taught by well-trained instructors. In the second place, the standard of expectation in physiography thus set for scholars who wish to enter college will be accepted as the standard for those who do not go to college; and in this way a large number of young people will be raised to a higher educational level than they now reach. In the third place, the graduates of the high schools, who go to teach in the public schools, as so many do, will have a better preparation than they can now secure for their work in a much neglected subject; namely, elementary geography. While I recognize warmly and fully the conscientious efforts of the teachers of to-day, it is mortifying and even disheartening to discover their ignorance of so fundamental a subject as geography. Little wonder that it has come to be a discredited subject in our lower schools, and that much talk is made nowadays of the need of its improvement. There is no single step that will do so much to raise the standard of the grammar-school teaching of geography as the establishment of a respectable standard for physiography in the high school. In the fourth place, physiography is now commonly regarded as a subject only good enough to study in the schools, but not good enough to be accepted as a measure of preparation for college. When this stigma is removed, the study will gain much in prestige, not only among college students, but per-

haps even in college faculties; and instead of turning over the college course in physiography to some one, a historian, a geologist, or whoever is willing to take it, special preparation and real proficiency may be expected of the professor in charge of it. What results may in the future follow this change from the customs of to-day might be taken as the ground for interesting speculation, but not for anything more at present, because in this country at least we have yet to reach the general recognition of physiography and advanced geography as worthy college subjects, demanding a man's whole time, as much as physics or economics.

It is herefore not too much to claim that in physiography, as in any other study, a favorable effect will follow all along the educational line when it is recognized as worthy of a place among college admission examinations. In its modern development, it fully deserves such a place; and I look to this Association as one of the bodies by which physiography shall be helped to secure its deserts.

HEALTH—To guard against degeneracy—be it physical, mental, or moral—one must be continually on the watch. Health is everything, and wealth gathered at the expense of health is of no earthly benefit when the latter is gone, as no expenditure of wealth can bring it back. Health is something that should never be risked or trifled with, any more than one's moral status or welfare. As a noted criminologist observes, there is no worse calamity that can befall a man than the successful issue of his first piece of villainy. So it is with the man who successfully gets through his first debauch, or who does not suffer at once from the evil effects of an unhealthy habitation, or while following some health-undermining occupation.—*Redmondino.*

THE RULE OF THE MOTHER.

IN America the tendency is to hold the mother responsible for the spiritual tone of the household. This unformulated theory has been pushed to so great an extreme that at length society is threatened with what has been designated a *matriarchate* or a return to that primitive state when the child was supposed to belong to the mother alone. Every teacher can bear testimony to the fact that the direction and oversight of the child's education are largely under the control of the mother. Even after the youth has entered college it is she who keeps in touch with his success or failure. Admirable as this interest may be, wife and child, nevertheless, suffer from the want of closer sympathy on the father's part in all that relates to the things of the spirit. Besides, however praiseworthy their intentions may be, mothers are not always the most judicious advisers. The father in many instances is an infinitely better guide; at any rate, his broad contacts with life and his natural force of character make him an ally that cannot safely be dispensed with.

All through the ages man has endeavored to dominate and impress his personality upon the world at large, until this form of activity has rendered irksome any more limited field of exertion. He has believed himself compelled to sing to the wide world so persistently and copiously, in such resonant praise-eliciting accents, that he has become fascinated, not only with the public deed, but with the oratorical utterances he finds so pleasing to the collective ear. As a result of these outside allurements it is difficult for him to subdue his voice to individual and immediate teaching. Furthermore, it is hard to persuade the politician and the philanthropist that the reforms needed in the state are first needed in the home, and that solicitude about other people's progress

might in a measure be spared if men were primarily solicitous about those immediately dependent upon them. The transference of paternal responsibility to institutions, and more especially to the mother, shows that there is a widespread conviction on the part of fathers that, however it may be with other people's children, his own, at least, live by bread alone. Acting upon this belief he is generous beyond compare in supplying his family with physical luxuries. He is, however, far less lavish with his time and companionship. Indeed, he refuses to be bothered about such petty details as the formation of character, the discipline of the child, and the general conduct of the home. Even in the pursuit of his pleasures he often sets an example of independence which serves to strengthen in the average American household the proclivity shown by its members to fly off in a tangent.

Although there is much room for the improvement of the mother, she is, in a measure, constrained to the fulfilment of her duties. The means for evolving the perfected father are, however, more uncertain owing to the existing impediments to the operation of *selection*. The greater number of eligible wives among well-to-do people as compared with desirable husbands, so far reduces the range of choice that there is no guarantee that the noblest, strongest, or handsomest men will marry refined women. The difficulty here arises in part from the fact that men of this class, if poor, are apt to go into remote and uncultivated regions and become the husbands of inferior women, while the rich often satisfy the claims of affection without incurring the obligations of the marriage tie. Thus the absence of healthy competition diminishes the chance of developing the best husbands and fathers.—*North American*.

THE LOYALISTS AND THE REVOLUTION.

PROFESSOR Moses Coit Tyler of Cornell University, whose works on American history have given him high rank among contemporary writers, thinks that the lapse of a century ought to make it possible for us to take an unprejudiced view of the Loyalists, otherwise called Tories, of the American Revolution. Mr. Tyler, being descended from the Whig or patriot side of that great social chasm, and having been stuffed as full as possible with early animosities derived from school-books and Fourth of July celebrations, thinks that he is not likely to be accused of undue bias in favor of the Loyalists if he attempts for a brief space to look at the controversy from their standpoint. Accordingly he writes an article in the *American Historical Review* on this subject which is well worth reading.

Who were the Loyalists, and what proportion were they of the whole number of inhabitants? According to the testimony of John Adams, New York and Pennsylvania were so evenly divided that if they had not been kept in line by New England on the north and Virginia on the south, "they would have joined the British." In North Carolina the two parties were about equal, in South Carolina the Tories were in a majority, while in Georgia their majority was so great that they were on the point of taking that State out of the confederation when the capture of Cornwallis occurred. The English historian Lecky, who gives his approval of the separation and is certainly not prejudiced in favor of George III and his ministry, says that the revolution "was the work of an energetic minority who succeeded in committing an undecided and fluctuating majority to courses for which they had little love, and lead-

ing them step by step to a position from which it was impossible to recede." John Adams held the opinion that one-third of the people of the 13 States were opposed to the revolution at all its stages. The interests of these people were in general the same as those who favored the revolution—that is, they were in favor of good order and good government.

As regards their character as individuals, there was nothing to show that the Whigs were better husbands, fathers, church members, or citizens than their Tory neighbors. There was a difference of political opinion among them, but not a difference of moral character. At the end of the revolution Massachusetts passed an act of banishment against 310 Loyalists. More than 60 of these were graduates of Harvard. "To anyone at all familiar with the history of colonial New England," says Prof. Tyler, "that list of men denounced to exile and loss of property on account of their opinions will read almost like the bead-roll of the oldest and noblest families concerned in the founding and upbuilding of New England civilization."

Of course Prof. Tyler's paper does not touch the question which party was right and which ought to have succeeded. On that score there is now no difference of opinion on either side of the ocean, and no one has argued the American view of the matter more strongly than Professor Goldwin Smith, who holds, nevertheless, that the Loyalists were badly treated then, and that their good name has been foully abused since. Prof. Tyler touches upon one point that will be new to most of his readers. He shows that the phrase "no taxation without representation," which had become crystallized as a

maxim of English law before the American Revolution, did not mean that the colonies could not be lawfully taxed by Parliament when they had no representatives in Parliament. It was a phrase applicable to the three orders of the English body politic, King, Lords, and Commons. It meant that the Commons could not be taxed when they were not represented.

Now the Commons represented the cities of Leeds, Halifax, Manchester, Birmingham and Liverpool in Parliament, although none of them had any vote or personal representation in it then or for a long time afterward. Indeed, only one-tenth, of the people of the United Kingdom had any vote. The Commons represented Massachusetts in the same way that they represented Manchester. That this was an unsatisfactory kind of representation will be admitted without argument, but it was not in contravention of the maxim quoted, which has come down to us as a legal justification for the war. It would have been strange, indeed, if the English constitution had contained within itself a justification for breaking up the British empire. This would have been like Mr. Lincoln's paradox at

the outbreak of the civil war, "a constitutional mode of overthrowing the constitution." No, the separation from the mother country was not a legal step. It was an act of revolution.—*New York Evening Post.*

No more noteworthy article has appeared in an American periodical in recent years than that of Moses Coit Tyler in the *American Historical Review*. Mr. Tyler's admirable paper shows, as it was meant to show, that the Tories of the Revolution were not mere obstructives; that they were not opposed to reform in the relation of the colonies to the mother country or to the extension of human liberties and rights; and that it is an error to represent them as lacking in love for their native land or in willingness to labor, fight or even die in its behalf. The Whigs were undoubtedly patriots, but it is unjust to charge those who would have effected needed reforms without civil war or an angry disruption of the English-speaking race with lack of patriotism in their doctrines, purposes or acts. Mr. Tyler's article creates a new standard and fresh starting point in American history.—*Montreal Gazette.*

NOTES FOR TEACHERS.

In education the process of self-development should be encouraged to the fullest extent. Children should be led to make their own investigations, and to draw their own inferences. They should be told as little as possible, and induced to discover as much as possible. Humanity has progressed solely by self-instruction; and that to achieve the best results each mind must progress somewhat after the same fashion, is continually

proved by the marked success of self-made men.—*Herbert Spencer.*

THE CONDITIONS OF HEALTHFUL LIVING.—In the first place, it is quite evident that due regard for the welfare of the body does not permit one to eat a full meal immediately following very hard labor, either physical or mental. The vital energy has become depleted and needs a period of rest, during which it can gather its

scattered powers and prepare them for exertion in a new direction—because the labor of digestion is labor, just as much as that of digging a trench or plotting a novel, though in a different way.

The exhausted housewife who drops in her chair at the dinner table, after having prepared food for a large family, declaring that she is "too tired to eat," states in a non-technical phrase a truth which students of the science of nutrition have long recognized. A suitable period of rest should intervene before any solid food is taken into the stomach. The middle-aged person who feels an unaccountable "drowsiness" soon after dinner should recognize that it is the demand, becoming imperative, of nature calling for the opportunities to do its work of digestion, and the rest of the system naturally falls into the condition of repose which will aid the natural processes.

Observe yonder group of laborers upon the public highway. They have never received technical education;

but an intuitive sense directs their movements. Their dinner is at hand, awaiting their attack in a row of tin dinner pails; but they have an hour for the meal, which can easily be despatched in a fourth of the time. They throw themselves upon the grass by the roadside, resting for a few minutes—perhaps indulging in some light sport or "horse play." Then the meal is taken, and the remaining half-hour is given to a post-prandial rest. These men simply realize that they feel better by dining in this way; and though their meal is probably far from attractive in its composition, yet it gives them health and strength, with plenty of brawn and muscle for their laborious occupation. Crudely, they obey nature.—*Good Housekeeping*.

Remember that the care for your health is a part of that total self-consecration which can not be divided and which all together makes you the medium through which God may reach His children's lives.

PUBLIC OPINION.

THE RESULT OF OVER-EDUCATION.
—Ever since the enormous enlargement, numerically, of the English universities there can be little doubt that the value of a degree has gone down commercially. The number of first-class men seeking work and finding none is a sorry comment on the development of the English university system. If this is true of the first class, what must be the lot of the second, the third, and the pass man? The learned professions, in fact, are overcrowded. The cause of this unhappy crowding of the market for brain-labourers is not far to seek. An

immense number of persons who in former times would have worked with their hands as their fathers did before them are being educated to work with their heads. There is a general levelling up of the social grades, if you look at it optimistically. The son of the artisan becomes a clerk, the son of the clerk aspires to teach in a school, the son of a school-teacher aspires to go to Oxford or Cambridge. But this levelling up is not an unmixed blessing. The result is that we have fifty times too many clerks—two hundred applied for an insignificant post advertised in the *Times* the other

day—ten times too many half-educated teachers, and, alas! ten times too many university graduates turned out every year to crowd the ranks of the Bar, the schools, and journalism, and recruit the year's crop of miserable and hopeless failures. None of these people can dig as their fathers did; they cannot make shop-boys, or 'bus-men, or crossing-sweepers. Too many of them can only teach or starve. It is really impossible to deny that a certain degree of intellectual education unfits a man to work with his hands and earn his bread as a labourer. It may be that it ought not to do so, but in the present imperfect state of the world so it is. Therefore, somehow or other, places must be found for this enormous harvest of tolerable scholars as schoolmasters or something analogous in the social scale. Every year the problem is how to do it. That problem formerly the university solved by the fellowship system. The

number of scholars was small and they had a fellowship apiece. That solution is no longer possible, even if it were desirable. Then the universities tried ignoring the problem altogether. They, as it were, denied liability. Their position was, "Our business is to provide facilities for learning for those who wish to learn, and opportunities to study for those who care to study. We have no duties beyond that. When our men have attained, by the help of our endowments, to a degree, the connection between us terminates. They must shift for themselves." Theoretically, of course, this was undeniably a logical position which they could very fairly take up; but in practice they must be held responsible, in some degree at least, for the men whom they have raised out of their own position in life by scholarships and exhibitions specially offered for necessitous persons.—*Saturday Review*.

GEOGRAPHY.

STUDY SOIL:—In a recent lecture, Willis L. Moore, the new chief of the Government weather bureau, spoke on the importance of studying the soil as well as the air in forecasting frosts. The introduction of this feature added greatly to the efficiency of the predictions of the Wisconsin bureau when he was in charge of that. This State is noted for its cranberry beds, to which great damage is caused by early frosts. Often there were destructive frosts when the town temperature did not go below 42°. The frost depends, of course, upon the lowering of the temperature of the soil. If it is dry and porous it gives out its heat readily; if it is wet it has much of water stability of tem-

perature. A half inch of rain evenly distributed is enough to counteract many early frost nips.—*Boston Budget*.

THE RESPIRATION OF PLANTS.—In *Science Progress* there is an interesting article by R. Frost Blackman, M.A., Demonstrator of Botany in the University of Cambridge, in which he shows the importance of the stomata which occur on the leaves of plants in the performance of their respiratory functions. It has long been recognized that both watery vapor and carbonate acid are transfused with much greater freedom by way of the stomata, which from the openings of an extensive system of

intercellular spaces existing in the leaves, especially in their lower strata, than through the epidermis.

The probability that the respiratory and the assimilative interchange of gases took place by different routes was also made probable by experiments, which seemed to show that leaves exhaled carbonic acid even in bright sunshine, when they were known to be at the same time actively absorbing it. Mr. Blackman, however, is able to show by a series of very careful experiments that the stomata are practically the sole path both for the exhalation of respiratory carbonic acid and also for the absorption of the carbonic acid required by the plant in its periods of active assimilation. Not only does he do this, but by other experiments he is able to explain away the apparently opposite results obtained by earlier investigators.—*The Hospital, London.*

ACETYLENE, THE NEW ILLUMINANT; ITS COMMERCIAL POSSIBILITIES.—It is only comparatively recently that the general public have begun to awaken to the importance of the commercial production of acetylene gas. The combustion of this gas has been described as producing something akin to real sunlight. Even the brilliancy of the arc electric light, not to mention, of course, the milder incandescent electric light, pales its fires before the burning rays of light given by this new illuminant. Now, however, if one may judge from published opinions and statements by those who are regarded as experts, the value of acetylene gas as an illuminant is to prove trivial compared with its real commercial significance. If all that is claimed for it be true, it means the cheaper manufacture of a great many substances used in the arts, which heretofore have had to be produced laboriously and expensive

ly in commercial and chemical laboratories. Says an exchange :

It would seem as though almost all the needs of man were able to be satisfied by this protean substance. The further investigation is pushed into its possibilities, the more astounding and bewildering they become. By the action of nascent hydrogen acetylene becomes ethylene, and this, on treatment with sulphuric acid and water, becomes alcohol, which, apart from its other uses, is absolutely necessary to the production of an enormous number of economic substances. In similar ways we can get such deadly poison as oxalic acid and prussic acid, while acetylene is a cheap source of the aldehyde so much used in the production of artificial essences and the manufacture of mirrors. When, therefore, it is considered that from acetylene can be derived whole systems of dyes, medicines, essences, perfumes, poisons, explosives—not to mention cheap whiskey—it will be seen that the latest product of the electric furnace has a utility out of all proportion greater than that which can be derived from its peculiar light-giving powers.—*Bradstreet's New York.*

Fine buildings and equipment are excellent things when they can be afforded, but always out of place when they bring about the necessity of a reduction of salaries which must sooner or later lower the standard of work done. First class teachers, first class buildings and first class equipment are all important factors in a first class school, but the greatest of these is a first class teacher.—*Exchange*

Abstract calculations are to arithmetic what picks and shovels are to railroad engineering, what hammer and nails are to architecture. Arithmetic consists of five essential operations : Addition, subtraction, multiplication, division, and *thought*, of which the last is chief. Very little time needs to be spent on the first four, as in the mathematical operation of the fifth they are all employed.

DREAM MARCH OF THE CHILDREN.

BY JAMES WHITCOMBE RILEY.

Was n't it a funny dream?—perfectly
bewilderin'!

Last night and night *before* and night
before that,

Seemed like I saw the march o' regi-
ments o' children,

Marching to the robin's fife and
cricket's rat-ta-tat!

Lily-banners overhead, with the dew
upon 'em,

On flashed the little army, as with
sword and flame;

Like the buzz o' bumble wings with
the honey on 'em,

Came an eerie, cheery chant, chiming
as it came:

Where go the children? Traveling!
Traveling!

Where go the children, traveling
ahead?

Some go to kindergarten; some go to
day-school;

Some go to night-school; and some
go to bed!

Smooth roads or rough roads, warm
or winter weather,

On go the children, tow-head and
brown,

Brave boys and brave girls, rank and
file together,

Marching out of babyland, over dale
and down:

Some go a-gipsying out in country
places—

Out through the orchards, with
blossoms on the boughs

Wild, sweet and pink and white as
their own glad faces:

And some go at evening calling home
the cows.

Where go the children! Traveling!
Traveling?

Where go the children, traveling
ahead?

Some go to foreign wars and camps
by the firelight—

Some go to glory so; and some go to
bed!

Some go through grassy lanes leading
to the city—

Thinner grow the green trees and
thicker grows the dust;

Ever, though, to little people any
path is pretty

So it leads to newer lands as they
know it must.

Some go to singing less; some go to
listening;

Some go to thinking over ever nobler
themes,

Some go an hungered, but ever brave-
ly whistling,

Turning never home again but only
in their dreams.

Where go the children? Traveling!
Traveling!

Where go the children, traveling
ahead?

Some go to conquer things; some
go to try them;

Some go to dream them; and some
go to bed!

—*St. Nicholas.*

EDITORIAL NOTES.

1896.

Happy New Year to all our readers.

We specially commend to all educators and well-wishers of men, women and children our poetry this month. We found it in December Number of *St. Nicholas*.

To reach all those who would be benefited by and would care for the CANADA EDUCATIONAL MONTHLY on acquaintance with it, we need the aid of those who already know it. We hope that their liking for our MAGAZINE, will induce each of them to send us the names of one or two new subscribers. This will be a favour to their friends, and will much oblige the Manager of the CANADA EDUCATIONAL MONTHLY.

In the August-September number of this MAGAZINE appeared an article on Bible knowledge as found in our schools, which has attracted much attention throughout the country in the press and otherwise.

In this connection, we may be allowed to mention the *Montreal Witness* as one of the newspapers which has devoted attention to the notices and the subject therein dealt with. Our aim in the article was specially to make clear this point, that the acquaintance of the children attending our schools with the Bible, is not equal to that which they have with the contents of the books more or less used and read in our public schools, thus showing that the contention of those who hold that the Church and the home are attending sufficiently to this duty, is not justified by results. That is, applying the ordinary school tests in the usual manner, the pupils of one school at least, and the school we may take to be a fair representative

of a class of our public schools, show less knowledge of our Scriptures than they do of ordinary school literature.*

We made no reflection on Sabbath School teachers, who are worthy in our opinion of all praise for their devotion to the best interests of society. We sought for simple elemental working knowledge of our Scriptures in one of the best Secondary Schools in Ontario, and found it not.

Many of our contemporaries consider that this part has been proved. We beg to thank them for their remarks on this important subject.

The fact is thus made plain, that pupils attending our Secondary Schools do not know their Bible, as a book of history, or literature, or its directions on moral questions as well, not nearly as well as they do ordinary school books.

The ignorance of the Bible which a College Professor found amongst undergraduates of a College in the United States of America, is also found amongst pupils of Secondary Schools in Ontario.

We need not repeat here an expression of the high estimate which all the best, the noblest writers of English have put upon the literature to be found in our English Bible. Their verdict is, that English literature cannot be understood without an intimate knowledge of the Bible. So far well. But this is only a part of the claim which this MAGAZINE makes, and for years has made, on behalf of the Bible in our schools. The Bible is the great teacher of morals, our final standard of appeal in questions of con-

*The total attendance of the school is over three hundred.

duct, our authority on questions of ought and ought not in daily life.

But what kind of instruction should be given from the Bible in our schools? We answer this question by quoting from the article which appeared in our last issue from the Rev. W. T. Herridge, M.A., who, it seems to us, admirably expresses what our aim should be in this connection.

"For the Bible is not a Protestant compendium of religion and ethics. If it is worth something to any section of the community, it is of equal value to all. Its three great lines of revelation, the revelation of the Fatherhood of God, the Brotherhood of Jesus Christ, and the presence and power of a Divine Spirit working amid the tangled affairs of earthly life, are of such a character that, to say the least of it, the facts themselves can excite no antagonism in any reasonable mind, however much it may be perplexed and irritated over dogmatic developments of them.

But whatever the faults of instruction, the Bible may be safely left to take care of itself. The voice of Psalmist and Prophet, most of all the voice of Him of Nazareth, will find an intelligent response even from children; and while their elders, per-

haps, are timidly afraid lest some theological bias should be given to their training, their less sophisticated minds will grasp the sublime yet simple truths which Holy Scripture unfolds before them, and thus secure to each succeeding generation the permanence of that religious conviction which fears God and works righteousness, and the highest fulfilment of all educational processes, the building up of manhood according to Jesus Christ."

Such, in general terms, being the kind of instruction required, in order more efficiently to secure it (we must not forget that we now have some instruction from the Bible in our public schools), we recommend the following: (a) That time (30 min. daily) be allotted for religious instruction on the school Time Table, (b) that the Bible be carefully read and committed to memory, (c) that facilities be given ministers to give religious instruction to pupils in school time. A large part of the above is now the spirit of our school regulations in Ontario. The great need is taking a wide and generous view of the whole situation. Earnestness and a kind, helpful disposition among the different denominations to carry on the great work to the utmost limit of efficiency.

SCHOOL WORK.

SCIENCE.

Editor.—J. B. TURNER, B.A.

The following are the papers which were set for the Senior Leaving and Matriculation Examinations in Chemistry and Physics for the year 1895.

CHEMISTRY.

NOTE.—An option is allowed between questions 8 and 9.

1. Compare the hydrides of the members of the nitroge group.

2. (a) Two-tenths gram of a compound having the composition $C_{12}H_{22}O_{11}$ is burnt in air. Explain the chemical changes that take place, using equations. Calculate the volume of the products of combustion at $100^{\circ}C$ and 740mm.

(b) .18 gram of a compound containing carbon, hydrogen and oxygen, is found to contain on analysis .072 gram of carbon, .012 gram of hydrogen, .096 gram of oxygen. Calculate the simplest formula of the substance.

3. Define the terms "oxidising

agent" and "reducing agent," and illustrate your definitions by reference to the experiments:—

(a) Sulphuretted hydrogen gas is passed into a solution of ferric chloride.

(b) Carbon is heated to a high temperature with ferric oxide.

(c) Sulphur dioxide is passed into a solution of permanganate of potash. Give equations.

4. (a) Dalton's gravimetric analysis of two compounds yielded the following results:—

Nitrogen 63.64, Nitrogen 46.67.
Oxygen 36.36, Oxygen 53.33.

Show the relation of these data to Dalton's formulæ for these substances (NO and NO₂).

(b) Gay Lussac's volumetric analysis of the mixture resulting from the decomposition of these same compounds gave the following results:—

Nitrogen 66 $\frac{2}{3}$ vols. Nitrogen 50 vols.
Oxygen 33 $\frac{1}{3}$ vols. Oxygen 50 vols.

Show the relation of these data to the present formulæ for these substances, and to Avogadro's law.

5. (a) Describe what takes place when:

- (i) Iron is immersed in a solution of sulphate of copper,
- (ii) Copper, in a solution of bichloride of mercury.
- (iii) Zinc, in a solution of acetate of lead,
- (iv) Magnesium, in a solution of nitrate of silver.

(b) Explain how quantitative results in these experiments can be used as an aid in determining atomic weights.

6. Describe simple laboratory methods of preparing small quantities of (a) metallic arsenic from the trioxide, (b) trichloride of antimony, (c) ferrous sulphate.

7. Sketch the chemistry of lead.

8. What is meant by the "Periodic Law?" Illustrate its significance by reference to the members of group

iv. (Carbon = 12, silicon = 28, tin = 118, lead = 207.)

9. Determine the acid and the base in the salt submitted.

PHYSICS.

NOTE—Experiments must be described in detail, must be capable of giving moderately accurate results, and be such as can be performed with simple apparatus.

1. (a) Define "*g*," and give a method of determining it.

(b) Two masses, each 1 kilo, are attached to the ends of a light flexible string and hung over a pulley which moves very easily. Upon one mass a gram weight is put. Neglecting the mass of the string and pulley, find the space the weights will pass through in 10 seconds. [$g = 980$.]

2. (a) A steam-engine supplies power to a dynamo which is used to produce electric lights, and also to work a motor, which again runs a circular saw in a mill. Trace the transformation of energy as far as you can, beginning with the fuel fed to the engine.

(b) A body of mass 50 grams falls from a height 30 centimetres above the ground. Find the kinetic and the potential energy at any point on its way down, and hence show that the sum of these two quantities at all points in its path is the same as the energy at the highest point, or that on reaching the ground. [Give units.]

3. A stone is thrown at an angle of 60° with the horizontal with a velocity of 30 metres per second. Find the height it will rise and the range on the horizontal.

4. You wish to find the specific gravity of some oil, and have only a U-tube and a graduated ruler. Explain how you would do it.

5. (a) State Boyle's Law, and describe how to verify it.

(b) Oxygen gas is sold for lecture purposes at 15 cents per cubic foot at, say, 15°C. and atmospheric pressure. A steel circular cylinder containing the oxygen is 5 feet high and 14 inches in diameter, and the gas is under a pressure of 10 atmospheres, temperature 15°C. After being used at a lecture, the pressure was found to be 6 atmospheres, but the temperature was 21°C. How much should be charged? [$\pi = \frac{22}{7}$]

6. (a) Give full explanation of a method of finding the latent heat of fusion of ice. Deduce the formula required, allowance being made for calorimeter, and state where errors will likely appear.

(b) If the latent heat, using the centigrade scale, is 80, what is it on the Fahrenheit scale?

7. A thermometer (such as is used by physicians) is graduated only from 95° to 110°F., and you wish to find the temperature of some water, but it is somewhat lower than the lowest graduation, which is just above the bulb. How could you determine its temperature? Illustrate your method numerically.

8. What is meant by the *polarization* of a common voltaic cell (copper and zinc in dilute acid)? Show how you would demonstrate experimentally that there is a back electromotive force?

9. Describe either a copper, a silver, or a hydrogen voltameter. Give composition of liquid, size of vessel, of electrodes and what current you would expect to measure. Describe how you would prepare the voltameter for use, and if the hydrogen apparatus is taken, how you would determine the temperature and then allow for it in working out the result.

10. Six similar cells are arranged in series, and the circuit completed through a coil of wire and a galvanometer. The resistance of the battery,

coil and galvanometer are 10, 50, and 20 ohms respectively. If the difference of potential between the terminals of the galvanometer be 2 volts, what is the E. M. F. of each cell of the battery?

ARITHMETIC, PRIMARY.

PROF. N. F. DUPUIS, Queen's.

By MISS ETTA REID, M.A., KINGSTON.

1. (a) Find, to the nearest cent, the value of $\$100 \times (1.03)^8$.

If \$100 be multiplied by the most nearly exact value of $(1.03)^8$ taken to four decimals it will give the answer to the nearest cent. To get $(1.03)^8$ to this degree of accuracy it will be best to keep five places of decimals, and employ contracted multiplication. This gives 1.26677, and the answer to the nearest cent is \$126.68.

(b) Find, within one inch, the side of a square whose area is 5 acres.

Reduce 5 acres to sq. in., and, to find the result within one inch, extract the square root without decimals. This gives 5600 inches or 155 yd. 1 ft. 8 in. To find the result to the nearest inch extract the square root to the first decimal. This gives 5600.2 inches, and the answer to the nearest inch is 5600 inches or 155 yds. 1 ft. 8 in.

2. (a) Find; by contracted methods, the value of $(1.23456)^3 \div (.23456)$, to the fourth decimal place.

1.23456	1.5241
65 4321	65 4321
1 2346	1 5241
2469	3048
370	457
49	61
6	8
1	1
1.5241	1.8816

$$\begin{array}{r}
 \overline{23456} \quad 1.8816 \quad (8.0219. \\
 \hline
 18765 \quad \text{Result} \\
 \hline
 51 \\
 \hline
 47 \\
 \hline
 4 \\
 \hline
 2 \\
 \hline
 2 \\
 \hline
 2
 \end{array}$$

Contracted methods of doing multiplication and division in decimals are explained in many Arithmetics, and every teacher and pupil should become acquainted with these methods. Any person desirous of knowing them may consult the proper works.

(b) Prove that an integer is divisible by 3 if the sum of its digits is divisible by 3.

If 10 be divided by 3, 1 remains, and a cipher placed to the right of this gives 10 again. Hence if 1000..., to any number of ciphers, be divided by 3, 1 remains. Hence if a denotes any number from 1 to 9, the remainder from dividing a 000..., by 3 is the same as the remainder from dividing a by 3.

But a number, such as 75234 say, is the same as $70000 + 5000 + 200 + 30 + 4$, and the remainders from dividing by 3 are the same as the remainders from dividing $7 + 5 + 2 + 3 + 4$ by 3. Therefore if the sum of the digits of an integer is divisible by 3, the integer is divisible by three.

3. In what proportion must two kinds of tea, which cost 50 cents and 65 cents per lb. respectively be mixed so that when sold at 60 cents per pound there may be a gain of $11\frac{1}{9}\%$?

The gain is $11\frac{1}{9}\%$ or $\frac{1}{9}$ of the cost of the mixture. Hence the cost of the mixture is $\frac{9}{10}$ of 60 or 54 cents. This exceeds the cost of the 50 cent tea by 4 cents, and is less by 11 cents than the cost of the 65 cent tea.

Hence 11 lbs. of the 50 cent tea must be taken with 4 lbs. of the 65

cent tea. Therefore the proportion is 11 to 4.

4. The discount on a note for \$3,650, which matured on August 21st, and was discounted on June 24th, was \$40.60. Find the rate of discount.

The rate will be different according as we take true discount or bank discount. We solve for both.

The note matures on August 21st, and is discounted on June 24th. Hence it is discounted for 58 days, the three days grace not being considered.

1st. The true discount is the interest on the Present Worth of the note.

$\$3,650 - \$40.60 = \$3,609.40 =$ Present Worth of the note.

Hence $\$3,609.40$ for 58 days has an interest of $\$40.60$

Therefore the rate = $\frac{40.60}{3609.40} \times$

$$\frac{365}{58} \times 100 = 7.078... \%$$

2nd. The bank discount is the interest on the face value of the note.

Hence $\$3,650$ for 58 days has an interest of $\$40.60$.

Therefore the rate = $\frac{4060}{365000} \times$

$$\frac{365}{58} \times 100 = 7\%$$

5. What sum of money deposited in a bank at the end of each year for the next three years, will amount to the same sum as \$5,000 deposited now, banks paying 4% per annum, interest added yearly.

Let P be the sum deposited yearly. The first deposit draws interest for 2 years, and amounts to $P(1.04)^2$. The second deposit amounts to $P(1.04)$, and the third to P . Hence the amount at the end of the 3rd year is $P((1.04)^2 + 1.04 + 1)$.

The amount of \$5,000 at the end of the 3rd. year is $5000(1.04)^3$.

Hence $P \left\{ (1.04)^2 + 1.04 + 1 \right\} = 5000(1.04)^3$
 and $P = \$1,081.74\dots$

6. What must be the market value of 6% stock, so that after paying an income tax of 16 mills on the dollar, it may yield 5% on the investment?

If P be the value of \$100 stock, after paying income tax, there is a yearly income of $\frac{P}{20}$ from every \$100 stock.

But every \$100 stock yields \$6 per annum of which, after income tax, there remains $6 - \frac{16}{1000} \times 6$ or $\$5.90\frac{4}{10}$

$$\text{Hence } \frac{P}{20} = 5.90\frac{4}{10} \\ \text{and } P = \$118.08$$

7. State the relation between the pound Troy and the pound Avoirdupois. What is the gain per cent. when the selling price per oz. Avoirdupois is the same as the cost per oz. Troy?

Since 1 lb. Troy contains 5,760 grains Troy, and 1 lb. Avoirdupois contains 7,000 grains Troy, therefore

1 lb. Troy is equal to $\frac{5760}{7000}$ or $\frac{144}{175}$ lb. Avoirdupois.

A lb. Avoird. contains 16 oz., and therefore 1 oz. Avoird. contains $437\frac{1}{2}$ grains. Similarly an oz. Troy contains $5760 \div 12$ or 480 grains.

\therefore The gain on an expenditure represented by $437\frac{1}{2}$ is $480 - 437\frac{1}{2}$ or $42\frac{1}{2}$

$$\therefore \text{The gain per cent.} = \frac{42\frac{1}{2}}{437\frac{1}{2}} \times 100 = 9\frac{5}{7}$$

8. The diameter of a circular plate of lead is 13 inches. From this is cut out a circular plate of radius 6 inches, and the remainder of the lead is moulded into the form of a circular plate, with one-fourth of the former thickness. Find the diameter of this plate.

The surface of the plate of lead is $\pi \left(\frac{13}{2}\right)^2$ sq. in. The surface of the plate cut out is $\pi \times 6^2$ sq. in. Hence the

remaining surface is $\left(\frac{169}{4} - 36\right) \pi$ or $\frac{25}{4} \pi$ sq. in. The surface of a plate moulded from this, and $\frac{1}{4}$ as thick will be $\frac{25}{4} \pi \times 4$ or 25π sq. in.

If d be the diameter of this plate
 $\pi \cdot \frac{d^2}{4} = 25 \pi$
 whence $d = 10$ inches.

9. A rectangular field whose length is $\frac{4}{3}$ of its width, contains 2 ac. 112 sq. rds. Find the length of a diagonal.

Since the angle is right, and one side is $\frac{4}{3}$ of the other, the sides and diagonal are as the numbers 3, 4, 5.

Hence the sides and diagonal may be represented by $3s$, $4s$, and $5s$.

$$\therefore 12s^2 = 2 \text{ ac. } 112 \text{ sq. rds.} = 13068 \text{ sq. yd.}$$

whence $s = \sqrt{1089}$ yds = 33 yds.; and the diagonal is 165 yds.

10. The length of one diagonal of a rhombus is double that of the other: the area is 16 sq. in.: find the length of each side.

The diagonals of a rhombus bisect each other at right angles, and form four congruent right-angled triangles.

If d , $2d$, and s be the lengths of the diagonals and side respectively, in inches.

The area = $2 \times \frac{1}{2} d \times 2d = d^2 = 16$ sq. in.

$$\text{whence } d = 4 \text{ inches; and } s = \sqrt{2^2 + 4^2} = 2\sqrt{5} \text{ in.}$$

EAST MIDDLESEX, PROMOTION AND REVIEW EXAMINATION, NOVEMBER, 1895.

SPELLING—2ND TO 3RD CLASS.

LIMIT OF WORK—Words, phrases and sentences in the different textbooks used by the class, names of familiar objects, days of the week and months.

VALUE, 50 marks; for every error in spelling deduct 3 marks; in capitals

and apostrophes, 2 ; in punctuation, 1. Dictate the punctuation marks.

1. The elephant, knowing the work was not managed much better, tried to deceive the overseer when the latter came to examine it.

2. Instead of taking vengeance on the painter the elephant threw some water over his picture.

3. When grown people do not, on such occasions, show presence of mind, we certainly should not be disappointed when children do not show it.

4. Until the children were ready to fly,

All undisturbed they lived in the tree ;

For nobody thought to look at the guy

For a robin's flourishing family.

5. In those knobs of the stamens there grows a very fine, curious dust, which sticks to wasps and other creatures that rub against the stamens and pistils.

6. Axe, hoe, rake ; Tuesday, Wednesday ; week, month, year.

SPELLING—3RD TO 4TH CLASS.

LIMIT OF WORK—As in the Second Class ; names of familiar objects continued ; days, seasons ; phrases in letter writing.

VALUE, 50 marks ; for every error in spelling deduct 3 marks ; in capitals and apostrophes, 2 ; in punctuation, 1. Dictate the punctuation marks.

1. Look ! white Indian pipes on the green mosses lie !

Who has been smoking profanely so nigh ?

Rebuked by the preacher, the mischief is stopped,

And the sinners, in haste, have their little pipes dropped.

2. With many a curve my banks I fret

By many a field and fallow,
And many a fairy foreland set
With willow-weed and mal-
low.

3. In that strange grave, without a name, whence his uncoffined clay

Shall break again—O, wondrous thought !—before the Judgment Day,

And stand, with glory wrapped around, on the hills he never trod,

And speak of the strife that won our life with the incarnate Son of God.

4. She'll find my garden tools upon the granary floor ;

Let her take 'em ; they are hers ; I shall never garden more ;

But tell her, when I'm gone, to train the rose bush that I set

About the parlor window and the box of mignonette.

5. Arithmetic, grammar, geography ; nine o'clock, recess, holidays ; teacher, scholars, trustees ; village, city, province ; rhubarb, cabbage, celery.

LITERATURE—3RD TO 4TH CLASS.

TIME, 2 HRS. 30 MIN.

LIMIT OF WORK—The meaning of words, phrases, sentences, and paragraphs in the reading lessons of the Third Reader. Studying the peculiar beauty, force of construction of certain stanzas, paragraphs, or expressions, noting the method of the author. See note at the head of Literature paper for Second Class.

With books open write the answers of these questions in complete sentences.

Lesson XXIX., page 82.

1. What is the subject of each of the first four paragraphs? (8)

2. Second paragraph : Explain the

italicized words: "a *bleak* plain," "about *nightfall* they reached an *inn*," "a *relay* of horses," "the wolves are *out*," "the horses to be *put to*." (10)

3. Why did the nobleman not heed the innkeeper's advice? (3)

4. Tell why "*was* travelling" in the second line is better than "*were* travelling." (4)

5. Tell briefly in their order the actions performed to escape the wolves. (6)

6. Who is each of the five persons represented in the picture on page 85? Tell where each is. (10)

7. Page 86. Show the appropriateness of the quotation used for the inscription on the wooden cross. (6)
Lesson XII., page 40.

8. If this lesson XII. were divided into two lessons, where should the division be made, and what would be a suitable title for each? (6)

9. (a) Tell something peculiar to each of the *five* kinds of rhinoceros mentioned in the lesson. (10)

(b) Tell four features or characteristics that are common to all. (4)

10. Page 41, 3rd paragraph, what qualities does the fierce rhinoceros possess that make the natives dread it more than they dread the lion? (6)

Lesson LXVII., page 179.

11. Describe two experiments (experiences) to show that we cannot always know by our feelings what the temperature of a body is. (6)

12. Relate in your own words how the makers may find out where to mark the degrees on the thermometer, page 181. (6)

13. Give the meaning of the last sentence in the lesson in your own words. (6)

Lesson XLVIII., page 129.

14. Who is meant by "mild offspring," "sullen sire;" "Thee," in

line five; "his," in line eight. Explain "cradled in the winds," "sturdy blusterer." (8)

Lesson LXIV., page 171.

15. If you were making a quotation of from 4 to 6 lines from this poem for your friend's autograph album, which lines would you choose? Give your reason for thinking them beautiful. (6)

16. Take any stanza in this lesson to show the arrangement of the rhymes. (3)

Count 100 marks a full paper; 33 minimum to pass. Full value ought not to be given for any answer unless it is carefully written in a correct, complete sentence, and shows definite knowledge. Deduct one mark for each mis-spelled word.

COMPOSITION—3RD TO 4TH CLASS.
TIME, 2 HRS.

LIMIT OF WORK—Capitals continued; punctuation marks, ; : . ? ! " . " Composition based on object lessons, pictures, local events, relation of stories, subject matter of reading lessons. Familiar letter writing. Simple business forms, such as accounts, promissory notes and receipts. Exercises to train in the correct uses of apostrophes, and of common words and phrases that are liable to be misused, such as older or elder, healthy or wholesome, "there is" and "there are."

Insist on neat, legible writing, and complete sentences. One mark off for every mistake in spelling.

1. Write in your own language the expanded and applied meaning of the lines:

Oh, many a shaft at random sent
Finds mark the archer little meant;
And many a word at random spoken
May soothe or wound a heart that's
broken. (16)

2. Improve, giving your reasons,

the arrangement in the parts of these sentences :

I saw a squirrel run up a tree with a large bushy tail to-day.

The coffee-bean chiefly grows on equatorial islands in the torrid zone.

3. Write an account, twelve or fifteen lines, of two or three hours' stroll with pleasant companions through field and woods. In the course of the composition mention certain wild-flowers, berries, birds, mosses, ferns, creek, and the effects of the walk on mind and body. (24)

4. On the 1st August, George Platt, Thorndale, bought of the Massey-Harris Co. a binder for which he gave his note payable in nine months for \$105. Write the note. (10)

ARITHMETIC—3RD TO 4TH CLASS.
TIME, 3 HRS.

LIMIT OF WORK—Practical application of the four simple rules continued. Factoring continued. Reduction and the compound rules. Cancellation, Bills, averages, sharing and measurements. Authorized text book to page 91. Mental arithmetic.

1. (a) Find the sum of $15 \times 11 \times 7$, $18 \times 13 \times 11$, and $33 \times 18 \times 13$. (3)

(b) One of the factors of 3289 is 23, find two other factors. (3)

(c) By cancelling find the value of $2574 \times 1155 \times 3289$, divided by the product of 7722 and 715. (6)

2. Make a bill of the following items, and put all the work of finding the prices of the several items on your paper: Miss Annie Black bought of Wm. Bright, general storekeeper, 6 quarts of coal oil @ 16c. per gal., 24 ounces of black tea @ 50c. per lb., and 12 ounces of green tea @ 32c. per lb., 35 lbs. of flour @ \$2.00 per cwt., 10 feet of felt paper @ 6c. per running yard, 8 egg cups @ 30c. a dozen. (16)

3. Find the value of a farmer's produce as follows :

12735 lbs. of wheat @ 64c. a bushel.
19108 lbs. of oats @ 22c. a bushel.
12175 lbs. of hay @ \$13.60 per ton.
480 bushels of potatoes @ 30c. a bag.
A bushel of potatoes weighs 60 lbs.,
 $1\frac{1}{2}$ bushel = 1 bag.

Put all the work of finding the values on your paper and add the four sums of money. (16)

4. (a) How much velvet is required to cover, except on the bottom, a box 4 inches square on each end, and 10 inches long? (4)

(b) The velvet is 15 inches wide. Estimate how much you would have to buy, and the cost, at 80c. a yard. (8)

5. A barn is 60 ft. \times 36 ft., corner posts are 16 ft. long; allowing 180 sq. ft. for each gable, find the cost of the lumber required for sides and ends at \$12.50 per thousand. (10)

7. F. sold 2 tons 120 lbs. of cheese @ $7\frac{1}{2}$ c. per lb.

F. sold 2 tons 96 lbs. of cheese @ $8\frac{1}{4}$ c. per lb.

F. sold 3 tons 240 lbs. of cheese @ $8\frac{1}{3}$ c. per lb.

Find the average price per lb. of all the cheese. (12)

Including mental Arithmetic: 33 minimum to p ss.

A maximum of 10 marks for neatness and style of work may be allowed on this paper if the steps and denominations are correctly and neatly written; exclusive of these require 33 marks as a minimum for promotion. Allow nothing for mere answer without the work. If the work is put down carelessly, the results of the different questions not explained or stated, and the denominations not written, deduct one-twentieth to one-fifth of the number of marks obtained. Report the marks for style of work as directed at the foot of the Arithmetic paper for Class II.

CONTEMPORARY LITERATURE.

The *Cosmopolitan* for December contains the opening chapters of a romance, entitled "The Great North Road," by Robert Louis Stevenson, which brings back with fresh strength all the regret of his departure. No other hand can do such work. A new serial by James Lane Allen is also begun in the same number, made attractive by the delicate appreciation of nature which distinguishes his writing, but in which unfortunately there is a alien and almost gross note, an infection from the new literature. Ouida and Sarah Grand contribute short stories. The whole number is remarkably attractive.

"Private Jams" is a pleasing short story from Temple Bar in *Littell's Living Age* for December 21st.

It would be hard to say which is the more charming—Stockton's short story, "The Staying Power of Sir Rohan," or Harris' "The Colonel's Nigger Dog," both of which appear in the *Christmas Scribner*. Each is so characteristic of that part of the country from which it comes and withal so spontaneous that the reader has not once to get on his tip-toes after an effect. "The Amazing Marriage" is concluded. Anyone of the articles might be mentioned for its excellence.

"Cast up by the Sea," a reproduction of a painting by W. H. Y. Titcomb, is given as a frontispiece in the January *Quiver*. The opening article, entitled "A Dean and his Deanery," is an appreciation of Dr. Payne Smith, Dean of Canterbury, who died in March of this year. Two good serials are running at present, and the usual departments are full of interest.

"National Drawing Course."—Free-Hand Drawing, Mechanical Drawing, Color Study, Outlines of Drawing Lessons for Primary and

Grammar Grades, Drawing Cards, Drawing Books and special material from Ginn & Co., Boston, U. S. A. This valuable and extensive course on drawing is produced by Anson K. Cross, Instructor in the Massachusetts Normal Art School, author of many school texts on drawing. He has been assisted by Miss Amy Swain in the more elementary work. The course is an important advance in the teaching of art, and will be of great service to those interested in education. Color study is especially interesting and opens up a comparatively new field of work.

Moliere's "Les Precieuses Ridicules," edited by M. W. Davis, with introduction, notes and vocabulary, Ginn & Co., Boston. This is a specially good edition, containing not only the text and assistants to it, as also a biographical sketch, critical estimates of Moliere by Goethe and Sainte-Beuve and a bibliography.

"Outline of the Philosophy of English Literature."—Part I. "The Middle Ages," by Greenough White. Ginn & Co., Boston. The aim of the author has been not so much to give histories of individual men, as to discover the characteristics of periods and the connections between them. In doing this he has taken a wide range in European history and art. Such a treatment of the subject cannot fail to be of value to the development of literature.

"Places and Peoples," edited and annotated by Jules Luquiens, Professor of Modern Languages in Yale University. Ginn & Co., Boston. A French Prose Reader, containing excellent selections from Alexander Dumas, Taine, Pierre Loti and others. The text is given with but few notes, sufficient merely to encourage the student.

"The Philosophy of School Man-

agement," by Arnold Tompkins. Ginn & Co., Boston. This is intended as a companion volume to "The Philosophy of Teaching," from one of the chapters of which the main subject is derived. The thought is carefully developed from the more elementary and outward conditions of the schoolroom, to the higher branches of ethical training.

"Political Economy for High Schools and Academies," by Robert Ellis Thompson. Ginn & Co., Boston. The author follows in his line of teaching the American School of Political Economy, or that of List and Carey. The subjects which are of more immediate importance to modern nations have not been overlooked. The concluding chapter is devoted to Communism, Socialism and Anarchism.

From D. C. Heath & Co., Boston, we have received Lessing's "Emilia Galotti," edited by Max Winkler, Ph.D., Scheffel's "Trumpeter of Sackingen," edited by Carla Wenckebach, and "French Composition," being selections for use in classes, written and arranged by C. H. Grandgent. These all belong to *Heath's Modern Language Series*, and are in every way praiseworthy, maintaining a high standard of literary and educational excellence.

From the American Book Company, New York, Cincinnati and Chicago we have received "Psychology in Education" by Ruric N. Roark. This is intended not merely as a teacher's textbook, but also to serve as an aid to all those interested in the development of thought. One of the chapters more directly valuable to teachers is that on the "Applications of Psychology to Formal Education." We have also received "Myths of Northern Lands," narrated with special reference to Literature and Art, by H. A. Guerber, author of "Myths of Greece and Rome." This most fascinating

subject is charmingly treated by one who is an authority, who thus lays the inheritors of the fortunes of the North under a considerable obligation, since but little is commonly known on the subject. The illustrations are good and the quotations from northern literature are extensive.

In the International Education Series of D. Appleton & Co., New York, we have received the *Mottoes and Commentaries*, the *Songs and Music of Friedrich Froebel's Mother Play*, prepared and arranged by Susan E. Blow. The work of Froebel has been for convenience divided into two parts. In the second the songs and music are given, while in the former volume mottoes, commentaries and mother communications are arranged. The first is intended for the mother, the second for the child. The songs have not been literally translated, but an effort has been made to retain the poetic meaning and form of the original. The pictures, much enlarged from the original, will be found very helpful, while the songs themselves are charming.

From Longmans, Green & Co., London and New York, we have received Daniel Webster's "First Bunker Hill Oration," together with other addresses, edited by F. N. Scott, also "Macaulay's Essay on Milton," edited by James G. Crosswell. These are of the well-known English Classics Series, and are valuable reprints of most important literature.

"The Advancement of Learning," Book II Macmillan & Co., London, with notes by F. G. Selby. This edition is remarkable for the extraordinary fullness of the notes which will prove of great assistance in grasping the meaning of the text. There is also a clear analysis of the subject matter given towards the end of the book.