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THE CANADA
EDUCATIONAL MONTHLY
AND SCHOOL MAGAZINE.

OCTOBER, 1890.

THE HARBOUR OF ST. JOHN, N.B.

BY REV. GEORGE BRUCE, M.A.

To the Editor of THE MONTHLY :

SIR,—In complying with your request to write an article on the harbour of St. John, I understand that I am expected to prepare a plain statement with regard to the general character and prominent features of the harbour in view of its position as one of the principal Canadian seaports upon the Atlantic coast. In doing this it will not be necessary to enter into any argument on the lines of peculiar commercial or political interests. At the same time the fact that the subject is controversially discussed from different standpoints with the avowed object of advocating views affecting the estimate of the value of the harbour, makes it necessary to emphasize certain facts, and to give them somewhat greater prominence than would otherwise be given to them. Fidelity to the interests of truth requires that, as a wall should be especially strengthened where it is subjected to unusual strain, so statements shall be especially clear and explicit where ignorance or misconception prevail. With this remark I shall proceed with my subject,

and I may say that it gives me great pleasure to respond to your request, for several reasons; in the first place, from personal regard, and because I feel assured that no better medium could be chosen than your magazine for the publication of such a statement about an important subject so closely related to the welfare of our country. The number and high intelligence of your readers and their special fitness and opportunities for forming and moulding public opinion give me this assurance. I am also impressed with the fact that there is need for a plain statement on this subject being made and brought to the attention of the people. Being equally acquainted with the East and the West I know that very erroneous views on this matter are prevalent and that in many cases they have become so engraven upon the minds of the people as to form an almost invincible preoccupation of mind and that these impressions are exceedingly prejudicial, not only to the harbour of St. John but through that to the interests of the whole Dominion, since

they tend, in so far as they prevail, to depreciate and thus to render partially valueless one of its finest possessions, an ocean harbour of almost unsurpassed excellence. It is not easy, perhaps it is not possible, to account for the prejudice which exists in regard to the safety and commodiousness of the harbour of St. John. Has interested capital invested elsewhere suborned evidence? Have blundering surveyors maligned and misrepresented nature? Or what has been the parentage of these distorted and strangely untruthful impressions? Perhaps the chill of the icebergs on "The Banks" has sent a cold shiver through the bones of passengers bound for New York and Boston and made them glad to leave the whole region behind them as fast as steam or wind and safety combined could carry them, bearing away little but uncomfortable impressions of an inhospitable shore. Of all such impressions I can only say that the discomfort and the danger are met with on the passage to any of these ports as well as to St. John, and that any vessel which will turn aside from the customary route and cross the entrance to the Bay of Fundy will find that the icebergs and the chill have been left behind, quite as soon as they would be if any other course had been pursued, and that the route to St. John is not characterized by especial difficulty or danger.

The harbour of St. John is formed by the efflux of the river St. John into the entrance of the Bay of Fundy. The river is 450 miles in length and is the principal river in the Maritime Provinces. It is navigated for 90 miles from its mouth, by steamers of 1,000 tons, several of which carry a great number of passengers and a large amount of freight daily. Above that, it is navigable for smaller vessels for 270 miles; with a break at Grand Falls. And, for canoes, it is

open along the south-west branch to *Mejarmette Portage*, whence the descent is by the *Chaudiere* to Quebec. The sail from St. John to Fredericton is very fine. On leaving the city, the vessels pass through a rock-bound channel of a grand and impressive character. Beyond the mouth of the Kennebecasis, memorable as the scene of the death of Renforth, and the defeat of the Tyne crew, the river widens out to its full size, and for nearly a hundred miles the noble stream winds in its majestic curves along the valley to which it gives its name. The scenery on each side of the river never fails to call forth the admiration of the tourist, some speaking of it as "the Rhine of America; or the Hudson of Canada," while others revel rather in the pastoral beauty of the rich and varied landscape panoramas which appear in succession as the vessel rounds each new headland, and enters almost at right angles upon a new course of many miles. The farms lie upon the slopes which stretch upward from the river for several miles, to the dark green forest-covered hills which form on either hand the distant horizon line, and become the limiting boundary of the valley.

If the course be *reversed* and the season be the autumn, an added and peculiar interest will be found in the shipment of vegetables and all marketable produce from the farms along the river, this usually being accomplished in a peculiar and dexterous manner, without the necessity of a long land haul, or of the stopping of the steamer at a wharf with the inevitable delay. The residents are all expert and fearless boatmen, and, having loaded their boats, they pull out boldly, and with the stroke of professionals, into the middle of the stream at an angle upwards and towards the approaching steamer. The vessel slackens her speed for an instant; the course of the

boat is so directed and timed that the prow comes within reach of the grappling hook from the lower deck of the steamer and in a moment the boatman, pulling in his oars, finds himself drawn swiftly alongside the vessel, and held firmly and closely to it. The cargo of potatoes, golden squash, shining citrons, crimson tomatoes and whatever else the country affords and the city needs is transferred with wonderful rapidity, the vessel, meanwhile, running onward. The boat hook is lifted, the swing stairs are pulled up, the boatman seizes his oars and glances shorewards over his shoulder to mark the angle of his course to make up for the drift with the steamer; strikes strongly and surely into the deep blue stream he knows so well which has carried his produce so often to its marketing, and in a few moments the interested passengers, who have crowded to the rail to see the performance, can discern but a distant and indistinct object, man and boat in one, nearing the shore. By the time the steamer reaches the wharf at the north end (formerly Indian-town) the store of rich, golden, tempting provisions is such as to impress one with the thought of the wonderful abundance and variety with which a kind providence supplies our daily needs, a veritable floating market borne from the rich slopes upon the bosom of the noble river. Passengers are of course taken to and from the steamers in the same way, hundreds of the people of St. John spending their summers along the river, learning and gaining almost daily in the enjoyment of change and rest. Accidents have very rarely occurred.

The harbour is formed by the mouth or efflux of the river which flows eastward from the point where it is crossed by the Suspension and Cantilever bridges till it strikes the rocky peninsula or projection upon which the main part of the city is

built, when it turns, almost at a right angle, to the Southward, so flowing outward to the bay, forming the harbour with its wharfage on both the St. John and Carleton sides of the outlet.

About two miles below is Partridge Island, the signal and fog-whistle station, which guards the opening seaward. The passage on each side of the Island is open, although that on the west is largely occupied by a stone and crib breakwater which extends from the mainland about 2,400 feet, and serves still farther to protect the harbour. The passage between the breakwater and the Island is about 900 feet wide. On the east side of the Island, however, lies the main entrance to the harbour.

Partridge Island was one of the favourite haunts of the immortal Foosecap the Hiawatha of the Micmacs; in fact St. John, as the legends tell, was originally his home. The myths regarding the character, prowess and achievements of this almost divine being are very numerous, and many of the best known places in the Maritime Provinces are woven into the weird pattern of the web. The character looms up in all the shadowy grandeur which belongs to such creations. He is said to have been an envoy of the Great Spirit who had the fame and habits of humanity but was exalted above all peril and sickness or death. He dwelt apart and above in a great wigwam and was attended by an old woman and a beautiful youth, and "was never very far from any one of them." His power was exerted for good and against magicians and all evil beings. When the English came he turned his huge hunting dogs into stone and passed away, the times being evil; but he will return again and restore the golden age.

This is of course no place for speculations on mythology but we are

reminded once more of the old question as to whether the traditions of these national, Divine-human heroes tell of a traditional or tribal memory of the Man of Nazareth, around which has been gathered the peculiar drapery of the life and character of the race, until he became the typical hero or deliverer who is to come again and restore all things, or whether the human heart, everywhere the same in its need, gives fantastic being and form to the object of its desire.

The harbour of St. John has also been the scene of many memorable events of a more literally historical character, prominent among them being the famous defence conducted by Madame La Tour, in the absence of her husband, of the fort bearing his name, which was their citadel and their home.

The harbour is remarkable for its tides (about 30 feet.) which overcome, in their rise, the naturally strong current of the river and create at the bridge the unique phenomenon of a *reversed* fall, the water commencing to flow through the narrow channel at the top of the harbour, so soon as the expanse below is full, in a distinctly marked rapid or fall up or against the ordinary current of the river.

With regard to the specific facilities of the port I shall find my course somewhat shaped by the *misrepresentations* and ignorance already referred to as so prevalent in regard to them, and I accept this guidance, not only that I may offer facts in the removal of error and the setting forth of the truth, but because these mistakes, prejudices and misrepresentations affect the vital features of the harbour, so that perhaps no better course could be followed than to deal with the matters in regard to which these false impressions prevail.

I may say farther that the statements I shall make as to matters of fact are taken from the official records

and government surveys mainly embodied in the admirable report of the Board of Trade of St. John for 1887, a document of very great value and of unimpeachable authority and accuracy. One of the matters concerning which a great deal has been written is the *capacity* and *commodiousness* of the harbour, especially with regard to vessels of large tonnage. The depth of water, of course, varies, as it does in all ocean ports, and here perhaps to a greater extent than in ordinary cases, the tide being unusually high; but steamers drawing 27 feet are loaded here, and war vessels drawing 27½ feet have entered and left the harbour with ease. At one time, to which reference was made incidentally in the report, there were nine steamers in the harbour, two of them 5,276 tons and 5,146 tons respectively, and the others from 1,500 to 3,000 each. In fact "the largest war and merchant vessels have visited the harbour except the *Great Eastern*, and she could easily have been accommodated." And, moreover, the harbour affords the greatest facilities for dredging whenever it is required. In view of this it is strange to find that false soundings have been registered on the Admiralty charts since 1844. These have been corrected within the year at the request of the Dominion Government on the representation of the Board of Trade, and the corrections have since been verified by soundings taken by one of H. M. S. S. It is therefore safe to say, on the best authority, that the harbour of St. John is equal to the largest and the weightiest traffic which can seek its accommodation, no matter how large in number or weighty in tonnage.

Another closely connected question is that of *entrance* or *approach*. And here we may again quote from the report already referred to: "The navigation of the Bay of Fundy, is remarkably simple and free. . . . So

much so that pilots *prefer making the port of St. John in bad weather to any other port on the coast.*" One pilot who has been 39 years in the occupation, has brought into this port 200 steamships and never had an accident with any one of them. He piloted the "Great Republic," the largest sailing vessel ever built, and he brought her into this port without a tug. He says: "The navigation of the Bay of Fundy compares most favourably with other ports and places where I have been."

Another, thirty-four years a pilot, says: "I consider the harbour of St. John compares very favourably with any other harbour on this coast." Another pilot and S. S. master for thirty years says, after full discussion: "I know of no bay on the north Atlantic coast so clear of obstructions to navigation as the Bay of Fundy, from Moos-a-peck or Moss Peck, so called, on the coast of Maine, to Particled Island (mouth of St. John harbour)."

Another master of great experience declares he always felt as safe in St. John harbour as in the English or St. George's Channel, and adds: "It seems to me, from a sailing master's standpoint, it is one of the most desirable and safe known." Another, of forty-six years' experience, says he considers the harbour of St. John exceptionally easy of access, and safe to enter at any time of tide.

Another of over fifty years' experience at sea, who sailed from St. John five times a year for sixteen years and often afterwards, says, in closing his statement: "I consider St. John to be *easier of access than any port on the Atlantic coast.*"

If additional testimony were necessary, it might readily be found. I shall only add these two in farther confirmation: The International S. S. Co., plying between Boston and St. John for the past twenty-five years,

making three or four trips a week or two at the least with large steamers carrying a great number of passengers as well as a great deal of freight, have *never lost a single life.* And the passenger steamers to Nova Scotia, running for thirty years, have the same unclouded record. It seems as if these statements made, as if in evidence, over signatures, and carefully prepared, ought to be conclusive as to the exceptionally safe character of the approach to the harbour of St. John.

Another feature much spoken of is the fog; and as an illustration of the almost criminally untruthful statements which are made and circulated, I quote the following from a chart published in London in 1877: "Ships navigating the Bay of Fundy have to encounter an atmosphere almost constantly enveloped in dense fogs; the tides setting with great rapidity over the rocks and shoals with which it abounds, and a difficulty of obtaining anchorage on account of the depth; so that under these circumstances the most unremitting attention is requisite to prevent disastrous consequences which must necessarily attend a want of knowledge and caution."

In the face of the testimony we have already given, what shall we say of the "want of knowledge and caution" of a man who will publish a chart for the direction of mariners, something upon the accuracy of which tens of thousands of lives and millions of dollars worth of property depend. And who will issue it with such carelessness or ignorance? Suppose his *commendations* of channels, eminently safe and easy of access and free from danger, be equally unreliable what shall be said of his responsibility for the loss of life and property which ensued? It is to be hoped that such authorities are not the only protection between brave men and a watery grave.

That fog prevails at times in the Bay of Fundy and along the entire

Atlantic seaboard for that matter, is a fact of which no one needs to be in ignorance, and that it is occasionally the cause of inconvenience or the source of danger is true, but it would be untruthful and unpatriotic to permit the assertion to be made that the presence of fog along this coast is calculated to make navigation unprofitable or dangerous, or that St. John is more subject to fog than the other points, and that therefore navigation is in especial danger in approaching this harbour.

To deal with the last named contention first. As I have already said, any reply in the form of controversy, or in the interests of one port or another cannot be permitted in a paper such as this is. I shall therefore hold myself free from any responsibility to reply by words of retaliation to the many statements which can easily be shown to be at variance with the truth. I shall simply say that such a thing as a vessel being forced to lie outside of St. John harbour on account of fog, is practically unknown; and this, I am of opinion, can hardly be said of any other port at this part of the coast, with anything like an equal amount of business. The approach to the harbour is said to be one of the best lighted, buoyed and steam-whistled in the world. As to the general prevalence of fog, and the consequent hindrance and danger to navigation, it may have seemed incomprehensible how such statements as I have given should have been made in the face of the accepted opinion concerning the prevalence and dangerous character of the fog upon the Bay of Fundy, but a few figures will give added force to the testimony of mariners.

Reference to the official register, Partridge Island, shows that, from 1870 to 1886 inclusive, seventeen years, the average duration of fog per month was 19 hours and 22 minutes,

or *38 minutes per day*, for the six winter months. And when it is remembered that this average is made up of longer as well as shorter durations, sometimes a day or more at once, it can readily be seen how far from the truth is the idea that the coast is enveloped in a continual fog, full of dismal dangers and appalling possibilities. I may add that while at times the fog, like rainy days and other things we experience, does seem to stay longer than we enjoy, on the other hand, it is frequently welcomed as a grateful relief from the heat, and the very air seems to have been cleared by it when it passes away, and rendered peculiarly translucent and invigorating. Days and weeks, and I may almost say months, of cloudless sky and the most serene and beautiful weather, give the surprisingly low average duration of fog tabulated in the imperturbable record, and silence at once our ungrateful complainings, and the utterances intended, we must fear at times, to prevent the excellent record from being known.

The remaining matters I must bring before you in a sentence or two. Ice is unknown in the harbour, and this is something which cannot be said of any other harbour north of Cape Hatteras. New York, Boston, Portland, Halifax are all frozen over, at times and vessels are detained by reason of the ice. In St. John such a thing is unknown and we may say cannot occur. It is of course true that the rise and fall of the tide, which renders this impossible, together with the current at low tide, does make the water less placid, the reciprocal throb of tide and river is pronounced strong.

As to the relation of the harbour of St. John to the *Continental and Atlantic trade* a few words may be said. The length of the ocean passage is: From Moville to Halifax, 2,338 miles; to St. John, 2,538 miles; to

Portland, Me., 2,617 miles. From this it appears that St. John is exactly 200 miles farther from Moville than Halifax and 79 miles nearer than Portland. And on the other hand, turning to Montreal as the distributing centre for the summer ocean trade, we find by the "Short Line," the distance to St. John is 481 miles; to Halifax, 758 miles; making a distance in favour of St. John of 277 miles or 77 miles less on the entire distance from Montreal to Moville (*i. e.*, the distance between Moville and Montreal by Halifax is 3,096 miles; by St. John it is 3,019 miles).

The statement that St. John is "not only one of the safest but actually the safest port summer and winter all the year round, north of Cape Hatteras," officially made in the report of the Committee of the Board of Trade, appears to be a strong and, perhaps, unguarded assertion, especially in view of the adverse opinions held and formulated; and until they were corrected, officially printed, but an unprejudiced analysis of statistics seems to establish the correctness of the statement. And these statistics are not based upon insignificant data. St. John recently stood *fourth* among the ports of the British Empire for the number of vessels or tonnage owned in it, being only surpassed then by Liverpool, London and Glasgow. And the record shows that between 1877 and 1886 inclusive, the total number of vessels *arriving* in the port of St. John

was 16,719, with a gross tonnage of 5,261,658, departing 16,794 with a gross tonnage of 5,532,188, or a grand total arriving and departing of 33,513 vessels, showing a tonnage of 10,793,864, and the loss by disaster or casualty upon this representing a trade of over eighty-five millions of dollars, was .26 of one per cent. of the tonnage,

This article has already expanded beyond the limits I had set for it and I shall only venture to add a sentence or two. There are at the present time 12 or 14 distinct steamship lines regularly entering and sailing from the port of St. John, including the Furness Atlantic Line, the International Line to Boston, two lines direct to New York, the line to the West Indies direct, the Nova Scotia lines and several lines upon the river, together with a very large sailing vessel trade to every part of the world. The people look confidently forward to the port being included in the government contract as one of the termini or winter ports of the Mail Line.

When we add the consideration of the number of railway lines already centering or terminating in St. John, including the Canadian Pacific, the Intercolonial and, possibly at an early day, the Grand Trunk, it is not difficult to form some estimate of the importance and present and prospective value of this harbour to the Dominion of Canada and the British Empire.

St. John, N. B., Sept. 25th, 1890.

THYSELF must perish, all thou hast must fade,
One thing alone on earth is deathless made,
That is,—the dead man's glory: therefore
thou
Will what is right, and what is noble, *do!*

CHARACTER is never formed by removing

opportunities of either good or evil. You must lead children to do right in the face of wrong as well as beyond it; and have them to do it every time, not because it is easy, but because they choose to do it. The development of the will power in the right direction is the highest and best work we can require of the teachers.—*Dr. Hall.*

A. MODERN PHILIPPIC.*

BY J. C. ROBERTSON, B.A.

ARGUMENT — The rapidly increasing danger lest classics have to go to the wall in the educational system of Ontario, owing to the seeming indifference among its teachers to any measures calculated to promote the efficient teaching of Greek and Latin.

IF my subject were a novel one, I should have waited till others had first given their views, but, as the matter has often been discussed, and no counsel given that has been of lasting service, I may perhaps be pardoned for speaking before I have been asked for my opinion.

In the first place, in spite of the present wretched condition of affairs, we must not lose heart, for the cause of failure in the past is such as to inspire us with hope for the future, for we have failed because we did not do our duty. Had we done our utmost and then failed, there would now be no hope for us.

If any one thinks our rivals too formidable to contend against, in view of the strong position they have gained, he must remember that that position once belonged to us, and had they been too faint-hearted to fight against such odds, they would not have their present strength. But they were wise enough to perceive that energy and constancy will always win the day over carelessness and negligence, that those who are ready to work will supplant those who are indifferent. And so if you, too, will at last make up your minds to act on this principle, and if each of you, throwing aside all superciliousness and indolence, will be ready to do all he can for the interests we should have at heart, the teacher by studying the best methods,

and the examiner by showing common sense, in short, if you will only wake up and cease expecting that this age will be satisfied with cramming and "gerund grinding," you will, with the blessing of Heaven, recover your ground, and win back what your indifference has frittered away, and will heap coals of fire on your revilers' heads.

Do not imagine that your rivals' present strength is secured to them irrevocably, as though they were altogether perfect. There are many who are dissatisfied, even of those who seemingly approve of the new order of things, and who feel that they might find in a proper study of the classics that which is lacking elsewhere. These are now at a loss, and know not whither to turn, all because of your unprogressiveness and indifference, with which you should allow yourselves to be reproached not a moment longer.

Do you not realize that you will not be allowed to maintain even your present subordinate position, unless you put forth strenuous efforts? While you are dallying and delaying, other studies and new interests are coming to the front. When, then, will you do your duty? What are you waiting for? Till you are compelled to do something? Surely, for a right-minded man, there is no compulsion like the consciousness that he is shamefully failing in his duty.

Or, are you looking for some reaction against the modern spirit? Be well assured that even if the educational hobby of the moment dies, many more will appear to take its place. Your supplanters have gained their present strength not more by their own merit than through your

*Addressed to the Classical Men of Ontario. By J. C. Robertson, B.A., Coll. Inst. Owen Sound.

inefficiency. As things are going now, even if fortune, to whom, rather than to any efforts of yours, you owe what influence remains to you should, in the shifting scenes of educational affairs, offer you your former proud position, you could not retain it, so hopelessly antiquated are your methods.

What then do I urge? That you put away the many obsolete methods still in vogue, that you come to some agreement about the objects you should have in view and the best means of attaining them, and that you try to bring it about that there be proper examination of what is done: for the way in which the thing is now managed is a perfect farce. For if anyone were to ask you: "Are you supposed to have any particular object in view, you classical men?" You would say: "Why certainly, we are teaching boys to read Latin and Greek literature readily and with due appreciation." Then, should your examiners be continually asking young students about the Homeric question, and how the Romans built their camps, and putting numberless questions about words they rarely meet with, and expecting advanced scholarship and ripe critical powers in mere lads, and testing their knowledge of even commonplace things in a hopelessly wrongheaded way, and never see to it that they have any ready command for practical purposes of the ordinary materials of the language, and appreciate the force or beauty of what they read? I do not say this out of disrespect for the examiners, but they ought to know better.

Such a course, if adopted, would deprive your rivals of one of the greatest of their advantages. What is that? I mean that they are winning praise and position, because of your inefficiency.

What has been said of you is unhappily only too true, though per-

haps not pleasant to hear. If it do not lead to disaster, it may be proper to prophesy smooth things; but if glorifying the possibilities of classical education prevents our realizing them, we must not deceive ourselves, or fail to perceive that if we would hold our own, we must improve our methods and know more definitely what are our aims.

With all the great advantages bestowed on you by a classical training, you have up to the present day simply misused them, and you teach exactly as half-civilized Indians till the land. For they put in all kinds of seed together, without considering the capabilities of the soil, or whether it be the proper season for sowing, or how they should sow to have the seed come up, and then they leave their crops to the mercy of Heaven, expecting by and by to reap a harvest of they scarcely know what, and one year's failures never teach them to do better the next. Perhaps this sort of thing may have been tolerated once, but matters have reached such a crisis that it is no longer endurable.

It seems to me that Providence, disgusted with our remissness, has put the aggressiveness into our rivals. For if they had been willing to remain as they were, had they not been inspired with a progressive spirit, I verily believe most of you would have been contented with a state of things that is a disgrace to education and to our country. I wonder if any of you ever reflects or feels annoyance that at first the controversy was whether Moderns and Science should be allowed any place at all, but that now classics has to fight for its very existence. Are we to quietly acquiesce in this, and be perfectly satisfied with the occasional issuing of a new curriculum? Shall we not rather go to work ourselves and attack the problem before us vigorously? Earnest and honest effort will soon discover

the rotten parts of the present system ; but if you remain idle, merely occupied in repining and finding fault with the spirit of the age, nothing will ever be done. Your enemies only laugh in scorn, and your friends are disgusted with your folly.

For when you have nothing to offer the "bread and butter" instinct, and fail in the great majority of cases to get results that will satisfy more sensible men, what can you expect? If, however, we recognize the urgency of the situation, that the future rests with ourselves, and that the longer we delay, the harder the problem before us will become, we shall have come to at least one sensible conclusion. What the future will be, if we continue our present shortcomings, it is needless to enquire ; it is enough to know that it will be disastrous, if our work is not done more efficiently.

And now, having spoken in uncertainty of the effect of these words, but in the firm conviction that if you carry out this advice you will be benefitted, I wish success to whatever course is likely to advance our cause.

EXCURSUS.

I hope the readers of this article will not imagine that any note of hostility to Moderns and Science running through it represents my real views. Perhaps had Demosthenes known to what use his speech would be turned in these latter days, he might have managed to indicate that what he was fighting against was the remissness of his own nation, that he had a profound respect for Philip's abilities, and only wished it understood that the world was large enough for them both.

There is one other matter of which I would speak before bringing this article to a close.

From the suggestions made by Mr. Fairclough, (in his article on "The September number of this magazine),

as to "the lines which those who desire improvement in elementary classical teaching might follow," I miss one that seems to me of the utmost importance, nay, to be an absolutely necessary condition for any improvement. That what is taught in our schools (I am speaking, of course, of Ontario) depends on the nature and standard of our examination tests needs, I suppose, no proving. I do not mean to say that the "Teaching of the Classics" in the examiners are responsible for the present deplorable condition of affairs, but I do say that they, and they only, can bring about a reform, and that without a considerable change in the character of the papers set no great or lasting change can be made in the methods of teaching. We have only to remember how quickly, within recent years, changes (whether desirable or undesirable matters not) have been effected in other departments of work in our secondary schools, under the influence exerted through the medium of examinations. The generally improved teaching of English, French and German can be directly traced to this source.

With the low percentage required for passing, and the tremendous pressure of work, few teachers think they can afford to be independent of examiners. Possibly the following illustrations may make it clearer how harmful an influence is thus exerted.

In considering Horace, Odes I., 1, 23-25,

Multos castra juvant, et litus tubae
Permixtus sonitus, bellaque matribus
Detestata.

is it not more profitable for examination purposes, for teachers to see that their pupils can, apropos of castra, describe a Roman camp, and can give a number of deponents that, like *detestata*, are used as passives, than to ask why Horace should introduce, in *matribus detestata*, any disagreeable

suggestion into his description of what is attractive to martial spirits? Any one familiar with our examination papers in classics knows that any time spent over the latter question is, for examination purposes, absolutely lost. Who has ever seen on a matriculation paper (to confine ourselves to them) a question that would test whether the pupil understood the connection of thought in an ode of Horace, or, indeed, in any passage chosen for examination? Even assuming that the translation given is an adequate one, do matriculants understand their own language so perfectly that it is superfluous to ask them about the meaning of their translations? How many teachers stop to ask about the connection of Horace, Odes

I., 12, lines 3-12, with the rest of the ode? Yet perhaps the same teacher is fortunate enough to have some English Poetry to teach, in which case he would spend a considerable time over a similar question in an English ode. In the case of Horace some teachers reluctantly forego such questions, to many it never occurs to ask them. Why this difference? Because the examiners in English require "intelligent comprehension of the prescribed texts," and the examiners in classics do not.

And this is by no means the only direction in which a change in the examination papers is desirable, and, if there is to be increased efficiency in the teaching of Greek and Latin, as necessary as desirable.

PERSONAL MAGNETISM A TEACHER'S DUTY.

"PERSONAL MAGNETISM" is a term adopted by accommodation, as descriptive of a power of personal attraction to one's self and to that in which one would interest others. It is a term that is suggestive rather than definite. We speak of the personal magnetism of a preacher, or a teacher, or a conversationalist, meaning thereby to say that that person has a power of winning an interest in himself and in his theme of discourse that is not to be accounted for merely by the intrinsic worth of himself or his theme. We know very well that this power of attraction in a person is *not* actual "magnetism"; but we call it that for lack of a better name, seeing, as we do, its effects, but not fully understanding its cause.

Personal magnetism is recognized as a comparatively rare qualification; and it is ordinarily deemed an innate possession rather than an acquisition possible to every man who has a mission to preach or to teach. But personal magnetism is seen by all to be

a qualification in the teacher or the preacher as valuable as as it is rare. In an admirable memorial address on the life and life-work of President Woolsey, President Dwight of Yale University says of his predecessor in that exalted position: "Had he possessed the rare gift of magnetism as a teacher—a gift which he was himself conscious of not possessing, as he once frankly stated to me, and a gift which, so far as my knowledge of teachers extends, is far more rare than any other—he would have realized a completeness in his work for his students, in some aspects of it, which was not fully attained." And this view of the comparative rarity and of the practical value of personal magnetism in a teacher is one that seems justified by the world's best experience in the teacher's sphere.

Yet it may safely be asserted that personal magnetism is largely an attainment possible to every competent teacher, and that, this being so, personal magnetism is plainly a teach-

er's duty. A glance at the elements of this qualification of a teacher would seem to make clear the correctness of this proposition. Without pressing too closely the analogy of the properties of magnets, it may be noted that a magnet has a twofold power of attraction, or two distinct poles of attraction. "Every magnet, whether natural or artificial," says the physicist, "has two poles and a neutral line." Each of the two poles can attract, and either of them can repel, according as they are presented to one object or to another. Each of them attracts its opposite and repels its like; and this fact must be borne in mind in all right using of magnetism. Similarly in the case of the teacher as a magnet; he must have in his nature the two poles, of a love for his studies and a love for his pupils. He must have a drawing toward knowledge for its own sake, and again he must have a drawing toward his pupils for their sakes. Each of these drawings is essential; neither of these drawings is by itself sufficient.

To begin with, every teacher must love knowledge, and must be attracted to the phase of knowledge which he essays to teach. Unless he and the subject of his study and his teaching have a drawing for one another, a man cannot be a good teacher. But this is only one pole of the magnet. Every teacher must love his pupils, and must be attracted to them because they are his pupils, and have needs which he can supply. This the other pole of the magnet. Both of these poles must be active in order to the efficiency of the teaching-magnet as a teaching-magnet. And in the exercise of its magnetic power each pole of the magnet attracts its opposite and repels its like. A pupil will not be won to study merely by his teacher's knowledge and love for knowledge. That very mental knowledge and love for it on a teacher's part may be a means of

repelling the poorly furnished mind of his pupil. Neither will a pupil be won to a love of his teacher as a teacher by merely his teacher's love for him. If the teacher be without knowledge and a love for it, he may repel a scholar who feels that his teacher, while affectionate, is not by that fact made a good teacher. In other words, a teacher whose only love is for learning may repel his scholars from learning; while a teacher whose only love is for his scholars will not be loved as a teacher. But if a teacher is full of attraction for knowledge, he may win his scholar's admiration and affection; and if he is full of attraction for his pupil, he may win that pupil's attraction to the knowledge that attracts the teacher. The exercise of this twofold attractiveness, in right proportion, on a teacher's part, is personal magnetism.

Almost every teacher who has any measure of success is drawn with peculiar attraction to his studies or to his pupils. Few teachers are attracted, and so are attractive, alike in both directions; hence the rarity of teaching-magnets, and of magnetism as a qualification of the teacher. Yet why should not every teacher devote himself alike to his studies and to his pupils, inasmuch as he can never be at his best as a teacher without the exercise of his best powers in both directions? His studies are all-important while he is seeking knowledge in order that he may impart it to others. His pupils are all-important, while he is teaching, as the recipients of the knowledge he has gained by study for their benefit. He cannot be a good teacher unless he is alike attracted to knowledge and attracted to those who need knowledge, and to whose minds he is to impart that knowledge which is now in his mind.

A great scholar is liable to be so interested in his studies as to care far

more for them, in what they are in themselves and in what they are to him, than he cares for those whom he has undertaken to teach in the realm of these studies. Such a man has no magnetic power as a teacher. His very absorption in his studies often tends to separate him from those pupils who have most need of his instruction. On the other hand, a man of mere warmth of heart, who cares more for his pupils than he does for his studies, may repel his pupils as pupils by giving them the idea that he is not the teacher he ought to be. In the one case the teacher may be honoured for what he knows, and in the other case he may be loved for his kindly and sympathetic spirit; but in neither case does he make his pupils enthusiasts in devotion alike to their studies and to their teacher. But where a man is alternately absorbed in his study for his study's sake, and in his pupil for his pupil's sake—at one moment counting his study the only thing worth living for, and at the next moment counting his pupil's teaching the only thing that is worthy of his life's endeavours—he is likely to prove a teaching-magnet, as every teacher ought to prove.

A good teacher is liable to be unduly attracted in the one or the other of these two directions—toward his studies or toward his pupils. His duty is to note his prevailing tendency, and to counterbalance it by its opposite. "Let me give you a bit of advice," said good Dr. Bushnell to a young clergyman of his acquaintance.

"Don't think so much of *things*, but think more of *men*." About the same time that same Dr. Bushnell said to another young clergyman of his acquaintance: "Let me give you a bit of advice. Don't think so much of *men*, but think more of *things*." And Dr. Bushnell was right in both cases. The one preacher was erring in one direction, the other preacher was erring in the other direction; the one was devoting himself too closely to his studies, the other to his people. Each was lacking at one pole of his magnet, and, unless that lack were supplied, he could not be truly magnetic as a preacher. As it is with the preacher, so it is with the teacher; he must not think too much of *men* or too much of *things*, but just enough of each and both.

He who is all alive to study when he is studying, all alive to his pupils when he turns to his pupils, and all alive to teaching while he is teaching, will not lack magnetism as a teacher. And unless a teacher is alike alive in these opposite directions, each in its time—as he can be—he fails in his duty as a teacher, and is one of the many who are without magnetism, instead of being one of the few who possess it. Degrees of magnetic power will naturally vary with the varying degrees of intensity in different personalities. Not all teachers can be alike magnetic in their teaching work, but all teachers can have magnetism while teaching, if they will use their powers aright in that sacred mission. —*Sunday School Times.*

"ENGLAND is in the position of a mother who has left her children too much to the care of others in the past. All of a sudden she wakes up to the knowledge that her daughters are growing up, that they are beautiful young women, and that they will do her credit in the world; then she tries her utmost, let us hope before it is too late,

to gain their confidence and esteem. I trust it is not too late, for there are signs on all sides that our Colonies are as loyal and devoted to us as we could possibly wish them to be, and I believe that every year we live we shall see more attention given to the affairs of our Colonies." —*The Earl of Hoptoun.*

BOTANY IN THE HIGH SCHOOL.*

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IN what is to follow, we are likely to travel together, for some distance at least, over the old ground and listen once more to the familiar ideas that have come to wear the visage of well-known and long-trying friends. But we should miss them if they ceased to put in an appearance at the Schoolmasters' Club, and since they are sure to come, it is, perhaps, an act of charity to introduce them in the morning and in the springtime, with whatever appearance of freshness they may be induced for a brief season to put on.

It is assumed that the teacher of Botany in a high school, in common with every real teacher of whatever subject, is aiming first of all to make the most of his students in every way, and is using his subject simply as a means of accomplishing this. He finds his classes made up, in great part at least, of young people who do not know how to see things just as they are, or how to express their conception of what they do see, or how to form a correct judgment about facts, or how to use books properly: in short, they are untrained and uneducated, and he has set out to do his part, with the rest, in training and educating them.

His object, then, is substantially the same as that of his fellow-teachers, but he has a subject to teach that is different in various respects from theirs, one that will necessitate different treatment and very likely some methods not in use in other branches.

He will perhaps try in the first place to see whether any kind of training can be secured by the proper study of Botany that is not readily attained

in the study of other subjects, but he will by all means try to ascertain whether and how the work of the same pupils in other directions may be stimulated and strengthened by their work in this.

This, it would seem, is the only fitting and right attitude to take, and it may be stated at the outset that the University requirement in Botany has been made not so much with the thought of making a place for a subject that may or may not in itself be of sufficient importance to warrant it, as it has been to introduce what, aside from its own peculiar educational value, is believed to be capable of reinforcing in various ways the work in other subjects.

Now the study of Botany will hardly be employed, directly and specifically, for the purpose of training the memory. The languages, in certain ways at least, give much greater opportunity to develop this faculty. Yet even here, the study of this science may be made to serve an auxiliary purpose by training the memory in quite a different way. Whoever studies a single plant so carefully and minutely that he can always thereafter faithfully describe from memory its mode of branching, the form of its leaves, the peculiarities of its flowers and other external or structural details, has had his memory trained, though not in just the way it is trained while he is learning the verbs in $\mu\epsilon$. Both these ways of exercising the memory are certainly useful; it may be difficult to say, offhand, which is the more useful.

Again, we do not think of Botany as preëminently a means of training the logical faculty. Mathematics is understood to be the special subject by means of which the reasoning

*Read before the Michigan Schoolmasters' Club, May 24, 1890.

powers are to be developed. And yet in a most important respect, the study of Botany may be made to supplement that of Mathematics. The student has just been occupied, we will imagine, with an exercise in Geometry. He has proven absolutely and beyond all peradventure that the areas of similar triangles are to each other as the squares of their homologous sides. The proposition admits of no debate, and whoever does not accept the conclusion "is not of sound mind and we cannot reason with him," etc. He goes into the class in Botany and proceeds to ascertain whether the plant that has been brought in for study is a *Thalictrum* or an *Anemone*. It looks just like a *Thalictrum*, but closer examination makes it apparent that it has certain characteristics that belong to the *Anemone*. He is not a little perplexed, and if he goes far enough with the investigation he finds that the botanists themselves have already shared his trouble. Finally a compromise is made, the new manual clears up the difficulty, and to the relief of the teacher, if not of the student, one more vexed subject of discussion is disposed of.

This is perhaps an extreme case, and it is readily admitted that such exercises might prove a stumbling-block and nothing more, but in the hands of a skilful teacher how strongly the impression is made that a large body of scientific truth is to be acquired by other than mathematical processes, and what is more, by the repetition of such exercises, the pupil really learns to acquire scientific truth by these other roads. He is constantly called upon to exercise his judgment, and, furthermore, he comes at last to recognize the fact that there are differences of opinion between the highest authorities and that there are certain questions that may never be settled, and must, for aught we

know, continue to be held in abeyance for an indefinite time. It is, perhaps, just as important for the average member of society to learn to use his judgment in this way and to learn that there are and always will be differences of judgment, as it is to have his reasoning powers trained by the use of mathematical demonstrations. Both are of the utmost value, and, as already said, it is hard to tell which kind of training is most important.

It has for many years been sought to secure as far as may be the right use of the mother tongue by the study of English in the High Schools. The critical study of English classics, the writing of essays, and the various other kinds of exercises that have made, in some schools at least, the study of English a liberal education in itself, cannot find any substitute, nor is it easy to conceive of any one's seriously offering anything to take its place; but other subjects may well be taught in such a way as to reinforce the work done in the more direct study of English, and Botany is perhaps one of the very best adapted to become such an auxiliary. The really scientific description of the organs, structure, and habits of flowering plants is rarely attained except as the result of long and careful training, and the teacher of Botany, by looking carefully after the descriptions written by his pupils, is able to give them a large amount of such training. It is certainly his business to impress the cardinal truth that whoever has occasion to write a scientific description has no right to leave it in any other than accurate, clear, and concise form, and in so far as he succeeds in doing this, he is making the study of Botany an aid to the right use of the English language.

The value of Botany as a means of developing the power of observation has so often been set forth and is so

universally acknowledged that it is superfluous to enlarge upon it here. Bearing in mind its great educational value in this direction, the teacher will endeavour to attain, by every means in his power, the results which it, of all subjects in the High School course, seems best adapted to secure. He will hardly set his pupils, first, to studying charts or learning lessons from some text-book; instead of this, he will see that they do actually study plants, and he will do this in spite of difficulties of all sorts, and in spite of the fact that it takes an endless amount of time, and having once adopted this better way, he will hold to it as the one way by which to accomplish the end in view.

Some such purpose as this, it may fairly be assumed, ought to be held by those who are called upon to teach Botany in the High School—to teach it so that the memory will be trained to hold firmly facts of form, structure, and relationship, so that the judgment will be developed, so that it will aid in the acquisition of a clear, direct and accurate use of the English language, and so that the eye will be taught to see "what is" *as it is*.

It may be doubted whether any teacher can tell another just how to do all this. It is *not* to be accomplished exclusively along any one of the lines that many of us have travelled—as, for example, by learning Gray's Lessons by heart, or analyzing "fifty species of phanerogams" (the University Calendar notwithstanding), or by filling out the blanks in some "Plant Analysis," or by getting a lot of microscopes and filling the class with the notion that the old botany is all wrong; but it can be done just as soon as the teacher himself learns to observe independently, just as soon as he knows how to study a plant without running first to a book to be told what to see. When he has reached this stage in his own habits

of scientific work, he will be able to help others to work in the same way, and until that time, to state the case mildly, he ought not to teach Botany in a High School or elsewhere.

It will not, it is hoped, be thought an ungracious or exaggerated statement to say that those who spend seven or eight years of preparatory and college work upon the other subjects taught in the High School can hardly expect in as many weeks to become fully prepared to teach Botany. Just now there is quite a demand for summer schools to enable those who have no special preparation for teaching this science to "get up" a certain amount of it, enough to pull through another school year. There are certain teachers to whom it does seem very desirable to offer even this meagre help, but it is at least a question whether it will not be better in the long run to refuse it altogether and to emphasize the exact truth that the subject is not to be taught well without special training on the part of the teacher, and this training is not readily secured by devoting four or five hot weeks in July and August to Botany along with two or three other sciences.

There are a few questions that keep coming from various quarters, some of them from regions far beyond the scene of activity of any of our Michigan schoolmasters, and perhaps the attempt may as well be made here and now to answer or partly answer some of them.

One of these is: "How about that requirement for admission? what do you really expect to have students do who are coming to the University?" Once for all—the requirement as it stands in the University Calendar is simply a means of making sure that a reasonable amount of time—not less than half a year—has been spent in the direct study of plants. It is impossible for a pupil to actually study and describe fifty species of

plants without, in some degree, getting his eyes opened. He will learn something (as our good Professor Onley used to say) in spite of his teachers, even if they attempt to teach him as Aristotle himself might have done, how plants ought to be made, instead of looking to see whether they are made so or not.

One is perplexed not a little by the constantly recurring question "What text-book would you recommend?" The reply so far has been, "I do not know of any to recommend without reservation," and what is more, it is doubtful if any book is likely to appear very soon that will meet the wants of those who raise the enquiry. There is no book that will make it easy to teach Botany. Whoever has tried to teach the subject by making the learning of Gray's Lessons the main part of the work, or, worse still, has set his class to learning Bessey's Botany by heart, has found out the dreary dissatisfaction of it and does not need to be told how very dry such botanizing is. Possibly, though, the very fact that no text-book has appeared, as yet, that really seems to meet this "long-felt want," is a blessing in disguise, for it has certainly driven more than one teacher beyond and outside of the book. The laboratory guide to practical Botany, suited to the wants of the average High School class, is yet to be written.

We are not in immediate need of any more "Plant Records" or "Plant Analyses." Authors of every grade, from High School teachers in the far west up to college presidents in the far east, continue to blossom out in this form of contributions, and it is to be feared that for some time to come their own unfortunate pupils, if no others, will go on trying to ascertain the mode of dehiscence of the dandelion and possibly the placentation of its ovules, in order not to leave too many blank spaces unfilled. A clean blank-book or sheets of good

unruled paper are much more likely to assist in developing genuine, independent work than all these boxes in which the vegetable kingdom, previously cut and dried, is to be packed away beyond all hope of resurrection or recognition.

"Is it desirable to fit up in the High School a laboratory with microscopes and undertake the study of minute structure and the lower forms of life?" Yes and no. If the teacher has had full preparation in that line of work, is enthusiastic in it, and can accomplish more with his students in that way, by all means go at it that way; it is easier than the other. I mean to say that it takes less skill to secure really good results if one has such an outfit, than if he has to go to work without it. But placing a compound microscope between the eye and the object does not necessarily make a good observer, and unless the teacher knows, to start with, what he is going to do with such instruments, he may as well not urge his Board to purchase them.

There seems to be certain practical reasons for encouraging in most of our High Schools the study of plants in the more direct and simple fashion. Those who take a college course will have an opportunity later for the study of anatomy and life-history, or, in general, what now commonly goes under the name of biological work; and those who take no higher course of study are perhaps just as well off if they have learned to use their own eyes, as they are if they have learned to see everything magnified. It is not possible to get both of these kinds of work done well, unless a year or more is given to the subject, and it need not be said that it is preferable to do one thing well rather than two things poorly. Of course the excellent work that has been done for years in the way of elementary Biology in a few of our schools is worthy of all encouragement, and, as far as the

University is concerned, this encouragement is and will continue to be given by the acceptance of such work as fulfilling the requirement for admission, and even in cases of special excellence, by giving advanced credit where such credit appears to have been fairly earned.

One more question naturally suggests itself: "Does either of the lines of work that have been considered really cover the ground that it might reasonably be expected an intelligent class in a good High School ought to cover? Is it not a very limited and, perhaps, one-sided view of the science of Botany that is to be attained by such a course as has been suggested?" Perhaps it is a sufficient answer to say that after a student has spent a much longer time upon the subject than can be given to it in any preparatory course, precisely the same question might be asked and the same answer implied. Even after years of work in any modern science, we are all of us still at the threshold, still laying foundations. Why should we continually struggle after the impossible? Our students cannot in six months gain the comprehensive view that is only to be best attained by years of reading and research, and it would seem to be the part of wisdom to help them to see clearly a part, rather than give them a hazy glimpse, like a view in dreamland, of the whole. If it is thought best, as it probably will be in the majority of schools, to study systematic Botany without introducing the use of the compound microscope, it is certainly practicable in the course of half a year, for any class of good ability to learn how to write a scientific description, to be able to delineate structural details with the pencil, and to acquire a reasonably clear and comprehensive knowledge of the general facts of structure and habit, and the principles of classification. This is a good attainment in itself, and this is exactly what is aimed at

in the few words that for years have stood as the University requirement in Botany. If, on the other hand, it has been decided, in the comparatively few schools that are likely to secure the necessary outfit, to take up the study of the lower plants and vegetable histology, the teacher will find *this department of Botany sufficiently extensive to engross all the time at his disposal, without attempting to cover other divisions of the subject.*

It is to be hoped that nothing that has been said will be construed into acquiescence with the prevalent impression that Botany can be taught just as well with little or nothing to work with. The teachers have "got along", it is true, for many years, and have managed, somehow, to produce results, but the practical laboratory appliances for the study of this subject are disgracefully behind what they are in other sciences. I mean the appliances merely for the ordinary study of flowering plants, with no reference to the more expensive equipment for microscopic work. Go into the great schools of Grand Rapids and Ann Arbor, with their special laboratories for the study of the physical sciences. There are the teachers of Botany working in an ordinary recitation room, some of the pupils twenty to thirty feet, or more, from a window, not a single laboratory table, the lenses, tenaculum, herbarium paper, and other necessary outfit purchased partly by the student and partly by the teacher, the whole affair giving at once the impression that, while the other sciences have at last struggled into recognition and are finally, in at least a few schools, properly equipped, Botany and its teachers have been left absolutely to themselves, to live or die, according to the law of the survival of the fittest. That there has been a vigorous survival is due to the determination of the teachers and not to the environment.—*The Academy.*

WESTERN CHINA: ITS PRODUCTS AND TRADE.

THUS China moves, and so far was have been her chief instigators in the path of that material progress which it is now generally conceded must accompany, if not precede, moral progress; and that there is room for and sharp need of progress in China, the perusal of every work of travel in that country cannot fail to convince the most conservative. Even those who take Ruskin literally, and sympathize with the old Chinese statesman's ideal of every man on his plot of ground, growing the food for his family and the raw material for his clothing, which is spun and woven by the women of the house, must admit the failure of the present system. The inequalities of fortune, and the inequitable distribution of the necessities and comforts of life, are all too glaring in our European cities and in our country villages; but the poorest workman or workwoman here looks well fed in comparison with the crowds of shrivelled, half-starved wretches by which one is surrounded nearly everywhere in inland China. The ravages of the most horrible diseases, which medical science has practically stamped out of Europe, are patent on all sides, and on fête days and festivals we have seen the country roads thronged with, literally, thousands of the most cruelly repulsive specimens of rotting humanity. In the environs of the larger treaty ports we find the labourers' wages tripled, and the value of the farmers' produce quadrupled. The people are better fed, and large numbers of the sick are treated in our hospitals, so that scenes like the above are seldom seen there. Under existing conditions large regions in China, and notably the rich and fertile province of Szechuen, which has formed the main theme of our present review, are vastly over-populated,

and large numbers exist there in a condition of permanent semi-starvation in consequence. But resources capable of maintaining in comparative comfort a far larger population exist here as elsewhere in China. The mineral wealth, notably coal, only requires the application of Western methods to become a large source of revenue to the State, and of employment to the surplus inhabitants. Above all, however, means of communication are the first necessity. With no roads but narrow mountain footpaths, every impediment stands in the way of migration from the congested districts of Szechuen to the sparsely peopled valleys of Yunnan and Kweichow; and even when once there the immigrant farmer, owing to the difficulties of inter-communication, finds no outlet for his surplus product, which, on the other hand, is so sadly wanted for the masses in the great cities. A "treaty port" established in this region means a new centre of activity, higher wages, and vastly increased employment for the labouring classes; to the surrounding country it means an increased outlet for their productions, and a steady rise in values. To the officials and gentry it means a concrete example of the gains to be derived from Western methods of progress as opposed to the stagnation involved in fixing their ideals in the past. To the missionary it means a fair field and no favour, and to the medical missionary an additional sphere of work amongst the indigent sick. To the people generally our settlements yield a specimen of order and cleanliness in a wilderness of dirt and discomfort, which they do nothing to alleviate until stimulated by our contact. As Mr. F. H. Balfour, an old resident in China, in his article in the *Asiatic Quarterly Review*, in

January, speaking of the model missionary, most truly tells us, "He lives in some dirty, crowded town, far away in the interior, where his modest Chinese house, running round a well-kept garden, and presided over by a notable English or American housewife, is not only 'an oasis of cleanliness in a desert of dirt and stench,' but a reproach and an example to the sordid dwellings of his neighbours." Chinese cities boast no municipalities and practically no police; each man does what is right in his own eyes, and it is open to one and all to befoul the roadways at their own sweet will, while the greed of the shopkeepers is forever narrowing the crowded alleyways that, with the one exception of the capital (and this has its own peculiar amenities), do duty for streets. Our "settlements," with their broad, tree-lined avenues, magnificent quays, and garden-encircled houses, are greatly admired by the natives. At Hankow, six hundred miles up the Yangtse, the common term in use among the Chinese for the British settlement, which is built on the site of an old swamp which has been filled up and raised by the enterprise of the residents, until its level is now higher than that of the Chinese town adjoining, is Hwa-lo, or Flowery Pavilions. Such oases are not without their influence and examples, and in the native cities at the treaty ports a marked, though very slow, advance in the direction of order and cleanliness is distinctly noticeable. Streets have been repaved, and the black slush underlying the broad stone slabs, which has a peculiarity of squirting up under the trousers of the unwary European as he treads on what the Chinese elegantly term "swimming stones," has in many cases been dug out and removed. In Hanyang, the prefectural city adjoining Hankow, from which it is separated by the deep but narrow Han River, a tree-lined *bund*,

solidly built up with blocks of red sandstone has been laid out. At some of the more recently opened ports, such as Wuhu and Ichang, which were thrown open to British trade by the Chefoo Convention of 1876, the privilege of a separate area for foreigners to reside in appears not to have been insisted upon. In the case of Ichang, the unwise abandonment, under Sir Thomas Wade, of the concession originally marked out for a foreign settlement, has undoubtedly been the cause of much sickness, and some deaths, among the few Europeans who have as yet resorted to that port, and, owing to the difficulty of obtaining a decent site to reside in, has deterred more than one would-be settler from adventuring there. Let us hope, that in the newly-opened port of Chungking, in Szechuen, wiser counsels may prevail, and that the right of British residents there will not be construed merely into the right of renting (at an exorbitant rent) a Chinese house with its pestilential surroundings. At the time the older treaty ports were opened, it was looked upon as a *sine qua non* that British subjects should be encouraged to resort to them by having every possible facility for settlement offered them. Such facilities include the power to live under the conditions that health, under a subtropical sun, and damp, rainy climate, demands; these are not obtainable in ports where the foreign residents are scattered about amidst Chinese surroundings. The foreign settlements are regarded with no friendly eye by the Chinese official; and, apparently, it is in the vain endeavour to please this class that our ministers in China have ceased to insist upon what was, till quite lately, regarded as the necessary concomitant of a treaty port. The climate *per se* undoubtedly is healthy, as Pliny describes it: "Coeli jucunda salubrisque temperies leniumque ventor-

um commodissimus flatus;" but, as far as unseasoned Europeans are concerned, it is not giving the climate a fair chance, when it is only to be enjoyed in the midst of Chinese humanity; while "gentle favourable winds," when tempered with the breath of Chinese cities, lose their virtue.

Few now living are likely to see railways permeating and developing this grand region of the earth's surface. These three western provinces are so cut off by precipitous ravines, steep mountain ridges, and deep, wide rivers, that the outlay necessary to make roads for the iron horse is quite beyond the means of the Chinese people or their government as at present constituted. Ordinary roads barely exist in China, and, without the aid of Western capital and science, railroads will never penetrate those distant regions. So far, only one railway exists in China—a short line of eighty miles, connecting the coal mines of Kaiping, on the Manchurian border, with the shipping port of Tientsin—finally completed and opened to traffic in 1888. This line runs through a marshy, thinly populated country, but which has the advantage of being immediately under the jurisdiction of the powerful viceroy of Chihli, Li-Hung-chang. Yet even his influence failed in prolonging the line eighty miles farther to its natural terminus, Peking. This line was built with native capital, but with imported English rails, and the rolling stock was also imported, mainly from England. But, now it has been decreed that future lines are to be built by Chinese, of Chinese materials, and with Chinese capital exclusively (the Hukwang viceroy, Chang chih-tung, within whose jurisdiction lies the recently authorized line from Hankow to Peking, is now engaged with two German mining experts, searching for suitable coal and iron ore with which to commence operations), the progress of future railways will be slow indeed.

And in a country like south-western China, even were foreign capital to be invited to construct the roads, they could hardly prove remunerative, as long as free exploration of the mineral resources of the region is prohibited. The Chinese have neither the capital, the knowledge, nor the energy, to develop their mines seriously; and the government will not allow the small native companies, that here and there attempt mining in a most primitive old-world manner, to avail themselves of foreign assistance. With the restless European pressing in upon them on all sides; with Russia occupying the best part of Manchuria on the north, with France holding Tonquin in the south, with the British Indian frontier touching them in the west, the Chinese can hardly remain long as they are. Either they will be absorbed gradually by their more enterprising neighbours—a process which we believe to be a matter of indifference to the great mass of the people who care little who governs them as long as they have equitable rulers able to keep order; or, like Turkey, they may rub on as they are on sufferance, owing to the mutual jealousy of their enemies. The latter seems the more likely prospect; and, eventually, the time must come when Western modes of thought will have taken hold, and the present archaic system of education be reformed in accordance with modern requirements. We shall then see what a race like the Chinese, endowed with exceptional industry, perseverance and patience, and with no lack of brain power, is capable of. But, unless another convulsion like the Taiping rebellion should occur (and this is by no means an impossibility), throwing over tradition bodily, as did the first emperor, B.C. 220, it will be a long time yet before China takes that place in the world to which her numbers, resources, and high civilization justly entitle her.—*Quarterly Review*.

EDUCATION IN AMERICA.

TO those who are imbued with English ideas, the American system cannot but appear strange. There is a curious dove-tailing about it which we, with our somewhat disjointed methods, are sure to observe. For example, each higher grade of instruction in America is calculated to fit on to the next lower grade with the most perfect nicety. The system is a "continuation" system; it rears an educational ladder which has truly one end in the gutter and the other in the university. America does not trouble much about the "infants," and begins its system with children of the age of six. From this age until they are ten years old, the children are found in the elementary schools, rich and poor sitting side by side. The effect has naturally been to level the classes. We say "level" advisedly, for it has been more of a leveling than elevating process. Above the lowest grade of society wealth or power alone appears to differentiate between man and man. There is one huge class of people, and it is a mediocre class. But to return to the schools. On reaching the age of ten, the child is removed to the grammar school, and enters upon what would seem the secondary stage of education. Here, as before, he mixes alike with the child of the poor and the rich. At the age of fourteen, the education of the grammar school is considered to have been absorbed, and the pupil forthwith "graduates." It is rather amusing to hear boys and girls of fourteen years of age talking glibly about their having "graduated" at such and such a school; but it is a fact, and a common fact, too. And now comes what is practically the dividing line—although in theory no dividing line is recognized. The child of the poorer parent leaves day

schools behind when once he has graduated in the grammar school; and the child of the well-to-do parent proceeds to the high school—the curriculum of which is deftly dovetailed on to that of the grammar school. The high school provides for the pupil until he is seventeen or eighteen years of age, and then, in comparatively rare cases, he proceeds to the university. Now all this may at first sight seem very complete and satisfactory, but we would point out that a closer inspection will discover many a weak spot. For example, the education of the grammar school is not that of our grammar schools; it is, on the contrary, equivalent to the upper standards of our elementary education. And the mass of children only acquire such an elementary education. For those who in England would be found at good day or boarding schools have, in America, "graduated," and entered on their daily lessons in the world. The high schools of that country receive within their walls but a miserable residuum. And this is the more remarkable (as it is deplorable), because education is perfectly free. Elementary, grammar, and high schools in the United States are provided out of the public moneys, and are therefore open, without distinction or exception, to the public. And yet in spite of this, there are only 500 boys in the city of Chicago—500 boys out of a city of nearly a million inhabitants—who are found availing themselves of the privilege of a free high school education. And the fault cannot be laid at the door of the schools, for they are usually well built, admirably equipped, and efficiently taught. The fact is a very discouraging one for those who are advocates of a free education for all classes; and the more so, because private pre-

paratory and high schools, though not nearly so well equipped, are largely on the increase in America—and this in spite of the competition of the free schools. It seems remarkable that while there are only about 500 public (and free) high schools, there should be more than 900 private high schools, in which fees are of course exacted. What the outcome will be we cannot tell, but it appears to us that both public and private systems will con-

tinue to flourish, and that the communistic character of the schools will gradually disappear. Great changes are taking place in the social conditions of the United States, and the education of the future generation will naturally mirror the experience of the present. At any rate, the general tone of the American educational system is colourless, neither compelling our admiration nor demanding our distrust.—*Education (Eng.)*.

MEANS OF PROFESSIONAL IMPROVEMENT.

BY BOOKS.

NEXT to psychology, history affords the best means of professional improvement. But care must be taken how it is studied. It is quite possible to know a great many historical facts, and yet be a poor historical student. No subject demands more purpose, or we may say motive, than this. To illustrate: the political economist studies history for the special purpose of establishing some theory. All of his investigations have this end clearly in view. The philanthropist, intent on improving the condition of society, studies history for the purpose of finding out from what sources the largest number of human miseries have originated. Every true student of history has some definite motive pushing him forward. So must it be with the student of education. His first inquiry is, *What was the education that made Greece what it was?* for we are more directly connected with Greece than any other of the ancient peoples. The Chinese, Hindoos, Egyptians, and even the old Hebrews, concern us as a nation very little. But our intellectual ancestors were the Athenians, although we are very remotely connected with them by race affinity. No literary works are so thoroughly

studied or so highly prized as those produced by the old Greek authors.

The Romans were the intellectual successors of the Greeks. Their authors must be studied. After Rome came Europe for fifteen hundred years, and after Europe America. Now, in tracing all this stream of history, the educational student finds a silver thread connecting the remotest Greece with the newest America. Without reading any one history page by page, he instinctively knows what to omit and what to study carefully. He establishes first points of termination and points of departure. These he fixes in the mind with their immediate circumstances, and then he gradually fills up the intermediate spaces. A few of these great epochs are the following: The Homeric period, the age of Solon, the age of Pericles—which would include the time of Socrates and the principal writers of prose and verse flourishing about this time—the fall of the Grecian state, the rise of the Roman republic, the age of Cæsar, the birth of Christ, etc., etc. These great periods are first as thoroughly studied as it is possible, ending with the fall of slavery and the period of American reconstruction.

It should be distinctly borne in

mind that the history of education is not a history of school work, but rather a study of the forces that have made the past what it was, and the present what it is. All reconstructing powers are educational, so that the history of education holds an intermediate place between the meagre history of school work on the one side, and the almost exhaustless history of civilization on the other. This study is comparatively new, and so its special literature is quite small. Passing by the German histories of education and Barnard's *Journal of Education*, already mentioned, the first work that should be read is Quick's "Educational Reformers," and then Brownings "Aspects of Education," and "Educational Theories." After these may be read Compayre's "History of Education," although this can be passed by without much detriment, for it is altogether too scrappy, and shows too little of the historical spirit. Painter's "History of Education" is good, but is open to the criticism of having been written without a definite purpose. Boone's "History of Education in the United States" contains a large amount of valuable material, and very many references which will

give the future historian much valuable help. Beside these histories, there is nothing in the English language of much value to the student of education.

In pursuing his subject with reference especially to our present educational condition, the student will study the following topics: The causes leading to the establishment of the American free school system, the relation of church to state in this country at the present time, the historical aspect of the church and state educational question, the relation of science study to national prosperity. These and many other questions like them will not fail to have very careful investigation. It is only in the light of the past that we can see the present. This is an axiom which the historical student more and more appreciates as he continues his work. So he becomes a prophet, for like causes always produce like effects. We need never try experiments with uncertain results. Human nature is the same from age to age in the palace of kings and in the hovel of the peasants. Humanity is a unity. Of this the educational student soon becomes convinced.—*School Journal*, N.Y.

OUR PUBLIC SCHOOLS.

To the Editor of The Week:

SIR,—I read with much pleasure the paragraph in the leading article of the *Week* of the 25th July last, in which you remark and refer to the *Bystander* as agreeing with you that three-fourths of those who use the public schools are just as well able to pay for the schooling of their children as for their food and clothing, and are equally bound to do so; that there is reason to fear the very class for which gratuitous education is needed don't avail themselves of the provision; that if the state of the law

is such that we are unable to get the children of the poorest educated, it should be altered for that purpose; and that the free education of all classes which is in many cases given in the high schools is something still more unreasonable; in all which I most cordially agree, as I do also with your concluding remark that the provision last mentioned is not merely unjust to those who make no use of these schools, but is frequently injurious to those who are induced to use them, when they might be better employed in manual labour. With refer-

ence to this last remark, I think it would do no harm to call the attention of your readers to the following extract from Mr. Punch's sensible and dramatic illustration of the case as respects the public schools in England :

TOO CLEVER BY HALF.

Being questions and answers cut on the straight.

Question—So you have finished your education ?

Answer—Yes, thanks to the liberality of the School Board.

Q.—Do you know more than your parents ?

A.—Certainly as my father was a sweep and my mother a char-woman.

Q.—Would either occupation suit you ?

A.—Certainly not, my aspirations soar above such pursuits, and my health impaired by excessive study, unfits me for a life of manual labour.

Q.—Kindly mention what occupation would suit you ?

A.—I think I could, with a little cramming, pass the examinations for the army, the navy, or the bar.

Q.—Then why not become an officer in either branch of the United Service, or a member of one of the Inns of Court ?

A.—Because I fear, that as a man of neither birth nor breeding, I should be regarded with contempt in either the camp or the forum.

Q.—Would you take a clerkship in the city ?

A.—Not willingly, as I have enjoyed better than a commercial education ; besides city clerkships are not to be had for the asking.

Q.—Well, would you become a shop boy or a counter jumper ?

A.—Certainly not ; I should deem it a sin to waste my accomplishments (which are many) in filling a situation suggestive of the servants' hall rather than of the library.

Q.—Well, then, how are you to make an honest livelihood ?

A.—Those who are responsible for my education must answer that question.

Q.—And if they can't ?

A.—Then I must accept an alternative and seek inspiration and precedents from the records of success in another walk of life, beginning with the pages of the Newgate Calendar.

—Punch, July 12, 1890.

Punch is a moralist and philosopher of the laughing school ; but our English proverb tells us, there is many a true word spoken in jest. The Roman philosopher and poet asks : *Ridentem dicere verum—Quid vetat ?* "What hinders a jester from speaking the truth ?" Common sense answers nothing hinders, and *Punch's* illustration is apposite to his case in hand. It is not right that boys should receive at the public expense an education which unfits them for manual labour ; and those who make the laws, which give them such education at the cost of the tax payer, are responsible and must answer the questions which *Punch's* examiner puts. Education at the public expense should be given only to those whose parents cannot pay for it, and should apply to such subjects as will be of use to them in such callings and employments as they may reasonably be supposed likely to be engaged in, and should certainly not be such as would unfit them for manual labour the independence and respectability of which, especially in agricultural pursuits, should be always strongly insisted upon. Institutions for higher education should be supported by voluntary contributions, or if aided from the public purse, should only be so to a very moderate extent, and for purposes in which the state has a direct interest, or which are connected with the scholar's probable calling and means of support. No one should be placed at the cost of the taxpayer, in the position in which *Punch's* examiner finds himself by being "too clever by half." W.

[The above we quote from the *Week* of recent date : the questions referred to are of much importance to our country.—ED.]

PUBLIC OPINION.

GOOD WORDS.—Do not think that the true and honest teacher has had all that is due from you when the scant salary has been paid. Show that you appreciate the work by a kindly word of sympathy and encouragement. It will do the teacher of your child good and you too.—*Barrie Advance*.

IT WORKS WELL.—There is hardly a Board School in England now in which some form of non-sectarian religious education is not given. And what is true of England is true of many other countries also. And even countries in whose schools no definite religious teaching is given still retain the reading of selected portions of God's Word and the opening and closing with prayer. I see nothing then either in the character of our population, or in the necessities of our school system to prevent the plan being followed here that is found to work so well in many public schools elsewhere.—*The St. John's College Magazine (Winnipeg)*.

PHYSICAL CULTURE.—It may interest the student of education to hear that M. de Coubertin, the genial critic of our English schools, has just published his impressions of American High Schools and Colleges. M. de Coubertin's observations of America have confirmed in all respects the opinions he had formed from his inspection of English Schools. Both in respect of physical development and of training of character, the free games of England are infinitely superior to the formal gymnastics of Germany. The gymnasium should be regarded as an appanage to the playing-fields, and even from it all that resembles military drill or class-room

lessons should be banished. In the States the two systems are struggling for the mastery; but, according to the author, the ultimate triumph of games is assured. Dr. Sargent, of the Hemenway Gymnasium, with his fifty-eight anthropometrical records of each student and his special apparatus for rectifying an abnormal big toe or an etiolated little finger, is treated by the Frenchman with ridicule hardly befitting the *role* of official reporter (M. de Coubertin's status on this occasion), while all that concerns football and baseball is set forth in strains worthy of "Tom Brown."—*Education (Eng.)*.

FREE ENGLAND.—I have expressed, as you will bear in mind, considerable sympathy with Mr. Matthew Arnold's noble discontent with the state of our educational institutions; but it is to be remembered that there is another side to all this. If we have not as much organization in this country, or as complete a co ordination of our educational institutions, as exists in France, Germany and Switzerland, it is in a great measure because we have more freedom, and because we insist on having it. There are advantages in this freedom which no amount of organization could compensate us for if we were to lose it. It has often been observed that the average intelligence amongst young people abroad, who have left their school experience a few years behind them, is hardly, if at all, superior to the average intelligence of young people of the same class in our own country. My own impression is that it is inferior, though perhaps that may be a prejudice of patriotism. Certainly practical politics, as distinguished from mere phrases and sentiment, have not the interest for the masses or the classes in Ger-

many or Italy, or even in France, that they have for our own population, and public opinion in those countries is far from being the swift, powerful, and sensitive influence that it is amongst ourselves. Now, so long as that is the case, it cannot be considered that the schools for the people have done their highest possible work. I agree that, in a few exceptional cases, foreign workmen may by their peculiar training be able to compete on terms of too great advantage with some of our own workpeople, nor am I altogether satisfied by the mere fact that literature such as the *Nibelungen Lied*, for instance, has a demand in Germany which enables booksellers to issue it at a cost of few pence, and to make a profit out of it. There are other things to be attained by the instrumentality of schools. Man is not a mere machine, nor a bookworm, and any nation whose schools fail to make the people free and public-spirited, keenly alive to the great problems of order and progress which we have to solve, are deprived, or suffer others to deprive them, of some of the highest results of education. Those who see in this failure, as I take it for public purposes, of the foreign educational systems, a complete condemnation of them, too often forget how small a part after all (if I may say it in the present company with freedom) school life plays in education. School is indeed most important, but it must necessarily form only a subsidiary

part of our education. Its work is not so much to make men, as rather to prepare them for being made. Its function is to multiply and to refine the susceptibilities of men or women to the best influences of the condition into which he or she is born. If those conditions are adverse—well, the susceptibilities will be withered and dull; but this is by no means the fault of the school. In England, as I take it, not more than about one-seventh of our education is received in school. The more powerful influences that play upon us are those of the family, the Church, municipal life, trades' unions, clubs, political leagues, and parliamentary elections. In free England we are rich in such influences as these, and I contend that they keep on educating men and women up to the last day of their lives on earth. Now it is on the fact that you young people are born to such an inheritance as that of free British citizenship, and the active social human life it necessarily involves, that I most of all congratulate you. The best wish I can have for your school life is that it may fit you for the high calling of British citizenship—a high calling, the duties of which must necessarily demand the most complete development of all the humanity that God has placed within you.—*From a Speech delivered at the distribution of prizes, in the College of Preceptors, by F. Allanson Picton, Esq., M.P.*

GEOGRAPHY.

HATTERAS LIGHTHOUSE.—A contract has been awarded for a lighthouse on the Outer Diamond shoal of Cape Hatteras, the most dangerous point on the Atlantic coast. A caisson will be sunk in twenty-four feet of water, inside of which the work of excavating will be done. As soon as

the base of the caisson rests on a good foundation its interior will be filled up solid with concrete. The cylinder on top will also be filled with concrete to the height of thirty-five feet above the water level. When the concrete solidifies it will make a practically monolithic foundation on

which to place the lighthouse proper. This base will be surrounded by riprap work of stones weighing not less than two tons each, extending to a distance of 400 feet on all sides of the tower. The lighthouse proper will consist of nine storeys, of one room each, and will be made of iron lined with brick.—*The School Journal* (N. Y.).

THE Mombasa & Nyanza railway was inaugurated Aug. 26, at Zanzibar, in presence of a large company. This railway will have a 24-inch gauge, and will be completed to Taveta, it is thought, in ten months.

SMALL GERMAN STATES—A German newspaper tells its readers that a traveller can pass on foot in less than seven hours through seven German States. Starting from Rudolstadt westward, in half an hour melstadt is reached; from that place, in one hour and a-half, he comes to Remda; in one hour more he arrives at Witzleben; in one hour and a-half to Osthausen; in one hour and a-quarter, *via* Eixleben, to Kirchheim; and then, in another hour is reached the little Gotha State of Ichtershausen.—*The School Newspaper*.

PETROLEUM.—A writer in the *National Review* calls attention to the fact that enormous deposits of petroleum, though yet wholly unworked, are known to exist in the British em-

pire, in Burmah, Canada and New Zealand. The Canadian oil deposits, excluding a small petroleum field in the Province of Ontario, are situated in the valley of the Mackenzie River. Their area is enormous. The Burmese oil-fields lie along the valley of the Irrawaddy. They are declared, by Prof. Thorp, chemist to the Royal School of Mines, to be enormous deposits "capable of supplying the whole of India with light and fuel." Burmese petroleum, he declares, will certainly prove to be more precious than Burmese rubies. Besides Burmah and Canada, New Zealand possesses important petroleum deposits. The New Zealand Government sent an inspecting engineer, last year, to examine the Taranaki district, where oil was known to exist. He found petroleum bubbling up in jets along the ocean beach, while inland the settlers could not use the water of their wells because of the infiltration of oil in them. Another remarkable fact was noted in this district—that the oil there underlies enormous deposits of pulverized iron ore. Wien, therefore, machinery has been established there for working this ore, an inexhaustible supply of fuel will be found furnished to hand in the oil deposits. The writer hints that British capital, which is now running far afield for investment, might be more wisely used in developing these great natural resources of the Empire.—*The School Herald*.

NOTES FOR TEACHERS.

BRASENOSE.—Apropos, I note that Brasenose College, Oxford, has just regained a lost possession, and one which it apparently holds dear. This is the quaint bronze knocker from which it derived its name; the said knocker having been alienated from its ancient home for nearly six centur-

ies. When the Oxford "scholars" migrated to Stamford in 1334, in consequence of a feud which then distracted the University, they carried off this knocker with them; and ever since then, it had remained on the door of the house in which they settled. This house was, however, sold

more than once ; and the other day, when it was again in the market, Brasenose itself became the purchaser. and bore off once more the ancient emblem. It represents a lion's face, with a ring through the mouth, and was probably modelled in the twelfth century. Surely this is the first time on record that a house has been bought for the sake of its knocker!—*The Critic.*

THE MAIN PURPOSE.—“The main purpose of education is to deal with the mind, the youthful mind, not as a repository that is to be filled with goods like a shop, and then the goods to be taken out and handed over the counter, the shop remaining exactly as it was while the goods passed through it, but that the main purpose of education is to make the human mind a supple, effective, strong, available instrument for whatever purposes it may be required to be applied to.”—*Gladstone.*

WHO WERE THEY?—Columbus was the son of a weaver, and a weaver himself. Cervantes was a common soldier. Homer was the son of a small farmer. Demosthenes was the son of a cutler. Oliver Cromwell was the son of a London brewer. Franklin was a journeyman printer, the son of a tallow chandler and soap boiler. Daniel Defoe was an ostler. Cardinal Wolsey was the son of a butcher. Virgil's father was a porter. Shakespeare was the son of a wool stapler. Milton was the son of a money scrivener. Mohammed was a driver of asses.

NEWSPAPERS. — The number of newspapers published in all countries is estimated at 41,000, 24,000 appearing in Europe. Germany heads the list with 5,500, then comes France with 4,100, England with 4,000, Austria-Hungary with 3,500, Italy with 1,400, Spain with 850, Russia

with 800, Switzerland with 450, Belgium and Holland with 300 each, and the rest are published in Portugal, the Scandinavian, and the Balkan countries. The United States have 12,500 newspapers, Canada has 700, and Australia also 700. Of 300 journals published in Asia, Japan alone has 200. Two hundred journals appear in Africa, and three in the Sandwich Islands. In the principal languages there are published 17,000 newspapers in English, 7,500 in German, 6,800 in French, 1,800 in Spanish, and 1,500 in Italian.

A LOVE FOR KNOWLEDGE.—The difference between the possession of mere knowledge and a real living love for knowledge itself is much greater than many persons imagine ; it is, indeed, the difference between the empiric and the scientist, between mere cramming and a real education. And the person who is able to impart this love for knowledge is something more than an ordinary teacher : indeed, he alone among his fellows really deserves the name. For the impartition of mere particles, mere aggregates of knowledge, is easy rule of thumb work compared with the work of imparting a real love for knowledge itself. And, indeed, the teacher must himself be full and running over with this love of knowledge. It must be the medium through which his personal magnetism, his personal influence, makes itself felt among those he has to deal with. Such men have been our really great teachers ; the late Dr. Kennedy may serve as the most obvious example. It is, perhaps, too much to say that every one has in himself some love for knowledge ; there is, no doubt, a small minority in whom it is so choked up and smothered, that it is practically non-existent ; but certainly most persons have at least some germ of

it. In all, however, it is a plant that will not thrive without careful culture and cultivation ; it can rarely grow up of its own unaided strength. But, when it finds some one who is able to bring it out of its hiding-place and can cherish its life with his own inspiration, then we may expect it to grow apace and to produce fruit of the greatest value. For him in whom the love of knowledge is once fairly awakened it is sure to increase the sum of his knowledge ; and, indeed, he will not rest in peace unless he is

daily making additions which are sure to be of importance and value to him in after-life. Hence it is that schoolmasters should pay more attention to the task of inculcating a love for knowledge, than to the supposed object of gathering together a mass more or less digested of knowledge which may of itself be useless for all after-time. It is because this fact is too often overlooked that we have ventured to call to it the special attention of our readers.—*The Private Schoolmaster.*

EDITORIAL NOTES

ANY of the books mentioned in our reviews may be obtained by communicating with P. O. Box 2675.

THE friends of the MONTHLY will oblige us by telling all interested in education that copies may be had at any time by applying to Post Office box 2675.

OUR readers will find in this issue an interesting and able paper on the harbour of St. John, N. B., by the Rev. Geo. Bruce, M. A., of St. John. Many of the readers of this magazine may not be aware that the Rev. gentleman is a native of this Province, a graduate of Toronto University, and after several years work in Ontario was induced, some fourteen years ago, to move to the chief city of New Brunswick. Such is the intercourse going on between the various Provinces of the Dominion ; we invite their men to help us to make Ontario what it should be, a land of peace and plenty ; we ask them to share with us the riches of our broad and fertile fields. And they on the other hand are equally ready to invite us to aid them in developing the resources of their beautiful provinces and to enjoy with them the abundance of

the sea. Canada has a magnificent seaboard on the Atlantic and the Pacific ; our friends on the south of us have taken their own course and we must therefore take ours. Mr. Bruce is in the best possible position to tell Canadians the facts about the fine harbour they have in that of St. John. We hope to have papers of a like character on the other harbours of Canada. Our motto is "let there be light." We recognize the sharpness and push of the neighbours on the south of us but this does not shut our eyes to the rich British heritage we have in our Canada ; rather otherwise. The recognition of this truth urges constantly on us all the duty of enlightened patriotism which every free man owes to his country.

THE TRAINING OF TEACHERS.

PERHAPS the most important business brought before the Ontario Teachers' Association at its last annual meeting was the report of the committee on the training of teachers. This committee, which consisted of members selected from each section of the Association, had been appointed several years before to consider, and bring in a report up-

on the matter. So important did the convention consider this report that it set apart a special time for its consideration. The conclusions to which it came, therefore, are worthy of special consideration. The report was divided into two parts: (1) a statement of the deficiencies needing to be remedied in the training of teachers, and (2) remedies suggested. The deficiencies enumerated are: little or no experience in the work of ungraded schools, little or no experience in actual governing and classifying. Non-professional training not given as a rule with a view to professional work, the age limit for candidates is too long; the intellectual attainments needed to pass the non-professional examination are no guarantee that the candidate has mature judgment, firm character, or exact knowledge; the different standards for the third class professional examination in different counties interfere with the general efficiency of teachers; the Normal School training is not sufficiently practical, and the professional training of High School assistants is but little more than nominal.

These deficiencies were admitted by the Association after careful consideration, only one or two verbal amendments being made to this part of the report. When it came to consider the remedies suggested there was more diversity of opinion; but after a very full and earnest discussion the following points were agreed upon: The age limit for students-in-training entering the County Model Schools should be raised to eighteen and nineteen years for females and males respectively. It was considered that this change would secure greater maturity of judgment in the management of a class or school. The meeting was very decided in its opinion that third class certificates should be valid only in the counties where they

are granted; and that they could only be made valid in another county by the inspector of that county endorsing them. It passed a resolution embodying these views. The next resolution passed was in favour of more practice in actual teaching during the Normal School course of training, the method of securing this extended practice being left to the Department. The Association proposed as a remedy for the deficiency in the training of High School assistants, that such training should extend over at least a year until such time as lectures on pedagogics, accompanied by practical work, are delivered in University College. The Association rightly considered that the very best teachers available should be secured for our County Model Schools, where the most important part of the training of our future educators takes place, and one of the resolutions passed declared that "only teachers of thorough professional training, and lengthened experience should be employed in Model Schools."

It has long been felt that our Normal Schools are not sufficiently in touch with the work that is going on throughout the country. How seldom is it that we hear of a Normal School master taking an active, not to say a leading, part in the periodical meetings of the Teachers' Institutes throughout the country. Yet the teachers of these schools should be the chief source of information for all that is new in the educational world. It is mainly to them that young teachers should look for guidance in regard to the best methods of instruction, of Government, and of organization. They should be in a position to give information on any subject of the school curriculum. The convention embodied its views on these matters in the following resolution: If arrangements could be made by which the Normal School masters

should conduct institutes and conventions throughout the province much would be accomplished towards bringing the whole educational system into harmonious working by placing most recent normal methods before the profession."

From what has been stated above it will be seen that the convention expressed its views upon every phase of the training question, training of third class teachers in the County Model Schools, of second class in the Normal Schools, and of first class and High School assistants in the Collegiate Institutes. So far the Provincial Association has done its part; it now remains for the Minister of Education to show whether he has sufficient

statesmanship to grapple successfully with the matter. Hitherto he has pottered with summer classes of one kind and another, apparently under the fatuous notion that these Will-o-the-wisps would be a good substitute for systematic training. If he has kept his eyes open he will surely have found out ere this how much he has overestimated the good effect of these classes. Let him therefore now try to emulate the more serious work of his predecessors, Mr. Crooks and Dr. Ryerson. The effort to do so will serve as a moral tonic to himself, and may convince the country that it has a man at the head of educational affairs who can do more than throw dust in its eyes.

SCHOOL WORK.

MATHEMATICS.

ARCHIBALD MACMURCHY, M.A., TORONTO.
EDITOR.

EDUCATION DEPARTMENT, ONT.
MIDSUMMER EXAMINATIONS, 1890.

Primary Examination.

ALGEBRA.

Examiners—Crimelius Donovan, M. A.,
J. E. Hodgson, M. A.

NOTE.—Only eight questions are to be attempted, four in group A and four in group B.

A.

1. Find the value (in the simplest form) of $m^2(c-n^2) + n^2(m-c^2) + c^2(m-n)^2 + mnc(mnc-1) + 7$, when $n-m^2=0$.

1. Put $n=m^2$. $m^2c^2(1-m)^2 + 7$.

2. (a) Find the remainder when $9a^3 + 4a^2 - 27a + 1$ is divided by $a^2 + 2a + 1$.

(b) Divide, by Horner's method, $5y^4 + \frac{7}{2}ay^3 - \frac{1}{2}a^2y^2 + \frac{3}{4}a^2y + \frac{1}{4}a^4$ by $\frac{1}{2}y^2 + 3ay - \frac{3}{2}a^2$.

2. (a) $4a^0 - 18a + 1$.

(b) $2y^2 - ay - \frac{3}{2}a^2$.

3. If $x+a$ is a common factor of $x^2 + px + 1$ and $x^3 + px^2 + qx + 1$, show that $(p-1)^2 - q(p-1) + 1 = 0$.

3. a must = 1, then $p=2, q=2$, substitute values for p and q .

4. Simplify (1) $\frac{(x+y+z)(x^2+y^2+z^2)}{xyz}$
 $-\left(\frac{y+z}{x} + \frac{z+x}{y} + \frac{x+y}{z}\right)$.

(2) $\frac{(x+y)(1-xy)}{(1-xy)^2 - (x+y)^2}$
 $-\frac{x(1-y^2) + y(1-x^2)}{(1-x^2)(1-y^2) - 4xy}$.

4. (1) Expression = $\frac{x^2 + y^2 + z^2}{xyz} +$
 $\frac{x(y^2 + z^2) + \text{etc.} + \text{etc.} - xy(x+y) - \text{etc.} - \text{etc.}}{xyz}$
 $= \frac{x^2 + y^2 + z^2}{xyz}$.

(2) $\frac{(x+y) - xy(x+y)}{1-x^2-y^2+x^2y^2-4xy}$
 $-\frac{(x+y) - xy(x+y)}{1-x^2-y^2+x^2y^2-4xy} = 0$.

5. Resolve into factors:

(1) $7x - 42y - 2x^2 + 9xy + 18y^2$.

(2) $a^6 - 3a^3 + 3a^2 - a^2 - 8$.

(3) $(ax + by)^2 + (ay - bx)^2 + c^2x^2 + c^2y^2$.

5. (1) $7(x - 6y) - (x - 6y)(2x + 3y)$
 $= (x - 6y)(7 - 2x - 3y)$.

(2) $(r^2 - a^2)^2 - 8 = (a^2 - a)^2 - 2^2$
 $= (a^2 - a - 2) \{ (a^2 - a)^2 + 2(a^2 - a) + 2^2 \}$
 $= (a - 2)(a + 1)(a^2 + a^2 - 2a + 4)$

(3) $(a^2 + b^2 + c^2)(x^2 + y^2)$.

6. Solve the equations:

(1) $\frac{ax + b - c}{ax - b + c} = \frac{(b - c)^2}{(b + c)^2}$.

(2) $\frac{x}{6\frac{1}{2}} + \frac{56 - 2x}{5\frac{1}{2}x + 5\frac{1}{2}} = x - \frac{7x - 2}{8\frac{1}{8}}$.

(3) $(x - 2a)^2 + (x - 2b)^2 = 2(x - a)(x - b)^2$.

6 (1) Add and subtract 1, and divide

$$\frac{b - c}{ax} = \frac{-2bc}{b^2 + c^2}, \quad X = \frac{(b^2 + c^2)(c - b)}{2abc}$$

(2) $1 \frac{8}{108}$.

(3) Divide both sides by $x - 2a + x - 2b$,
 $\therefore x - 2a + x - 2b = 0, \quad x = a + b$.

B.

7. In paying two bills, one of which exceeded the other by one-third of the smaller, the change out of \$5 00 was half the difference of the bills. Find the amount of each.

7. Let x = smaller, $\frac{4}{3}x$ = larger,

$$5 - \frac{7}{3}x = \frac{1}{6}x, \quad x = \$2.$$

8. A man leaving his property by will to his three sons, left $\frac{1}{3}$ of it and \$1000 to the eldest; $\frac{1}{3}$ of the remainder and \$1000 to the second; and the rest to the third who found his share to be \$2,500. What was the total value of the property?

8. \$12,000.

9. The digit in the tens' place of a certain number of two digits exceeds that in the units' place by four. When the number is divided by the sum of the digits the quotient is seven. Find the number.

9. 84.

10. At what time between 8 and 8.30 are

the hands of a clock equally distant from the figure VI?

10. Let x = minute past 8,

$$30' - x = 10' + \frac{x}{12}, \quad x = 18\frac{6}{13}$$

11. A and B together own p dollars, A and C q dollars, and B and C r dollars. How much money does each own?

11. Let $x = A$'s money, $p - x = B$'s, $q - x = C$'s, $p + q - 2x = r$,

$$x = \frac{p + q - r}{2} = A's.$$

12. A train starts on a journey of 240 miles; after going 103 miles it reduces its speed by one-fifth, and in consequence is $1\frac{1}{2}$ hours late at its destination. Find the ordinary speed of the train.

12. Let x = usual rate per hour,

$$\frac{137}{\frac{1}{2}x} - \frac{137}{x} = 1\frac{1}{2}, \quad x = 27\frac{1}{2} \text{ miles an hour.}$$

ARITHMETIC.

Examiners—J. A. McLellan, LL.D.,
 J. J. Tilley.

NOTE.—Only nine questions are to be taken, three in group A, three in group B, and three in group C.

A.

1. (a) Show how to find the L. C. M. of two or more numbers.

(b) Find the L. C. M. of 24, 105, 180, 96, 336, 84, and of

(c) 4410, 7350, 7875.

1. (b) 10080.

(c) 110250.

2. (a) Prove the rule for finding the product of two fractions.

(b) Simplify $\frac{2}{3}(3\frac{1}{2} + 1\frac{1}{2})\text{£}$

$$+ \frac{1\frac{1}{2} - \frac{1}{2} \text{ of } 1\frac{1}{2}}{1\frac{1}{2} \text{ of } 3\frac{1}{2} + 1\frac{1}{2}} \text{ of } .95 \text{ of } 5s. + \frac{8.4}{.012}d.$$

2. (b) £6 6s. 5d.

3. If the Avoirdupois lb. is equal to 7000 grains Troy, and if 6144 sovereigns weigh 133 lbs. 4 oz. Troy, how many sovereigns will weigh an oz. Avoirdupois?

$$3. \frac{7000 \text{ grains}}{133 \text{ lbs. } 4 \text{ oz.}} \times 6144 = 3\frac{1}{2} \text{ sovs.}$$

4. A man engages a sufficient number of men to do a piece of work in 84 days, if each man does an average day's work. It turns out that three of the men do respectively $\frac{1}{4}$, $\frac{1}{5}$, and $\frac{1}{6}$ less than an average day's work, and two others $\frac{1}{4}$ and $\frac{1}{5}$ more; and in order to complete the work in the 84 days, he procures the help of 17 additional men for the 84th day. How much less or more than an average day's work on the part of these 17 men is required?

$$4. \left(\frac{1}{8} + \frac{1}{10} - \frac{1}{6} - \frac{1}{7} - \frac{1}{9} \right) \times 84 \div 17 = \frac{29}{30}$$

$$1 - \frac{29}{30} = \frac{1}{30}$$

B.

5. How many bricks, 9 inches long, 4½ inches broad and 4 inches thick, will be required to build a wall 45 ft. long, 17 ft. high and 4 ft. thick, supposing the mortar to increase the volume of each brick $6\frac{1}{2}$ per cent.?

$$5. \frac{45 \text{ ft.} \times 17 \text{ ft.} \times 4 \text{ ft.}}{9 \text{ in.} \times 4\frac{1}{2} \text{ in.} \times 4 \text{ in.} \times \frac{106\frac{1}{2}}{100}} = 30720.$$

6. A circular race-course is 22 yds. wide and has an area of 12 acres. Find the diameter of the inner circle.

$$6. \frac{12 \text{ acres}}{22 \text{ yards}} = 2640 \text{ yards (length of the circle in the middle of the race course),}$$

$$2640 \div \frac{22}{7} = 840 \text{ yards (diameter of same)}$$

$$840 - 22 = 818 \text{ yards.}$$

7. The area of each of the longer walls of a room is 330 square feet; the area of each of the other walls is 220 square feet; the area of the floor is 384 square feet. Allowing $\frac{1}{4}$ of area of walls for doors and windows, how many yards of paper, 18 inches wide, are required to cover the walls?

$$7. (330 + 220 \times 2 \times \frac{24}{25} \times \frac{36}{18}) \div \frac{36}{18} = 234\frac{2}{3} \text{ yards.}$$

8. The pressure of compressed air varies inversely as its volume. If the pressure on the inner surface of a cylinder fitted with a piston be 20 lbs. on the square inch, and when the piston is forced in 2 inches, the

pressure becomes 30 lbs. on the square inch; what is the length of the cylinder?

$$8. \frac{30}{10} \times 2 = 6 \text{ inches.}$$

C.

9. A man has \$20000 Bank Stock which is at 170 and pays a half-yearly dividend of 5 per cent.; he sells out and invests in Stocks at 108, which pays 3½ per cent. half-yearly. Find the change in his half-yearly income.

$$9. 1st \text{ income} = \$1000,$$

$$2nd \text{ " } = 1000 \times \frac{170}{108} \times \frac{3\frac{1}{2}}{5} = 1101\frac{2}{3}.$$

$$\text{difference } \$101\frac{2}{3}.$$

10. Bought goods at \$5.70 on 4 months' credit and sold them immediately at \$6.12 on such a term of credit as made my immediate gain 6½ per cent. Reckoning interest at 4 per cent. per annum, how long credit did I give?

$$10. \frac{300}{304} \times 5.70 \times \frac{106\frac{1}{2}}{100} = \$6,$$

12 cents is interest on \$6 for 6 months.

11. A merchant in Montreal drew on Hamburg for 10000 guilders at \$415; how much more would he have received if he had ordered remittance through London to Montreal, exchange at Hamburg on London being 11½ guilders for £1, and at London on Montreal 9½ per cent., brokerage being 1½ per cent. for remittance from London?

$$11. \$415 \times 10000 = \$4150,$$

$$\frac{10000}{11\frac{1}{2}} \times \frac{40}{9} \times \frac{108}{100} = \$4266\frac{2}{3}$$

$$\$116\frac{2}{3}$$

12. (a) What is meant by averaging accounts?

(b) Find the equated time for the payment of the following accounts:

JOHN SMITH.

1888.

Dr.

June 10.—To mdse. @ 3) days.....	\$950
July 15 — " " 45 "	300
Aug. 20.— " " 60 "	250
Sept. 1.— " " 30 "	150

1888.

Cr.

July 10.—By cash	\$450
Aug. 15.— "	350
Sept. 5.— "	200

CLASSICS.

J. FLETCHER, B.A., Toronto, M.A., Oxon., Editor

In the hope of inducing and facilitating a more general study of the honour matriculation classics, a systematic discussion of certain parts of the honour work in Greek and Latin will be attempted in this column.

NOTES ON CICERO, IN CAT. III.

Esse debet—"Is bound to be;" cf. *Esse debuit*, "is bound to have been." (Bradley, ex. 24.)

Conditam, etc.—"After its foundation and enlargement."

Toti urbi—Dative after *subjecto circumdatos*, "applied on every side."

Prope jam—"Already all but."

Iidem—"Also." (Bradley, § 366.)

In rempublicam—"For the destruction of the country."

Retrudimus—Not "blunted" but "parried."

Dejecimus—"Struck down."

Eorum—"Referring to gladios."

§ 3. *Illustrata*—"Brought to light."

Per me—"Through my instrumentality."

Per of the indirect agent.

Quanta—s. c. sunt, "How enormous they are."

Quam manifesta—"How clearly proved."

Qua ratione, etc.—"The manner in which the facts have been followed up and got possession of."

Qui ignoratis et expectatis—"Who are waiting in ignorance to hear."

Principio—"In the first place."

Paucis ante diebus—On Nov. 8; nearly a month before.

Eruptit—"Sallied."

Quum reliquisset—"Leaving." (Bradley, § 411.)

Providi quem ad modum, etc.—"I took precautions to ensure our safety."—(Bradley, § 174.)

In tantis, etc.—"In spite of such monstrous and secret treachery." (Bradley, p. 222, 5, [1].)

Quum ejiciebam—"When I was engaged in expelling." (Bradley, § 184.)

Invidiam. "*Oodium*,"—"unpopularity."

FLETCHER AND NICHOLSON'S
GREEK PROSE.

EXERCISE 3.

1. Ὁ τοῦ ξητούντος πόνος ἀπανθ' εὐρίσκει. 2. Τῶν πασῶν τρήρων τὰς διακοσκίας ἡ πόλις παρέσχετο. 3. Παρήσαν ἐν τῇ μάχῃ τῶν ὀπλιτῶν ἀμφὶ τοὺς ἐγδοήκοντα λόχους. 4. Τὰ τοῦ στρατηγοῦ ἵεκα καὶ τὰ τοῦ κριτοῦ σὺν ἡμῖν ἐπαυδέθη. 5. Ὁ πονῶν πλείστα καὶ ὠφελῶν τὸ κοινὸν οὗτος καὶ μεγίστων ἀξιοῦται. 6. Πάντες ἔχομεν τὸ σῶμα θητόν. 7. Οἱ πάλαι τοὺς ἀμφὶ Πλάτωνα περὶ πλείστου ἐποιούντο. 8. Ὁ ρινόκέρως ἔχει τὴν δορὰν ἰσχυροτάτην. 9. Ἡ ἀηδὼν ἔχει τὴν φωνὴν ἡδίστην. 10. Τοῖς ἐλευθέροις μεγίστη ἀνάγκη ὑπὲρ τῶν συμφορῶν ἡ αἰσχύνῃ ἐστίν. 11. Οἱ πολλοὶ φοβουσι τοὺς ἐπὶ τῶν πραγμάτων καὶ μεγάλως ταραττουσι τὰ ἐνθάδε. 12. Οἱ ἄγγελοι εἶπον ὅτι ὁ στρατηγὸς ταχὺ τῆς Μυσίας ἐς Πέργαμον ἀφίξειτο. 13. Ἐπαινετόν ἐστι τὸ τοῦ Σοφοκλέους καλὸν τὸ σωφρονεῖν.

EXERCISE 4.

1. Οἱ μὲν ἔφυγον, οἱ δὲ ἔμειναν. 2. Τοὺς μὲν ἐπήνεσε, τοὺς δὲ ἐκόλασεν. 3. Τοὺς μὲν δεῖ εὐτυχεῖς εἶναι, τοὺς δὲ δυστυχεῖς. 4. Ὁ μὲν οὐδὲν κερδαίνει, ὁ δὲ πολύ. 5. Τὸ καὶ τὸ ἐποίησε καὶ τὸ οὐ. 6. Ἐν τοῖς πρώτοι οἱ Ἀθηναῖοι τὸ ξίφος (τὸν σίδηρον) κατέθεντο. 7. Δύκος ἄρνα ἐδίωκεν, ὁ δὲ ἐς ναὸν κατέφυγεν. 8. Ὁμηρος ἐν καταλόγῳ ἐμήνυσε τὰς μεγίστας καὶ τὰς ἐλαχίστας τῶν νεῶν. 9. Καὶ ὁς, ἀνὰ κράτος ἐλαύνων, τοὺς διώκοντας φεύγει. 10. Περὶ δυσμᾶς ἡλίου ὁ στρατηγὸς ἐπανήγαγε τοὺς στρατιώτας ἐς στρατόπεδον τὴν ταχίστην, καὶ οἱ ἐπὶ σκῆμας ἤσαν. 11. Οἱ Ἕλληνας κατὰ γῆν καὶ κατὰ θάλασσαν Ἐφεσον τῆς Ἰωνίας ἐπολιόρκησαν. 12. Οἱ Ὀρᾶκες

τὸν Στυρμόνα ποταμὸν διέβησαν καὶ ἔταμον τὴν Φιλίππου. 13. Ἄγγελοι εἶπον ὅτι τὸ τῶν πολεμίων ναυτικὸν ἐς τὸ Σούνιον ἄκρον ἀφίεται καὶ ἐπὶ πόλιν πρὸς πλεῖ. 14. Μαχεῖσθε ὑπὲρ πατρίδος ἐν ἧ ἐγένεσθε καὶ ὑπὲρ οἰκῶν ἐν οἷς ἐτραφίητε.

MODERN LANGUAGES.

Editors { H. I. STRANG, B.A., Goderich.
W. H. FRASER, B.A., Toronto.

EXERCISES IN ENGLISH.

1. Contract into simple sentences :

- (a) I believe that this is the only way in which it can be accomplished.
(b) When they heard that the fort had been captured they decided to retreat.
(c) He mounted his horse and galloped to the rear, that he might bring up the reserves.

2. Expand into compound or complex sentences :

- (a) Alarmed by reports of the advance of the enemy the general called a council of war.
(b) Instead of promptly reporting the prisoner's escape he allowed nearly a day to pass.
(c) Probably not one of the spectators could explain the mode of doing it.

3. Change from compound to complex, or vice versa :

- (a) Soon after, night came on, and the pursuit had to be abandoned.
(b) He determined to make the attempt, although there seemed but little hope of success.
(c) We must send them assistance without delay, or they will all perish.

4. Change the voice of the finite verbs :

- (a) They told us that he had been seen the day before.
(b) The doctor will not allow any one to enter the room.
(c) The courier whom he had sent with the letter was captured by the enemy.
(d) The eyes of the wretched men were now turned anxiously towards their leader.

5. Substitute words or phrases of equivalent meaning for those italicized :

- (a) In this *mode* of warfare the savages *proved* more expert than their assailants.
(b) The sea *broke constantly* over the *gunwale*, and *incessant* baling was necessary to keep them afloat.
(c) They afterwards learned that the natives who *lined the beach* of the island were *addicted to cannibalism*.
(d) The misery we endured this night *exceeded* that of the *preceding* one.

(e) The *visible alteration* for the worse in his *appearance* seemed to me the *melancholy presage of approaching dissolution*.

6. Combine the following groups into complex sentences :

- (a) They saw several other islands. They held on their course. There was a chance of being starved to death in an open boat. There was a risk of being killed and eaten by savages. They preferred the former.
(b) They had no fire arms. Some stones happened to lodge in the boat. They threw these back. This was their only defence. They could make no other.

(c) They steered along this reef. They at length found an opening. They passed through it into smooth water. There they were able to rest from their toil.

(d) Daylight came. Their limbs were benumbed with cold. They could scarcely continue the work of baling. The lives of all depended on their doing so.

7. Break up into a series of short simple sentences :

- (a) To add to their misfortunes, it was found that a considerable part of their stock of biscuits had been so much damaged during the gale that it was quite unfit for food.
(b) I gave them this information that in case any accident should happen to me those who survived might be able to find their way to the nearest land.

(c) I have found by much experience that I was entirely wrong, and that although by chance an African elephant may be killed by the front shot, it is the exception to the rule.

8. Change to indirect narrative :

"I thank you with all my heart," he

replied, "for the great kindness you have shown me. Believe me, I shall not soon forget the many benefits I have received from you during my stay among you, and I hope that some day I may have an opportunity of proving my gratitude."

9. Change to direct narrative :

He asked the workmen why they came to him with complaints. Did they expect him to make good losses which were solely due to their own negligence? If they had done as he advised them the previous week the disaster would not have happened.

10. I once had a little brother,
 With eyes that were dark and deep ;
 In the lap of that dim old forest,
 He lieth in peace asleep.
 Light as the down of the thistle,
 Free as the winds that blow,
 We roved there the beautiful summers,
 The summers of long ago.
 But his feet on the hills grew weary,
 And one of the Autumn eves,
 I made for my little brother,
 A bed of the yellow leaves.

(a) Give, if you can, the name of the lesson from which this extract is taken, and also the name of the writer.

(b) Show the force of the epithets *dim* and *yellow*, as applied to the *forest* and the *leaves* respectively.

(c) Explain as clearly as you can the comparisons implied in *lap* and *asleep*.

(d) Give the grammatical value and relation and also the meaning of *light*.

(e) Show, if you can, any special appropriateness in the words *roved* and *beautiful*.

(f) Give the grammatical value and relation of the phrases, "in the lap" and "on the hills."

(g) Give the grammatical value and relation of *asleep*, *summers*, *long ago*, *weary*, *one*.

(h) Select all the words that show inflection.

(i) Give all the other inflected forms of the words *had* and *lieth*.

(j) Classify the verbs : 1. as strong and weak. 2. as transitive and intransitive.

(k) Form adjectives from *brother*, *peace*, *down*, *autumn*, *yellow*.

(l) Form nouns from *brother*, *deep*, *dim*, *forest*, *long*, *hill*.

(m) Write out in full the clause of which "as the winds" forms part, and tell the kind and relation.

CLASS-ROOM.

MISCELLANEOUS QUESTIONS ON ENGLISH GRAMMAR.

FOR CANDIDATES FOR THE PRIMARY EXAMINATION

1. Classify sentences according to (1) Form, (2) Composition, giving an example of each kind.

2. Write compound sentences to illustrate the different kinds of co-ordination, naming each kind and explaining the names.

3. Write sentences to illustrate the different functions an infinitive phrase may perform in the detailed analysis of a simple sentence, describing the function in each case.

4. Exemplify the different kinds of clauses that may begin with *that*, *as*, and *where*, respectively.

5. Exemplify the different relations in which a noun in the nominative may be, and show in how many of these a noun clause may stand.

6. Do the same with the objective case.

7. Give examples to show that the same infinitive phrase may be used with three different grammatical values.

8. Give examples of words in *ing* used as prepositions, and show, if you can, that this use has originated from their participial use.

9. What effect has the loss of inflections in English had on (1) the *functional interchange* of words (2) the placing of words in a sentence? Explain why in each case.

10. Fill the blanks in the following with *who* or *whom*, giving your reason in each case.

_____ did you say he gave it to?

_____ did you say he took it to be?

_____ did you say it was that gave it to you?

_____ did you say you met yesterday?

_____ did you say gave it to you?

11. Complete the following sentences correctly and point out the difference in the force of the italicized words:

(a) If he *was* present _____

If he *were* present _____

(b) If any one *will* make the attempt _____

If any one *shall* make the attempt _____

(c) *Shall* he be _____

Will he be _____

(d) She looked *sad* _____

She looked *sadly* _____

CONTEMPORARY LITERATURE

THE *Classical Review* for June contains much classic lore, chiefly articles and notes from scholars, and valuable reviews of important classical works. In the department of Archæology, there is a good article on the "Acquisitions of the British Museum."

THE August *Overland* publishes a good article on "The Position of Labour among the Hebrews," in which a general account is given of the attitude of different nations towards labour. "Parson Fourbits" is a characteristic western story, told by a miner.

Table-Talk is gradually being enlarged and additions are frequently made to the contents in the shape of new departments. Among these may be mentioned "Housekeeper's Enquiries" and "Menus for the Month." Among the articles "Dinner in a Paris Restaurant" and "Fashionable Crazes" may be mentioned. Any number of *Table-Talk* contains a great deal of profitable reading for housekeepers.

THE last number of *The English Illustrated* contains the concluding part of Sir Donald Mackenzie Wallace's "Overland from India," in which he describes the journey from Teheran to England. One regrets that Sir Donald has said little about the famous Trans-Caspian Railroad. He states that a well-seasoned traveller might do the whole journey easily in six weeks. The Hon. Maude Stanley writes sensibly about servants and another pleasantly written article is that on "Osterley Park." The illustrations are always very good.

SEVERAL comparatively new authors' names appear on the table of contents for the last *Wide Awake*, which contains baseball and football stories, poetry, and the usual depart-

ments, and is a particularly seasonable number. Margaret Sidney writes of the adventures of some campers among the Adirondacks, and an article a little out of the beaten track is "The Camera Club," finely illustrated. Mrs. Spofford's story "One Good Turn" is perhaps the best thing in the magazine this month.

ONE of the articles in the September *St. Nicholas* has already been quoted frequently, "Great Ocean Waves," by W. J. Henderson. The first thing in the magazine is a description of a visit to Dr. Oliver Wendell Holmes, which everybody will read. There are two good serials at present, "Lady Jane" and "Crowded out of Cröfield." Dr. Chas. G. D. Roberts in "Chopping them Down," tells about life in a lumber camp. There are many other good things in the number.

THE *Dominion Illustrated* for Sept. 13th is one of the best numbers yet issued. It contains engravings of H. M. S. *Bellerophon*, *Canada* and *Thrush*, also portraits of the Earl and Countess of Aberdeen, the late Judge O'Reilly and the late Dr. Wilson. Several views are given, including one of the Chaudiere Bridge, Quebec. The pictorial paper of Canada, illustrates Canadian resources, industries, scenery and social life in such a manner as to deserve the hearty support of Canadians. The next number, which will be of special interest, is to contain a full account of Prince George's visit with illustrations.

THE *Illustrated News of the World* (printed in New York from the original blocks of the *Illustrated London News*) contains, on Sept. 20th, the usual number of good illustrations, and the departments and articles, in

which we always find interesting reading. Edwin Lester Arnold's strange story, "Phra the Phœnician," has reached its ninth chapter. Canadians will be most interested in "An American Girl in London," by the brilliant Canadian authoress, Miss Sara Jeannette Duncan, whose first book, "A Social Departure," has been a great success. The illustrations are of the Ober-Ammergau Passion Play, salmon-fishing in North America, etc.

In "Over the Teacups" of the September *Atlantic*, Dr. Holmes gives a lay sermon on future punishment and about the American fondness for titles. Mr. Quincy's clever article on "Cranks as Social Motors." James Russell Lowell's "Inscription for a Memorial Bust of Fielding" and the serials by Miss Murfree and Mrs. Deland will not want for readers, while there are other contributions, such as Mr. J. F. Jameson's scholarly article on "Modern European Historiography" and "Mr. Brisbane's Journal" which go to make up an excellent number.

DONALD G. MITCHELL writes a delightful article on "The Country House," in the September *Scribner*; it is illustrated by a number of attractive drawings, photographs, and engravings by twelve different artists. "Jerry," an anonymous novel of considerable power, reaches its eighth chapter, and among the articles may be named Professor Shaler's on "Nature and Man in America," Thomas Stevens' on "African River and Lake Systems" and an excellent paper on "A Crown Jewel: Heligoland" by Emma Cheney. The place of honour is occupied by a readable article on the American navy.

The Century for September is almost a California number, a good deal of space being given to an article by John Muir on the proposed Yosemite National Park, describing the scenery and pointing out the dangers of amateur management of the great place. An article on "How California Came into the Union," a temporary department devoted to the '49ers and a short editorial are the other parts of the magazine devoted to that State. Two sonnets and some light verse in bric-a-brac, the conclusion of the clever

story entitled "The Anglomaniacs," and another instalment of the truly artistic "Letters from Japan" are also found in the number, which is well up to the high standard of *The Century*.

Webster's International Dictionary of the English Language. Edited by Noah Porter, D. D., LL.D. (Springfield: G. & C. Merriam & Co.)—After ten years work with an editorial staff of one hundred and after an expenditure of more than \$300,000.00, Messrs. G. & C. Merriam present their "International Webster's Dictionary" to the world. They are to be congratulated upon the result. It would seem that they have neglected nothing and overlooked nothing, that one could desire in such a work. The additions and improvements are especially noticeable in the appendices, which might almost take the place of several works of reference. The unabridged edition was first published in 1847. There were other important editions in 1859 and in 1864, but only the edition of 1890 will, we feel sure, fully satisfy the wide and severe requirements of modern use. Even a brief examination of the International inspires a feeling of confidence in it, which long and frequent use, we feel sure, will only confirm.

Shakespeariana, now an illustrated quarterly magazine, makes its appearance with an excellent table of contents, including seven articles by Shakespearian scholars. The first of these is "The Second Henry Fourth," a historical and critical essay, by W. H. Fleming of New York. Among the others are a carefully written estimate of Shylock's character and history, very different from the ordinary superficial impression of the Jew's character, and an article on "The New Place," by L. I. Lawrence. There is also an article suggesting further search into the history of the Shakesperae family and giving some reasons for the supposition that such a search would be rewarded. The number is concluded by a brief history of the Shakespeare society, New York, which is illustrated, as is also that on the New Place.

Practical Sanitary and Economic Cooking Adapted to Persons of Moderate and Small Means. By Mrs. M. H. Abel. A Prize

Essay published by the American Public Health Association.—This is really a small, practical cook-book, which explains carefully much of the chemistry of cooking, and gives in a condensed form a great deal of valuable information about the wholesome and economical preparation of food.

Heath's Modern Language Series. German Literature. By Prof. Carla Wenkebach, of Wellesley College. (Boston: D. C. Heath & Co.)—This is a new text-book of German literature, written in German, and intended for the use of advanced students in colleges and academies. It is intended to issue the work in three parts, covering respectively the periods to 1100 A.D., from 1100 to 1624, and from 1624 to the present time. The authoress has availed herself of the latest result of German literary study and criticism, and we have no doubt that the book will be found of much value by students.

Mechanics. By Prof. Wallace Wright, of Union College. (New York: D. Van Nostrand Co.)—It is a pleasant task to review an excellent mathematical text-book written by a Canadian. Professor Wright has prepared a work on "Mechanics" for the use of students which will bear comparison with the best text-books already issued on the subject, and although he has availed himself of the progress recently made in physical science, he has not fallen into the

mistake of changing for the sake of change. Sufficient attention is given to the practical parts of the subject and a large number of typical examples are introduced. The chapters on "Friction" and "Work and Energy" are especially good. Students intending to take up engineering and kindred subjects will find this book good preliminary work.

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tion of the valuable work done by the editors of the different departments of THE MONTHLY.

We are grateful to the friends of THE MONTHLY who have, from many different places, sent us letters of approval and encouragement, and request their kind assistance in getting new subscribers for 1890.

The Editor will always be glad to receive original contributions, especially from those engaged in the work of teaching.

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