ci-dessous.

L'Institut a microfilmé le meilleur exemplaire qu'il

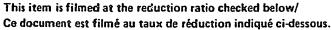
lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue

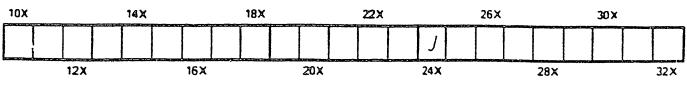
bibliographique, qui peuvent modifier une image

reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

Coloured covers/	Г	Coloured pages/
Couverture de couleur	L	Pages de couleur
Covers damaged/	Г	Pages damaged/
Couverture endommagée	L	Pages endommagées
Covers restored and/or laminated/	Г	Pages restored and/or laminated/
Couverture restaurée et/ou pelliculée	L	Pages restaurées et/ou pelliculées
Cover title missing/	г	Pages discoloured, stained or foxed/
Le titre de couverture manque		Pages décolorées, tachetées ou piquées
Coloured maps/	Г	Pages detached/
Cartes géographiques en couleur	L	Pages détachées
Coloured ink (i.e. other than blue or black	α)/ Γ	Showthrough/
Encre de couleur (i.e. autre que bleue ou i	noire)	Transparence
Coloured plates and/or Allustrations/	г	Quality of print varies/
Planches et/ou illustrations en couleur		Qualité inégale de l'impression
Bound with other material/	Г	Continuous pagination/
Relié avec d'autres documents	L	Pagination continue
Tight binding may cause shadows or disto	rtion	Includes index(es)/
along interior margin/	L	Comprend un (des) index
La reliure serrée peut causer de l'ombre ou distorsion le long de la marge intérieure	i de la	Title on header taken from: /
distorsion le long de la marge interredre		Le titre de l'en-tête provient:
Blank leaves added during restoration may	appear	
within the text. Whenever possible, these	have	Title page of issue/
been omitted from filming/	L	Page de titre de la livraison
Il se peut que certaines pages blanches ajo		
lors d'une restauration apparaissent dans l		Caption of issue/
mais, lorsque cela était possible, ces pages pas été filmées.	n'ont L	Titre de départ de la livraison
pas etc 11111663.	Г	Masthead/
	L	Générique (périodiques) de la livraison
Additional comments:/	ere are some creases in	the middle of pages.
Commentaires supplémentaires:		





THE QUARTERLY;

A Periodical in connection with the Collegiate Institute Literary Society.

Nous travaillerons dans l'esperance.

VOL. V.]

HAMILTON, OCTOBER, 1879.

[No. 3.

NATIONAL CHARACTER.

SECOND PRIZE ESSAY .- BY MISS BALLANTYNE.

T O live in a country such as curs, is a great advantage to the student of human nature, for the composite character of the population enables him to study the peculiarities of many nations every day of his life. It gives him all the facilities which natives of the old world must seek in travel, and it gives them greatly increased, for he can observe and compare at one time, and so not allow each new impression to partially efface the last.

"Human nature is very much the same all the world over," we hear constantly asserted; and beyond doubt it is true. It is not strange, then, that among the endless permutations of likes, dislikes, vices, virtues, habits and so forth, that go to make up character, no two should be exactly alike?

Just as surprising as the fact that no two faces, though made up of the same set of features, are ever precisely the same.

The parallel between physical and mental resemblances goes further than this. In spite of all the changes which time, care, sickness and trouble may mark on our features from childhood to old age the individual stamp remains. And so with character. We do change, undoubtedly, day after day; we change our opinion in small things and in great; we change by our own exertions, and we change against our will; familiarity lessens our reverence for some good things -removes from us something of the feeling of awe with which we regard themwhile, on the other hand, it softens the feelings of abhorrence with which we regard things vile; each new friend, every new place, leaves a mark on our character; we either improve or retrograde-we never stand still, and yet, . after all, we never lose the undefinable something by which we are known. The internal change which day after day and . year after year produces is generally best known to ourselves. To others we are to a great extent the same.

So with families. While a family holds together we should expect to find, as we do, that their dispositions are very similar. But let the members be scattered to the four corners of the world, let them be subjected to as different influences as the world can afford, and yet enough of the original family peculiarity will remain to each to mark the kindred.

This resemblance, whatever it is—for it is as undefinable as the likeness of kindred faces often is—is apt to strike most forcibly on first acquaintance.

As with families, so with nations.

Each nation is made up of good, bad, and indifferent; of wise and foolish; of high and low; and each family and every individual is as different from the others on close acquaintance as blue is different from green. And yet, on first coming among them, there is a sameness which cannot fail to impress us. We feel it, but probably if asked to describe it, we would be puzzled to do This national peculiarity is apt to so. be strongest among the uneducated of a nation, because education by removing prejudices and "notions" tends to assimilate the people of different nations : but it is present in all. It is present in everything belonging to the nation-its laws, its customs, its festivals; it is written in its books and painted on its pictures. It sounds forth in its national music, and is even reflected in its religious observances. It is the spirit of the nation. It is the cord which binds many diverse individuals into one.

It is a deeply interesting study—this study of national character. Beginning with the assumption that human nature is always and everywhere fundamentally the same; to trace its progress through centuries in different countries, and mark the effects which surroundings, and events, and customs springing from these have produced; to connect with the luxuriant vegetation and burning. skies of the south, the indolence, the impatience, and the fire in temper and imagination of its inhabitants; and to see in the more reluctant fruitfulness and cooler climate of the north, reasons why its people should possess more industry and more perseverance, give less time to things imaginary and more to things practical than their brethren of the We never look in vain for natsouth. ural surroundings which are "emblems of deeds that are done in their clime."

These things teach a useful lesson to human pride; they bid us be cautious how we glory in what we are, or condemn others too severely for what they are.

That each nation should prefer its own | style of living and style of thinking, is

Sales See

most natural. A Canadian cannot have the same habits as a West Indian, and different habits give rise to different passions and feelings. But why on this account one should consider himself essentially better than the other, is certainly not so clear. That each should love his own country dearly—love her first and best—is not only natural, it is just and right. But that this should lead to a disdain of other countries, is surely not logical. We cannot help thinking that this love of country has been too indiscriminately lauded; that spurious imitations have passed current for the real coin.

Love of country is itself a pure, a holy feeling, as is self respect. But that love of country which leads to contempt of other countries-to a disregard of the rights of other countries—this is allied to selfishness, to self conceit. And no one who examines history can fail to observe that much of this latter feeling has been worshipped under the name of patriotism. It cannot be right to do for one's country what it would be wrong to do for oneself. And who would dream of glorifying the man who, in his eagerness for his own advancement, utterly ignores the most obvious rights of others ---who is unwilling to give up the smallest part of his own rights for the general good-who connives at anything, no matter how wrong, for the furtherance of his own interests. No one, surely!

Yet Kossuth, that much lauded patriot, has left his own words as evidence of the metal of which his patriotism was made —and he is very far from standing alone—"I would praise anything, forget anyone, to help Hungary." If to be a patriot is not incompatible with being a Christian, the patriot must not forget the Christian's rule of conduct: "Do unto others as you would that others should do to you." We are not without examples of men who, when contending for the rights of their country, when giving most indubitable proofs of their love for her by laying down fortune, health, life, for her sake, yet never forgot that the freedom,

the justice they sought for their own was equally the right of every nationevery man under the sun; who never, by their deeds against justice, gave the lie to the words with which they asserted they sought her. Washington was one of these noble men whose sentiments and whose actions make them worthy to be the pride, not of one nation only, but of all nations. Wendell Phillips says of O'Connell-and surely no truer patriot ever breathed-that he made it a rule never to refuse his help to any rightful cause, though his own might for the time seem to be compromised by his action. After he had obtained his seat in Parliament, and was struggling against every kind of prejudice, and with scarcely any help to obtain the emancipation of his countrymen from the disabilities under which they labored, he was offered the votes of the twentyseven members who were then vehemently opposing the contemplated emancipation of the West Indian slaves, if he would in turn give them his support. He replied, "Gentlemen, God knows I am here in the cause of the saddest people whom the sun sees; but may my right hand forget its cunning, and my tongue cleave to the roof of my mouth, when to help Ireland-even Ireland !-I forget the negro for one single hour." Noble words! and worthy of a true patriot. National bigotry has blemished the records of the most enlightened nations of old. The principles of right and justice were applied only within their own borders; once beyond them, and those principles were discarded or The reversed. Greeks had such a contempt for outsiders that they would not even learn their languages; they regarded them as inferior beings whose rights it was quite unnecessary to respect.

Though not so unhesitatingly avowed, national bigotry exists to-day as it existed centuries ago.

In' the wars between France and Germany, between Russia and Turkey, just as in the wars between the Dorian and Ionian, or between the Aryan and and Semetic of old, we find the hatred of races far stronger than the love of the principles for which they contend, stronger than love of country or even than love of freedom, nerving the soldiers to deeds of reckless daring in battle, and inciting him to acts of the most wanton, the most fiendish cruelty in victory. Though we see its effects most strongly in time of war, it is not then alone that it exists. Indeed to it may be attributed, in past at least, more than one war which history records.

How irrational and how mischievous the feeling is, must be plain to anyone who studies the question. It is irrational because we should not dislike people for qualities which they possess almost of necessity, and because they are probably just what we would have been in their place. It is mischievous because certainly no one nation monopolizes all the good qualities of nature, and by giving way to an unreasoning prejudice against those unlike ourselves, we prevent ourselves from being benefitted by their estimable qualities.

But though its disadvantages in old countries are neither few nor small, here in Canada it has more and worse ones. It is still more irrational, for from whatever spot we come, once settled here we are all Canadians, and have, therefore, a common country whose welfare is ours. It is more mischievous because it prevents all parties working together for one end -the good of our country-and from benefitting by intercourse and interchange of ideas. That the feeling should be fostered here, then, is not only unwise, it is wicked, it is insane. The physical boundaries, the "mountains," are removed; a thousand times let the moral mountains be swept away also, that the many different elements of which our people is composed may, "like kindred drops, be mingled into one!" God speed the happy day when this shall have been fully accomplished!

[&]quot;Mountains interposed, make enemies of nations Which had else like kindred drops, Been mingled into one."

It is a grand country, "this Canada of ours." Nature has been very generous in dowering it. She has given it beauties unsurpassed by any other country—lakes, hills, streams, majestic rivers, fairy-like islands-charms as diversified as the people who dwell amongst them. She has given it a healthful climate, and unrivalled sources of wealth—fertile soil, wide-spreading forests, mines, quarries, teeming waters. And we have the finest government under the sun. May the people be worthy of their glorious country! What a magnificent nation would we be, could we, out of all the elements which go to form our nation, glean all the good, and leave all the bad.

The formation of our national character is going on every day. We are all taking part in it. Let each do his part well, and all will be well done. If we resolutely free ourselves from all narrow prejudices, look impartially on each different nation, and learn a lesson of good both from its virtues and its faults; if we never hesitate to recognize good and imitate it wherever we see it, never hesitate to root out a fault or forsake a foolish custom, though it were tenfold a national vice or a national custom, we will be doing our part well.

Thanks to the paternal provisions of our government, Canadians have the means of becoming an educated people, and an educated people should be free from petty prejudices. If it is too much to expect that all should rise to the mental eminence necessary to see those prejudices in their true light, at least it is not too much to expect that those whose learning and position enables them to influence others should never give countenance to anything which tends to perpetuate or glorify them. So shall they be reckoned among the benefactors of their country, for "He who rooteth out one vice is greater than he who conquereth provinces."

[WRITTEN FOR THE QUARTERLY.]

CONVALESCENT.

A FRAGMENT.

'Twas near the entrance of a forest walk-Where tow'ring oaks, with ancient branches balk The curious glance, that vainly seeks to spy, Through leafage green, some glimpse of laughing sky. In fair Italia's clime the scene is laid. And many a rood around, the view display'd Is one of passing beauty. On the height, On which we stand with wond'ring gaze, the sight Is wooed and ravish'd by the gem-like green Of vernal-vested earth, ere yet the sheen Is tarnished, of the leaves, by Summer's heat, And pass'd away in Spring's young joyance sweet. Beneath our feet lay spread the broad champaign, As fair and smiling as in Chronos' reign. The broad expanse of rolling landscape showed Far hamlets dun and strips of winding road ; The awakened sun-god, new-refresh'd from sleep, Enhanc'd the blue of Air's abysses deep ; The gentle West-wind sent his softest breeze. To wake the birds and whisper through the trees.

б.

CONVALESCENT.

The dim extreme of this long leafy aisle Reveal'd to view a time fray'd castle-pile; Oaks' massy boles the long approach command, Like brother giants linked hand in hand. The castle, partly ruined, had been rear'd By the Visconti in whose line appear'd,. Through many ages, names of truly great, Their country's weal who wrought in craft of state; Who many a meed for daring valor earn'd, Nor e'er from foe in dastard flight had turn'd. From sire to son their pride was handed down, Ancestral honor, prized beyond a crown. At length arose a son who brought not fame, But black disgrace to that unsullied name; In foreign clime, a broken wretch he died, Nor wife, nor friend, nor stranger at his side.

This wooded alley's mouth, where pour'd the sun Through emerald leaves on greener sward, shewed one So fair, so fragile, that the wind might seem To bear her sky-ward, bosom'd in its stream. Upon a couch she lay, by servants care To this spot mov'd to breathe the balmy air; Her form was wrapp'd in costly fabrics' fold, That jealous clung, as loth to leave their hold. Seen dinting soft the pillows' snow, her face Reveal'd in every feature dreamy grace; 'Twas framed by rings and tendrils of soft hair, A wealth, a glory, gleaming, wond'rous rare. Her gladden'd gaze was fix'd on tender skies, Whose dark sweet blue was mirror'd in those eyes-Great wistful, starlike eyes, that ever grew More calm and steadfast as the Heaven's hue. Her cheek and brow were ting'd by rosy light With more than earthly radiance, strangely bright. Delicious languor steeps her every sense, The convalescent's grateful recompense, For season long of fever's anguish borne-Nor slumber came at eve nor rest at morn. Long had she tarried at the gates of Death, Now slow return'd she but with cautious breath, As from a cavern dark to upper air, With wild flowers, sweet and dazzling sunlight, fair.

Keloios.

LETTERS FROM ROME.

From James K. Lawson, a former Student at this School, who is now studying Art in Rome.

ROME, Aug. 20th, 1879.

We are at last in Rome, in the best of health, and hopes as high as the dome of St. Peter's. I was as glad to get rid of New York as I was anxious to see Rome, for in New York I had the fever and ague for three days, which returned again with the fog off the banks of Newfoundland. The ship's doctor gave me quinine which cured me. After ten days on the water we sighted the north of Ireland, and enjoyed the beautiful scenery from 5 o'clock till sunset. We arrived in Greenock next morning at 5 o'clock, and had to spend three hours in the dirty, drizzly hole before we got the train for Glasgow, the boat being too heavily laden to go up the river. The Anchor Line Co. in Glasgow sent us to the Anchor Line in London by the Midland Railway. From what we could see of the scenery, the Scottish is exquisitely beautiful, and far surpasses the English. We stopped a short time in each of the large cities, and arrived in London at 11.30 P. M., stunned, dizzy and tired, as if we had dropped from the clouds into the midst of Bedlam. The lodgings cost od. each for the night. On Thursday morning the Anchor Line Co. gave us our tickets for Rome. The rest of the morning we spent in seeing the sights. London Bridge we crossed twice, taking in the Thames, Shipping, Royal Exchange, St. Paul's and the curious old monuments, and the magnificent new ones.

Whom do you think we spent the afternoon with? Turner, Rubens, Rembrant, Raffaele, Michael Angelo, Claude and other great painters, in the National Gallery. Turner is a greater genius than ever the greatest stretch of my imagination made him out to be. It is impossible to describe one of his pictures, or the feeling which comes over you when you look at one of them; and, I think, after looking at the two pictures by Claude and Turner for about an hour, (which appears to me like a short and beautiful dream,) that although Claude's is faultless, Turner's picture is far superior to it. I will not attempt to describe any of the other pictures, but leave it to your imagination.

London we left at 8 o'clock at night for New Haven, where the boat left for Dieppe at 11 o'clock, and occupied seven hours in crossing the Channel, which is wide between these points. One hour in Dieppe, two-and-a-half hours in the train, and we are in Paris, the beautiful city to get lost and bamboozled in., However, after a good deal of fumbling and floundering, we found an omnibus which took us to the right station, having, at the same time, a splendid peep at Paris from the top of the 'bus, during an hour's ride with about twenty soldiers. Saturday night we slept at Macon, Sunday night at the beautiful port of Genoa, Monday night in Pisa, Tuesday night in Rome, where we fell in with a half Englishman who next morning volunteered to be our guide; he took us to one of the gardens which lie round inside the great walls of Rome, where we had a beautiful view of the city; he then led us to St. Peter's. Its beauty no man can describe. Our "Tallian" then took us to some of the Sculptors' studios; there are whole streets of them, and the artists are very kind and polite people. Cardwell, a grand old English sculptor, a fine old man, gave us lots of advice and information. The Academies are free, but none of them will be open till October 1st, being closed on account of the heat. The artists are all fled, but

the heat does not affect me as much as Hamilton heat. The climate is just the thing for me. Well, after our excursion among the Sculptors, we set out to look for a room. The Italian was well posted in the business, and after a thorough search, he found us a decent room, two beds and all the furniture for 19 francs (\$3.80) a month, (after beating down the landlady), with use of kitchen, pots, pans, etc. We can live on about 12 or 15 cents per day at present, but when I sell some pictures we will go in for a few luxuries. I will be at work in a day or two, when I get settled on some sketches of St. Peter's, Fort St. Angelo, etc., on the muddy Tiber.

Yours affectionately,

JAMES KERR LAWSON.

ROME, Aug. 21st, 1879.

In continuance of my last letter, which was penned in as much hurry as I do this, (somehow or other I have been in a hurry ever since I landed in Rome), I will try to tell you something more sensible and definite than in my last. We are now in very comfortable quarters, with a couple of beds that a prince might sleep in. The landlady is a very kind and decent woman. The next room is fitted up for a painter's studio, and will be occupied as soon as the weather becomes cooler—then all the English and

French painters flock back to Rome. The Academy doors will be thrown open, and I will be in Elysium. In our neighborhood there are whole streets of studios. The British and French Academies and Sistine Chapel are also in our neighborhood. There is also a beautiful public garden of immense size, full of busts and statuary, which commands beautiful views of different parts of Rome. There I have been the last two mornings, from six until it gets hot, making a drawing of the Vatican which is about two miles off. There are many other magnificent pictures to be seen from this point, and I will be engaged at them every morning for some time to come, and when I get a pad for water-color paintings you will have all the pictures you want and perhaps some to sell. 'Yesterday Dand I found our way to the Colliseum; I will not tell you what it is like-I cannot-but I will send you a picture of it. The heat, while we were there, was terrible, and we were glad to take shelter in one of the lion's dens or dark cells where the victims were kept of old, where the echo of your voice is like the groan of a dying man. I will write no more now, but in some future letter I will make you all hold up your hands in holy horror when I tell you how we were mobbed in Pisa, and how the military turned out to our rescue. I will write again shortly, and send some sketches.

Good-bye for the present, my love to you all.

Yours affectionately,

JAMES KERR LAWSON.

THE KINDER GARTEN.

THE system of home and school education, known as the Kinder Garten (childrens' garden), has been formerly described in the "Leisure Hour." As several inquiries have been made on the subject, and as the system is about to be grafted on some of our Board schools, we give a few more words of explanation by one of the earliest pupils of Fröbel, who is generally reckoned the founder of the system.

Physical education or bodily culture must always be at the basis of every proper system of training. Taking physical education as the first step or foundation on which to build, Fröbel invented a number of games which should exercise, in the form of play, all the limbs and muscles of the body. These games have been borrowed from Germany, but since the wide spread of the system, many others have been invented on the same principle, and with the same object; and as English children naturally prefer English games in thought and feeling, as well as language, we can indulge them in this respect. While affording healthy and cheerful exercise to the muscles, all the games have songs set to music, which the little ones sing as they play, and great care must be taken by the teachers to observe that every movement should be in order, and in exact time to the music.

Perceiving that even babies, as soon as they begin to notice the things around, require some plaything in their little hands. Fröbel began his system of education at the very foundation, and gave the infant toys which he should be induced to think about as he grew older.

The first toy used in the school-room for children above three years of age, is a cube divided into eight smaller cubes, contained in a box which it closely fits. With this the little ones receive their first definite lesson in form, number, order, and construction. They learn addition, subtraction, multiplication, and division by having the actual objects before them. They learn to distinguish the cube from other forms around, to notice the lines and angles on its faces, to distinguish the perpendicular and horizontal lines, to build a vast variety of forms of use and beauty with their eight small cubes, and also to embody their own ideas in some definite form, instead of following the teacher word by word and without thinking for them-For after directing them for selves. some time, the teacher should allow her pupils to build as they like, merely pointing out any defects in the order of construction, or want of accuracy in form, which may strike his experienced eye in the wonderful things she will be called upon to admire.

Another plaything is then given, a cube divided into eight oblongs. The same lessons can be imparted with it, and it also affords many more facilities for making numerous forms and figures.

The next toy is a much larger cube divided into twenty-seven smaller cubes, three of this number being divided across from corner to corner, each into two triangular pieces, and three more being divided into four triangular pieces. This toy enables the pupil to extend his lessons and building operations and construct his houses, churches, and other objects of use and beauty, in a more perfect form.

A still more advanced toy is a box containing a cube divided into twentyseven oblongs instead of cubes. Of the twenty-seven oblongs in this box, three are divided lengthways, each into two parallelopipeds, and three others cut each into two squares, being half of the oblong. It will be perceived that these gifts bring the child step by step from the first rule in arithmetic gradually on to the extraction of the square and cube root, and decimal fractions. In geometry, from the simple 'ball, cube, and cylinder, he learns to make and become accustomed to the most intricate and complicated geometrical forms; and that, teo, without any forcing or undue strain or pressure on his memory, but by constantly using and becoming accustomed to them in his daily work. In construction, also, he goes step by step, from the effort of placing one brick to stand upon another till he builds his houses, monuments, churches, and embodies with facility his ideas on any mechanical subject.

and the second state of th

I now turn to the Kinder Garten employments, which I would have the reader bear in mind are purely educational; and though the child of tender years does not perceive this—and indeed, knows nothing about it, but simply, under the stimulus of an awakening energy which impels attraction, is perpetually doing something, still it is the duty of the teacher to comprehend everything, and, above all, to get some insight into the meaning of the child's play, and to give it useful direction.

Fröbel maintained as one of the principles on which his system was based, "Play is the work of the child," and those who have sat down cauly to study the plays and occupation of children, with the conviction that there is some deep meaning in their little games, which they extemporise themselves, will have been struck by the fact that all their conceptions are ideal, and that they always play at what they are not, and not what they are. Sometimes they act as though they were men or women; one will be mamma, another papa, another grandmamma; at other times they pretend to follow various trades and professions, and every occupation, from the minister to the costermonger, will be personified. Again, they are horses, dogs, sheep, bullocks, as the whim of the moment inspires them, then look at what they are attempting to do-they will keep a school, build a house, attempt every variety of cookery, and practice any or every trade; but all |

this time they are labouring under the same ideal impression, and are attempting to be what they are not.

What, then, is it that the child is doing in all this? He is exercising at the same time the body and the mind, and is educating himself in life's essential lessons. I have already spoken of the purpose of physical exercise, but in play the child is receiving a mental training scarcely inferior. The Kinder Garten simply gives a fixed and definite purpose to this restless and wandering action. We give full vent to the child's ideality or imagination ; but with us he learns the value of mathematical accuracy, and acquires what we may call ability. Size, form, order, proportion, and relation, are ideas which he insensibly acquires in some of the employments which I will briefly enumerate.

The first employment we will glance at, more from the fact of its being the most simple, and a sort of introduction to what will follow it, than from the interest attached, is stick-laying. This is exceedingly easy. A number of pieces of stick, three or four inches in length, like the round lucifer matches, before being dipped, are given to each child, and the mother or teacher with them can direct the little ones to make the various kinds of geometrical lines—the angles, triangles, squares, and all the straight letters of the alphabet. In addition to this very pretty stars and the outlines of figures and patterns can be laid out on the table with a number of these sticks. but it must never be forgotten that as soon as the children have learned how to use their new toy or employment they should be allowed free use of it if only for five or ten minutes at a time, the teacher simply giving a word of advice when she considers it necessary.

Pea-work, to which stick laying is an introduction, is likewise made with the round undipped lucifer-match sticks. They can be obtained at almost any German toy warehouse, about a yard in length, and can then be broken, and the

II

ends pointed, any size required.

In addition to the sticks, some common yellow peas soaked in cold water twelve hours, so that they may be softened and swell, must be ready, and slightly rubbed in a soft dry cloth before commencing work. With these simple materials all sorts of objects can be constructed, and they afford more varied and lasting as well as cheaper amusement than purchased toys. Ready-made toys are usually in favour only for a very short time, and are often broken just to find out how they are made, if not out of sheer destructiveness. Fröbel advised that children should make their own toys, and in constructing them exercise their invention and skill. What they make themselves they are more likely to protect and preserve than to destroy.

Lessons in modelling come next. The best material for the purpose is common modelling clay, two or three pounds of which can be obtained for sixpence at any modellers shop; besides this a modelling knife of hard polished wood is wanted, about the size of a lead pencil, flattened at one end and the edges sharpened and the other end rounded down to a point. A small piece of oil cloth and a nursery pinafore are quite sufficient to protect the rest of the dress from the white dust which, however, will easily brush off from any material on which it may happen to fall or come in contact.

Having the plastic clay before her, the teacher should give a lump to each of her pupils, telling them to roll it into a round ball. This should always be the first step as anything can be made from the ball more readily than any other definite form, and a starting point, especially with children, is always necessary.

Modelling supplies what the peaworks lacked. With the latter employment the outline or skeleton of a building or anything of the kind could be made, but in modelling there is more substance and reality, and it enables the pupil as soon as proficient to model birds, vases, or imitate any solid form.

Our next employment is mat-making or paper-plaiting, a most interesting and favorite occupation, especially with little girls. The mat is a piece of colored satin paper, perpendicular cuts being made in it at equal distances, but leaving a margin of nearly an inch on all sides of the square, so that a frame is left which holds it together. Strips of the same kind of paper, but of a different and suitable color, are passed in the slit at one end of a long thin piece of wood, called the mat needle, and the needle is worked through the mat, taking one strip up and going over the next, till half are over, and the other half under it. The needle is then taken through on the opposite side of the mat, from which it entered, and the colored¹ strip drawn after it, until it crosses the mat, when the strip is retained, and the needle drawn away. This is repeated until the mat is full of strips, the second row always taking up what passed over, and going over what was taken up in the preceding row. When full the ends are pasted down at the back of the mat, and it is complete. This is the first and most simple form. But an endless variety of patterns can be invented, and any crotchet pattern copied, from the fact of the mat being formed of squares.

In addition to the above, we have paper cutting, paper folding, and paper plaiting in other forms, but as this system of education must be seen in practice to be fully appreciated and understood, I will simply observe that we teach writing and reading on the same principle as we instruct our pupils in other branches of education. In learning to read, the little ones have first of all colored pieces of card board of various sizes, some of them halfcircles, given to them; with these they learn to make their letters, and so master the alphabet, and begin to spell the first simple words. As an advanced step, they have ready-made letters, with which they receive spelling lessons; after this they read in books.

In writing and drawing, a child proceeds in the same manner. One side of his slate is engraved with squares of about a quarter of an inch. Over these he learns to draw his pencil over one, two, three, or more squares, and gradually acquiring the use of the pencil and pen, learns to write and draw.

It will be observed that the same principle pervades everything in this system of training, developed from a very simple, but purely mathematical basis. The child is gradually induced to develop his faculties, *not forced* to do so. The principle is to turn to systematic and progressive use the otherwise random and wayward activity of childish play. The system will be found equally practicable in the nursery or

public school-room; and all mothers who have the welfare of their little ones at heart would do well to become more fully acquainted with it, if they have not already tested its value, whether for bodily exertion or mental dicipline. I need scarcely add, that even in regard to higher moral training the system can be turned to good account. The hymns which form so important an agent in early religious training are more readily and pleasantly impressed on the memory when sung to cheery music in genial companionship than when painfully learned in silent and solitary study. But this was familiarly known in infant and juvenile English schools, before the German Kinder Garten was heard of .---Leisure Hour.

THE BENEDICTION.

(From the French of Francois Coppee.)

It was in eighteen hundred-yes-and nine, That we took Saragossa. What a day Of untold horrors! I was Sergeant then. The city carried, we laid siege to houses, All shut up close, and with a treacherous look, Raining down shots upon us from the windows. " It is the priests' doing !" was the word passed round ; So that although since daybreak under arms-Our eyes with powder smarting, and our mouths Bitter with kissing cartridge-ends-piff! paff! Rattled the musketry with ready aim, If shovel hat and long black coat were seen Flying in the distance. Up a narrow street My company worked on. I kept an eye On every house-top right and left, and saw From many a roof flames suddenly burst forth Colouring the sky, as from the chimney-tops Among the forges. Low our fellows stooped, Entering the low-pitched dens. When they came out, With bayonets dripping red, their bloody fingers Signed crosses on the wall; for we were bound In such a dangerous defile not to leave

ÌŻ

Foes lurking in our rear. There was no drum beat, No ordered march, Our officers looked grave; The rank and file uneasy, jogging elbows As do recruits when flinching.

All at once, Rounding a corner, we are hailed in French With cries for help. At double-quick we join Our hard-pressed comrades. They were grenadiers, A gallant company, but beaten back Inglorious from the raised and flag-paved square Fronting a convent. Twenty stalwart monks Defended it—black demons with shaved crowns, The cross in white embroider'd on their frocks, Barefoot, their sleeves tucked up, their only weapons Enormous crucifixes, so well brandished, Our men went down before them. By platoons Firing, we swept the place ; in fact, we slaughtered This terrible group of heroes, no more soul

Being in us than in executioners. The foul deed done-deliberately done-And the thick smoke rolling away, we noted Under the huddled masses of the dead Rivulets of blood run trickling down the steps ; While in the background solemnly the church Loomed up, its doors wide open. We went in. It was a desert. Lighted tapers starred The inner gloom with points of gold. The incense Gave out its perfume. At the upper end, Turnel to the altar as though unconcerned In the fierce battle that had raged, a priest, White-haired and tall of stature, to a close Was bringing tranquilly the mass. So stamped Upon my memory is that thrilling scene, That, as I speak, it comes before me now-The convent built in old time by the Moors ; The huge brown corpses of the monks ; the sun Making the red blood on the pavement steam ; And there, framed in by the low porch, the priest; And there the altar brilliant as a shrine ; And here ourselves, all halting, hesitating, Almost afraid.

I, certes, in those days, Was a confirmed blasphemer. 'Tis on record That once, by way of sacrilegious joke, A chapel being sacked, I lit my pipe At a wax candle burning on the altar. This time, however, I was awed—so blanched Was that old man!

"Shoot him !" our Captain cried. Not a soul budged. The priest beyond all doubt Heard ; but as though he heard not. Turning round, He faced us, with the elevated host, Having that period of the service reached

When on the faithful benediction falls, His lifted arms seemed as the spread of wings; And as he raised the pyx, and in the air With it described the Cross, each man of us Fell back, aware the priest no more was trembling Than if before him the devout were ranged. But when, intoned with clear and mellow voice, The words came to us,

Vos benedicat

Deus Omnipotens !

The Captain's order Rang out again and sharply, "Shoot him down, Or I shall swear!" Then one of ours, a dastard, Leveled his gun and fired. Upstanding still, The priest changed color, though with steadfast look Pater et Filius !

Came the words. What frenzy, What maddening thirst for blood, sent from our ranks Another shot, I know not ; but 'twas done.

The monk, with one hand on the altar's ledge Held himself up; and strenuous to complete His benediction, in the other raised The consecrated host. For the third time Tracing in air the symbol of forgiveness, With eyes closed, and in tones exceeding low, But in the general hush distinctly heard, *Et Sanctus Spiritus !*

He said ; and, ending -His service, fell down dead.

' The golden pyx Rolled bounding on the floor. Then, as we stood, Even the old troopers, with our muskets grounded, And choking horror in our hearts, at sight Of such a shameless murder and at sight Of such a martyr, with a chuckling laugh, Amen !

Drawled out a drummer-boy,

ANNOTATED ENGLISH CLASSICS.

ANNOTATED ENGLISH CLASSICS.

THE introduction by the Department of Education of the study of the great English classics into High School and Collegiate Institutes, is a measure that requires no apologists. Its advantages are too obvious. It is patent that the systematic study of the master pieces of English literature ought to have a refining and elevating effect on the student, enlarge his powers of expression, and give him a correctness of. thought and a just appreciation of the graces of style, an appreciation which he would not otherwise acquire. Yet, without detracting from the value of this study, it may be conceded that its results have as yet scarcely equalled the expectations formed regarding them. It may be that no great acquisition of taste, critical perception of beauty, or command of the difficult art of composition is to be expected from the slight attention devoted to this study by intermediate pupils. It is true that by the enforced perusal of the work, a certain degree of proficiency may be obtained for examination purposes; yet the fact remains that contrary to expectation no great advancement has been made in the direction already referred to. The chief cause, no doubt, is the imperfect character of the annotated English classics with which our schools have been supplied.

Literature is a fine art, and it requires to be studied like one. Let a person unskilled in painting, for example, be requested to criticise a painting by one of the great masters, and though he may recognize its wondrous beauty, he will be utterly unable to state to what it is due. Let him be required to publish his criticisms, his crude thoughts concerning it, and then his work will bear no very remote resemblance to that of the majority of the annotators of our text books in English; or rather, that a student of English literature will obtain

as much assistance in his study of the subject from the last mentioned source, as the student of painting would from the first. A student may be struck by the peculiarly happy effect of a certain passage; he is unable to state whether it is due to the melody of the versification, the rhythm of the language, the polish of the diction or the beauty of the thought. He requires to be trained to a critical appreciation of the many elements that enter into good literary work. And it is here that he fails to obtain assistance from our Annotated Text Book. And what is the character. of these text books? Confessedly in the majority of cases their notes form a sort of hodge-podge in which we intermingled a little history, a little geography, and a great deal of In the opinion of some derivation. annotators it would appear that the best method of directing attention to felicities of diction and graces of style is through the medium of Chambers's or Wedgewood's Etymological Dictionary. No benefit can result from time spent in learning such notes as the following which we find in a recent work :--

"Vaulted: O. Fr. volte and vaulte; N. Fr. voite; L. Lat. voluta, volvere (to roll); Gr. $\mathcal{E}idv\mathcal{E}iv$ the root presenting the idea of rotundity."

"Pioneers: Fr. pionnier from pion (a foot-soldier), Sp. peon, It. pedone from L. Lat. pedonem (L. pes pedis a foot)."

"Spade: A. S. spadu; Lat. spathu; Lat spatha; Fr. epée; O. Fr. espee." Candidates for second-class teachers' certificates have no doubt felt duly grateful for the editor's researches into Greek, Low Latin, Latin, Italian, Spanish, French, Old French, Anglo-Saxon, &c.

Let us refer to one more example from another source:—"Array from Fr. *arroi* which is either a hybrid word from ad and Teutonic rat, counsel, help, or from Low Lat. arraia from Ger. reihe a row;" a conclusion extremely edifying to the anxious student. Numerous other instances might be adduced but for the want of space.

The meaning of the author is left by some annotators in its original obscurity, others have devoted too much rather than too little attention to it. One especially has given a paraphrase of great literary merit of the author's text. But nothing can justify notes of the following kind :- "Depopulation : the act or process of unpeopling a place, depriving it of inhabitants useless, producing no good." "Raptures, violent feelings of pleasure when 'the soul is raised to flame,'" one deems it necessary to comment in this fashion : "True to imagined right i.e. holding firmly to what they consider to be justice and maintaining their rights." In the next line of the text we have "the peasant boasts these rights to scan," which is expatiated on as follows: "Scan, examines carefully not only his own rights but also those which others claim, and boasts that he has the right to do so." We would be sorry to entertain so low an estimate of the reasoning powers of the students for whom these notes are written as the editor seems to do.

Time will not permit us to notice some of the misconceptions of the author's meaning to be found in some of these annotated editions.

Grammatical inaccuracies are very generally, and indeed very properly referred to, by the greater number of editors. One especially deals almost solely with the grammatical analysis of the author's language, and his notes abound with references to his own text book on English Grammar, for which these notes serve as a kind of advertisement.

A more ambitious style of annotating is encountered in a comparatively recent work. The notes in it bristle with words of "learned length and thundering sound," terms such as construction Pros To Semainomenon, pregnant construc-

tion, construction louche, &c., and the often repeated names of the various figures of speech. No literary training can be derived by young pupils from the use of such terms unless they are very carefully explained by the teacher. specialty appears to be made of the figures of speech. No fault could be found with this if the province of each figure were fully explained : instead of that we meet with a remark of this kind " Note POLYSYNDETON. What is the effect of the figure?" Precisely what the pupil wants to know, and what frequently he has no means of ascertaining.

Nothing more need now be said to point out the defective character of the annotated text-books heretofore used in our schools. They devote too much attention to mere verbal analysis, and are lamentably deficient in acute critical research into the sources of an author's weakness and strength, the merits and demerits of his style.

It will readily be seen from the foregoing remarks what an annotated textbook should be. The day has gone by for any one who may be the happy possessor of an etymological dictionary, a few school histories and geographies, to sit down and calmly elaborate notes that are not so much calculated to assist those in perplexity as to sell. An annotated text-book should not be a repository for the useless lumber of the philologist, the derivation of only such words should be given as would illustrate some definite principle. Grammatical inaccuracies should be pointed out; and parallel passages might be given to illustrate the most striking thoughts. The meaning of the author where liable to misconception should be briefly made Rhetorical forms when pointed clear. out should have the causes to which they owe their peculiar effects fully explain-Brief explanatory notes on the ed. proper names may be given : but above all an attempt should be made to point out the beauties and defects of the author's style, to apply the canons of criticism to the passages under con-

sideration. This is a faint outline of some of the principal features that should characterize an annotated textbook. We may remark that a good opportunity for the production of a work of this nature will be afforded next year when Scott's "Lady of the Lake" will be read for the Intermediate University, and First-class Teachers' Examinations. The edition that has been most extensively used heretofore, is that of Taylor. From the preface of this work, we learn that it is one especially intended for junior classes, and however admirably adapted it may be for these, it cannot therefore be so well suited to meet the requirements of students preparing for higher examinations. We hope to hear of some one who will take the trouble to edit such an edition of the "Lady of the Lake," as will be a credit to Canadian scholarship, and a boon to teachers and taught.

WHERE GENIUS FINDS INSPIRATION. ---It is told of Mrs. Siddons that one day, as she was passing in her carriage through St. Giles's, she saw two Irish vixens indulging in a struggle that was a more common sight in the great actress's time than in our own. The tragedienne ordered her coachman to stop, much to the amazement of the lady who was her companion on the occasion. The performers of this grand combat continued their conflict without taking heed of who was or who was not looking on at their exertions. At last. equally mauled, very much disfigured, and exceedingly out of breath, the Milesian viragos had to leave off from Upon this the positive exhaustion. majestic Sarah directed her servant to "You are astonished," she drive on. said to her friend, "at my stopping to witness a vulgar street brawl. I have never been satisfied that I had exactly caught the true facial emotion for Lady Macbeth, when she talks of dashing out the brains of her babe. Now, one of those women, in threatening the other, struck me as having exactly the expression required; and I am determined to try it to-night, as I have to play the character." She did, and the effect was electric.

GRAY'S "ELEGY." - The scene of Gray's beautiful "Elegy on a country churchyard" has been much controverted, but it is settled by the following statement, in vol. III., page 49, of the edition of Gray's Poems by Mason, published in 1778, viz: "That being on a visit to his relations at Stoke, he (Gray) wrote that beautiful little ode which stands first in his collection of Poems. He sent it as soon as written to his beloved friend Mr. West, but he was dead before it reached Hertfordshire." To which is added : "This singular anecdote is founded on a marginal note in his common place-book, where the ode is transcribed, and the following memorandum annexed : "Written at Stoke the beginning of June, 1742, and sent to Mr. West, not knowing he was. dead !" Rogers thought the stanza which Gray threw out of his Elegy better than some of the stanzas he retained. Here it is, and most persons will agree with Rogers :---

"There scattered oft, the earliest of the year, By hands unseen, are showers of violets found ; The redbreast loves to build and warble there,

-And little foot-steps lightly print the ground."

SENIOR LITERARY SOCIETY.

THE QUARTERLY.

Nous travaillerons dans l'esperance.

HAMILTON, OCTOBER, 1879.

OFFICERS OF THE "QUARTERLY."

Principal Editors, .	}	MR. H. SUTHERLAND, MR. A. LAWSON, MISS J. WOOD,
Educational, Mathematical, Poetry,	MR. MR. MR.	MISS A. GROVER. J. E. ARMSTRONG. G. Ross. A. MACMECHAN.
	MR.	H. R. FAIRCLOUGH. W. B. Willoughby, A. MacMechan.

SENIOR LITERARY SOCIETY.

Once more we have the pleasure of assuring the public through these columns that fortune still smiles as kindly as ever on our Literry Society. Good feeling among the members individually, and a hearty appreciation of the benefits derived from our weekly meetings, con tinue to be, as in the past, the chief source of our unviried success as a society. The quarter just elapsed has been exceedingly shirt owing to the fact that no meetings de held during the summer vacation; jevertheless, in respect of work don and entertaining programmes, it has fully equalled the corresponding quaters of other years. Owing to the amount of business on hand, we have beth obliged to call one special meeting and postpone one programme of entertainment.

During the quater, several of our most prominent members who have been the main stay of the society for years, have left us to pursue their advanced studies in he various Universities of the Domnion, but while we regret their loss we are proud to know that they have al won honor and distinction for themselves in whatever course of studi they have pursued. And we are prod to know, also, that whatever success they may attain to in after life, they will always retain a kindly remembrance of the many happy hours spent at our society meetings.

Some people are disposed to regard the time spent in Literary Societies as lost. This opinion, we are sure, is formed without reflection. For although an education is generally supposed to be derived from books, yet such an education, if it may be so called, is of very little use to a person in society, if he has never learned how to impart it for the benefit or pleasure of those with whom he associates. In our Literary Society the members learn both how to make use of the knowledge they are daily gaining, and at the same time acquire a refined taste and appreciation of good literature. Hence it behooves students, above all others, to embrace the advantages offered by our Society. The recreation (in its real sense) will amply repay them for the short time they may spend at the meetings.

During the coming winter it is probable that we will present to the public more than one Musical and Literary Entertainment, and when we do so, we have every confidence of our ability to win the favor of a Hamilton audience as we have done hitherto.

The officers elected for the next quarter are:—

President, -	-	Mr. George Kapelle.
ist Vice-Pres.,	-	Mr. R. Little.
2nd " -	-	Miss M. Stewart.
3rd " -	-	Miss Grover.
SecTreas., -	-	Mr. H. R. Fairclough.
Counsellor,	-	Mr.W.B.Willoughby.

JUNIOR LITERARY SOCIETY.

At the opening of another quarter, we are glad to record the general prosperity of our Society. Some of the earnest working members of the last term have left the school, but those who have hitherto been spectators now signify their intention of assisting us to promote its welfare.

Though it seems at first sight some-

what of the nature of a paradox, yet it is not the less true, that to no class of the community are these societies more beneficial in their effects than to the nonliterary—if we may use the term—or business men, for the majority of the students in the lower forms leave school before they have reached the standing of the Senior Society—that is, those who through their own desires are driven to the front of the battle of life, the turmoil and care of which, are so inimical to the cultivation of the higher intellectual tastes.

It is this very fact, of their being placed under adverse circumstances, and in danger of entering their business career unacquainted with the duty due to others as well as to themselves of cultivating these powers, that renders the establishment of such a society a thing of necessity in the lower school.

Nations and societies are composed of individuals; national intellect is the sum of individual thought; national progress the total of individual advancement; patriotism the love of our fellow-men; therefore let the students combine in one body, with social feeling for one another, to further the development of our minds as individuals.

And now that our society is in regular running order, we think it our duty to thank those who have assisted in its establishment, for we are now, and will be hence-forward enjoying the fruits of their labors by having our way paved and cleared from all disadvantages which befell them in its promotion to the high standing which it has attained.

We must also express our indebtedness to the Senior Society of this Institute for the very great privilege they have kindly allowed us of informing the public concerning our progress, from time to time, through this medium their school journal.

During the last quarter we held a competition for prizes in all the branches of our society, and before the next vacation will probably hold another of the same kind, in which it is not expected that all will be foremost, yet each can gain for himself a prize well worth winning—the culture of his intellect.

At the first meeting of this quarter the members were permitted to correct all errors found in our constitution, but owing to its being so carefully drawn up by our founders, we are 'happy to state that no clause was subject to correction; the gentlemen elected to constitute the General Committee for the present term are as follows :—

Ist Vice-Pres., - 2nd " 3rd " SecyTreas., -	Mr. J. W. H. Milne. Mr. D. Alexander. L. P. Duff. H. B. Witton. Miss M. G. Zealand.	
	Miss M. G. Zealand. Miss A. M. Cook.	

PERSONALIA.

Mr. J. Coutts, A.A. of last year's University class is till rusticating. He finds shooting on the Chatham Plains an extremely pleasint occupation.

Mr. Duncan has passed the Senior Matriculation at Topnto University, and won a Scholarship i 2nd year at Knox College.

Mr. W. F. Farquiarson of last year's University class had just won the first Scholarship, in the first year at Knox College, Toronto.

Mr. N. Hudspetl has just returned from Toronto after winning a Scholarship at Trinity.

Mr. W. Hunter has distinguished himself at Magill University, we hope that he will continue to do so throughout his course.

Mr. J. Lawson is now studying art in Rome. We published a letter describing his trip in another page.

Mr. D. I. K. McKinnon, our late secretary, is pursuing his legal studies in Belleville.

Mr. J. Reid, who ussed at Toronto University in 2nd year, has entered Magill University "du enndem."

Mr. R. C. Tibb of Lst year class, has won third Scholarship at Knox College in first year.

SOLUTIONS TO THE EXERCISES IN TODHUNTER'S EUCLID.

(Continued from the July Number.)

- 219. AB, CD the arcs (ABCD bg. in order on cir:um.) Join AE, ∴ < BCA, CAD standing on = arcs are = ∴ BC || AD.
- 220. In fig. 219, BC, AD || chds., \therefore < BCA = CAD \therefore arc AB = arc CD, \therefore chd. AB = chd, CD.
- 221. Join AE. Then $\langle DAE = ACB + AEC = const. + const. = const.$ arc DE = const.
- 222. Let it meet the O in F. Then FCE+FCB = 2 rt. $\langle s, but FEB+FCB = 2$ rt. $\lfloor s, \therefore FEB = FCE, \therefore$ arc FB = FE.
- 223. ABCD the 4 l bisect A and ent. < arc by AE, CE (E bet. C and D) then < DAE = D(E, \therefore ADC = AEC \therefore &c.
- 224. 0 cen. Make $\angle AOE = 3 < s DOB$.
- 225: P, Q must lie on O through A, B. AOB is const. and C is const., ... QBC is const., PQ must be const.
- 226. A, B, pts. of set. of Os. CAD the st. line. Then <s ACB, ADB in = Os are on = §gs. and ∴ = ∴ &c.
- 227. Join BA, BC. Then ent. < BCQ of 4 l. = int. < BAP, and P. Q are rt. <s and BQ = BP, ∴ CQ = AP.
 228. I. Draw BP, Q ⊥ AL, AM. Then since < P = MQ ∴ AL and AM
- 228. I. Draw BP, Q ⊥ AL, AM. Then since < P = MQ ∴ AL and AM = 2AP or 2AQ = const. (It is clear that P and Q cannot both be either within or without the circum.) 2. Draw BP, BQ as bef. Prod, BA to K. Then < MAR = MLB = LAB, ∴ BM = BL, BP = BQ, and P, Q are rt. <s, ∴ LP → AQ, ∴ AL AM = 2AP (or 2AQ) = const.
- 229. O cen. BisedOF in H. Join EH and prod to meet O in K. Then arc BK = arc A $\sharp : < KOB = EOA$. < GON = 2 < GEK = 2 < HEO= 2EOA, $\therefore IOB = 3EOA$, $\therefore \&c$.
- 230. The vertices \oint these \triangle s all lie on same \bigcirc and \therefore the bisecting lines all bisect the argon other side of base.
- 231. Os touch atÅ, BCD touches inner O at C and cutting large O in BD. Join AC and prod. to meet O in E. Take H, K, cens. of Os. Join HC, KE and AHK. The < KEA = KAE = HCA, ∴ KE || HC. But HC cuts BD at £. <s, so ∴ does KE, ∴ KE bisects BD. ∴, arc BE = arc ED, ∴ < BEC = DAC.
- 232. By No. 26, the lines from rt. <s to middle of hyp. are in = $\frac{1}{2}$ hyp. \therefore &c.
- 233. Let ABC be isos. △, vertex A, and let o cut base in 2 pts. if possible, viz:
 D, E then ADB, AEC <s in ½ o are both rt. <s, i. e. ADE, AED are rt. <s, ∴ &;
- 234. AB diam. At BE, ADBF 2 rects., of which CE is a seg. The △ ACB > △ ADB, since it has a gr. alt.
 235. A O, cen. D, bill pass through A, F, B, E, C, and EA, AF, &c. are quads.
- 235. A O, cen. D, fill pass through A, F, B, E, C, and EA, AF, &c. are quads.
 ∴ < ACR = FCB, and ECF is rt. <, ∴ CE bisects supl. <.
 236. O cen. The < OBE = OEB = EBC, and EBF is rt. < ∴ ext. < is
- 236. O cen. Then < OBE = OEB = EBC, and EBF is rt. < ∴ ext. < is also bisected
- 237. Bec. AEC. DC are rt. $\langle s, :: a \circ d w$ will pass through AEDC and $:: \langle s \rangle$ ADE ACE are insame seg.
- 238. Join CB, BL Then ABC, ABD are rt. <s, .: &c.
- 239. Let ABC beaiy chd. Then OBA is a rt. L, .: OB bisects AC.

- 240. A, B the gn. pts. in the line AB. From AB cut off AC = 2ce gn. rad. and from cen. A at dist. AC, desc. O. Through B draw BD, a tan. to this O. Through A draw AE || BD. Bisect DBA, BAL by BF, CF; F shall be cen. of req. O.
- A, B, pts. from which the tans. are to be drawn. C the pt. where the o is 241. Draw CD \perp AB, meeting $\frac{1}{2}$ o in to touch. On AB describe a $\frac{1}{2}$ O. D. D shall be cen. of req. O.
- ABC the \triangle . BD, CE the \perp rs. O middle pt. of base. Then DE is a 242. chd. of the O having O as cen. and passing through B, E, D, C.
- $AD^2 = AB^2 + BD^2 = AB^2 + BC^2 + CD^2 + 2BC$, CE. 243.
- O cen. of \cap AOM. Then \langle s at PQR are rt. \langle s, \langle POMR is rect., \langle \langle 244. RQM = RPM = PAB, and OQM = OMQ, $\therefore RQD = QAM + QMA =$ rt. < &c.
- A α may be desc. abt. GEFD, and another abt. DF β C. Join FD. \therefore < 245. GED = GFD = FDB = FCB, and $ED \parallel FC \therefore EG \parallel BC$.
- CH "that diam." meeting DE in G. Join AB, BH, HA. Then < HCB 246. = HAB and DEC = BAD (: ABCD is quadle in \mathbf{O} , \therefore DEC+DCE = $HAC = rt. <, \therefore CGE = rt. <.$
- In fig T. 47. Let BE, DC intersect in P. Then a Owill go round ABPC, 247. and P is middle pt. of arc BPC, : AP bisects < BAC, and the other line evidently bisects GAB and HAC, .: &c. 4
- Through A draw AB ____ CA, meeting o in B. B shill be pt. req. For a 248. O through CBA will have CB for diam and ... touch the large O in B, ... CBA is greatest <.
- EF meets AB in H. Join DE. Then a O will pass through DFEG, $\ldots <$ 249. FGD = FED = FBH and HFB = DFC, \therefore remg< BHF = FDG =rt. $\langle (F \text{ within } O, G \text{ without.}) \rangle$
- A pt. of cont. AD, AE chds. B cen. of AD, C of AE. Then < BAD+ 250. $CAE = rt. \langle a | so BDA + CEA = rt. \langle a : B + C = | rt. \langle s, BD || CE$ ∴ &c.
- AC, BQmeeting o in F, E, ACBD the rhombus, AB the shorter diam. 251. AE, BF cut in H. Then \langle FAH = EBH, and CAB \vdash CBA, \therefore HAB = HBA, \therefore HA = HB, \therefore the \Box m so formed is a rhomus. Again \lt FCE and FHE = 2 rt. \lt s and ACB+CBD = 2 rt. \lt s, \therefore AHB = CBD, \therefore &c.
- Let AB, CD cut internally at E. Draw diam. AF an join CB, BF, FD, 252. (ACBD bg. in order). Then bec. E and B are rt. < .. BF || CD, .. FD = BC, \therefore AE²+ED²+CE²+EB² = AD²+BC² = AD²+DF² = AF². Next externally, (ABCD bg. in order), precisely the same. Prod. PD to meet O at E. Then < APB = PEB = BE.
- 253.
- Draw tan. through pt. of cont. Then the <s it makes with the cutting line 254. $= \langle s \text{ in alt. segs.} \rangle$: segs. are similar,
- < DAP = < in alt. seg. AQP = BAQ and APD = ABQ, \therefore &c. 255.
- Join AB. Then $\langle ABD = AGB, \therefore G + H = 2$ rt. 256.
- Prod. DA to F and CA to E. Then FAC = -n alt seg. CBA and 257. $EAD = ABD, \therefore ABC = ABD.$
- FPG tan. at P. (F toward same part as A). Join AB. Then FPA = 258. $ABP = ACD, \therefore \&c.$
- AB chd., CAD tan., E middle pt. of arc. Join EA, E. Then DAE 259. = EBA = EAB, \therefore DAB is bisected. \therefore &c.
- \sim NPA = POA, and \sim s N, M are rt. \sim s, \therefore PAN = OAM. To each 260. add MAP, .: MAN = PAQ. Also a o will go road AMPN, .: $AMN = APN = AQP, \therefore \&c.$ (This supposes M betA and B, and ABP ½ O). \geq . . .

SOLUTIONS IN EUCLID.

- 261. Take P bet. B and D. Prod. QP to K. Then QPS = KPB = – in alt. seg. BAP. Again in \triangle s AOR, SPR, the \neg s at O, P are rt. \neg s, \therefore OAR = RSP, \therefore QPS = QSP, \therefore QS = QP, &c.
- AB the base, C the pt. in it. On AB desc. a seg. cont. $\prec =$ gn. \prec . 262. Through C draw CD \perp AB, meeting the o in D. Then ABD is req. \triangle .
- AB the base, CD the alt. On AB desc. a seg., cont. $\neg = \text{gn.} \neg$. Draw EF || AB at dist. CD, meeting **O** in EF. Then ABE or ABF is \triangle req. 263.
- AB base, C its middle pt. On AB desc. a seg. cont. $\prec = gn. \prec$, and from 264. cen. C, with alt. as rad., desc. O, cutting seg. in D, E. Then ABD or ABE is ∆.req.
- AB the base, C vertex, Desc. O abt. it. Then when ABC is isos., C 265. bisects arc ACB and \therefore ABC has its greatest alt. BOC is greatest when O is a rt. \prec . Take OP, such that $OP^2 = \frac{1}{2}OB^2$,
- 266. and from cen. Q at dist. OP desc. a O. Draw from A a tan. to this O, cutting large O in B, C.
- The \neg r pt. can move only in arc of **O**, \therefore bisecting line bisects remg. arc 267. of Oce.
- AB the gn. side. Desc. seg. ACB, cont. $\neg =$ gn. \neg , also seg. ADB cont. 268. $r = \frac{1}{2}$ gn. r. From cen. B, with sum of sides as rad. desc. **O**, cutting ADB in D. Join BD, cutting ACB in C. ACB shall be \triangle req. For \prec ACB = 2ADC and = ADC + CAD, $\therefore CD = CA$, $\therefore \&c$.
- AB the com. chd., C the pt. Then seg. on each tan. = rect. AC.CB, \therefore &c. AB meets com. tan. CD at E. Then EC² = AE.EB = ED². A **O** will pass through AEDC, \therefore &c. 269.
- 270.
- 271.
- AB com. chd., CD, EF other chds, passing through O. Then rect. CO.OD 272. = AO.OB = EO.OF. \therefore &c.
- O gn. cen., A fixed pt. in the line. Join AO and desc. a $\frac{1}{2}$ O on it. From 273. cen. A with rad. = side of gn. sq,, desc. O, cutting $\frac{1}{2}$ O in B. Join AB, BO. From cen. O, with rad. OB desc. O. This is O req. For AB is a tan. to it, ∴ &c.
- $GH^{2} = GB^{2} + BC^{2} + CH^{2} + 2GB.BC + 2BC.CH + 2GB.CH = BC^{2} + 2GB^{2} + 2GB^{2}$ 274. $4\text{GB.BC} + 2\text{GB}^2 = \text{BC}^2 + 4\text{CG.GB} = \text{BC}^2 + 4\text{AG}^2 = \&c.$
- Let AB, AC be = tans. to 2 Os, P and Q cutting at D, E. Join AD. AD 275. prod. shall pass through E. If not, let it cut the Os P, Q in F, G respectively. Then rect. FA. $D = AB^2 = AC^2 = GA.AD$, wh. is imposs., \therefore &c.
- Since rect. BC.DC is = CE.CA, \therefore diff, of rect. CO.DB and CE.EA is = diff. of sqs. on CE and CO, i. e., DE^{\pm} . The rect. BD.DC from above is 276. = DE^{2} +DE.EF and rect. AF.FB is = DE.EF+EF², which being combined $= DF^2$.
- Let AB be given diam., DB tan. Then place BC in O to side of given 277. sq. Join ACD. Then sq. on BC is = to diff. of sqs. on BD and CD, which is = to rect. AC.CD.

ALGEBRA, IST CLASS, 1879.

See Gross' Algebra. 1.

(1) $(ab - 2a\sqrt{ab - a^2})^{1/2} = (ab - a^2 - 2a\sqrt{ab - a^2} + a^2)^{1/2}$ 2. $=\sqrt{ab-a^2}-a$

(2) $(3+4\nu'-1)^{\mu}+(3-4\nu'-1)^{\mu}=(4+4\nu'-1-1)^{\mu}+(4-4\nu'-1-1)^{\mu}$ $=2+\sqrt{-1}+2-\sqrt{-1}=4$

(1) $2x^4 + x^3 - 11x^2 + x + 3 = 0$: $2x^4 + x^3 - 10x^2 - (x^2 - x + 2) = 0$ 3. (x-2) (2x-1) (2+3x+1) = 0 $\therefore x-2=0$ $\therefore x=2$ $\therefore 2x-1=0$ $\therefore x=\frac{1}{2}$ and $x^2 + 3x + 1 = 0$: $x = \frac{-3 \pm 1/5}{-3 \pm 1/5}$ (2) $x^2 + y^2 + z^2 = a^2$ (1) $yz + zx + xy = b^2$ (2) x + y - z = c (3) From (1) and (2) $x+y+z=\pm \sqrt{a^2+2b^2}$ (4) :. From (4) and (3) $z = \frac{1}{2} (\pm \sqrt{a^2 + 2b^2} - c)$ Combining this result with (3) to find the value of (x+y) and with (1) to find the value of $(x^2 + y^2)$, the values of x and y can easily be found. (3) $\sqrt{x^2+5x+4} + \sqrt{x^2+3x-4} = x+4$ $\therefore \sqrt{(x+4)(x+1)+1/(x+4)(x-1)} = x+4 \therefore \sqrt{x+4} = 0 \therefore x = -4$ and $\sqrt{x+1} + \sqrt{x-1} = \sqrt{x+4}$ \therefore $x+2\sqrt{x^2-1} = 4$ \therefore $3x^2+3x-20=0$ $\therefore x = \frac{-4 \pm \sqrt{26}}{3}$ all the above values satisfy the = nSee Gross' or Colenso's Algebra. 4. $xy = ab (a+b), x^2 - xy + y^2 = a^3 + b^3 \therefore x^2 + y^2 = (a+b) (a^2 + b^2)$ 5. then $\left(\frac{x}{a} - \frac{y}{b}\right)$ $\left(\frac{x}{b} - \frac{y}{a}\right) = 0$ if $\frac{x^3 + y^3}{ab} - xy$ $\left(\frac{a^2 + b^2}{a^2b^2}\right) = 0$ if $\frac{(a+b)}{ab} - \frac{ab}{a^2b^2} = 0$ as this result is true \therefore the orig. ex. is \rightleftharpoons to zero. Substitute in S = $\frac{n}{2}$ (2x+(n-1) b) : 96 = $\frac{n}{2}$ (12+(n-1)) б. $\therefore n^2 + 2n - 48 = 0 \therefore n = -x \pm \sqrt{1 + 48} = -8 \text{ or } +6$ Let (x-m) $(x-n)^2 = x^3 + px + q$ $\therefore x^3 - x^2 (2n+m) + (n^2 + 2mn) - mn^2$ 7. $=x^3+px+q$: Equating coefs. we have m+n=0 : m=-n(1) $n^2 + mn = p(2)$ mn = -q(3). from (1) and $(2)n = \sqrt{-\frac{1}{2}p}$ and from (2) and (3) $n = (\frac{1}{2}q)^{1/2} \therefore (\frac{1}{2}q)^{1/2} = (-\frac{1}{2}p)^{1/2}$ (2) $x^4 - ax^3 + a^2x^2 - a^3x + a^4 = (x^2 + px + a^2) (x^2 + max + a^2)$ 8. $\therefore x^4 - ax^3 + a^2x^2 - a^3x + a^4 = x^4 + x^3(ma + p) + x^3(2a^3 + map) + x$ $(pa^3 + ma^3)4a^4$: Equating coefs, we have ma + p = -a(1) $2a^{2} + map = a^{2}(2) pa^{2} + ma^{3} = -a^{3}$ which coincides with (1) From (1) and (2) we have $m^2 + m - 1 = 0$ $\therefore m = \frac{-1 \pm \sqrt{5}}{2}$ (1) Book work. q. (2) $(1+x)^n (1 + \frac{1}{n})^n = (1+nx+\frac{n(n-1)}{1!^2}x^2+) \times$ $\left(1+n\frac{1}{x}+\frac{n(n-1)}{L^2}\frac{1}{x^2}+\right)$ $=1+n^2+\left(\frac{n(n-1)}{1^3}\right)^2+$ terms involving $x_1+x_2^2, x^3$ etc. + terms involving $\frac{1}{r}$ $\frac{1}{r^2}$. $\frac{1}{r^3}$ etc.

25

the

Again
$$(1+x)^{n} \left(1 + \frac{1}{x} \right)^{n} = \frac{(1+x)^{2n}}{x^{n}} \text{ now in } \frac{(1+x)^{2n}}{x^{n}} \text{ the coef. of}$$

term involving $x^{\circ} = 2n \ \frac{(2n-1)....(n+1)}{L^{n}} = \frac{L^{2n}}{(L^{n})^{2}}$
And as before we found that the coef. of terms involving x° was=
to sum of sqs. of coefs. \therefore etc.
10. (1) Let $S = 1 + 3x + 5x^{2} + 7x^{3} + \therefore$ $Sx = x + 3x^{2} + 5x^{3} + \dots + 2x^{n-x} - (2n-1)x^{n}$
 $= 1 + 2x \left(\frac{x^{n-1} - 1}{(x-1)} \right) - (2n-1)x^{n}$
 $\therefore S = \frac{1}{1-x} \left\{ 1 + 2x \left(\frac{x^{n-1} - 1}{x-1} \right) - (2n-1)x^{n} \right\}$
(2) $\frac{1}{3 \times 8} = \frac{1}{5} \left(\frac{1}{3} - \frac{1}{8} \right) \frac{1}{8 \times 13} = \frac{1}{5} \left(\frac{1}{8} - \frac{1}{13} \right)$
 $\frac{1}{(5(n-1)+3)(5n+3)} = \frac{1}{5} \left(\frac{1}{5(n-1)+3} - \frac{1}{5n+3} \right)$

II. Loudon's Algebra.

ARITHMETIC,

FIRST CLASS 1879.

1. (1), .031,578. (2); .3. Ans. 2. A, 18¹/₆; B, 14¹/₆; C, $10\frac{29}{36}$. Ans.

3. From Question I lb. Troy pure gold = $1869 \times \frac{1}{11} \times \frac{1}{40}$ sovs; also, I lb.

Troy pure gold = $155 \times 20 \times \frac{19}{2} \times \frac{128992}{2} \times \frac{5189}{75}$ francs, \therefore sov. = 25.192+francs. 4. A puts in \$66000 for 1 month, B puts in \$58000 for 1 month, for managing business A gets 834% = \$350. B gets 614% = \$250, \therefore A's profits =

5. Log. .0000025 = log. .00001 - 2, log. 2 = $\overline{6}$.39794.

Let $(1.08)^n = (1.08)^n = \frac{1}{\log (1.08)} = 29.9 + \therefore$ in 30 years \$100 at 8% exceeds \$1000.

6. Cash price is $133\frac{1}{3}$ of cost price, credit price is $\frac{9}{8} \times 133\frac{1}{3}$ of cost price, = 150% of cost price. 7. The volume of G : the vol. of Q in the ratic

7-2.6:19-7, i. e. as II: 30, \therefore wt. of G. : wt. of Q as 11×9 : 30×2.6 , i. e. as 209 : 78, \therefore there is $\frac{2}{2}\frac{2}{3}\frac{9}{7}$ oz. gold in 1 oz. of mixture.

8. Present worth of \$520 for 6 months = \$500, at end of three months the goods are worth \$510 to him \$510×11634%=\$595.421/2, and \$595.421/2 is the present worth of \$677.70 for 1.72+yrs.

9. $\frac{1 \text{ st percentage} + 4}{1 \text{ of } $6000} = $375, \therefore 1 \text{ st percentage} = 2\frac{1}{2}$. 104

10. (I) Area $= \frac{225}{2 \times 360} \times \frac{32}{7} (80)^2 = 2000 \times \frac{32}{7}$. Length of arc $= \frac{225}{2 \times 360} \times \frac{32}{70} \times \frac{32}{70$

 $= 50 \times \frac{2}{3}$

(II) By joining the ends of the side which is = to 3 with the middle part of the side = 6 we obtain $3 = \triangle s$, whose sides are respectively = to 3, 4, 5, \therefore the united area is 18.

ENGLISH GRAMMAR.

JUNIOR MATRICULATION, 1879.

6. "Trace briefly the formation of the English language from the Anglo-Saxon, shewing the causes which brought about the change."

The language of the Anglo Saxons was unmixed in its vocabulary and synthetic in its grammar; that is, all its words were of one stock, and the relations between them in composition were expressed, not by auxiliaries and particles, but by terminational modifications called conjugation and declension. Today, however, following the natural growth of all language, it has become, perhaps, the most mixed in its vocabulary and the most analytic in its grammar of all existing languages. The first stage of this growth was hastened by the Danish invasion, which, although it had no effect on the vocabulary of our language, yet by getting rid to some extent of the use of inflections, prepared the way for the greatest crisis our language has undergone, viz: the union with it of Norman French at the time of the conquest. This union brought an immense number of new words into the language, but did not essentially affect its grammar; but rather firmly established a process of gradual change, which kept on for the next five centurics This time has been divided by grammarians into the following periods.

I. From 1066 to 1216, called the period of semi-Saxon, during which were written "History of King Leir," "Saxon Chron," latter part "Layamon." The following are the changes noticeable :—

(a.) The masc and fem. of the article less frequent, and the oblique cases beginning to drop away.

(b.) In declension of nouns, the cases diminish in number, the abl. disappearing. The dat. ending "om," becomes "on." The plu. endings "an" and "as" are used indiscriminately.

(c.) In verbs, the infinitive endings

"an" or "en" become "e" "En" of part. dropped. "Enne" of the gerundial infinitive becomes "an."

II. From 1216 to 1237, called the period of Old English, in which were written "Havelock, the Dane," "Robert of Glaucester," and works of Wycliffe. The changes are :—

(a.) "The" is now of all genders, but with different case endings.

(b.) In nouns, gender changes from grammatical to natural. Characteristic fem. endings are dropped. Prepositions supplant case endings. Plurals in "a" cease.

(c.) In pronouns, dual forms become obsolete.

(d.) In verbs the infinitive is expressed by "to," then with "an" or "en" added. "Ath" in plu. indic. becomes "en." Many strong preterites become weak. "Ath" in the third sing. becomes "s." Participles drop declension and end in "ing."

III. From 1327 to 1558, called the period of Middle English, in which the chief authors were "Chaucer" and "Mandeville." The changes are :---

(a.) "The" is now of all cases and genders..

(b.) In nouns, the six declensions are reduced to one. Case endings entirely superseded by prepositions. The Norman plu. ending "s," completely supplants all others.

(c.) In pronouns, "my" and "thy" are used for "mine" and "thine," the gen. of I and thou. "Heo" fem. of he becomes "she," and "hi," "heom," "hem," become "they." "them."

become "they," "them." (d.) In verbs, "to" alone becomes the sign of the infinitive. The "en" of plu. indic. (in A. S. ath., is dropped. Participles and gerundial infinitives have the same ending, "ing."

Throughout these periods the spelling of words had been gradually changing.

1. Short final vowels in the course of

PRONOUNS.

ADJECTIVE

time were elided.

2. Broad vowels were shortened. After the death of Queen Mary our extensive literature was established, and the language became unchangeable.

7. "Write a brief paper upon the English possessive case; its origin, form, etc."

The possessive case has in English two forms: one the case ending "'s," of A. S. origin; the other, of Norman origin, substituting for the case-ending the preposition "of," besides a few remnants of the A. S. gen. endings, "an," "ena," and "re," as: mine, thine, wooden, oaken, your, our, etc. It was long supposed that the "'s" was an abbreviation of "his," but this explanation is erroneous; as "'s" is appended equally to feminine nouns and to plurals. Its origin is due to the fact that the vowel of the genitive ending "es" was dropped out and the apostrophe used to mark the elision.

The A. S. possessive precedes, and the Norman follows the governing noun. The A. S. possessive form is confined to genitives of origin or agency, of possession, and of relation of persons.

The possessive has a double force.

(1.) The *attributive*, which indicates some quality of the noun on which it depends: as, origin, agency, possession, etc.

(2.) The objective, which expresses the object of some feeling or action.

8. "Classify pronouns in English."

 Personal: as, "I," "thou," "he," &c.
 Reflexive: "sclf," originally a noun.
 Indefinite and distributive: as, "onc," (pl. "ones"), "any," "other," (pl. "others"), "who" (he who), compounds of "who," "each," "either" and "neither."
 Relative and Interrogative: "who," "which," "what," and their

SUBSTANTIVE PRONOUNS

- compounds "that," "as," after "such," "the same," whether," etc.
- 5. Demonstrative: as, "this," "that," (pl. "these," "those"), "such," "same," "self-same," "that ilk," "thilk," and occasionally "so."

- (I. Possessive: "his," "its," "mine," "thine," "hers," "ours," "yours," "theirs."
- 2. Reflexive Possessive: "my own," "our own," etc.
- 3. Indefinite Distributive: "any," "none," "each," "either," "neither," "other."
- 4. Relative and Interrogative : "which," "what," and their compounds.
- 5. Demonstrative: "this," "that," "such." "thesame," "thatsame" and "self-same."

9. "Distinguish clearly between poetry and prose."

The object of prose is in general to convey information; that of poetry to to give pleasure. Hence, since objects in the Concrete, that is, as they appear in nature to the senses, are easier to conceive and afford more pleasure than their properties viewed abstractedly, it will be found that poetry deals largely with the Concrete, while the Abstract is confined almost entirely to prose,

Poetry seeks to multiply and combine objects and effects, while the language of research employs separation and analysis. Hence combination is one of the characteristics of poetry and isolation of prose.

Poetry, being one of the Fine Arts, involves the production of Harmony, which prose does not.

The Ideal is aimed at in poetry, as in the other Fine Arts; that is, poetry endeavors to rise above the tameness of reality, to portray greater beauties and higher loveliness than we can find on earth.

All that produces pain or horror is rigidly excluded from poetry.

In consequence of the differences of principle between them, the diction of poetry differs from that of prose. Poetry, in its different styles, uses almost all the words of polite prose; but prose avoids a number of words belonging to poetic diction. The prose writer selects the word which will most accurately express his meaning; the poet that which gives the most pleasure.

Poetic diction is (I) Archaic and noncolloquial; (2) picturesque; (3) euphonious.

10. "Name two words from each of the following languages: Greek, Dutch, Chinese, Arabic, French, Italian. Persian."

Greek: phaenomenon, criterion, dogma, lithograph, liturgy, etc.

Dutch: sloop, yacht, schooner, boom, cable, skate, squint, etc.

Chinese: gong, Nankin, Bohea, Hyson.

Arabic: algebra, almanac, alcohol, alchemy, talisman, zero, sugar, coffee, etc.

French: curfew, ally, habit, surprise, etc.

Italian: canto, stanza, piano, gazette, sonnet, etc.

Persian: Scarlet, bazaar, azure, lilac, caravan, etc.

11. "Write brief notes upon hybrids, Celtic language, accent, orthoepy, patronymics, augmentatives."

Hybrids. In order that a language may be pure and accurate, the component parts of those words which are composed of two words, or parts of words, must be taken from the same source. When this is not the case, and the components are from different sources, the words formed by them are called hybrids. In English, hybrids may be classified as follows :

- (1.) Saxon words with Classic suffixes.
- (2.) Latin words with Greek suffixes or prefixes.
- (3.) Compounds made up of words taken from different languages.

Hybrids are allowable only when their component parts have become completely naturalized.

The Celtic language is divided into two branches:

I. Erse. . . I. Erse. . . I. Irish. 2. Gaelic. 3. Manx. II. Cymric. 3. Armorican.

The Celtic elements of English may (2.) By a suffix : as, Johnson.

be divided into three classes:

- (1.) Those handed down from the original Britons, consisting chiefly of geographical terms, as, "Avon," "Don," "Durham," etc., and common household words, as, "basket," "gruel," "gown," "tackle," etc.
- (2.) Those of late introduction; true Celtic words, but not original constituents of our tongue; as, "tartan," "plaid," "kilt," "clan," etc.
- (3.) Those that have come to us from the Celtic, but through some other tongue, Latin or Norman-French; as, "druid," "bard," etc.

Accent is the stress which the voice places on *parts* of words, and must be distinguished from emphasis, which is the stress of voice on words themselves.

In English there have been two systems of accentation at work: 1. the Saxon, 2. the Norman-French.

The Saxon tends to place the accent on the root of the word, which has hence been termed the "radical accent."

The French tends to place the accent on the last syllable, owing to the fact that most Latin words incorporated into French had the accent on the penult, which became the ultimate in French by dropping the Latin termination; hence this accent has been called the "terminational."

Besides these two systems of accent, there is another which serves merely to distinguish words spelled alike, and has therefore been called the "distinctive" accent.

Orthoppy is the science of correct pronunciation. The pronunciation of words in English is in a great measure arbitrary. Good present usage is always the highest authority, but as usage varies at different times, and in different places, a perfect and permanent system of pronunciation is unattainable.

Patronymics are names formed from that of a father or ancester and applied to his descendants.

Patronymics in English are formed :----

- (1.) By a genitive case : as, Richards, Wilkins.

(3.) By a prefix : as, from N. French, *Fitzgerald*; from Gaelic, *MacDonald*; from Irish, O'Connor ; from Welsh, *Prichard*, *i.e. Ap.* Richard.

Augmentative forms express qualities tending to excess, and hence often imply censure. In English they are :

(I.) Those ending in "ard," "art," of

Gothic origin.

- '(2.) Those ending in "oon," "one," of Italian origin.
- (3.) Those ending in "ry" or "ery," with collective force, taken from the A. S., neuter forms "ru" and "ra" denoting much or many.

AN EXERCISE IN PARSING.

He will have the expense besides all the trouble. He will have the expense and the trouble besides. Both John and I were present. Both brothers were present. All those present heard it. He sat up all night. All is lost. He is all powerful at court. We have other things to attend to. Others may believe it, but I cannot. You may break him, but you can never bend him. He spoke to all but me. There was but a minute to spare. I would do it but that I am forbidden. There is no one but pities him. Either road is difficult. I do not believe either's account of the matter. I do not drink either beer or wine. He knows something about it, else he would not look so mysterious. I have nobody else to look to. They gave us trouble enough. We have not enough to eat. They have bread enough and to spare. You must go, for you are sent for. Parse the italicised words in the above extract. Besides .- Prep., joining expense and trouble. Besides.—Adverb, modifying will have. Both.—Conjunction, correlative to and. It assists and to unite the words Fohn and I. Both.—Quantitative adj., qualifying brothers. All.—Quantitative adj., qualifying those.

All.—Quantitative adj., qualifying night.

All.—Noun, com., 3rd, sing., neut., nom., subj. of *is*.

All.—Adv. of degree, modifies powerful.

Other.—Indef. adj., qualifying *things*. Others.—Indef. pron., 3rd., pl., m. or f., nom., subj. of may believe.

But.—Conjunction, adversative. It joins the sentences of the verbs are may break and may bend.

But.-Prep., joining all and me.

But.—Adverb,modifying quantitative adjective a.

But.—Preposition, joining would do and that. That is a demonstrative pronoun, object of but, and the clause 'I am forbidden' is in opposition with that.

But.—Preposition, governing clause (he) pities him.'

Either.—Distributive adj., qualifying road.

Either's.—Distributive pronoun, 3rd, sing., poss., depending on account.

Either.—Conjunction, correlative to or. It assists or to unite beer and wine.

Else.—Conjunction, joining the sentences of which the verbs are *knows* and *would look*.

Enough. — Quantitative adjective, qualifying trouble.

Enough.—Noun, common, 3rd, sing, neut., obj. case, governed by have.

To spare.—A verb in the Infinitive Mood, used as adj. It is joined to the noun *enough*.

NOTE.—A verb in the Infinitive Mood is used either as a noun, an adjective, or an adverb, as "he likes to read," (noun;) "apples to eat," (adjective ;) "he worked hard to obtain the prize," (adverb.) Since it has the character of a verb it may have an object or may not.

For.—Conjunction, subordinate. It joins the sentences of which the verbs are *must go* and *are sent*.

For.-Adverb, modifying are sent.

NOTE.—For never introduces a principal sentence. It is not to be used instead of *because*. Because introduces the reason for a preceding act; for introduces the ground for a preceding thought.

JULY EXAMINATIONS, 1879.

FIRST CLASS TEACHERS.

CHEMISTRY.

TIME-TWO HOURS.

(N.B.-150 marks to count a full paper.)

Values.

- I. Explain the principles on which the determination of atomic weights is based. One part by weight of hydrogen is combined with three parts by weight of carbon in marsh-gas, with six parts by weight of carbon in acetylene. Again, one part by weight of hydrogen is combined with eight parts by weight of oxygen in water, and eight parts by weight of oxygen are combined with three parts by weight of carbon in carbonic anhydride, and with six parts by weight of carbon in carbonic oxide. Why is the atomic weight of carbon taken as 12 instead of as 6 or as 3?
- 20 2. What is understood by the theory of atomicity? What atomicity or quantivalence do you assign to nitrogen, arsenic, iron and copper respectively, and why? Give the formulæ of the most important compounds which these elements form with hydrogen, chlorine, oxygen, and sulphur respectively.
- 3. What is a compound radicle? Give examples. Select the compound radicles from among the following: KCl, H₃ N, H₄N, HO, KHO, SO₂, SO₂.
- 10 4. Ten grains of air are passed at a very high temperature over an excess of carbon. What product is formed, and what is the approximate weight of it?
- 5. What compounds of sulphur are there which in their constitution and general reactions resemble the corresponding compounds of oxygen? How is sulphur now recovered from alkali-waste? What are the respective formulæ of iron pyrites, copper pyrites, zinc blende, realgar, galena, and cinnabar? What are the products furnished by these several minerals when heated in presence of air?
- 6. Draw a comparison between sodium and potassium compounds in respect of their occurrence in nature, and in respect of the difference of properties manifested by corresponding potassium and sodium compounds. Give illustrations of double decompositions taking place between potassium and sodium salts.

25 | 7. On testing a certain liquid you find that it reddens blue litumspaper. What conclusion can you draw from this?

Had the liquid burned reddened litmus-paper blue what conclusion could you have drawn?

- 25 9. You are given seven test tubes, and are told that in one there is pure water, and in the other six there are respectively aqueous solutions of silver nitrate, copper nitrate, zinc sulphate, calcium chloride, magnesium sulphate, and potassium nitrate. How could you determine which test tube contained the pure water, which the silver nitrate, which the copper nitrate, &c.?

QUEST. I.—From the question we are allowed to assume the law that "elements combine in fixed proportions by volume and by weight." The determination of atomic weights is based on obtaining the simplest, perfect, chemical compound of the element of unknown atomic weight, with one of known weight, and estimating the relative proportions of each element in the combination. Thus, if we know that the atomic weight of sodium is 23 (that is, the combining value of sodium is 23 times that of hydrogen, or 23 parts of sodium will replace I of hydrogen), and if the simplest compound of sodium and chlorine be obtained (there is only one compound of these elements), a combination of 23 parts of sodium and 35.5 of chlorine will be produced; then we say that the atomic weight of chlorine is 35.5. The atomic weights of the different elements are the weights of their atoms compared with hydrogen, as this is the lightest of all known elements. But the comparison must be made when the element under consideration and hydrogen are subjected to the same physical conditionsnamely, in the gaseous state at same temperature and under the same barometric pressure. Thus, a gas, a liquid, or a solid cannot be directly compared ; yet, under these various conditions, combinations can be obtained, by which we are able to compare their atomic values, as in the above mentioned case of sodium and chlorine, without the difficult, and often impossible, process of converting them into the gaseous condition. Again, the atomic weight of chlorine can be obtained directly, by taking equal volumes of this gas and hydrogen and causing them to unite when a perfect definite chemical compound is produced, leaving no portion of either element in a free state. But if we weight equal volumes of the two gasses, the chlorine will be found to be 35.5 times as heavy as hydrogen. Again, if hydrogen and oxygen be compared, as in the last part of Question I., oxygen will be found to weigh 16 times as much as hydrogen. But 8 parts of oxygen unite with 1 of hydrogen, therefore 1 volume of hydrogen would unite with half a volume of oxygen. According to the definition, "an atom is the smallest portion of an element that can enter into a chemical compound." Therefore we cannot use half a volume of oxygen, but one volume, and this requires two volumes of hydrogen for combination, and then the atomic weight of oxygen will stand at 16 and not at 8, and this unites with two atoms of hydrogen. So also with the compound H N, where nitrogen weighs 14 times as much as hydrogen ; for were we to take of hydrogen one atom or volume we would have a third part of an atom of nitrogen, which chemists cannot measure or deal with. A fourth compound of this hydrogen series, illustrative of chemical combinations and atomic weights, is marsh gas H₄C, in which one of the components is a solid that cannot directly be compared with H, as in the examples above given. But the

combination in marsh gas, when decomposed, yields by weight carbon 3 parts, and hydrogen 1 part. This is not the only compound of hydrogen with carbon. Olefiant gas contains one part of hydrogen and six of carbon, while acetylene has hydrogen one and carbon twelve parts by weight. If the atom of carbon weighs only three, then the formulæ for these three hydrocarbons would be HC, HC_{1/2}, & HC_{1/2}, but we must avoid fractions of atoms, for we cannot subdivide them; then the simplest formulæ of acetylene would be CH,—with C having an atomic weight of 12,—olefiant gas CH₂, and marsh gas CH₄. If the densities of these first two gasses be taken, it will be found that their true formulæ are C_{2} H₂ for acetylene, and C_{2} H₄ for olefiant gas, but this doubling of C & H does not affect the relative proportions of the elements by weight in the compound. As far as the compounds CO & CO₂ are concerned, the atomic weights of C & O might be 3 & 4, or 6 & 8, or 12 & 16, but we have shown above that the atomic weight of O must be 16; therefore that of C cannot be other than 12.

QUEST. 2.-All matter is made up of particles, which are chemically indivisible, called atoms. Atoms of each element have a different weight from those of any other element. All combinations are made up of two or more unlike atoms of elements, and the smallest particle of the compound that can exist is called a molecule. But an atom of an element cannot exist in a free state. The smallest portion even of an element that can exist is an indivisible group of atoms,-the atoms of the same element combining with each other to form molecules of that element. When chemical reactions occur, molecules of one element change places with those of other elements. Molecules in a free state occupy the same space as the compound :- thus, if we decompose two molecules of Na Cl we get one molecule of sodium, and one of hydrogen, each made up of two atoms,the smallest portion that can exist separately. The atomic weight of an element is the weight of that body compared with hydrogen, and the molecular weight of most elements is twice the atomic weight. As exceptions, a molecule of phosphorus or arsenic consists of four atoms; while of mercury or cadmium a mole-Molecules of one element are capable of replacing cule contains only one atom. or uniting with molecules of another element, but not always the same number are required. Thus, one atom of Cl unites with one of H to form a molecule of HCl. Now the H can be replaced by one of Na, or one of K. Again, one atom of O unites with two of H to form a molecule of water; or one of N with three of H; or one of C with four of H. One of Cu unites with one of O, therefore one atom of Cu is capable of replacing two atoms of H. One atom of Cl unites with one of H, and as three of H are required to unite with one of N, therefore three of Cl will unite with one of N. Again, two atoms of H unite with one of O, and four of H with one of C, therefore two of O will be required to make a saturated compound of carbon and oxygen. Quantivalency, or atomicity is the term applied to this difference of combining powers of elements and must be determined by the number of atoms of hydrogen with which it can combine or which it can replace. In the above examples, those elements that can combine atom for atom with (or replace) hydrogen are termed monovalents or monads, as chlorine, sodium; those which combine with, or take the place of two atoms of hydrogen are called divalents or diads, as copper and oxygen ; those that unite with, or replace, three of hydrogen, are trivalents or triads, as nitrogen (sometimes) or gold. Carbon unites with four atoms of hydrogen and is therefore a tetravalent or tetrad. There are also pentads and hexads. Atoms of elements of the same valency unite with or replace each other atom for atom.

The valency of nitrogen is a triad or pentad; arsenic is both a triad and pentad; iron is both a diad and tetrad, and copper is a diad. One atom of each

of the first two elements unites with three of hydrogen, and are therefore triads, but two atoms of N or As unite with five of oxygen, which have the combining power of ten of hydrogen, and are thus pentads. Iron and copper, each have the power of replacing two atoms of hydrogen.

The most important compounds of the above elements with H, Cl, O. & S are NH_3 ; As H_3 , As Cl_3 ; N, Cl_3 ; Fe Cl_2 , Fe₂ Cl_6 ; $Cu_2 Cl_2$, $Cu Cl_2$; $N_2 O$, $N_2 O_2$; $N_2 O_3$, $N_2 O_4$, $N_2 O_5$; As₂ O_3 , As₂ O_5 ; Fe O, Fe₂ O_3 , Fe₃ O_4 , Fe O_3 (combined as a ferrate); $Cu_2 O$, Cu O; As₂ S_2 , As₂ S_3 ; Fe S; Fe S₂: (Fe₂ $S_3 Cu_2 S_3$), $Cu_2 S_3$, Cu S

QUEST. 3.—If one of the atoms of H be removed from CH_4 (methyl hidride) we have a compound no longer saturated, this would form a base $-CH_3$ —capable of uniting with chlorine or other elements to form a saturated compound of methyl (e g CH₃ Cl or methyl chloride); such unsaturated compounds are called "compounds radicle." In the qui tion, H₄ N and HO are the only compounds radicle.

QUEST. 4.—The oxygen of the air unites with the carbon and carbonic anhydride (CO_2) is formed; but this coming in contact with excess of heated carbon absorbs this element and becomes carbonic oxide (CO). Every 12 grains of carbon unite with 16 of oxygen to form 28 grains of carbonic oxide; therefore 10 grains of C yield 23.33 of CO.

QUEST. 5.—Among the compounds of sulphur resembling those of oxygen, are :—H₂ S; CS₂; Fe S, Fe₃ S₄; Cu₂ S, Cu S; and many other compounds with the metals, &c., corresponding to H₂ O; CO₂; Fe O; Fe₃ O₄ Cu₂ O, Cu O, &c. The formula of iron pyrites (or more correctly pyrite) is Fe S₂; of copper pyrites or chalcopyrite is [Fe₂ S₃ + Cu₂ S); of zinc blende is Zn S; of realgar, As₂ S₂; of galena Pb S; of cinnabar Hg S, or Hg₃ S₃.

In roasting pyrite in the air, oxide of iron and sulphurous fumes are produced; chalcopyrite yields sulphurous fumes, and leaves the oxides of copper and iron, when heated in the air; under similar conditions blende is converted into zinc oxide and sulphurous acid; galena parts with its burning sulphur and litharge or oxide of lead remains; realgar and cinnabar both yield sulphur dioxide, the former with arsencous acid, the latter with metallic mercury when exposed to heat in the presence of air.

QUEST. 6.—The primary source, in nature, of sodium and potassium is the decomposition of feldspars. As rocks containing sod. feldspars are more common, so we have a greater quantity of this metal available. The sodium compounds are either obtained from the carbonate through the medium of the ashes of sea weeds, or from common salt, so abundant. The compounds of potassium are at present principally obtained through the agency of land plants, which extract potash from the soil, and accumulate it in their ashes.

The potassium-has a greater affinity for oxygen than sodium has. The compounds of these two metals generally have similar properties, though in a few cases these bases have the power of changing acids, e.g. Soft soap is a compound of potash and a fatty acid, whilst hard soap is composed of soda and a fatty acid. If sodic chloride be added to soft soap, the potash takes the chlorine and the soda takes the fatty acid, and now hard soap is formed. The sodium salts color the flame yellow, whilst those of potash give a violet color.

QUEST. 7.--If bluc litmus is reddened, it shows the presence of an acid. If red litmus is turned blue, it is owing to an alkali being in the liquid.

QUEST. 8. If potassic iodide in solution be added to the following aqueous solutions of salts, it produces, with mercury chloride, a red mercuric iodide.

Hg Cl₂ + 2 KI = Hg I₂ + 2 K Cl; with lead nitrate, a yellow plumbic iodide. Pb (N O₃)₂ \downarrow 2 KI = Pb I₂ + 2 KNO₃; with sodium sulphate, no change; with silver nitrate, a yellow, silver iodide. Ag NO₃ + KI = Ag I + KNO₃; with sodium sulphite no apparent change is produced, although with sodium bisu phate the liquid is slightly rendered brownish yellow.

QUEST. 9.—Nitrate of silver produces a white, flocculent precipitate with sodic chloride; copper nitrate is turned deep blue with ammonia; zinc and magnesium sulphates produce a white precipitate with barium chloride indicating the presence of sulphuric acid, whilst in the zinc solution ammonium sulphide produces a white precipitate insoluble in caustic alkalis, and in the magnesium solution sodic phosphate and ammonia produces a white precipitate : Calcic chloride produces a white precipitate with the silver nitrate indicating chlorine, and ammonic oxalate precipitates the lime as a white powder; potassic nitrate colors the flame violet, indicating the presence of potassium, and by adding strong sulphuric acid, and a few drops of solution of ferrous sulphate brown rings are produced at the surface of the liquid, indicating a nitrate. The water produces no precipitate with any of the above reagents, and may be recognized by its inaction, or it may be distilled when nothing will remain in the tube and no gas but water-vapor will be given off.

LATIN GRAMMAR.

Questions selected from Junior Matriculation Examination, Toronto University, June, 1879.

- 1. State the meaning of the adjectival terminations,—*eus*,—*ax*,—*lentus*,—*anus*,—*ensis*, with examples.
- 2. Translate the following, and explain the constructions employed.
 - (a) Si quid acciderit novi, facies ut sciam.
 - (b) Laudat Panœtius Africanum, quod fuerit abstinens.
 - (c) Qui genus estis ?
 - (d) Ventum erat ad Vestæ.
 - (e) Homines sua parvi pendere, aliena cupere solent.
- 3. Distinguish hic, iste, ille, and is; scribere ad aliquem, and scribere alicui; nonne, nē, and ně; aliquis, quisque, and quisquam; alius, and alter; et, atque, and ac; aut, ve and vel, verě and verē.
- 4. Distinguish between dissimulo and simulo, manubiæ and præda.
- 5. State the principal rules to be observed in the oratio obligua.
- 6. Distinguish jura and leges, imperium and potestas, crimen and scelus.
- 7. Derive and write short notes on

suffragium, relegatio, augures, coóptatio.

ANSWERS.

- —eus designates the material of which anything is made, as, aureus, golden.
 - It also forms adjectives from proper nouns, as Pythagoreus, Pythagorean.
 - -ax forms verbal adjectives, denoting *inclination*, generally a *faulty* one, as, *loquax*, loquacious.
 - ---lentus denotes fullness, abundance, supply, as, opulentus, opulent.
 - anus denotes belonging to, derived from, as urbanus, pertaining to a city: it also forms adjectives from proper nouns, as, Syllanus, of Sylla.
 ensis has the same meanings as the preceding termination, thus, forensis, forensic; Cannensis, of Cannæ.
- (a) "If anything new happens, you will let me know." The conditional verb is here in the future perfect indicative, because the consequent verb is in the future. Novi is a partitive genitive, depending on the

neuter pronoun quid. The future, (facies) is sometimes used, as in English, as a softened imperative : and ut with the subjunctive is used after facies, because verbs of causing, making, accomplishing, take the subjunctive with ut, ne, ut non.

- (b) "Panœtius praises Africanus, because he was temperate." The subjunctive (fuerit) is here employed because the statement is made, not on the writer's authority, but on Panœtius'.
- (c) "Of what race are you?" Literally 'who are you as to race'? Genus is the accusative of Specification.
- (d) "They had come to the temple of Vesta." Ventum erat is used impersonally. Ad governs some such noun as templum, aedem, understood.
- (e) "Men are wont to regard their own possessions of little worth, and to desire those of others." Sua and aliena are the neuter plurals of suis and alienus respectively, used substantively,—their, other friends, possessions, &c. Parvi is the genitive of price, agreeing with pretii understood.
- 3. (a) By hic, this, the speaker points at an object; by ille, that, he points at the opposite, more remote object; hence hic is used, also, for present, and that which is at present; ille, famous, renowned by the tradition, report, &c., which tells of remote things. Iste, the pronoun of the second person, that of yours, designates that which is near the person addressed, and often denotes contempt. Is refers to a preceding noun, or is the antecedent of a relative.
 - (b) Scribere alicui means simply 'to write to any one.' Scribere ad aliquem conveys the additional notion of sending the letter.
 - (c) The interrogative particle nonne expects the answer yes: në, which is enclitic, simply asks for information. Në, is a negative adverbial particle, used especially with imperatives and subjunctives, and

to denote purpose, that not.

- (d) Quisquam is used chiefly in negative and conditional sentences, and in interrogative sentences implying a negative, and is generally without a substantive : aliquis, another than quis i.e., one who has more or less of the distinctions of a multitude, some one, many a one : quisque, each one, refers to each individual as unit of a multitude.
- (e) A lins is simply another; alter is the other (of two), the second.
- (f) Et joins words, each of which is considered independently and as of . equal importance. Atque adds a notion that is of more importance than the preceding one. Ac is a contracted and less emphatic form of atque.
- (g) Aut denotes a stronger antithesis than vel and must be used if the one supposition excludes the other. Vel implies a difference in the expression rather than in the thing. Ne for vel is appended as an enclitic.
 - (h). Vere is the ablative singular of

ver, spring; vere the adverb truly, formed from the adjective verus.

- 4. Simillo, I pretend what I am not: dissimulo, I conceal what I am. Prada is plunder of every description: manubia, that portion which fell to the share of the commanderin-chief, the proceeds of which were frequently applied to the erection of some public building.
- 5, (a) In oblique narration, the principal verb or verbs will be of the infinitive mood.
 - (b) All the subordinate clauses, that express the original speaker's words or opinions will have their verbs in the subjunctive mood.
 - (c) When a speech is reported in oblique narration, (1) the verb or participle on which the infinitive depends is often omitted: (2) questions for an answer are asked in the subjunctive : questions of appeal generally in the infinitive (with

interrogative pronouns and adverbs): (3) the *imperative* in *direct* becomes the *subjunctive* in *indirect* narration.—Arnold.

- 6. (a) Jura, a generic term, comprising all ideas of right and justice, which lie at the basis of all institutions and iaws. Leges, specific enactments of a state, instituted for the purpose of preserving order and peace.
 - (b) Imperium, properly, the command, which demands implicit obedience; the command, as of an army, &c.; supreme authority, which unites with supreme power irresistible will. Potestas, conceded power, power as a subjective '' quality, according to which we have the capacity and right to act.
- (c) Crimen, the charge, imputation of a crime. Scelus, an impious crime, maliciously performed, with disregard of 'religion and laws.
- Suffragium, from suffrago, an anklebone, 'or knuckle-bone. Either a voting-tablet, or the right of voting. In Rome, the common mode of vo-

ting was by means of stones or pebbles, each voter receiving two stones, one white and the other black, the former to be used in the approval and the latter in the condemnation of a measure.

- Relegatio—relego, to send away, lēgo, lex—was a kind of exsilium, by which the person was confined within, or excluded from particular places.
- Augures—avis, and gero or garrio, to chatter—soothsayers, who made their predictions from the flight and singing of birds. When about to take the auspices, the augur went out before the dawn of day, and marked out with a wand (lituus) the divisions of the heavens. After sacrificing, he offered a prayer for the desired signs to appear. If, on returning home, the augur came to a running stream, he purified himself in its waters.
- Cooptatio—con, opto, intens, of the old opo, optomai—If a magistrate or collegium elected a colleague or new member, the act was called *cooptatio*.

MATRICULATION, 1864.

·· LATIN PROSE.

When Xenophon was performing a customary sacrifice, he learned that the elder of his two sons, by name Gryllus, had fallen in battle at Mantinea; nor did he think that the commenced worship of the gods should be stopped on that account, but he was satisfied merely to lay down the crown. Having enquired in what manner he had fallen, when he heard that he had died fighting very bravely, he replaced the crown on his head, having called the deities, to whom he was sacrificing, to witness, that he felt greater pleasure from the valour of his son than pain from his death.

Xenophon cum sollemnis sacrificium perago, e duo filius magnus natus, nomen Gryllus, apud Mantinea in prælium cado cognosco; nec ideo instituo Deus cultus omitto puto, sed tantummodo corona depono contineo. Percontor quisnam modus occido, ut àudio fortiter pugno intereo, corona caput répono, numen, qui sacrifico, testor magnus sui ex virtus filius voluptas quam ex mors amaritudo sentio.

Zenophon cum sollemne sacrificium peragebat, e duobus filiis majorem natu, nomine Gryllum, apud Mantineam, in prælio cecidisse cognovit; nec ideo institutum deam cultum omittendum putavit, sed tantummodo coronam deponere continebatur. Percontatus quonam modo occidisset, ut audivit fortissime pugnantem interiisse, coronam capiti reposuit, numina, quibus sacrificabat testatus majorem se ex virtute filii voluptatem quain ex morte amaritudinem sentire.

SUNSET FROM THE MOUNTAIN.

A Class Exercise in Description.

Standing on an eminence overlooking the city of Hamilton and its surroundings, one may command the view of a landscape stretching out in the form of a semi-circle, and diversified by ranges of hills, fertile valleys, rugged rocks, steep cliffs, and a broad expanse of sparkling water.

The beauty and variety of the scene are enhanced by the glow of the setting sun, the encircling mountains casting around them their lengthening shadows, relieved here and there by patches of sunlight.....

The sides of the mountain beneath us are thickly covered with trees, now exchanging their green for the mellow tints of autumn, and waving in the evening breeze.

The various caverns and indentations in the mountain look dark and gloomy at this moment, and we turn away from them to the more pleasing prospect of the city itself, whose streets and principal thoroughfares can, from our situation, readily be discerned.

North of the City lies Burlington Bay, a beautiful sheet of water, surrounded by hills, sloping at intervals to the water's edge, or again forming irregular abutments of almost perpendicular rocks.

At the eastern extremity, the Bay is separated by a narrow sand-bar from Lake Ontario, whose blue waves are now sparkling in the evening sun. Away to the left, the terraced hills, dotted with farm houses and clumps of trees, rise one above the other till we come to one bold peak, standing out prominently against the evening sky. Behind this the sun is setting, causing a purple haze to gather before the mountain, and casting a sombre hue over the little town of Dundas, lying beneath. If is a glorious sunset. There are just enough clouds to lend brilliancy to the sky, and these, together with the blue water, the brown hills, and the thousand tints of

the trees, produce a most picturesque effect.

The sun sinks, and at last disappears. As we descend from our eminence the shadows deepen, hiding from our view, first the distant hills, then the water, and finally the city itself: J. W.

THE COLLEGIATE INSTITUTE.

BOARD OF EDUCATION.

Jas. Osborne. Esq., *Chairman*; Hugh Murray, J. M. Gibson, M.P.P., F. W. Fearman, Thos. White, M. D., J. B. Eager, C. R. Smith, B. J. Morgan, J. Cunmings, S. H. Ghent, I. B. McQuesten, M.A., A. Sutherland, John White, M. A. Joseph Fielding, A. M. Ross, J. Greenfield, G. Coumbe, J. M. Meakins, W. G. Reid, D. McLellau.

THE MASTERS.

George Dickson, M. A., Head Master.
W. H. Ballard, M. A., Mathematics.
T. C. L. Armstrong, M. A., Modern Languages.
P. S. Campbell, B. A., Classics.
C. Robertson, M. A., Moiern Languages.
J. W. Spencer, B. A. Sc. Ph. D., F. G. S., Science.
G. W. Van Slyke, 1st (A) Provincial, Mathematics.
N. McKechnie, Fourth Year Undergraduate, Toronto University, Assistant in Classics.
W. M Sutherland, M. A., Commercial Master.-... Andrew Patterson, Master of First Form.-Girls.
D. E. Sheppard, 1st Provincial, do. Boys.
J. McInnes, Undergraduate, University, Toronto, Assistant in Mathematics and English.
Mrs: Davidson, 1st Provincial, and Mathematical Scholar, Toronto University.
H. Sutherland, and Provincial, Certificate.
W. C. Forster, Drawing Master.
Prof. Johnson, Music Master.
Major Dearnalley, Calisthenics.

The work of preparing students for the Universities is made a specialty. The following classes are maintained in the Upper School.

I. Class for senior matriculation honors in all departments.

2. Class for junior matriculation (honors in all departments) and for Law Society.

3. Class for First-Class Teachers exclusively. In the Lower School there are TWO classes for Second-Class Teachers and for Intermediate Candidates.

The special features of the school are :

1st. Each department of the Upper

School is taught by a University trained man, who has made the subjects of his department a specialty in his University course. The time of FOUR masters is given exclusively to the Upper School.

2d. Complete equipment for doing the work of both Upper and Lower Schools. Not only is there a full staff of masters, but there is an ample supply of maps, mechanical apparatus used in applied mathematics, chemicals and chemical appliances for experiments, and apparatus for illustrating physics.

3d. Large classes reading for matriculation in the Universities. Arrangements are made for those who have all the subjects for matriculation prepared except classics and modern languages, to join special classes in these subjects, to enable them to advance more rapidly than they would in the Lower School.

4th. Instruction in practical chemistry. Students will be taught both to manipulate and extemporize apparatus.

5th. A large collection of fossils and minerals; also several cases of Canadian birds, human skeleton, etc., to illustrate the lessons in physiology.

6th. Two flourishing literary societies among the students for the purpose of improving themselves in public speaking, reading, writing of essays, and in general literature.

7th. Classes in free-hand oil and water color drawing. Drawing is optional in the Upper School.

8. Publication of a school journal by the Literary Societies.

9th. Advanced classes in vocal music. All the students are taught music, but none are permitted to join the advanced class unless they can read music at sight.

10th. Instruction in military drill.

We call the attention of our readers to the Advertising Cards in this issue of THE QUARTERLY.

THE SCHOOL AT THE UNIVER-SITIES.

TORONTO UNIVERSITY.

James Reid, passed (directly from the school) 2nd year in Arts.

M. S. Fraser, passed (directly from the school) 1st year in Arts.

Geo. Graham, passed (directly from the school) 1st year in Arts.

Geo. Freeman, passed (directly from the school) 1st year in Arts.

Isaac Pike, passed (directly from the school) 1st year in Arts.

The following students passed the Matriculation Examination last June :----

John Coutts, Thos. Crawford, Miss Alice Cummings, Miss E Durdan, H. R. Fairclough, W. Farquharson, A. A. Kraft, A. Lawson, W. F. Mills, D. Mc-Coll, Geo. Ross, J. A. Ross, R. C. Tibb.

Miss M. Stewart and Miss M. McCoy passed the University Examination for Women.

W. A. Duncan passed Senior Matriculation. Altogether 21 at Toronto University.

MC'GILL COLLEGE, MONTREAL.

Sixteen passed the Local Examination (names given in last number of THE QUARTERLY.)

Walter Hunter passed (difectly from the school) 1st year in Arts, ranking 2nd and winning a Classical and Modern Language Scholarship of \$125, and remission of sessional fees.

TRINITY COLLEGE, TORONTO.

R. Norman Hudspeth and E. Martin, Matriculated in Arts, Mr. Hudspeth winning the 3rd General Proficiency Scholarship.

KNOX COLLEGE, TORONTO.

W. Farquharson, passed 1st year and obtained 1st Scholarship.

R. C. Tibb, passed 1st year and obtained and Scholarship.

W. A. Duncan, passed 2nd year and obtained 1st Scholarship.

The following students of the school obtained First-class Teachers' Certificates at the last Examination :

W. Atkin, Miss K. Ballantine, Sidney versity and one at Knox College. Foster, Thos. McLaughlin and Miss M. 1879 two Scholarships at Toronto A. Mills. University, three at Knox College, one at McGill, and one at Trinity College. At the recent Matriculation Exami-Altogether 16 at Toronto; 1 at Lonnation of Toronto University, the school don (the Dominion Gilchrist Scholarranked among the other schools of the ship) 8 at Knox College, 1 at McGill, Province :--and I at Trinity College, making a total 1st in Mathematics. of 27 Scholarships. 2nd " Classics. 1st " Modern Languages. Taking the 7 Intermediate Examina-1st " number of Candidates passed. tions together, no fewer than 186 passed. ıst" First-class Honors won. At the 1st Intermediate 21 passed. ıst " " 2nd " Scholarships won. 23 " " " 3rd 16 (There were no failures.) ĸ .. 4th \cdot 33 The First Scholarship in Mathematics, 4. " 5th " 35 was won by Geo. Ross. " " " бth 30 The Scholarship in Modern Lan-" 7th 👘 " 28 " guages, valued at \$100, was won by Miss FIRST-CLASS CERTIFICATES. Alice Cummings. The second place in Classics was won 1877 two obtained First-class Certificates. " by H. R. Fairclough. 1878 " " " A. Lawson ranked 5th in General 1879 five Proficiency. During the present year 38 students of the school passed University Examina-At the Local Examinations of McGill tions; 5 obtained First-class Certificates; University, held in May last, the school 28 passed Intermediate; 2 Matriculated ranked,in Law, 2 Matriculated in Medicine. 1st in Mathematics. 1st " Classics. Ist " Modern Languages. MILITARY TRAINING IN OUR Ist " Science. SCHOOLS. 1st " the number passed. Ist"" " of honors won. As most of our readers are probably Walter Hunter carried off the 2nd aware, the Government have taken an Classical and Modern Language Scholimportant step in the matter of securing arship of the 1st year in Arts. for the youth of our country a thorough knowledge of military drill. Regulations (There were no failures at McGill. have been issued authorizing the forma-The following is a synopsis of the tion of volunteer companies in High Scholarships won by students on leaving Schools and Collegiate Institutes, subthe schools : ject to certain conditions, of which the 1873 two Scholarships at Toronto following is the substance: -I. The University. company shall consist of not less than forty members over fourteen years of 1874 three Scholarships at Toronto age. 2. On no occasion shall the stu-University and one at London, England. 1875 three Scholarships at Toronto dents forming such a company be called University and one at Knox College. upon for active service. 3. The Govern-1876 three Scholarships at Toronto

University and two at Knox College. 1877 two Scholarships at Toronto

University and two at Knox College. 1878 one Scholarship at Toronto Uni-

ment shall furnish rifles, ammunition, pouches and belts; but the members of the company must provide for themselves jackets and caps which shall be uniform for all. 4. Instruction will be

provided at regular periods of the year and the members each furnished with a manual of the drill.

The measure, as all will admit, is a most judicious one, and there is little to fear but that it will be a decided success. Great advantages will accrue both to the Government and to the students throughout the country. The former, in a few years, will have the satisfaction of knowing that they have the material for creating a reserve force of men who are not only loval and desirous of serving their country, but also trained to do their duty not less efficiently than soldiers of the regular army. While to the latter the drill will afford regular physical exercise and a recreation after study which is much needed in our schools, and at the same time they will be discharging a duty which is incumbent upon every young man in this country, viz : that of learning how to do his share, whenever the occasion may demand, in the defense of Canada or of the glorious Empire of which we are a part.

We have not heard how the scheme is heing received in other schools, but we feel confident that at our own Collegiate Institute it will certainly be a success. The students generally favor the scheme, and at a meeting held to consider the matter, no small amount of enthusiasm was evinced. As more than double the required number have signified their intention of embracing the advantages offered, there will in all probability be two companies formed in connection with the Institute. It is at present thought possible to form a bona fide volunteer company of the older students, as part of the 13th Battalion; and as this matter is being taken hold of with considerable interest among the students, it is almost certain that such a Company will be formed.

We are in sympathy with the whole scheme. Although we sincerely hope war may never desolate our fair Dominion, yet we believe it to be a national duty to make every preparation against evils which history teaches are liable to befall us at any time: This is the design of the Government; and we heartily commend it. But if we knew that war would not exist for the next thousand years, we would still uphold military drill in our schools, were it only to diminish the number of pale faces and round shoulders among students.

THE VICE-REGAL VISIT.

A very prominent feature of the welcome accorded to Their Excellencies, the Marquis of Lorne and Her Royal Highness Princess Louise while visiting our city, was the reception given them at the Central School by the School Board, Teachers and Pupils of the various schools. Rows of seats had been previously arranged around the entire grounds in front of the building affording ample accommodation for the 5000 children who, dressed in holiday attire and attended by their teachers, were arranged thereon according to their respective grades.

On the appearance of their Excellencies, at three o'clock, this vast assemblage of the youth of our city, who were all cagerness to do honor to the distinguished visitors, greeted them with such cheers as only enthusiastic youth can give. As the carriage drove through the gate, the Band of the XIII Battalion played the National Anthem and were joined by the vast concourse of pupils singing under the leadership of Prof. Johnson.

The Governor and Princess having alighted, were conducted by Mr. Osborne, Chairman of the Board of Education, to the raised platform in front of the building which was most beautifully decorated with flowers and evergreens. The Members of the Board, Mr. Geo. Dickson, M.A., Principal of the schools, and Mr. J. H. Smith, County Inspector, were here prescribed. A history of the schools handsomely bound in blue velvet with gold ornaments, was then given to their Excellencies. The Marquis expressed himself as highly pleased with the reception, and said that he would find an opportunity of again visiting the schools, when he would be able to see and learn more of them.

On behalf of the students of the Collegiate Institute, of whom she is one of the most distinguished, Miss Cummings presented the Princess with a beautiful boquet.

Mr. Osborne explained the highly creditable position taken by Miss Cummings at the recent University Examinations.

The Princess expressed great pleasure at hearing of her success, complimented her thereon and said that she hoped that her success would be equally great in all her future undertakings. Their Excellencies next proceeded to view the grounds. Passing around in front of the long ranges of seats they were greeted by hearty cheers and showers of boquets were thrown down from all directions till they literally strewed the pathway. They seemed to enjoy this part of the entertainment very much. The interior of the building was next visited, after which they re-entered their carriages and drove off, having been at the Central for about an hour, during which time all present were afforded ample opportunity of seeing and expressing their opinion of the Marquis 'and Princess.

SHAKESPEARIAN SERIES OF READINGS.

Professor Bell is engaged by the Lecture Association of the Collegiate Institute, to give a series of these readings during the fall. Mr. Bell was so popular and successful in his last series here, that this is sure to be highly satisfactory to all.

The readings will be conducted as before, the early part of the evening being occupied by a condensation of one of Shakespeare's plays, followed by several shorter pieces of a lighter nature. The plays selected for this series are "Romeo and Juliet," "Julius Cæsar" and ""As you like it."

We need say very little of Prof. Bell's

elocutionary powers and scholarly taste. All who have heard him once will be only too glad to welcome him back. The plays selected are those on the curriculum for the school examinations, and will on that account be the more interesting to our students:

PROGRAMME.

The following is the programme of readings to be given by Prof. D. C. Bell, in the Lecture Hall of the Collegiate Institute —

FIRST READING,

Friday evening, November 7th, 1879. Part first—A condensation of Shakespear's tragedy of "Romeo and Juliet" (by request), introducing the principal scenes, incidents and characters. Part second—Selections from Hood's "Whims and Oddities," &c., &c., concluding with "Travelling by Telegraph."

SECOND READING,

Friday evening, November, 21st, 1879. Part First—A condensation of Shakespear's historical tragedy of "Julius Cæsar" (by request), introducing the principal scenes, incidents and characters. Part Second—Selections from Coleman's "Night-Gown and Slippers," &c., concluding with "How I became a Yeoman," by Prof. Aytoun.

THIRD READING,

Friday evening, December 5th, 1879, Part First—A condensation of Shakespear's comedy of "A Mid-summer Night's Dream," introducing the principal scenes, incidents and characters. Part Second—Selections from Barham's "Ingoldsby Legends," &c., concluding with "The Bloomsburg Christening," by Charles Dickens.

Prof. D. C Bell's literary evenings in Hamilton Collegiate Institute, will be resumed in January, 1880. Dates and particulars will be duly announced.

Californian Adage.—The fool seeketh to pick a fly from a mule's hind leg; the wise man letteth the job out to the lowest bidder.

INSPECTOR'S REPORT.

"Extract from the report of Inspector "Buchan on his visit to the Collegiate "Institute on 7th, 8th, 9th, 28th, 29th, "30th April, and 8th May. Transmitt-"ed for the information of the Board " and Head Master."

"Accommodation.—Two of the rooms "are inferior; the accommodation in "other respects good."

"*Equipment.*—The material equip-"ment is very good. The Staff is very "good."

" Organization.—The internal organ-"ization is good."

"Remarks.—This School is in its "usual very good state."

SCOTT'S LADY OF THE LAKE.

Mr. Armstrong, our Modern Language master, is, we are glad to learn, at work preparing an annotated edition of Scott's "Lady of the Lake," which is to be read next year.

Anyone who is at all acquainted with the nature of the English annotated editions must know how unsatisfactory such editions are, and how ridiculous many of their Canadian imitations are. Difficulties arising in the text are generally avoided, while absurdly easy and evident meanings are carefully given. An • undue prominence is given to difficulties day. and crudities of derivation, while no attempt is made to make the work an exercise in higher English, and in the cultivation of æsthetic taste in literature. These books are besides mostly written : for junior pupils and hence do not suit our first and second class teachers and honor students in the University.

We can confidently await Mr. Armstrong's edition, knowing that it will be fully suited to the requirements of our schools.

A juvenile in our public schools being asked at the last examination, how high the thermometer should stand, sagely replied, "about three feet from the ground."

 \mathcal{O}

WENTWORTH TEACHERS' ASSOCIATION.

The regular h.lf-yearly meeting of this Association will be held in the Collegiate Institute, Hamilton, on Friday and Saturday, 24th and 25th of October.

PROGRAMME :

FRIDAY—Forenoon Session.—10 to 11 a. m., Routine Business; 11 to 12 a. m., Reports of Committees Afternoon Session.—1.30 to 2 p. m., President's Address, George Dickson, M.A.; 2 to 3 p. m., English Etymology, T. C. L. Armstrong, M.A.; 3 to 4 p. m., History and How to Teach it, Rev. Alex. Burns, LL.D.; 4 to 4.30 p. m., Practical Botany, E. A. Stevens. Evening Session.—8 p. m., Lecture, "Some relations of Pyschology to Education," Rev. George P. Young, M.A.

SATURDAY—Forenoon Session.—9 to 10 a. m., Commercial Contracts, W. M. Sutherland, B. A.; 10 to 11 a. m., Physical Geography, Rev. W. P. Wright, M. A., 11 a. m. to 1 p. m., Question Drawer.

Teachers will please send questions for the "Drawer" to J. H. Smith, P. S. Inspector. Ancaster, before the meeting of the Association.

Friday will be considered a visiting day.

All Teachers are expected to attend.

GEO. DICKSON,

President.

J. H. SMITH,

P. S. Inspector.

October 8th, 1879.

An Educational Point.—Sam: "I say, Jim, how does you like my new sweet ob clothes?" Jim: "Sweet ob clothes! Go 'leng! you mean suit of clothes." Sam: "Go 'long wid yer ownself, you black ignoramus! Don't folks as knows French say sweet of rooms? Well, de same am applicable to clothes. Go whitewash yourself."

ARCHIBALD MACALLUM, M. A., LL. B.

Since last we greeted our patrons, one, so intimately connected with the schools of Hamilton for nearly a guarter of a century that it is difficult to speak of them without remembering him, has passed outward to that bourne whence no traveller ever returns-from an honored place in our midst to a sacred place in our memories-from a wellspent life on earth to a well-earned crown of life in Heaven. His was a faithful heart that never was backward in sympathy; his was a generous hand that never lacked warmth and assistance; none ever came for advice but found him a friend and a helper; none ever looked on his life but found something noble to copy.

Mr. Macallum was born at Point Fortune, on the Ottawa River, in 1824, and died, after a lingering illness of several months, at his residence, in Hamilton, on the 30th June, 1879. Born of Gaelic parents and reared in the backwoods, with no opportunities for obtaining an English education, his boyhood quietly passed away until he began life for himself; and then he began it in earnest. Never waiting for convenient seasons, he commenced his self-education at once; never stopping for difficulties, he pressed onward and overcame them, blessed with good talents and indomitable perseverance, he steadily won his way, step by step, to a foremost place in the intellect of the nation. He received the first first-class certificate ever granted at the Normal School of Toronto, and was subsequently made Principal of the Provincial Model School in that city. In 1858 he became Principal of the Hamilton Public Schools, and in 1871, Public School Inspector. Nor did he cease to be a student when he became a teacher, for, in 1864, he took his degree of B. A., in the Toronto University, his M. A. in 1866, his LL. B. in 1877, and at the time of his death had made prepara-

tions for taking the topmost step in the ladder, LL. D. He was likewise the author of several educational works, which met with flattering reception.

Of him it is truly said: Very quietly did he pass along life's pathway. No harshness fell from his lips; as the sun builds the flowers, and works its mission quietly, so did our departed friend move in and out of his home, in the Church and in the world, working out quietly, gently and beautifully all the resources of a life, grand in its symmetry and perfect in its moral beauty. He has left his impress on society generally; he speaks to us powerfully by the influence of his meek and quiet spirit.

To young men there is a lesson from his life to be learned: That the most extensive and varied knowledge may be combined with piety. He was a gentle, loving father, a kind husband, the teachers' counsellor, the pupils' friend, and the faithful guardian of the rights and privileges of the people; a consistent Christian, a doer of good, and one whose memory will long be green in every heart in the city.

JAMES PRINGLE,

MANUFACTURER OF

SADDERS, HARNESS, WHPS,

TRUNKS,

Travelling Bags, &c., No. 24 JAMES STREET NORFE,

HAMILTON, ONT.

LIGHT HABNESS AND TUBP BOOTS A SPECIALTY.

MRS. POTTER'S REGISTRY OFFICE,

184 JAMES STREET NORTH.

Ladies can procure good Servants on the shortest notice by applying at the above address.

