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# Educational Weekly

Vol. 1.

THURSDAY, JANUARY 8, 1885.

Number 2.

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SAMUEL J. MOORE, General Manager. C. FRASER, Business Manager Educational Weekly Dept. JOHN E. BRYANT, M.A., Editor.

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Education Dept., J. nuary 7th, 1885.

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# The Educational Weekly.

TORONTO, JANUARY 8, 1885.

Object Teaching, which is a familiar expression to describe the method by which the child gains ideas from an examination of a concrete thing, and not from an abstract presentation of these ideas, is a rational method, and, as we said last week, more than anything else distinctively marks modern education. But like all other methods of teaching it is useful or injurious in proportion as the teacher is capable or incapable. The old methods of education had this advantage, they could not be spoiled by an incompetent teacher, although a good teacher could greatly improve upon them. The new methods have this disadvantage, that while perhaps the best teacher never really attains to the ideal in his employment of them, very many teachers, through slothfulness, or indifference, or want of knowledge, use them so badly, that in their hands they become no better than the old methods, in fact are injurious. Pestalozzi, himself, who first made object teaching of principal importance in education, fell far short in his own practice of a true scientific method. His lessons were given in a disconnected order, and hence his pupils gained but slight knowledge of that correlation of ideas which is the result of true scientific observation. He excited the attention, quickened the observing powers, made names correspond to vivid and real conceptions of things, but his lessons were not related to one another, and hence left no concrete whole in the mind. Much of the object teaching of to-day is similarly fragmentary and unscientific. It proceeds upon no plan. It has no distinct end in view. The child is taught to pick out from an object presented to it superficial qualities, whereas it should be incited to discover all for itself, even those which are remote. The lessons become tedious from constant repetition of precisely the same kind of observations. A horse, a house, a tree, a bit of thread. are taken up one after the other, and after the obvious qualities of size, shape, color, use, etc., are exhausted, the next object is taken, with useless iteration of the same observations. But object teaching, in its ideal existence, exercises both the observing powers and the judgment of the pupil, and introduces him to methodical and orderly thinking, and is the key to the vestibule of every

THE proposed Department of Political Science in the University of Toronto, promises to be one of the most useful the university curriculum was offer. A very large number of students desire to study man in his sociological relations rather than in his accrue to higher education from university crises in the world's history.

physical or biological, as a constituent of the state rather than as an element of nature. They wish to know the laws by which men have been gathered into political and other societies, what is best to promote the well being of these societies now, and what will secure the greatest happiness for them in the future. They do not find the knowledge they seek for in literature, which, for the most part, is concerned with an ideal humanity and with merely incidental aspects of it; nor in mathematics, which is entirely built upon hypotheses impossible to be completely identified with anything we can really grasp in nature; nor in natural science, from which the distinctively human element, the mental element is excluded; nor even in mental science, which being concerned with the nature and laws of mind alone, deals with an ideal mind, a generalized conception of mind, and hence with the conduct of an ideal, generalized person, and not, i.e. theoretically, with the conduct of real men, interacting upon the conduct of other real men. It is true, however, that ethics, which is mental science on its practical side, includes largely the consideration of the conduct of individuals, both towards one another and towards the state, and so, heretofore, afforded to such students as we are speaking of some means of pursuing the study of man as a member of society. The proposed department should embrace all studies which refer to man in his social relations: political science in general, or sociology; political science in its limited sense, or the theory of government; political institutions, or practical government; jurisprudence, including the general principles of law, ancient law, international law, and the fundamental laws of our own commonwealth; political economy, or the science of wealth: the obtaining of wealth being a principal aim of the individual, and its distribution and exchange being of prime importance to the state; ethics, which determining the principles governing the conduct of man towards man, must also greatly regulate the conduct of man towards the community and the state; and history which, in its three aspects-social, political and constitutional -shows the progress in intellect, character and wealth which man has made, and the development of those institutions and laws by which society is held together. The proposed curriculum, which we publish in another column, seems to be very carefully prepared and quite full enough, except that the department of ethics is scarcely represented.

ONE of the first advantages which would

confederation would be the extension of the facilities for obtaining it and diffusing it, resulting from the strength which the federal institution would have, as compared with the University of Toronto, or with any of the present denominational universities. As we remarked, last week, the Government cannot do anything for the University of Toronto without exciting the opposition of the other universities. However unjust this opposition may appear to the supporters of the present national university, and however weak the Government may appear to yield to it, the fact remains that unless confederation takes place the opposition will, for all time to come, effectually prevent further state aid to higher education of any substantial amount. And private benefactions, even when prompted by religious enthusiasm or denominational loyalty, can never be adequate in this country to endow and maintain anything but a weak institution, however excellent be the work it may do. But once let confederation be accomplished, then the Government can do something, and something liberal; for the friends of higher education in this province are numerous enough to give sufficient strength to a Government to maintain one good central institution of higher learning, with facilities for instruction and study in every department of literature, science and art, worthy of the province. The first duty, as indeed it seems to us would be the first pleasure, of the Government would be to establish a professorship in a department of Historical and Political Science as outlined above, and a second duty to establish a professorship of Pedagogic.

THE establishment of a professorship of pedagogic would round off our educational system in respect of its facilities for the complete professional education of the teacher. The actual experience of teachers of the First Class in the school-room, and their practice in the Model and Normal schools, have placed them beyond the necessity of a further training in the art of teaching, and have given them a reasonable knowledge of all necessary methods. But if a chair of pedagogic were established it would afford them, and also undergraduates intending to be high school masters such an opportunity as is not obtainable in the province now, of studying education as a science, of gaining an insight into those psychological and physical laws upon which true education must be based, and of acquiring an historical account of the development of the theory of education, and of the successes and failures of those educational movements, which perhaps unnoticed at the time, have been nevertheless

## Summary of News.

THE Journal des Débats, Paris, resents American interference in the settlement of the Congo question.

TUESDAY's despatches said the British annexation of St. Lucia Bay on the coast of Zululand would probably increase the friction between Germany and England. Inwald, a German explorer in Zululand, writes that he has acquired by treaty from the King of Zululand the right to St. Lucia Bay and 100,000 acres adjucent in behalf of Luderitz, the German merchant who established a trading post at Angra Pequena,

COUNT VON MUNSTER, German Minister to England, is reported to have assured Earl Granville on Monday that Germany has no intention of encroaching upon Australian right, or of establishing a penal colony in New Guinea.

IT is reported that France and Germany have come to an understanding in reference to an international protectorate over the territory of the African International Association.

A DESPATCH on the 31st stated that the formation of a Congo monarchy under a German prince is being discussed in Berlin, another despatch stated that the King of the Belgians will be proclaimed Suzerain of the Congo Free State.

A REPORT from London dated Dec. 30, stated that Earl Granville had ordered the commander at the Australian stations to hoist the British flag over the Louisiade and Woodlark group of islands.

On Thursday it was reported that the seat of Government of the new Congo State should be at Brussels, with an International Council in control.

BISMARCK'S colonial policy is eulogized in France. It will provide it is said an outlet for the over population of Germany, and for German trade and enterprise.

THURSDAY'S despatches reported that the Premier and Governor of Victoria had telegraphed to Earl Derby urging him to tele-graph authority to Australia to secure possession of what adjacent islands remain unclaimed by foreign powers.

THE proposed annexation by France of the New Hebrides for use as a penal settlement for the worst class of convicts, has the approval of the French papers, but is deprecated by England. The Paris papers say that if M. Ferry acts with promptness and firmness England will submit.

It is thought probable at Berlin that Germany will refuse to recognize the recent British annexation of Santa Lucia Bay.

THE Presbyterian Church of Victoria protests against the annexation of the New Hebrides by France, as tending to nullify missionary work done for the past thirty-six vears.

On Monday it was stated that M. Ferry demanded a share with Belgiuin in the suzerainty of the new Congo State.

Another report causing some excitement was that Germany had opened negotiations for the purchase of the Dutch pussessions in New Guinea.

Spain is reported to be annexing territory on the west coast of Africa.

DESPATCHES from Korti on the 30th ult., give the plan of advance adopted by General Volseley. The advance guard of the expedition being at Merawe, and further ascent for the main body by way of the river being impracticable, a reconnoitering force is to dash across the desert to Gakdul well, south west of Merawe and north of Khartoum, and to seize and hold it. The stores will be transported thither and the great portion of the force, and this will be made the strategic point. General Earle, second in command, will push on in small boats from Merawe to Abu Hamed, and is ordered to keep open the line from Abu Hamed to Koresko, and to advance if possible as far as Berber. If then an overland march is possible, he is to go westward through the desert and join the main body at Gakdul well. It is not improbable that fighting will have to de done near Gakdul well before it is taken.

On the 30th the main body of the English advanceguard under command of Gen. Stewart commenced its march into the desert. The column was nearly a hundred yards wide and a mile long. Native troops refuse to accompany Gen. Stewarts column, but are willing to go with Gen. Earle's.

NEITHER Russia nor Germany accepts England's latest proposals regarding Egypt. Russia recommends the guaranteeing of a new loan at a small reduction of interest, and that England shall withdraw from Egypt on a fixed date. Bisma ck charges England with the sole responsibility for the Egyptian troubles, and recommends a complete understanding and agreement with France, as the only way to secure the accord of the other

On Monday the report that Bismarck had charged England with the sole responsibility for the Egyptian troubles was denied.

On Monday it was reported that M. Ferry had accepted Lord Granville's Egyptian proposals.

On December 31, Lord Wolseley received a small piece of paper with General Gordon's geauine seal on the back, dated December 14, saying Khartoun is all right. The note was not an inch square. The paper was rolled up the size of a pea and sewed in the seam of the messenger's garment. General Gordon estimates the Mehdi's force from 20,000 to 80,000. General Gordon spends his nights in ceaseless watch, visiting the outposts to see that every sentry is on the alert. He has two palaces, with a gun mounted on each. He always examines them at day-break, to assure himself they are properly primed and ready for action. He then lies down and sleeps the greater part of the day. General Gordon is described as cheerful. The messenger refused to return to Gordon, as he considered the route too dangerous.

THE report on New Year's day was that France contemplates issuing a large loan on January 15, unless M. Ferry speedily settles the Tonquin difficulty, to free itself from its present anomalous position. then declare war on China. France will

THE Chinese have secured fifty-five German drill sergeants for their army. On the other hand four men-of-war have been sent out from France to reinforce Admiral Courbet.

GEN. LEWALL has succeeded M. Camperon as French Minister of War, because the demand of M. Ferry for more troops to be sent | have been reduced to forty cents per word,

to Tonquin would interfere with the mobilization of the army. The Minister of Marine has also resigned.

A SUBSEQUENT despatch reports that the Minister of Marine has not resigned but is fully in accord with M. Ferry and Gen. Lewall.

Tugspay's despatches denied the report that the French Minister of Marine intended to resign. Gen. Lewall's appointment indicates a vigorous war policy towards China. Gen. Negrier is reported to have defeated 6000 Chinese near Chu.

THE Pall Mall Gazette having been successful in exposing the weakness of England's naval service, has commenced an attack on Lord Northbrook, First Lord of the Admirality, demanding his resignation.

THE Pall Mall Gazette of Friday prophesics that during the new year some form of home rule must be granted to Ireland.

MONDAY, Dec. 29, being Mr. Gladstone's seventy-fifth birthday, greetings were sent him from all parts of the empire. All newspapers irrespective of party, devoted leading articles in eulogy of the man, though not always of his principles.

MR. BIGGAR, M.P., and Mr. Healy, M.P., on the 30th ult. denounced Mr. Bannerman, chief secretary of Ireland. The former said that Mr. Gladstone knew Earl Spencer was a scoundrel.

IT has been announced to the promoters of the channel tunnel scheme that if they endeavor to obtain a bill from parliament the government will oppose the measure.

THE National School Teachers' Congress held at Dublin on the last day of the year, decided by a large majority that the loyal to: sts be abstained from on the occasion of the annual dinner.

THE late earthquake in Spain was far more serious than at first reported. The death roll now runs up to two thousand.

PARLIAMENT at its next session is to be asked for a dowry of \$150,000 to the Princess Beatrice on her marriage to Prince Henry of Battenburg, and an annuity of \$30,000 thereafter.

On Friday it was reported that the venerable patriot, Louis Kossuth, was dying.

ANOTHER dynamite explosion occurred in London on Friday, this time in the underground railway while a train was passing. Providentially no one was hurt.

HENRY GEORGE addressed the Crofters at Uig on the 2nd inst. Resolutions were adopted asserting that all rents should in future be used for the benefit of the nation.

On Monday Mr. Gladstone was reported to be suffering from long-continued sleeplessness, brought on by his worries and anxieties in regard to foreign affairs. His physician, Sir Andrew Clark, has ordered a week's absolute rest.

An agitation is to be commenced in Wales with the object of obtaining a Land Act similar to the Irish Land Act.

LORD WILLIAM PLUNKETT, Lord Bishop of Meath, was, on New Year's day, consecrated Archbishop of Dublin.

Owing to the new competition cable rates

### Notes and Comments.

JOHN G. SAXE, the author of The Hen and the Honey Bee is a popular American writer of comic and satiric verse, and of vers de société. He was at one time à journalist. He was born in 1816. For some time past he has been in poor health.

NEXT week Mr. Bengough will resume his articles on phonetics and phonography. Phonography is of so much importance nowa-days, that he is indeed handicapped in the world's race who cannot practice it. Mr. Bengough's articles will be found both interesting and practical.

OUR first number was unavoidably some four or five days late on account of delays incident to the starting of every new journal. This present number will therefore be some two or three days late also. But we hope next week to issue the number promptly on time, and also each subsequent number.

THE series of articles from the pen of Dr. Hoagins, on "Noted Auxiliary Educationists," commenced in our first number, will be continued in our next issue. The late Bishop Strachan will be the subject of the next sketch. Then will come Dr. Duncombe, William Lyon McKenzie, Major Lachlan, and others.

Mr. Selby's enterprise in establishing a kindergarten emporium cannot be too highly commended. Commercially we believe it has not been a successful venture, yet we sincerely hope it may become so. But it is a great convenience for mothers and teachers of little ones to have within easy reach a tull supply of kindergarten material and literature.

FROM personal experience we can speak very favorably of Mr. Stahlschmidt's "Favorite" school-desks, advertised in our last number, knowing them to be both strong and comfortable. Of Messrs. Guggisberg's "Automatic" desks we can speak from personal inspection. They are exceedingly well finished and very compact. In this last respect they are a novelty, we believe. Mechanics whom we know have tested them and pronounced them very strong.

THE sketch of Fræbel is concluded in this number. Next week we intend to give a general sketch of the Freebel methods. and following this there will be a series of articles taking up the methods one by one, so that those teachers who wish to acquaint themselves practically with the kindergarten system may be able to do so. We advise all young teachers to follow these kindergarten articles, for the better the kindergarten is understood, the more praise does it receive from practical educationists.

WE received the Christmas number of the Varsity too late for notice last week. Its handsome cover is only in just keeping within. A very thoughtful and discriminating essay on Joaquin Miller, by the editor, seemed to us worthy of great praise. Dr. Mulvany's most musical Latin translation of Heber's Hymn to the Trinity, and Dr. Wilson's Our Ideal are so beautiful that we cannot resist transferring them to our columns, knowing that our readers will be as delighted with them as we are.

WE call especial attention to the opening chapter of a series of articles on "Perspective" by Mr Arthur J. Reading, teacher of mechanical drawing and perspective in the Ontario School of Art. Mr. Reading found in teaching this subject to the teachers' classes last summer that there was no text-book which he could recommend to his pupils as sufficiently clear and concise. These articles will be written in a plain and simple style, so that anyone wishing to obtain a practical knowledge of perspective, without which correct drawing is impossible, will be able to acquire it without the aid of a teacher.

THOSE who desire an hour's mental relaxation can easily have it by obtaining either Grip's Almanac or the Purch Almanac for 1885. In respect of humor, whether in the text or in the illustrations, the Canadian book does not compare at all unfavorably with its noted English congener. But Punch has the advantage not only in a supremacy of position and circulation which enables it to make use of a more expensive process of illustration, but its artists, Tenniel, Du Maurier, Sambourne, and Harry Furniss, are picked from the best in the world. Either book can be had for ten cents.

WE have received a copy of the Presbyterian Review, a new journalistic venture, published in the interests of the Presbyterian Church, by a joint stock company which very praiseworthily promises to hand over to the church, for church purposes, all profits beyond a return of seven per cent, per annum to the shareholders. The manager of the company is, we believe, Mr. G. H. Robinson, M.A., for many years Principal of Whitby Collegiate Institute. We wish our contemporary every success. We notice in this first number a very readable article on "Church Psalmody," by the Rev. Mr. Thompson, of Ayr, who has delighted so many associations of teachers with his enthusiastic praise of music. Inexhaustible both in his wit and wisdom, we know no one so influential in the cause of good music among the people as he.

MR. CHARLES MACKAY, author of the poem The Sea-King's Burial, was one of the most popular lyric poets of ourday. He was a journalist by profession, and for some time wrote the leading articles of the Illustrated London

News, of which afterwards he was the chief editor for many years. But he did a great deal of work in general literature, his Memoirs with the abundant and excellent matter of Extraordinary Popular Delusions being probaby the prose effort by which he is best known to the public. But it is as a lyric poet he will be longest remembered: his Cheer Boys, Cheer, his The Good Time Coming, and his John Brown (the music of the latter piece being also written by himself) being extremely popular in their day, and well remembered now. In 1857 he visited America, and his leave-taking of his American friends was the occasion for one of Dr. Holmes' finest poems. He was born in 1812.

> We regret that our over-crowded columns prevent us from giving, as we said we should, a complete list of those who have kindly promised to contribute to our journal during the coming year papers of practical interest on educational matters. From every part of the province we have received the most encouraging and kindly letters; and we do not doubt that, as we said last week, we shall be able to do something towards knitting more closely together our very complex educational system. We wish it to be distinctly understood that our columns will be freely open, as far as space permit, for all who have something to say on educational matters-whether it relate to the work of the school-room, or the administration of the system by the departmen al officers, or changes in the school law that would be beneficial, or any other educational topic whatsoever. Only let the articles be short. We have so many interests to attend to, our space is precious.

A LITERARY enterprise of great national importance has been undertaken by our indefatigable Canadian littérateur, Mr. G. Mercer Adam. This is the publication of a Canadian Library which shall comprise, among other things,-Canadian annals; records of Canadian adventure; histories of Canadian wars; accounts of Canadian foundations and settlements; biographies and memoirs of eminent Canadians, past and present; manuals of Canadian constitutional history; collections of Canadian song and fiction; descriptions of great engineering enterprises in Canada; a cyclopædia of Canadian political, industr. al, statistical and national affairs; and translations of the early French histories of Canada, and of the narratives of the early French missionaries in this country. We shall frequently refer to this enterprise again, and shall aid it as much as lies in our power, as we think it will increase the popular knowledge of Canadian history and institutions, and develop an interest in Canadian literature, which may be greatly helpful towards establishing a truly national and patriotic spirit. In the meantime we recommend the Library to the managers of all Mechanics' Institutes and school libraries.

## Literature and Science.

#### "HOLY, HOLY, HOLY! LORD GOD ALMIGHTY!"

DR. MULVANY.

SANCTUS! Sanctus! Deus Dominator! Hymnis matutinis veneramur Te. Sanctus! Sanctus! Clemens et Creator, Semper Tres Personæ, sub uno Nomine.

Sanctus! Sanctus! Mare circumstantes Crystallinum cantant Te cælicolæ! Cherubim et Seraphim semper adorantes, Qui es, et qui fuisti, et semper cris, Te!

Sanctus! Sanctus! Sanctus! sub nube latentem, Te Deum profani non possunt cernere, Solus Tu es Sanctus. Perfectem et potentem, Semper summum solum confitemur Te.

Sanctus! Sanctus! Deus Dominator! Cuncta quæ fecisti, semper laudant Te. Sanctus! Sanctus! Clemens et Creator, Semper Tres Personæ, sub uno Nomine. -'Varsity Holiday Number.

#### OUR IDEAL.

PRESIDENT WILSON.

DID ever on painter's canvas live The power of his fancy's dream? Did ever poet's pen achieve Fruition of his theme? Did marble ever take the life That the sculptor's soul conceived? Or ambition win in passion's strife What its glowing hopes believed? Did ever racer's eager feet Rest as he reached the goal, Finding the prize achieved was meet To satisfy his soul? -' Varsity, Holiday Number.

#### THE SEA-KING'S BURIAL.

CHARLES MACKAY.

("The old Norse kings, when about to die, had their body laid into a ship; the ship sent forth with sails set, and slow fire burning in it, that, once out at sea, it might blaze up in flame, and in such manner bury worthily the old hero, at once in the sky and in the ocean "—Carlyle's "Hero Worship."]

"My strength is failing fast," Said the sea-king to his men ;-"I shall never sail the seas Like a conqueror again. But while yet a drop remains Of the life-blood in my veins, Raise, oh, raise me from the bed; Put the crown upon my head; Put my good sword in my hand; And so lead me to the strand, Where my ship at anchor rides Steadily;

If I cannot end my life In the bloody battle-strife, Let me die as I have lived,

On the sca."

They have raised King Balder up, Put his crown upon his head; They have sheathed his limbs in mail, And the purple o'er him spread;

And amid the greeting rude Of a gathering multitude, Borne him slowly to the shore ;-All the energy of yore From his dim eyes flashing forth-Old sea-lion of the north-As he looked upon his ship Riding free; And on his forehead pale Felt the cold refreshing gale, And heard the welcome sound Of the sea.

" Hurrah ! for mighty Balder ! As he lived, so he will die ! Hurrah I hurrah! for Balder!" Said the crowd as he went by. "He will perish on the wave, Like the old Vikingr brave; And in high Valhalla's halls Hold eternal festivals; And drink the blood-red draught None but heroes ever quaffed, With Odin and the spirits

Of the free. In the fire, or in the wreck, He will die upon the deck, And be buried like a monarch Of the sea."

Old Balder heard their shouts As they bore him to the beach; And his fading eye grew bright With the eloquence of speech, As he heard the mighty roar Of the people on the shore, And the trumpets pealing round With a bold triumphal sound, And saw the flags afar Of a hundred ships of war, That were riding in the harbor Gallantly.

And said Balder to his men-And his pale cheek flushed again-"I have lived and I will die

On the sea."

They have borne him to the ship With a slow and solemn tread; They have placed him on the deck With his crown upon his head, Where he sat as on a throne; And have left him there alone, With his anchor ready weighed. And the snowy sails displayed To the favoring wind, once more Blowing freshly from the shore;

And have bidden him farewell Tenderly, Saying: "King of mighty men,

We shall meet thee yet again, In Valhalla, with the monarchs Of the sea."

Underneath him in the hold They have placed the lighted brand; And the fire was burning slow As the vessel from the land, Like a stag-hound from the slips. Darted forth from out the ships. There was music in her sail As it swelled before the gale, And a dashing at her prow As it cleft the waves below,

And the good ship sped along, Scudding free; As on many a battle morn In her time she had been borne. To struggle, and to conquer On the sea.

And the king with sudden strength Started up, and paced the deck, With his good sword for his staff, And his robe around his neck ;-Once alone, he raised his hand To the people on the land : And with shout and joyous cry Once again they made reply, Till the loud exulting cheer Sounded faintly on his ear; For the gale was o'er him blowing

Fresh and free: And ere yet an hour had passed, He was driven before the blast, And a storm was on his path, On the sea.

And still upon the deck, While the storm about him rent, King Balder paced about Till his failing strength was spent. Then he stopped awhile to rest-Crossed his hands upon his breast, And looked upward to the sky With a dim but dauntless eye: And heard the tall mast creak, And the fitful tempest speak Shrill and fierce, to the billows Rushing free;

And within himself he said; "I am coming, O ye dead! To join you in Valhalla,

O'er the sea.

"So blow, ye tempests-blow, And my spirit shall not quail; I have fought with many a foe ;-I have weathered many a gale; And in this hour of death, Ere I yield my fleeting breath-Ere the fire now burning slow Shall come rushing from below, And this worn and wasted frame Be devoted to the flame-

I will raise my voice in triumph, Singing free :-

To the great All-Father's home I am driving through the foam, I am sailing to Valhalla,

O'er the sea.

"So blow, ye stormy winds-And ye flames ascend on high ;-In the easy, idle bed Let the slave and coward die! But give me the driving keel, Clang of shields and flashing steel: Or my foot on foreign ground, With my enemies around! Happy, happy, thus I'd yield,

On the deck, or in the field, My last breath, shouting 'On To Victory.

But since this has been denied, They shall say that I have died Without flinching, like a monarch Of the sea."

And Balder spoke no more,
And no sound escaped his lip;—
And he looked, yet scarcely saw
The destruction of his ship,
Nor the fleet sparks mounting high,
Nor the glare upon the sky;—
Scarcely heard the billows dash,
Nor the burning timber crash;—
Scarcely felt the scorching heat
That was gathering at his feet,
Nor the fierce flames mounting o'er him
Greedily.

But the life was in him yet, And the courage to forget All his pain, in his triumph On the sea.

Once alone a cry arose,
Half of anguish, half of pride,
As he sprang upon his feet,
With the flames on every side.
"I am coming!" said the king,
"Where the swords and bucklers ring—
Where the warrior lives again
With the souls of mighty men—
Where the weary find repose,
And the red wine ever flows;—
I am coming, great All-Father,

Unto thee!
Unto Odin, unto Thor,
And the strong, true hearts of yore—
I am coming to Valhalla,
O'er the sea."

Red and fierce upon the sky
Until midnight, shone the glare,
And the burning ship drove on—
Like a meteor of the air.
She was driven and hurried past,
'Mid the roaring of the blast:
And of Balder, warrior-born,
Naught remained at break of morn,
On the charred and blackened hull,
But some ashes and a skull;
And still the vessel drifted

Heavily,
With a pale and hazy light
Until far into the night,
When the storm had spent its rage
Upon the sea.

Then the ocean ceased her strife
With the wild winds lulled to rest,
And a full, round, placid moon
'Shed a halo on her breast;
And the burning ship still lay
On the deep sea, far away;
From her ribs of solid oak
Pouring forth the flame and smoke,
Until, burnt through all her bulk
To the water's edge, her hulk
Down a thousand fathoms foundered
Suddenly.

With a low and sullen sound;
While the billows sang around
Sad requiems for the monarch
Of the sea.

Vi-king'-r the Norse sea-kings. All-Fa'-ther, a beautiful old English name for God. Val-hal'-la, the heaven of our pagan ancestors. O'-din, one of the gods of the old English. Keel, the bottom of a ship; used herefor "ship." Thor, the old English war-god. Ha'-lo, a circle of light. Req'-ulems, hymns sung over the dead.

## THE FAIRY LAND OF SCIENCE. MISS A. B. BUCKLEY.

THERE is only one gift we must have before we can learn to know them-we must have imagination. I do not mean mere fancy, which creates unread impossible monsters, but imagination, the power of making pictures or images in our mind, of that which is, though it is invisible to us. Most children have this glorious gift, and love to picture to themselves all that is told to them, and to hear the same tale over and over again till they see every bit of it as if it were real. This is why they are sure to love science if its tales are told them aright; and I, for one, hope the day may never come when we may lose that childish clearness of vision, which enables us through the temporal things which are seen, to realize those eternal truths which are unseen.

If you have this gift of imagination come with me, and in these lectures we will look for the invisible fairies of nature.

Watch a shower of rain. Where do the drops come from? and why are they round, or rather slightly oval? In our fourth lecture we shall see that the little particles of water of which the rain-drops are made, were held apart and invisible in the air by heat, one of the most wonderful of our forces or fairies, till the cold wind passed by and chilled the air. Then, when there was no longer so much heat, another invisible torce, cohesion, which is always ready and waiting, seized on the tiny particles at once, and locked them together in a drop, the closest form in which they could lie. Then as the drops became larger and larger they fell into the grasp of another invisible force, gravitation, which dragged them down to the earth, drop by drop, till they made a shower of rain. Pause for a moment and think. You have surely heard of gravitation, by which the sun holds the earth and the planets, and keeps them moving round him in regular order. Well, it is this same gravitation which is at work also whenever a shower of rain falls to the earth. Who can say that he is not a great invisible giant, always silently and invisibly toiling in great things and small whether we wake or sleep?

Now the shower is over, the sun comes out, and the ground is soon as dry as though no rain had fallen. Tell me, what has become of the rain-drops? Part no doubt have sunk into the ground, and as for the rest, why you will say the sun has dried them up. Yes, but how? The sun is more than ninety-one millions of miles away; hor has he touched the rain-drops? Have you ever heard that invisible waves are travelling every second over the space between the sun and us? We shall see in the next lecture how these waves are the sun's messengers to the earth, and how they tear asunder the rain-drops on the ground, scattering them in

tiny particles too small for us to see, and bearing them away to the clouds. Here are more invisible fairies working every moment around you, and you cannot even look out of the window without seeing the work they are doing.

If, however, the day is cold and frosty, the water does not fall in a shower of rain; it comes down in the shape of noiseless snow. Go out after such a snow-shower, on a calm day, and look at some of the flakes which have fallen; you will see, if you choose good specimens, that they are not mere masses of frozen water, but that each one is a beautiful six-pointed crystal star. How have these crystals been built up? What power has been at work arranging their delicate forms? In the fourth lecture we shall see that up in the clouds another of our invisible fairies, which, for want of a better name, we call "the force of crystallization," has caught hold of the tiny particles of water before "cohesion" had made them into round drops, and there silently but rapidly, has moulded them into those delicate crystal stars known as snowflakes.

And now, suppose that this snow shower has fallen early in February; turn aside for a moment from examining the flakes, and clear the newly fallen snow from off the flower-bed on the lawn. What is this little green tip peeping up out of the ground under the snowy covering? It is a young snow-drop plant. Can you tell me why it grows? Where it finds its food? What makes it spread out its leaves and add to its stalk day by day? What fairies are at work here?

First there is the hidden fairy "life," and of her even our wisest men know but little. But they know something of her way of working, and, by and by, we shall learn how the invisible fairy sunbeams have been busy here also; how last year's snowdrop plant caught them and stored them them up in its bulb, and how now in the spring, as soon as warmth and moisture creep down into the earth, these little imprisoned sunwaves begin to be active, stirring up the matter in the bulb, and making it swell and burst upwards till it sends out a little shoot through the surface of the soil. Then the sun-waves above ground take up the work, and form green granules in the tiny leaves, helping them to take food out of the air, while the little rootlets below are drinking water out of the ground. The invisible life and invisible sunbeams are busy here, setting actively to work another fairy, the force of "chemical attraction," and so the little snow-drop plant grows and blossoms, without any help from you or me.

One picture more, and then I hope you will believe in my fairies. From the cold garden, you run into the house, and find the fire indeed laid in the grate, but the wood dead and the coals black, waiting to be

lighted. You strike a match, and soon there is a blazing fire. Where does the heat come from? Why do the coals burn and give out a glowing light? Have you not rend of gnomes buried down deep in the earth, in mines, and held fast there till some fairy wand has released them, and allowed them to come to earth again? Well, thousands and millions of years ago, those coals were plants; and like the snowdrop in the garden of to-day, they caught the sunbeams and worked them into their leaves. Then the plants died and were buried deep in the earth and the sunbeams with them; and like the gnomes they lay imprisoned till the coals were dug out by the miners, and brought to your grate; and just now you yourself took hold of the fairy wand which was to release them. You struck a match, and its atoms clashing with atoms of oxygen in the air, set the invisible fairies "heat" and "chemical attraction" to work, and they were soon busy within the wood and the coals causing their atoms, too, to clash; and the sunbeams, so long imprisoned, leapt into flame. Then you spread out your hands and cried, "Oh, how nice and warm!" and little thought that you were warming yourself with the sunbeams of ages and ages ago.

This is no fancy tale, it is literally true, as we shall see after a while, that the warmth of a coal fire could not exist if the plants of long ago had not used the sunbeams to make their leaves, holding them ready to give up their warmth again whenever those crushed leaves are consumed.

Now, do you believe in, and care for, my fairy land? Can you see in your imagination fairy Con. sion ever ready to lock atoms together when they draw very near to each other: or fairy Gravitation dragging rain drops down to the earth; or the fairy of Crystallization building to the snow flakes in the clouds? Can you picture tiny sunbeam-waves of light and heat travelling from the sun to the earth? Do you care to know how another strange fairy, "Electricity," flings the lightning across the sky and causes the rumbling thunder? Would you like to learn how the sun makes pictures of the world on which he shines, so that we can carry about with us photographs or sun pictures of all the beautiful scenery of the earth? And have you any curiosity about Chemical action, which works such wonders in air, and land, and sea? If you have any wish to know and make friends of these invisible forces, the next question is how are you to enter the fairy land of science?

There is but one way. Like the knight or peasant in the fairy tales, you must open your eyes. There is no lack of objects, everything around you will tell some history if touched with the fairy wand of imagination. I have often thought, when seeing some sickly child drawn along the street,

lying on its back while other children romp and play, how much happiness might be given to sick children at home or in hospitals, if only they were told the stories which lie hidden in the things around them. They need not even move from their beds, for sunbeams can fall on them there, and in a sunbeam there are stories enough to occupy a month. The fire in the grate, the lamp by the bedside, the water in the tum bler, the fly on the ceiling above, the flower in the vase on the table, anything, everything, has its history, and can reveal to us nature's invisible fairies.

Only you must wish to see them. If you go through the world looking upon every thing only as so much to eat, to drink, and to use, you will never see the fairies of science. But if you ask why things happen, and how the great God above us has made and governs this world of ours; if you listen to the wind, and care to learn why it blows; if you ask the little flower why it opens in the sunshine and closes in the storm; and if, when you find questions you cannot answer you will take the trouble to hunt out in books, or make experiments, to solve your own questions, then you will learn to know and love those fairies.

Mind, I do not advise you to be constantly asking questions of other people; for often a question quickly answered is quickly forgotten, but a difficulty really hunted down is a triumph forever. For example, if you ask why the rain dries up from the ground, most likely you will be answered, "that the sun dries it," and you will rest satisfied with the sound of the words. But if you hold a wet handkerchief before the fire and see the damp rising out of it, then you have some real idea how moisture may be drawn up by heat from the earth.

A little foreign neice of mine, only four years old, who could scarcely speak English plainly, was standing one morning near the bedroom window and she noticed the damp trickling down the window-pane. "Auntie," she said, "What for it rain inside?" It was quite useless to explain to her in words, how our breath had condensed into drops of water upon the Lold glass; but I wiped the pane clear, and breathed on it several times. When new drops were formed, I said, "Cissy and Auntie have done like this all night in the room." She nodded her little head and amused herself for a long time bre thing on the window-pane and watching the tiny drops; and about a month later, when we were travelling back to Italy, I saw her following the drops on the carriage window with her little finger, and heard her say quietly to herself, "Cissy and Auntie made you." Had not even this little child some real picture in her mind of invisible water coming from her mouth, and making drops upon the window-pane.

(To be continued.)

## Educational Opinion.

ON THE VALUE OF DRAWING TO THE PUBLIC SCHOOL PUPIL.

FIRST PAPER.

In view of the progress being made in the system of education throughout our province, a progress engendering continual advancement in the matter of taste and culture, the direct result of which is an outcropping of a desire for art in its higher manifestations, it is well to state how the teaching of drawing in our common schools may be of great service to many

of our younger population.
We do not advocate this study wholly from a desire to mete out to art in its finer aims in future a more direct and general recognition. Merely now to observe and investigate the matter to some extent is all we can do, and from our standpoint to endeavor to point out the way the results of such teaching—to our thinking—would operate: by serving the utilitarian purpose of enabling many of the pupils so taught to grasp and understand more readily the nature and proportions of any object it is well for them to be interested in when they leave school, whether it may be a block of wood to hew, a large stone to chip, or some piece of metal upon which they must ply with hammer and tongs at the forge and anvil.

To the laying of a sound, practical basis necessary for the accomplishment of all good work from the artizan's standpoint, no place is more suitable than the public school, for in it may be conveyed an insight into the fundamental principles that eventually will guide and direct the subsequent career of a youth into the channels of practical design, who otherwise, although he may have had natural faculty for drawing, yet from lack of encouragement would have remained in ignorance of a means to make a livelihood by the exercise of

One of the chief values of drawing to the average pupil is the power of explanation which a little facility in this respect gives him. He will, if he pursues his studies at any reasonable length compatible with his abilities, be able to explain and illustrate many things in a much shorter and more satisfactory way than a mere verbal description would give. For instance, in the days when he will have left school, and such success has attended him that he has become an honest working mechanic, he will be enabled to map out and preserve for himself and others an idea of his work; so that his thought by being thus fixed becomes more of a safe guide, and more intelligible; and so whatever work he may have to do in the matter of fashioning any article is bodied forth concretely, to be carried further, or to be so adjusted as to completely suit his purpose. Any one who wishes to explain a new design, adjustment or whatnot, for any

article he is having made, will be able then, with the knowledge of drawing obtained in his school days, with a few dest strokes of his pencil so to explain and illustrate it that the most obtuse of mortals cannot otherwise than understand him, no matter in what channel of life his efforts may be directed.

There are many ideas that cannot be expressed in any other manner than by drawing, consequently it is of the greatest importance that instruction should be given in this art; else many thoughts that may he of great service to mankind will have to go unrecorded and perish for want of concrete representation. However, as for the higher results of drawing, such as the awakening of the mind to a deeper appreciation of all forms of beauty, we cannot now treat of them. Our plea is now for giving the public school pupils a rudimentary knowledge at least of drawing. There is in every school some one or perhaps more of the pupils who have a natural aptitude for it. It may be well here to remark that strong desire and aptitude for drawing creates for itself a place as it overrides the tyranny of all restraint. This is what makes the artist. Not for his development, however, do we wish to speak; but for those who have a grain or two of faculty for design, and who need encouragement to have it furthered or brought out. Such an one, were he encouraged in the idea that eventually it would be within his power to earn a good livelihood by the exercise of this congenial faculty would then be guided into a desire for the ultimate development of it.

Whatever may be thought of the manifestations of art, they are the natural products of our time. So that if we as a people now wish ornament as an adjunct to utility, we have to train up a class of designers to meet the increasing wants of what education and growing wealth are creating. In this respect it will be well if our public school teachers are at least able to successfully pave the way at the first for a pupil who may have a talent which in time will in part meet the growing needs in the matter of design, that our civilization demands.

Ornament to the educated mind and eye is not a luxury. Good form, color, or heauty in any shape, is just as necessary to the majority of educated persons as good food is necessary for the successful rearing of fat cattle.

As the eye now demands such appurtenances to comfort, the manufacturer in his enterprise looks about him to supply it. If he cannot find in our own country one who is sufficiently developed as a designer, then he seeks in some other country—to some purpose—his object. Or by being perhaps put to a little trouble and expense in this connection, he may cheaply get cast-off patterns from some of the older manufactories, which may tem-

porarily do, until he is forced by demand and competition to so adjust his manufacturing facilities as to keep abreast of the times.

If, as it has been stated, the education of the people begets desires which are the necessary outcome of a state of culture, i. e., a more complete existence; then it is as much the duty of the Government to see that our population in its increasing demand for richer and more beautiful textile fabrics does not have to go outside of our own manufacturing industries to have these desires gratified, as it is the duty of the Government to see that a rigid policy is fashioned for the protection of manufactures already established. course freemen buy where they please; so that if one sees a better pattern of wallpaper, or carpet, or rug, or any article of household furniture, abroad, than he sees at home, and if he deems the possession of this article essential to a better enjoyment of his life, and if he has the means requisite to a free gratification of his educated taste, he will certainly import this article, spite of duty. We repeat, though, that it is the duty of the Government to see that there shall be no need of going outside of our own domain for the essentials spoken of. To prevent that, it has only to foster and encourage the art of design as much or in the same degree as it encourages education in all the other branches.

Homer Halson

#### BOOK REVIEW.

A Temperance Lesson Book, by Mrs. Mary H. Hunt, with an introduction by A. B. Palmer, M.D., LL.D. New York: A. S. Barnes & Co.

The people of the State of New York represented in Senate and Assembly, do enact as follows:

Section 1.—Provision shall be made by the proper local school authorities for instructing all pupils in all schools in physiology and hygiene, with special reference to the effects of alcoholic drinks, stimulants and narcotics upon the human system.

This enactment has called forth an excellent little work-A Temperance Physiologyfor Intermediate Classes and Common Schools, prepared under the direction of the Scientific Department of the National W. C. T. U., and endorsed by Dr. Palmer, Dean of the Medical Department of Michigan University. Moderate in their tone, careful in their statements, the editors have happily succeeded in shaping physiological and hygienic truths into suitable forms for youthful minds to eagerly seize upon and comprehend. The book is in its make-up very attractive. The cover is strong and pretty. The paper thick, well calen-

dered and white. The typography is of that beautiful clear type which is characteristic of all the books of A. S. Barnes & Co. The work itself is such as many parents and teachers have long wished for. The pupil is taken into a veritable wonder-room-the laboratory of nature. He is first made acquainted with alcohol. He watches its growth from the fruit or the seed, through the processes of fermentation and distillation. Its harmful character and that of opium likewise, at length he fully recognizes. He is then led to exploring the recesses of the human body. In a series of easy lessons helearns the wondrous delicacy and mechanism of its structure. He cannot but shudder as he clearly sees the destruction wrought by the alcohol or the narcotic entering at the lips to defile "the beautiful temple" within-he sees how a single drop of nicotine put upon the tongue of a dog is fatal to it. He sees how greedily alcohol mixes with water in any compound. He learns how it enters the blood, the tissues, the bones even, in search of its prey.

This little book contains a clearly defined outline of physiology, upon which is established an intelligent acquaintance with the all-important laws of hygiene. particularly those referring to the effects of stimulants and narcotics. Its scientific accuracy, the teachable form of its preparation, the spirit of great fairness in which it is written, its attractive style, and the skill which is shown in condensing such an amount of information within so few pages, are its chief characteristics. The book pleads for a career. In closing it, one is impressed with the conviction to which Dr. Palmer gives utterance, that, "if all the facts contained in this little work concerning life and health were firmly lodge. I in the minds of the pupils in our public schools throughout the country, an immense work for good would be accomplished." Of course this book, excellent as it is, cannot be used as a text-book in the schools of our province; but until some such sinilar work be prepared and authorized, our teachers cannot do better than make it the basis of their health and conduct

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By far the most superb gift-book of the season is the Romeo and Juliet, which the Shakesperian scholar, Edward Dowden, has edited, and the celebrated young Academician Frank Dicksee has illustrated. It is a very large folio of 53 pages, in large type, and contains twelve magnificent drawings, reproduced by the photogravure process. Its price, \$25, will of course prevent a large sale, but if any school should wish to make a present to a teacher, nothing more beautiful or excellent could be selected.

talks with their pupils.

## TORONTO: THURSDAY, JANUARY 8, 1885.

#### EXAMINATIONS AND EXAMI-NERS.

As it is about midway between the examination season of last year and that of this year, anything which may be said now on examinations and examiners cannot be mistaken to have a covert and insidious personal reference to some particular examination or examiner.

Examinations when conducted by bodies specially instituted for that purpose are in no sense a part of a true educative process: they have become a part of the education system, not on account of any educational function they fulfil, but, accidentally, because of the impossibility of testing in any other way, without the suspicion of partiality, the relative mental equipment of candidates, or-what is a more serious misfortune,-their absolute mental equipment. As a test of the relative mental equipment of candidates, they are frequently illusory; they do much harm: -- morally, by giving to students false and sordid motives for the pursuit of knowledge; and intellectually, by imparting to them a stimulus and enforcing a haste detrimental to the personal exercise of their judgment, their reflective powers, and their powers of observation; and physically, by exciting in them some of the strongest of the human passions,ambition, pride, love of praise, desire of gain, and so on, - to goad them to over-tax the brain, and force the mind to disregard the requirements of the body. This use of examination is passing away. It has disappeared from our more advanced public and high schools; the students of our colleges are rebellious against it; the senates of our universities are substituting for the competitive examination the more rational system of giving to students certificates of a certain absolute standing, leaving their relative standing undetermined in name as well as in fact.

If the teaching has been properly done, if the teacher is competent, no one can so well test the absolute standing of a student as the teacher himself, and examinations should form a large part of his process of education. But when pupils of different teachers or students from different institutions are to have their absolute mental equipment tested and certified to in order to qualify them for entrance into some

higher institution, common to several lower ones, or to qualify them for the possession of a certificate which entitles them to some special privilege or hall-mark of standing that all are anxious to possess, then, unfortunately, human nature, highly developed as it is supposed to be, is not so unvaryingly impartial as to be trusted, and the board of examiners has to be instituted, not, let it be repeated, to discharge a function of education—but simply, with as much approach to perfection as possible, though still roughly, to make this test of absolute standing, which the true teacher can best do, but practically, cannot be allowed to do.

It follows then, that the nearer the examiner is, in respect of character, wisdom, and experience, to the ideal teacher, the more fit is he for his duty. As a teacher he would be familiar with every part of the work to be examined, for he would have taught it all, or supervised its acquirement: he would know from experience what value to put upon attempted and half-formed answers which sometimes indicate mere blind ramblings, but at other times real approaches towards the sought-for truth; he would not set questions which were beyond the limits of what he taught, or too hard or too numerous for the time allowed; his sense of justice would not allow that, or if accidentally he had once done it, the faces of his pupils would so accuse his conscience so that he would never repeat the wrong; in every examination he would see that the work was fairly covered by the questions he set, for he would know that his pupils in reviewing their work for the examination would think they had not done right for themselves unless they had reviewed the whole, and that they naturally would expect that he who had read all and understood it, would pass in all, he who had read three-fourths would pass in three-fourths, and so on, for any fraction; again, he would recognize the merit of exact and careful preparation of the work assigned: e.g., if he had with special care taught difficult parts of the subject, he would know that his pupils would naturally expect that some one or more of these parts would be examined upon, and so he would examine in them; he would also, as a teacher, have paid great attention to the form in which work prepared for him was done, knowing that accuracy of expression, entire correspondence of word with thought, is an important result to secure

in education: so in his examination, the mere answer he would consider of little importance in comparison with the reasoning, and the clearness in expressing the reasoning, by which the answer had been obtained; and again, as a teacher, he would have learned the injustice of proposing questions which are deficient or inaccurate in statement, knowing that a young candidate is apt to fasten upon such a question and that, baffled by it he does not know how, he will work upon it persistently through almost all the time allowed, thus losing, by no fault of his own, all chance of passing; he will remember too that he is examining in all probability pupils of very different degrees of mental endowment, and will so set his paper that the most humbly endowed, if entitled to pass, will have a fair chance of so doing.

This is the way in which a conscientious teacher of judgment and experience, would examine his own pupils. How much the more necessary is it for an examiner, who has to deal with the pupils of many teachers to be highly conscientious, wise, and experienced! How often have our most important examining bodies, the Education Department, and the University of Toronto, employed examiners, that were not sufficiently wise, conscientious and experienced. Papers have been set, over and over again, at their examinations, with numerous errors, not always typographical. Inexperienced people have been appointed both to prepare and to examine papers. Papers too long by half for the time given have been set. Papers going beyond the limits of the subject as laid down in the curriculum oras prescribed by custom have been set. Papers for an inferior examination have been made equal in difficulty to those of a superior examination in the same subicct at the same time. There have been papers entirely too difficult, others entirely too simple: this happening most frequently when two subjects are put upon the same paper. There have been papers so eccentric in their treatment, that a candidate who might know perfectly eighty per cent. of the subject prescribed could not make five per cent. of the paper assigned. There have been papers made up of a few very easy questions, the remainder being of extremely difficult ones, thus putting the most indifferent student quite on a par with the most studious one who was not brilliant. Papers have been set that gave clear evidence that

the examiners had not read the whole of the work which they examined, but had dipped into it only here and there; papers too, in which the examiners suddenly and without authority (that had been made public at least) made new departures in the method of examination, thereby, if the usual percentage of marks for passing had been exacted, necessarily causing the rejection of seventy-five per cent. of the candidates who offered themselves.

A number of other instances could be given of an abuse, or perhaps one should say, a misuse, of the trust reposed in examiners; but these are passed over, because to mention them might lead to an easy identification of the examiners; while now we wish to be quite general. We may say, however, that we are quite able to substantiate our general remarks by reference to particular papers, except that, of course, the question of percentages must always be a matter of opinion.

We repeat that the ideal examiner must be a wise, accomplished, experienced and highly conscientious teacher.

#### TO THE PATRONS OF THE EDU-CATIONAL WEEKLY.

THE Editor begs leave to announce in this way to the patrons of the EDUCATIONAL WEEKLY, that they may expect during the year contributions upon educational topics of both general and special interests from many of the leading educators of the province. He has received a large number of letters of congratulation and good will containing promises of aid, of the most cordial and sympathetic nature possible, both from gentlemen who kindly allow their names to be published, and from others who, for various reasons, desire not to have their names announced.

The Editor wishes the readers of the WEEKLY distinctly to understand that no gentleman whose name is announced is in any way answerable for the policy this paper may pursue. The Editor himself is the only one who is responsible for that, and the only one who is to determine what that policy shall be. Briefly he will state it to be that which he conceives to be best for the entire educational interests of the province. He begs leave to heartily thank all those who have promised to help him in any way, and respectfully solicits advice and contributions of interest from all who are engaged in any way in the work of education.

Amongst the many who have promised contributions sometime during the year are:-

T. C. L. Armstrong, M.A., LL.B., Barrister, Toronto. Rev. W. Ballantyne, M.A., Pembroke. W. H. Ballard, MA., Inspector, Hamilton. John W. Bengough, Editor Grip, Toronto. Thomas Bengough, Shorthand Institute, Toronto. J. H. Brown, Professor of Visible Speech, Deaf and Dumb Institute, Belleville.

P. H. Bryce, M.A., M.D., Secreta Provincial Board of Health.

James Carlyle, M.D., Normal School, Toronto. Thomas Carscadden, M.A., Principal Collegiate Institute, Galt.

Rev. Principal Caven, D.D., Knox College, Toronto. Geo. A. Chase, M.A., Head-master High School, Ridge-town.

Rev. Professor Clarke, Trinity College, Toronto,

W. Cruikshank, Principal, Ontario School of Art, Toronto J. Dearness, Inspector, East Middlesex, London.

W. G. Eakins, M.A., The Mail, Toronto.

L. E. Embree, M.A., Principal, Collegiate Institute, Whithy. J. H. Farmer, M.A., Classical Master, Woodstock Col-

W. H. Fraser, M.A., Modern Languages Master, Upper Canada College.

W. B. Geikie, M.D., F.R.C.S., Dean, Trinity College Medical School.

J. C. Glashan, Inspector, Ottawa.

Goodwin Gibson, M.A., Barrister, Toronto.

Rev. Principal Grant, D.D., LL.D., Queen's College, Kingston.

John Henderson, M.A., Principal, Collegiate Institute, St. Catharines.

John George Hodgins, LL.D., Deputy Minister of Educa-

William Houston, M.A., Librarian to the Legislative Assembly. S. Hughes, English Master, Collegiate Institute, Toronto-

W. H. Huston, M.A., Principal, Pickering College. M. J. Kelly, LL.D., Inspector, Brantford.

Thomas Kirkland, M.A., M.D., Principal, Normal School, Toronto.

I. M. Levan, M.A., Principal, Collegiate Institute, St. Mary's

Robert Little, Inspector, County Halton, Acton. Rev. Professor MacLaren, Knox College, Toronto,

C. F. McGillivray, M.A., Head Master, High School, Fergus.

T. M. McIntyre, M.A., LL.B., Principal, Ladies' College, Brantford. W. Mulock, M.A., Barrister, Vice-Chancellor University of

Principal Nelles, D.D., Ll.D., Victoria College,

Wm. Oldright, M.A., M.D., Provincial Board of Health,

A. Purslow, M.A., LL.D., Head Mavier, High School, Port Hope.

W. J. Robertson, M.A., Mathematical Master, Collegiate Institute, St. Catharines.

Rev. Principal Sheraton, D.D., Wycliffe College, Toronto. H. H. Spotton, M.A., Principal, Collegeate Institute, Barrie. John Squair, M.A., Lecturer, Modern Languages, Univer-sity College, Toronto.

James Turnbull, M.A., Head Master, High School, Clin-

W. Tytler, M.A., Head Master, High School, Guelph. Homer Watson, A.R.C A., Ontario Society of Artists,

E. Wetherell, M.A., Principal, Collegiate Institute, Strathroy. W. Williams, M.A., Principal, Collegiate Institute, Col-

President Wilson, LL.D., University College, Toronto.

N. Wolverton, M.A., Principal, Woodstock College. Samuel Woods, M.A., Principal, Ladies' College, Ottawa,

## Table Talk.

MR. BUXTON FORMAN edits a new varicrum edition of Byron for Mr. Murray, the famous London publisher.

THE offer of Miss Caldwell, of Virginia, to give \$300,000 to found a Catholic University at New York, has been submitted to the Pope, who intends to confer a signal mark of distinction upon the lady.

MARTIN FARQUHAR TUPPER, who derived nothing from the sale of Soo,000 copies of his "Proverbial Philosophy" in America, is now suffering from poverty in London. If all those who have ridiculed the old poet would contribute something for his relief, he would be enabled to spend his last days in comfort.

THE International Library and Artistic Association having for its object the protection of library and artistic works by means of the establishment of International Copyright, has for its President, Victor Hugo; and for its Honorary English Committee, the Prince of Wales, Mr. Gladstone, Lord Tennyson, Monsignor Capel, Mr. Froude, Mr. Ed. Jenkins, Prof. Max Müller, and Mr. Torrens.

In Mr. Herbert Spencer's The Man versus The State, in which the author's principal thesis—that liberalism is growing coercive in its legislation, that Liberals are but Tories of a new type—is enforced with brilliant argument, the reader will have an eloquent plea against over legislation. Every young man who wishes to keep abreast with the highest political thought of the day should read this book.

Our High School masters will be interested in Mr. Verrall's Studies, Literary and Historical, on the Odes of Horace, to be published by the Macmillans. Mr. Verrall deals chiefly with the meaning of the poems and their relation to the history of the time. His most important thesis is that the first three books of the Odes were originally published as a whole, and were not a mere miscellany, but in their main outline, based

IT is said that an inventory of all General Grant's possessions has been taken under the judgment entered against him in favor of Wm. H. Vanderbilt for \$150,000 and interest, loaned him when trying to save the firm of Grant & Ward from failure. The inventory covers all Grant's real estate, and includes presents of weapons, bric-a-brac, and rare articles made to the General by friends at home and abroad, the swords and medals awarded him by Congress, his pictures and books, relics of the war, and even the engraved cards ordered to be struck to express the thanks of Congress. It is understood that Vanderbilt has thrown off \$60,-000 of the claim, and that Gen. Sherman and Cyrus W. Field, with other friends, are making efforts to raise the remaining \$100,000.

THE air we breathe is in truth the worst enemy of the astronomer's observations. It is their enemy in two ways. Part of the light which brings its wonderful, evanescent message across inconceivable depths of space, it stops; and, what it does not stop, it shatters: and this even when it is most transparent and seemingly still; when mist veils are withdrawn, and no clouds curtain the sky. Moreover, the evil grows with the power of the instrument. Atmospheric troubles are magnified neither more nor less than the objects viewed across them. T.L. Lord Rosse's giant reflector possesses—nominally -a magnifying power of 6,000; that is to say, it can reduce the apparent distances of the heavenly bodies to 1-6000 their actual amount. The moon for example, which is in reality separated from the earth's surface by an interval of about 234,000 miles, is shown as if removed only thirty-nine miles. Unfortunately, however, in theory only. Prof. Newcomb compares the sight obtained under such circumstances to a glimpse through several yards of running water, and doubts whether our satellite has ever been seen to such advantage as it would be if brought—substantially, not merely optically -within 500 miles of the unassisted eye.

#### Music.

M. LASSALLE, the French baritone, is to receive \$100,000 for a six months' tour through the United States.

A SERIES of concerts for working people has been inaugurated at Steinway's Hall, New York. Theodore Thomas' orchestra gave the inaugural performance.

Schumann was not social in disposition. An amusing anecdote is told of an interview between him and Wagner, at which Wagner did all the talking and Schumann all the listening. Here is another anecdote of Schumann told by Hebel:—"Schumann was quite unable to express himself. I visited him in Leipzig. We had been in the habit of exchanging letters and compliments. After a curt, almost dumb greeting, I sat by him a quarter of an hour. He did not speak but only stared at me. I, too, remained silent, in order to test how long the thing would last. He didn't open his mouth. Then I jumped up in despair. Schumann, too, seized his hat, and accompanied me to my hotel, half an hour distant. He walked beside me, dumb, and I, angrily, followed his example. Having arrived at the hotel we took leave of one another abruptly without saying a word."

Arthethird Brooklyn Philharmonic concert given last week under the direction of Mr. Thomas, Mozart's "Requiem" was produced. The mysterious circumstances attending the production of Mozart's "Requiem," and the fact that it was his swan-song, completed on his death bed, would always invest it with a special interest, even if it did not contain some of his most inspired conceptions. It seems remarkable that a man in ill health, should in his last year produce two such good works as the "Magic Flute," and the "Requiem," and the world will never cease regretting that he died at the age of thirtyfive, and wondering what he would have achieved had he lived twenty years longer, as he might easily have done if his patriotism had not induced him to prefer starving in Vienna, to the honorable position and three-thousand-thaler income offered him by Frederick William II. of Prussia:

HERE is a story of the celebrated Adelina Patti, who is now singing for Col. Mapleson at the Academy in New York:-A year previous to her first public appearance in New York, she and her sister, Carlotta, went to a party. By some oversight no one had thought of ordering a carriage to fetch them home. It had been snowing all day. Both the young ladies were in full ball toilette, with white satin shoes. It was two o'clock in the morning, and no coach anywhere to be found. Most of the guests had already left; what was to be done? At last one of the gentlemen hit upon the happy idea of fetching a sledge which was standing not far off under a shed. Adefina and Carlotta, well enveloped in woollen shawls and wraps, took their seats. A clothes-line was then fastened to the sledge, and several of the gentlemen catching hold of it drew the two young ladies home. This was Mme. Adelina's first triumphal progress, and afforded much delight to her and to the others who took part in it. "Never" said the Diva, subsequently, "shall I forget this incident, which struck me as a good omen for my future career." What that career has since been everyone knows.

#### Drama.

MME. PATTI carries twenty-six trunks on her operatic tour.

EDWIN BOOTH will reappear at the Fifth Avenue theatre on January 19.

DRURY LANE is wholly given up to elaborate spectacular pantomime.

MISS MARY ANDERSON is appearing as Julia, in the "Hunchback," at the Lyceum.

IT is now believed that Mme. Albani will not visit America during the present season.

MR. HOWARD CARROLL has written a play entitled "An American Countess," which Mile. Rhea has bought, and in which she will act during her approaching season.

RISTORI'S Elizabeth is pronounced a great creatio. Critics, however, complain that the great actress has not yet thoroughly mastered the English language.

PROF. BLACKIE the other day at Glasgow made light of his seventy-five years by singing Lyle's "Let us Haste to Kelvin Grove," and a parody of the same song.

THE notable foreign actors and actresses now in America are Henry Irving, Ellen l'erry, Ristori, Aimée, Théo and Patti; and Bernhardt, Wilson Barrett, Sonnenthal and Materna are soon to come.

MISS FORTESQUE, the heroine of the Garmoyle suit, after a tour of the English Provinces, in which she will take the part of Galatea, in Mr. Gilbert's play of "Pygmalion and Galatea," will come to America to fill a professional engagement.

St. James' Gazette, endeavoring to find the reason for the perennial popularity of "Hamlet," asks: "Is not the reason the fact that the very complexity and vacillation of the character appeal to that sense of doubt and uncertainty which is common to us all?"

IN "As You Like It," at St. James' Theatre, London, this month, the more important of the characters will be allotted thus:—Rosalind, Mrs. Kendall; Orlando, Mr. Kendall; Adam, Mr. Hare; Jacques, Mr. Vezin; Touchstone, Mr. Young; First Lord, Mr. Brandon Thomas.

LORD LYTTON has been taking the London critics to task for not approving Miss Mary Anderson's *Juliet*, accusing them of irritation and vindictiveness because Miss Anderson does not entertain them at supper. The critics reply with vigor, and repeat their opinion of Miss Anderson's acting, as being graceful and painstaking—but ineffectual.

SHAKESPEARE—whose dramas were never more popular in English-speaking countries than to-day—has been the salvation of the drama in recent years. Notwithstanding the evil effect of plays of the French school upon the popular taste; Shakespeare has, despite Bernhardt and her ilk, been a constant corrective. "Hamlet" and "Othello" and "Romeo and "Juliet" and "As You Like It" refuse to be crowded off the boards by "Camille," "Frou Frou," the lascivious humor of opera bouffe, and the melodrama of the carpenters. Whatever remains of a correct dramatic taste in England or America is more largely due to the healthful, ennobling and ever-present influence of Shakespeate than to any other cause.—Current.

## Art.

ANOTHER Royal Society! This time it is the Royal Society of Medalists. Sir Frederick Leighton and Mr. Alma Tadema are members. The secretaries are officials of the British Museum.

A MONUMENT to Bellini will be unveiled at Naples next spring, representing the composer seated at a piano and preparing the score of an opera. Grouped about are the statues of the heroines of his works, represented by their most noted interpreters, among them Grisi as Norma, Malibran as Elvira, and Mlle. Emma Nevada as Amina.

An American critic in the Brooklyn Union has, to use a street phrase, rather badly given himself away in criticising an etching of Mr. P. G. Hamerton. pronouncing it bad, and, on the strength of it, asserting that Mr. Hamerton is one of the worst etchers known; when, as a matter of fact, the etching was never published or even made. Mr. Hamerton remarks that hitherto in criticism he had supposed the non-existent was safe—but it is no longer so.

INDICATIONS are not lacking that the various photographic reproductive processes will soon, practically, usurp the province of wood engraving. Steel engraving already is virtually extinct. The wood engraver of the near future must be a master of his art—an artist, in fact—to obtain employment. There will be plenty of portraiture for a Cole and of landscape work for a Kingsley; but the days of a journeyman of the burin are numbered. It is not easy for a thoughtful person, familiar with the technical and commercial conditions of book and magazine illustrating, to glance at some of the holiday books and come to any other conclusion.

THE lady who is known as Miss Etlen Terry was at one time the wife of Mr. Watts, now the foremost of English painters. In the Watts' collection, at present on exhibition in New York, by the way the most remarkable representation of English art ever seen in America, is a picture in which Endymion, the beautiful shepherd, lies sleeping, while the love-smitten goddess Selenc, is hovering above him. It is said that Miss Terry, twenty years ago, was the model of the ethereal goddess. The face bears no great resemblance to that of the famous actress—the reason assigned, being that the painter, in revenge of his wife's vagaries, altered it beyond recognition.

MISS FANNY SUTHERLAND, a young artist formerly of Toronto, has been on a visit to this city since last October. Miss Sutherland has studied under Sir Frederick Leighton, Millais, and other leading members of the Royal Academy, and she has strong testimonials from Mr. Pickersgill, R.A., as well as from the Duke of Northumberland, Lord and lady Romilly, Lady Ramsay Fair-fax, Lady Clifford of Chudleigh, Mr. Cecil Raikes, M.P. for Cambridge, Lady Margaret Creighton, daughter of the Earl of Radnor, and many other well-known persons whose portraits she has painted. She has also added much to her reputation by her powerfully painted water colours of interiors of many of the old halls and historic mansions of England. These have been honoured on several successive years by being placed "on the line" at the exhibitions of the Royal Academy.

### Practical Art.

#### PERSPECTIVE.

In view of the fact that the study of perspective and kindred subjects is being taken up so generally in educational institutions throughout Canada, and that the growing demand occasioned thereby for suitable text books is with great difficulty supplied, any apology for, or explanation of, the articles of which this is the first, is entirely unnecessary. It is felt that they will be welcomed by a large majority of the readers of this journal.

It is the intention of the writer to make them eminently practical and self-explanatory, avoiding everything that would be likely to interfere with simplicity, so that they may be useful not only to teachers and adults, but to younger ones who may be interested.

It may be stated here that, in order to teach the subject properly, the teacher requires to have a thorough understanding of all principles involved, of the rules governing these principles and their methods of working, and of the practical application of rules, so as to be armed at all points and prepared to answer intelligently any and every question that may be asked. To acquire this knowledge the following suggestions as to mode of study might be adopted with advantage:

Determine not to be satisfied with simply knowing how a certain result was obtained. but insist upon understanding also why the means were adopted that brought about this result.

Do not pass by a difficulty until it is mastered.

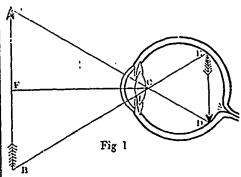
Work out every problem that is given, without reference to the solution, even when it is supplied; then compare one with the other and make such corrections as may be

It will be found that one step leads up to another; that what is known is used for the purpose of finding out something that is not known, and therefore the necessity of understanding the work as it is taken up will be readily seen.

A slight knowledge of the laws of Optics is absolutely necessary to a thorough comprehension of the first principles of this science, for it really is a science as well as an art, and while no more than is required for the purpose will be introduced here, yet it is hoped that the student will obtain more than a superficial knowledge by means of text books devoted to that particular subject.

Nearly every object possesses the power of reflecting or giving off at least a portion of the light that falls upon it, and this light

that when the eye is directed towards an object the rays of light pass from it and produce on the optic nerve, of the eye the sensation called vision.



in fig. 1, AB is an object from the extremities of which rays of light enter the eye through the pupil, cross one another in C, and pass onward to form the inverted image DE. For the sake of simplicity the point C is supposed to be the focus of the crystalline lens L, and as this is a point through which all rays must pass, it will be used to indicate the position of the spectator or point of wision.

It will be evident that, provided AB is the longest line that can be seen when at the distance FC from the eye, the angle ACB limits the extent of visible surface, or field of vision, that is to say, this angle includes all the rays that can enter the eye at one time. It is called the angle of vision, and in the normal eye is considered to be the angle of an equilateral triangle, or 60°. As the opening in the iris, called the pupil, through which all light must pass in order to reach the interior of the eve, is circular, the neld of vision is also circular; and as light passes from every portion of it, instead of a few points, the volume of light entering the eye forms a cone, of which AB is the base, FC the axis, and C the apex.

The meaning of the word perspective, which is derived from the Latin per, through, specio, to look, naturally suggests the fact that there is something through which the spectator is looking. This something is the Picture Plane, or plane of delineation, and may be illustrated by means of a pane of glass held upright between the eye and the object, on which the outline could be easily traced. This outline would be a correct perspective drawing and might be transferred to a sheet of paper, but by means of certain fixed rules, we are enabled to make our drawing at once on paper, without the tracing on glass, that is if the exact shape, size and position of the object are known.

Assuming that the word, "plane" is new to some, a few words are given here by way of explanation. A plane is simply a flat surface without thickness, and may be horizontal, vertical or oblique. The walls, floor and ceiling of a room and the roof of a house are travels in straight lines in all directions, so I familiar objects, and are good illustrations

of planes in the three positions mentioned. The picture plane is usually imagined to be vertical, and the ground plane, that is, the surface of the ground, horizontal.

The different lines and points used in practice will be taken up and explained in the next article.

Arthur Meading

## The High School.

#### QUESTIONS ON STEWARTS ELEMENTARY PHYSICS.

Selected from Hill's Manual.

I -INTRODUCTORY.

3. What are characteristics of the knowledge of physical laws which men acquire from every-day experience?

4. How long since men first set themselves systematically to the task of acquiring a knowledge of the laws of nature

What is the object of Physics? 6. What do we learn from astronomy concerning the magnitude of the Universe?

7. Explain the three-fold division of matter in o substances, molecules and atoms. Illustrate by a familiar example.

S. What is the analogous three-fold divi-

sion in astronomy?

9. What resemblance exists between the structure of the Universe and that of a body on the earth's surface, in consequence of which both may be called porous?

10. Distinguish between physical and sensible pores. What proves the existence of physical pores? Give instances of bodies having sensible pores.

it Name the three states of matter. What are their c'ief characteristics? Give examples of each state.

12. Explain relative motion by means of the motions of the earth and the planets.

13. What have we strong reason to suppose to be the condition of any substance at rest,the molecules of a block of stone, for example?

14. In view of our present scientific knowledge, what may be asserted of every body in the universe, large or small?

15. Illustrate by examples the meaning of the term force.

16. Mention three of the most universal forces of nature. What are their effects? What consequences would ensue if these forces severally were to cease to exist?

17. What must be the effect of a single force acting upon a body? What may be the effect of two or more forces acting simultancously on a body? Illustrate by the force of gravitation.

II. LAWS OF MOTION.

#### (a) Determination of Units. .

18. What is the unit of time?

19. Mention the two chief advantages of the Metric system of weights and measures. 20. What is the unit of length in the Metric

system, and its value approximately in English inches?

21. Enumerate the chief multiples and sub-multiples of the metre, and give their values in terms of the metre.

22. How are units of surface and of capacity derived from those of length? Give examples of each kind.

## The Public School.

#### THE HEN AND THE HONEY-BEE.

JOHN G. SAXE.

A LAZY hen, the story goes,
Loquacious, pert and self-conceited,
Espied a bee upon a rose,
And thus the busy insect greeted:

"I've marked you well for many a day, In garden blooms and meadow clover; Now here, now there, in wanton play, From morn till night an idle rover.

"While I discreetly bide at home, A faithful wife, the best of mothers, About the fields you idly roam, Without the l.ast regard for others.

"While I lay eggs and hatch them out,
You seek the flowers most sweet and fragrant;
And, sipping honey, stroll about,
At best, a good for nothing vagrant."

"Nay," said the bee, "you do me wrong:
I'm useful, too,—perhaps you doubt it:
Because, though toiling all day long,
I scorn to make a fuss about it.

"Come now with me and see my hive, And note how folks may work in quiet; To useful arts much more alive Than you with all your cackling riot!"

## MORAL EDUCATION THE GREAT WANT OF THE AGE.

11. MORAL EDUCATION-ITS NATURE.
REV. PRESS PRESCOTT.

Moral education must not be confounded with religious education, for this would be virtually to confound morality with religion. Morality may exist without religion,—or, at least, with very imperfect systems of religion,—although religion cannot exist without morality.

Moral education was given by Pagans to their children before the light of Christianity shone into the world; though given in a form which that light shows to have been defective. The "Cyropædia" of Xenophon, though regarded as a philosophical romance, is one of the best specimens of the views held by enlightened Pagans on the subject of morality.

To come nearer our own times. In the days of Ferdinand and Isabella, the Catholic Sovereigns of Spain, the Moors, who were Mahometans, inhabited the south of Spain until their expulsion, and the proverb was current among the Spaniards: "The Catholic faith and Moorish morality make a Christian." Thus, on the contession of the Catholics themselves, the followers of the False Prophet were their superiors in morality

Moral education, as we have seen, stands in most intimate relation to the successful

cultivation of the intellectual powers, but it sustains a yet more important relation to religious decision and the spiritual life. In its absence the intellect suffers, but the Christian character suffers still more. It may be regarded as the connecting link between mental education and religion.

The nature of moral education, and the relation it sustains to religion, are set forth, in a parabolical manner, in that inexhaustible treasury of wisdom, the Word of God. In the parable of the Sower we are taught that religion requires, for its production, two things—good seed and good soil. In vain is it that the seed be good, abundant in quantity, and excellent in quality, unless the soil be good. And yet, as we shall hereafter see, the Christian Church directs its attention almost exclusively to the sowing of the seed, while it neglects the preparing of the soil.

British agriculture has made great advancement during the past thirty or forty years; but how has that improvement been effected? Not by improving the seed, but by improving the soil. The wondrous science of chemistry, which during the same period has received great development, has taught the agriculturist that certain chemical substances are required by certain kinds of soil, and that when these substances are supplied the fruitfulness of the soil is increased. And the reli.ion which moral education bears to religion is this: as those substances, skilfully applied, enrich the soil and cause it to bring forth abundantly, so moral education, conducted on system, prepares the human heart to receive the precious seed of Divine truth, and causes it to bring forth thirtyfold, sixtyfold, or a hundredfold.

Let us listen; therefore, to the Great Teacher, as He speaks to us in the Gospel according to St. Luke, in the 8th chapter, at the 15th verse: " Those on the good ground are they, which in an HONEST and GOOD heart, having heard the Word, keep it, and bring forth fruit with PATIENCE." These three qualities,-Honesty, Goodness, and Patience,-together with the Golden Rule. will be seen, when we come to investigate them, to be the three qualities, the cultivation of which constitutes moral education, as applied to those who are yet in the days of their youth. This enumeration, or classification, is given to us by Him who understands human nature. He "knows what is in man," for this very sufficient reason-He has created man. For the present purpose, therefore, it is not only admirably clear and concire, but it is likewise comprehensive and

"For the present purpose," we say, because the purpose of this work is not to furnish a code of Christian ethics for mature Christians, but to do what is quite as important, though not so glittering, to lay deep in youthful minds the foundations of morality, on which the edifice may in after years be erected.

#### METHOD OF INSTRUCTION IN TEACHING WRITING.

The method of instruction in writing naturally ranges itself under three divisions: first. Knowledge; second, Execution; third, Criticism. There is something to be done, and there must be a best way of doing it; both these must be known. The doing follows. And then the questions immediately arise, is it correctly done? and, Was it done in the best manner? These are answered by criticising.

KNOWLEDGE.—Teachers and pupils, therefore, should know exactly,—

- 1.—What the proposed work itself really is: that is, the MATTER TO BE EXECUTED.
- 2.—How to execute the proposed work; that is, the MANNER OF EXECUTING.
- 1.—THE MATTER TO BE EXECUTED.—
  This embraces a thorough knowledge (a) Of the elements; (b) Of their connection to form letters; (c) Of the distinction between main and creeting lines, and of turns and angles; (d) Of the peculiarities arising from the abination of letters into words.
- 2.—THE MANNER OF EXECUTING.—This involves a correct knowledge (a) Of the position of the body, of the arms and the hands, and of the books; (b) Of penholding; (c) Of the rests; (d) Of the movements. All these will be found treated of at length under their respective heads.

First, With regard to the Matter to be Executed.

1. The teacher must himself know what is to be done, and how to do it.

There is no better way for him to learn this than by taking the book his pupils are to use, and writing it himself in advance from day to day His own writing will be improved, and he will acquire a knowledge of the number of minute points which require attention, and of the difficulties to be overcome.

Let him also study the directions and explanations of this book, pen in hand. Many statements, which, if merely read, would obtain little if any appreciation, will be found to be of great importance if subjected at once to the test of experiment.

Having thus qualified himself, however poor a writer he may be, he will come before his class with confidence.

2. He should elicit from his class by questions all that they can discover by observation of the copy and from the instructions on the cover of the copy-books, and should tell them the critical points.

It is an excellent rule never to tell them anything they can find out for themselves. They will thus be trained to habits of careful observation—the true method of acquiring the foundations of all knowledge.

3. He should use the blackboard freely.

Let him rule the lines on the board corresponding to the copy. Then require the class to dictate the copy to him, doing exactly what they tell him. This shows them the necessity of exact knowledge.

Next give suitable explanations and illustrations, and call attention especially to the critical points.

4. The forms of the elementary principles should be fixed on their minds.

- (1) BY EXAMPLE.—Let them be made correctly on the blackboard.
- (2) BY CONTRAST. Let the opposite be illustrated.
- (3) By Comparison.—Let erroneous forms be made; not all possible ones, but those that illustrate the various points in the description, especially the critical points.

Secondly .- With regard to the manner of executing we would suggest:

- 1: That the teachers should illustrate it by example. Let him take a large book-a geography, for instance—and place his right arm and hand on it in the correct position with the pen properly held. Let the pupils view this on all sides. In the same way, let the movements be illustrated.
- 2. That the scholars should learn it by experiment.

For instance let them try holding the pen with the thumb at the end of the fingers, instead of opposite the first joint of the middle finger, and it will be found that the least pressure on the pen causes the holder to sink down. A like result follows if the thumb is placed at the side of the holder, instead of underneath it. The pupils thus proving the facts by experience will see the value of the directions given and remember them.-The Teachers' Guide to Writing.

## The Kindergarten.

#### THE LIGHT THAT IS FELT.

JOHN G. WHITTIER.

A TENDER child of summers three Secking her little bed at night, Paused on the dark stair timidly. "Oh, mother! take my hand," said she, And then the dark will all be light.

We older children grope our way, From dark behind to dark before; And only when our hands we lay, Dear Lord, in Thine, the night is day, And there is darkness nevermore.

Reach downward to the sunless days, Wherein our guides are blind as we, And faith is small and hope delays; Take Thou the hands of prayer we raise, And let us feel the light of Thee !

-Christmas St. Nicholas.

#### FROEBEL.

(Concluded from last issue.)

PESTALOZZI hadalready done much towards discovering this truth. He had absolutely devoted his life to the education of children, -teaching, and showing others how to teach, upon the plan which began by educating the senses, and through them reached and worked upon the intellect. Inspiring all his labor, was his unbounded faith in the power of human love and sympathy. This was upon the right track, and a great advance upon the barren and erratic theories and practices previously in vogue; and with it,

Froebel to develop the truth and to perfect it. Here the lessons taught by nature to the thoughtful, observant lad in the old Thuringian Forest came into play. Taking the results of his well-loved Pestalozzi, Froebel was able to seize upon, expound, and develop the ideas involved in them, and so derive a conception of the process of true human development, that is to say, true education.

And this is what he learned from Nature and from Pestalozzi's experiments: the process of education is harmonious development. lust as Nature insists that the bud must come to the perfection of budhood, absorbing all the qualities of light and air of which as a bud it is capable-not hurrying forward to another stage before its present stage is completed; so that were it to die it would still die a perfect bud; the stem, likewise, and the leaf, the blossom and the fruit-Nature working in timely, perfect harmony; -so with the little child, the harmonious development of all its composite nature according to the laws of its being, must be the true process of its education.

The child's mind is naturally active and vigorous; in truth, it is never at rest. It wishes to do everything it feels itself strong enough to do. "Just as the gardener creates nothing in the trees and plants which are under his care, so the educator creates nothing in the children," Froebel would say, for he loved to speak of children as young human plants, "and he must watch their movements with the most sympathetic care, in order to supply exactly that food which they require at any particular time." Froebel would have the educator early learn this truth-every letter of which might well be written in gold: The beginning of all knowledge is observation; the goal of it is clear comprehension, Observation, or in other words, the power of the senses, is the foundation of all instruction. For example, Pestalozzi found that on first beholding two or three objects placed before it, the order of thought with the child is: (1) How many? (2) How do they look? (3) What are they called? i.e., the order of development is: number, form, speech. Froebel recognized this and adopted it, and so his whole system and all his methods are based on continued observation of the nature of childhood.

We can now understand how the Kindergarten grew out of this. Froebel's own unloved boyhood made him very tender and sympathetic with children, and he would not even have his assemblies of children called schools, but he called them "gardens of children." and the teachers he called "child-gardeners." The children's occupations, he maintained, should be to them an easy and natural employment of their energies, and should therefore come to them, as it were, through the avenues of play; and so he went on, thinking Froebel could close right in. But it was for out, inventing and forming, with the aid of

enthusiastic coadjutors, a system of employments which, while they appear in the eyes of children to be plays into which they will throw all their energies, have nevertheless a distinct educative object. This object, as Froebel described it, is "to give the children employment in agreement with their whole nature, to strengthen their bodies, to exercise their awakening minds, and through their senses to make them acquainted with Nature, and then with their duties to their fellowcreatures; and especially, to guide aright their hearts and their affections.

Froebel's great ambition was so to establish his system as to have its influence spread throughout his country, and thereby affect, as he hoped for good, the educational work of his time. Like all great reformers, he encountered much indifference, much opposition, and at last-what seems inexplicable in the middle of the nineteenth century-an actual prohibition of his system on the part of the Prussian Government. However, as during all his life he had many sympathetic and enthusiastic co-workers, who caught from him his self-sacrificing spirit, and learned from an intimate experience of his actual work the principles which in his judgment lie at the foundation of all education, his teachings have not been lost to the world, but through many channels have influenced the character of primary education in all western nations. He died in April. 1852, only a third of a century since, but there can be no doubt that his principles of education have been acknowledged as true by leading educators all the world over.

HESPERA.

FREEMAN'S Historical Geography of Europe, although somewhat expensive (31s. 6d.), is, perhaps, the best for the close student of history.

THE Trinity House authorities are seriously considering making it compulsory for steamers navigating the Channel to carry electric lights.

A TABLET in remembrance of Dr. William Chambers, recording his services to literature and other virtues, has just been erected near his grave in Peebles, in which town he was born in 1801.

MR. ELLERY, the Government Astronomer, at Melbourne, and President of the Royal Society of Victoria, communicates in the last volume of Transactions, his views on the red sunsets, which have given rise to so much speculation. He attributes them to the prevalence of aqueous vapor in the higher regions of the atmosphere.

Two interesting things are promised to the readers of periodical literature: In the Pebruary Harper's a poem by Walt. Whitman, suggested by the song of a single bird heard by Lieutenant Greeley amid the snow and ice of 80° N.L.; and an article in the January number of the North American Review, by Mr. Frederic Harrison, on Mr. Froude's Life of Carlyle, in which it is said Mr. Froude will be handled without gloves.

## The University.

THE PROPOSED DEPARTMENT OF POLITICAL SCIENCE IN THE UNIVERSITY OF TOR-ONTO.

#### PASS.

#### SECOND EXAMINATION.

Constitutional History and Law. Chrasy, Rise and Progress of the English Constitution.

Political Economy.

MRS. FAWCETT, Political Economy for Beginners.

#### THIRD EXAMINATION.

Constitutional History and Law. BAGEHOT, Essayon the English Constitution. Outlines of the Constitutional History of the United Cutlines of the Constitutional History of Canada.

Political Science.

Amos, The Science of Politics.

Political Economy.

WALKER, Political Economy.

#### FOURTH EXAMINATION.

Political Institutions.

ENGLAND:-VERNON SMITH, History of English Insti-

utions.
UNITED STATES:—Sketch of Federal Institutions.
CANADA:—O'SULLIVAN, Government of Canada.

Political Science.

SPENCER, Study of Sociology.

Political Economy.

CAIRNES, Character and Logical Method o. Political

#### HONORS.

#### SECOND YEAR.

Constitutional History and Law. TASWELL-LANGMEAD, Constitutional History of England.

Political Economy.

FAWCETT, Manual of Political Economy.

#### THIRD YEAR.

Constitutional History and Law.

STUBBS, HALLAM and MAY; Constitutional History of

England.
STORY, Commentaries on the Constitution of the United States (Bks. 1. and 11., and the first three chapters of

STORY, Commentanes on the Constitution of the United States (Bks. 1. and 11., and the first three chapters of Bk. III.)

Documents illustrative of the Constitutional History of Canada:—Articles of Capitulation, 1760; Royal Proclamation in der the Treaty of Paris 1763; Quedec Act, 1774; Constitutional Act, 1791; Lord Burham's Report, 1839; Union Act, 1840; Resolutions of Quedec Conference, 1864; British North America Act (1867) and Amending Acts.

Political Science.

LORIMER, Institutes of .aw. MAINE, Ancient Law.

Jurisprudence.

MARKBY, Elements of Law.

Political Economy.

MILL, Principles of Political Economy.
THOMISON, Elements of Political Economy.

#### FOURTH YEAR.

Political Institutions.

ENGLAND:-Cox, Institutions of the English Government.
UNITED STATES:—
CANADA:—

Constitutional History and Law.

HEARN, Government of England.
COOLBY, Constitutional Law in the United States,
TODD, Parliamentary Government in the British Colonies.

Political Science

FREEMAN, Comparative Politics and History of Federal

Government.
Woolsey, Political Science.
Maine, Early History of Institutions, Village Communities, and Early Law and Custom.

Jurisprudence.

HOLLAND, Elements of Jurisprudence, HALL, International Law.

#### Political Economy.

SMITH, Wealth of Nations.
ROCCURI, Principles of Political Economy, with Pre-liminary Essay by Wolowski on "The Historical Method of Political Economy."

In addition to the work above specified, it is suggested that the following be prescribed in the usual way, by regulation:—

- lation:

  1. The LATIN of the First and Second Pass Examinations.

  2. Either the GREEK of the First and Second Pass Examinations; or,

  3. The FREECH and GREMAN prescribed as an alternative for the GREEK of these Examinations.

  4. All the ENGLISH (Pass and Honor) prescribed in the Curriculum.

  5. All the HISTONY (Pass and Honor) prescribed in the Curriculum, and the ETHSULOGY of the Fourth Year.

  6. The CHEMISTRY, or BIOLOGY, of the First Pass Examination, or the MINERALOGY and GROLOGY of the Second.
- Second.
  7. The MENTAL SCIENCE (Pass and Honor) of the Second Year, and the Logic (Pass and Honor) of the Second and Fourth Years.

## Educational Intelligence.

A MONUMENT to Virgil was unveiled lately at Andes, near Mantua, the poet's birthplace.

HEREAFTER the University of London will confer a new degree to be known as the "Teachers' Diploma."

THE late Sir Erasmus Wilson's munificent bequest to the Royal College of Surgeons will reach the sum of \$1,000,000.

THE study of historical and political science is growing in favor among the universities. At Harvard and Johns Hopkins more attention is paid these branches than ever before.

SIR LYON PLAYFAIR has collected statistics, based upon the death rate, to show that the health of children has improved thirtythree per cent, under the operation of the compulsory education act in Great Britain.

A NEW and important feature of the Boston Institute of Technology is a laboratory fitted up in the new building, devoted to the study of sanitary chemistry, in which opportunities are given for analyzing milk, food, air, water, etc.

A BIOLOGICAL school in connection with the University of Pennsylvania has been opened. Original research is its principal aim. To secure this its chairs must be filled by original investigators.-no easy matter in this money-making day.

SAYS the Athenaum: the Senate of the University of London has never ventured to propose to confer its medical degrees on every man who could contrive to pass the examination; why should its degrees in arts, law, and science be bestowed without any guarantee of proper training?

MRS. DR. SOPHIE KOWALCOSKI has been elected teacher of mathematics in the new University of Stockholm. As Dr. Kowalcoski read last winter a privatissimum on partial Differential Equations with noteworthy results, a new professorship was established for her in the University.

AT a meeting, held on Dec. 15th, in support of the proposal to found a teaching university for London, there were present representatives from the London University, the British Museum, University and King's Co leges, and many other important educa-tional institutions of the capital. The committee appointed to prepare a scheme pre-

sented their report. The report recommended that the new university should be closely connected with the existing University of London, though remaining distinct from it, each institution granting its own degrees and having its own vice-chancellor, while the chancellor should preside over the two bodies jointly.

AT a competitive examination of teachers to select a principal for an American district school, where the salary was \$1,500 per annum, eighteen gentlemen, who had been principals, and four ladies were examined. The following words were given to spell: Poniard, separate, business, mingle, scintillate, mignonette, privilege, ethereal, ecstasy, allege, exhilarate, hymeneal, correlate, vacillate, daguerrean, bouquet, supersede, ven-tilate. One lady spelled all correctly, and she was the only person that did.

ONE of the truest things ever written is the following from President Garfield's pen: -It has long been my opinion that we are all educated, whether children, men, or wo-men, far more by personal influence than by books and the apparatus of school.

The privilege of sitting down before a great, clear-headed, large-hearted man, and breathing the atmosphere of his life, and being drawn up to him, and lifted up by him, and learning his methods of thinking and living, is in itself an enormous educating power.

THE winter session of the Teachers' School of Science, connected with the Boston Society'of Natural History, commenced in October with a lecture on Sponges, by Professor Alpheus Hyatt. The plan pursued by Professor Hyatt has special reference to the teaching of methods of observation. Mr. Hyatt's classes are made up mainly of teachers. We hope to be able soon to give one or two of Mr. Hyatt's elementary science lectures, as models of the way elementary science should be taught.

AT a meeting of the Managing Committee of the American School Classical Studies at Athens, held at Princeton lately, Professor Albert Harkness, of Brown University, Rhode Island, was chosen director for the year 1885-86. This school, is established for the purpose of affording means for the study of classical literature and history on classic ground, amid associations and where a language is spoken that constantly recall the past. Professor Harkness is, as everyone knows, the author of our authorized Latin Grammar.

THE Public Library of Toronto was opened on April 7th last. From that date until December 31st—229 days—179,506 volumes had been issued, a daily average of 783. Upwards of two-thirds of the books were works of fiction. The following are the exact figures :-

Natural Science and Mathematics	2,000
Political, Social, and Medical Sciences	1,826
Theology	1,395
Arts	2.473
General Literature and Collected Works	6,346
Geography and Travel	5,676
History	4.126
Biography	4,323
Poetry and the Drama	1,352
Periodicals	4,563
Fiction	24.632
Juvenile	
Reference Books	
Total icena	20.006

DURING the present Congress the Blair Education bill, which contemplates the extension of Federal aid to the different States with a view to decreasing illiteracy, will come up. The measure provides that for ten years the Federal treasury shall supply to the several States a certain sum annually to be expended in securing the benefits of common school education to all children of school age. The first year the sum of \$15,000,000 is to be appropriated, the second year \$14,000,000, the taird year \$13,000,000, and for every remaining year of the period of ten years a sum less by \$1,000,000 than that of the preceding year, until with the tenth year Federal aid will cease. The proposal is an important one; but it is safe to say it will not carry.—Mail.

CO-EDUCATION is having a hard fight for existence, but is being very generally adopted, notwithstanding. The scene of action of the latest struggle is Adelbert College, Cleveland, Ohio. It will be remembered that this college was originated some sixty years ago as the Western Reserve College, and was opened for young men exclusively; about ten years ago young ladies were admitted. Quite recently the institution was removed to Cleveland, and re-named Adelbert-in memory of the donor's only son—by reason of a gift of \$500,000. The young ladies who graduated from the college as a rule stood higher in scholarship than the young men, were more regular in attendance, and proved themselves an honour to the institution. When the agitation against co-education was commenced, the women of Cleveland commenced a vigorous resistance. They interested the press, the pulpit, the medical profession, and the public generally, in their behalf. They got up a petition with over 4,000 names, and got written opinions in favor of their contention from James B. Angell, ex-Minister to China, now president of Michigan University, from Galusha Anderson, president of Chicago University, from Chancellor Manatt, of Nebraska University, from Hon. Andrew D. White, ex-Minister to Berlin, from Prof. Moses Coit Tyler, and from President Warren, of Boston University. All of the above gave the very strongest testimony in favour of co-educa-The trustees of Adelbert College, after an exciting discussion of over seven hours, decided by a vote of twelve to six—or two to one—in favor of retaining the girls. The girls celebrated their good fortune by a banquet .- Mail.

THERE is a very nice custom in vogue in some American schools. It is the setting apart of certain days called "Author's days. Upon these occasions, the birthdays of the authors are taken up, if possible, the day is devoted to a certain author and his works. The parents of the children are invited to be present, and generally respond. An essay is prepared, usually by the teacher or some other qualified person, on the life and times of the author chosen, and it is read aloud to the audience. This is followed by discussions, and by the reading of choice selections from the author simself. Thus the time passes away pleasantly and profitably. Those children whose natural taste for poetry is strong —and there are many such, though few think so-reap inestimable benefit from the periodical and sympathetic study of the poets and poems of their own language. The taste thus early formed and fostered will be of unspeakable comfort to themselves, and may kindle similar desires in others. The general cultivation to be derived from the intelligent study of poetry cannot be over-estimated. The only true way to study it, or to study time being; make the children feel they are wanted to help in the discussion; make nothing cumpulsory; show them the beauties; never mind the parsing or the analysis—which not only destroy the poetry, but often obscure the meaning—and enter into the subject with an enthusiasm and interest which will quickly communicate itself to the children. English literature should be the staple of our modern education. Its importance and usefulness as an element in all education is admitted, but teachers and educators fail to give practical effect to their beliefs, at least in assigning to English a worthy place in the curricula of schools and colleges.—

Mail.

## Personals.

#### EDUCATIONAL.

MR. Margach, headmaster of Brockville Model School has been re-engaged for the present year, at a salary of \$1000.

MR. A. McMechan B.A., formerly of Brockville High School, has been appointed Modern Languages Master of Galt Collegiate Institute, at a salary of \$900.

MR. A. W. BURT, B.A., late Modern Languages Master of Perth Collegiate Institute, has been appointed headmaster of Brockville High School, at a salary of \$1200.

MR. N. ROBERTSON, B.A., formerly Classical Master of Perth Collegiate Institute, has been appointed headmaster of the High School at Smith's Falls, at a salary of \$1000.

THE successor to Mr. Hunter in the Waterdown High School is Mr. A. Crichton, B.A., formerly of Orangeville and Seaforth High Schools. Under his management the school ought to lose none of its reputation for scholarship, for Mr. Crichton was considered at graduation one of the best classics the University had sent forth.

We learn that Miss Jennie McDonald, of Perth Collegiate Institute, who, at the late examination for junior matriculation into the University of Toronto, obtained first-classhonors in Mathematics, English, French and German, and second class in History and Geography, being third of her class in Mathematics, and first in History and Geography, was not seventeen years old at the time she won these brilliat, honors.

#### GENERAL.

PRINCE ALBERT VICTOR, eldest son of the Prince of Wales, attains his majority to-day.

EDWARD KING tells one of the most delightful anecdotes of Carlyle. That portentous pseudo-philosopher, Mallock, called on the old Scotchman and let himself loose, talking Carlyle almost to death. Carlyle listened imperturbably, invited him to tea, and had him to smoke in the library afterwards. When at last the sage thought proper to take his leave, Carlyle accompanied him to the door and said, "Well, good bye; I've received ye kindly because I knew your mother, but I never want to set eyes on ye again."

The only true way to study it, or to study English literature generally, is in the way described. Banish the school idea for the Cathedral on the fear of men, said the

curled lip, uplifted eyebrow, or shrugged shoulder in a drawing room or club was more trying to many a young man's faith than would be the leading a regiment across an open plain subject to the enemy's cannon. He told a story of the late Sir Robert Peel with quiet dignity ordering his carriage when at a dinner-party Christianity was denied, saying that he was sorry to retire, but that he was still a Christian; while, without approving of the truncated creed or singular methods of the Salvation Army, the Canon praised its followers for their not being ashamed of what they professed.

DR. JOHNSON'S death was announced in the principal country papers of December 16th to 23rd, 1784, by a paragraph in the summary of London news which used then to be supplied to them weekly, very much in the same way as London Correspondence is now sent down every evening :- "December 14th.—Yesterday afternoon, about ten minutes before seven of the clock, there departed this life, at his house in Bolt Court, Fleet street, in his seventy-sixth year, to the inexpressible crief of his friends, and to the infinite loss of His Majesty's subjects, that eminent ornament of literature, and firm friend of virtue and religion, Dr. Samuel Johnson. His venerated remains will be interred in Westminster Abbey. Sir Joshua Reynolds, Sir John Hawkins, and the learned Dr. Scott of the Commons are appointed his executors. Dr. Johnson settled his worldly affairs five days before his death. He was entirely resigned to the will of God, and rarely spoke during his last days, except upon religious subjects. He passed away without a struggle, dying so quietly that the persons in his chamber were not aware of the exact moment of dissolution.'

THE wife of William Black, the novelist, is thus sympathetically described: - Mrs. Black is a wom in who must be pronounced the happiest possible choice for a distinguished man of letters. Her manner is at once genial and distinguished, and she is not only so well read, but so thoughtful and capable of expressing her ideas, that people who converse with her are a little surprised to learn that she does not write herself. But it is one of the convictions of this charming lady that a woman wedded to a worker in literature should not attempt to compete with him in ordinary cases. Nothing is so pitiable as to see a clever writer with a wife who writes indifferently, unless, indeed, it is to see a clever woman with a husband whose writings are mediocre compared with her own. Mrs. Black, who is fair and of generous figure, with a soft and sympathetic voice and all the poise of a well-bred woman, thoroughly believes that it is her mission as a wife to attend to her household and make home a pleasant place-effor's which the celebrated and hard-working novelist unquestionably appreciates. Their three children are headed by a daughter of nine years, who is sufficiently precocious to have views on politics; but she adds ingenuously and ingeniously; "I have been forbidden to talk about them; only my politics are the same as papa's, and he belongs to the Re-form Club." The second child is a fairhaired boy named Norman; the third a little girl, whose political views were not even suggested to me, and all three are pretty, graceful and well-bred children. So that, altogether, one must pronounce the author of "Madcap Violet" a singularly fortunate

IT is said that an inventory of all General Grant's possessions has been taken under the judgment entered against him in favor of Wm. H. Vanderbilt for \$150,000 and interest, loaned him when trying to save the firm of Grant & Ward from failure. The inventory covers all Grant's real estate, and includes presents of weapons, bric-a-brac, and rare articles, made to the General by friends at home and abroad, the swords and medals awarded him by Congress, his pictures and books, relics of the war, and even the engraved cards ordered to be struck to express the thanks of Congress. It is understood that Vanderbilt has thrown off \$60,000 of the claim, and that Gen. Sherman and Cyrus W. Field, with other friends, are making efforts to raise the remaining \$100,000.

PRINCE BISMARCK has long been known as a hard worker, and there are few Government officials in Europe who have so little time at their disposal as his clerks. The duties of the Prince are of such a miscellaneous character, being occupied both with home and foreign affairs, that he cannot limit himself to any fixed hours, but must have his clerks at hand from eight in the morning till ten at night and even later. He constantly receives despatches and other communications throughout the day, which must be at once disposed of; and even after ten o'clock his clerks have to prepare the work for the following day, so that they usually do not leave the office till after midnight. And yet their salaries are far lower than those which their qualifications would enable them to earn in private life. They are obliged to know several languages, and be well versed in the law, and are selected from among the clerks in the Foreign Office on account of their trustworthings and accounts. their trustworthiness and accuracy.

## Examination Papers.

#### SECOND CLASS PROFESSIONAL EXAMINATIONS.

Papers set at the Examinations held in Toronto and Ottawa Normal Schools, December, 1884.

> III,-WRITING AND BOOK-KEEPING. Examiner.-J. E. Hodgson, M.A.

#### WRITING.

- 1. Write to dictation the first three sentences from "Shakspeare's Word-Mastery," by John Ruskin, Book V., page 121.
- 2. Write each of the following letters three times: m, r, s, t, g, y, f, p, l; A, B, ., E, H.

#### BOOK-KEEPING.

- 1. Define the following terms as used in Book-keeping:—Shipment, Consignment, Acceptance, Protest, Interest, and Stock.
  - 2. Explain fully Interest Account.
- 3. What is meant by equating an account? Apply in the following account:—

Dr.	WILLIA	ч Ѕмітн.	Çr.
1884. Jan. z. To Mdse. Feb. 15.	- \$650 00 - 550 00	1884. Mar. 1.	By Cash - \$800 00

- 4. Journalize the following:—
  (1) Gave John Smith an order on James Bond, for \$600.00.
- (2) Received from John Smith an order on James Bond for \$380.00.
- (3) Bought of James Page, mdse. as per invoice, \$980.00. Gave in payment, cash \$400.00, and my note at 30 days for the balance. Discount off note, \$4.00.

#### IV .- PHYSICS.

#### Examiner .- I. C. GLAS!IAN.

Fifty per cent. of the whole will be considered a full paper.

1. What is the difference between force, momentum, and energy? Explain by illustrations.

Two boys of equal weights jump to the ground, one from a height of 4 feet, the other from a height of 16 feet. Compare (1) the impulses, (2) the energies, with which they strike the ground.

2. Distinguish between volume, density and mass.

A cubic inch of mercury at 32°F, weighs 7.8588 ounces; a cubic foot of air at 32°F. and under a pressure of 2116.4 lbs. per square foot weighs 1.2026 ounces. Compare the volumes, the masses, and the densities in the two cases.

3. Explain how one is able to suck up water through a tube. Would mercury rise in the same way and to the same height?

4. Why does oil rise in the wick of a lamp?

In which would the mercury stand the higher under the same air pressure, in a barometer with a half-inch bore, or in one with an eighth of an inch

bore? Why?
5. What is the difference between heat and temperature? Explain by illustrations.

A pound of iron at 182°F. is plunged into 10 lbs. of water at 36°F.; find the resulting temperature, the mean specific heat of iron within the range of 36°F. to 182°F. being .11.

If the length, the breadth and the height of a room be 25 ft., 20 ft. and 10 ft. respectively, how many pound-degrees of heat will be required to raise the temperature of the air in the room 36°F., the pressure of the air remaining constant and its aven se density being 1.28 ounces per cubic foot; the space and of air at constant pressure being

2375.

6. What is ant by latent heat?

What is the attent heat of water-substance, 1st, in melting 2nd, in evaporating at atmospheric pressure?

Find the temperature obtained by passing an ounce of steam at 212°F, into 10 lbs. of water at 50°F.

7. In Spring and Autumn the surface of the plaster on the outside walls of buildings in which there has been no fire for some time, is often found quite wet. Whence comes this dampness? By what experiments could you prove the correctness

of your explanation?
8. Around a straight rod three rings are painted, the first red, the second green, and the third blue. What will be the appearance of the rod, looked at through a triangular glass prism held with the "edges" parallel to the length of the rod. Why?

## Official Regulations.

REGULATIONS RESPECTING THE EXAMINA-TION FOR ENTRANCE TO HIGH SCHOOLS AND COLLEGIATE INSTITUTES, TAKING EFFECT JULY, 1885.

UNTIL after December, 1885, the candidate will be examined more minutely on the selections in one of the lists given below, the series being at his option.
After December, 1885, the selections will be from
the Fourth Book of the series of Readers now
being prepared by the Education Department, some of which selections will be changed each half year.

#### SELECTIONS FROM ONTARIO READERS.

The Stage Coach.—Dickens.
The Lark at the Diggings.—Reade.
The Geysers of Iceland.—Dufferin.
The Story of LeFevre.—Sterne. The Skater and the Wolves .- Whitehead. The Ocean.—Ryron.
Autumn Woods.—Bryant.
Sir John Franklin.—Punch. The Incident at Ratisbon.—Browning. The Shipbuilders .- Whittier.

The Battle of the Baltic.—Campbell. The Incident at Bruges.—Wordsworth.

SELECTIONS FROM ROYAL READER SERIES. Stanzas from "The Princess," p. 13.—Tenny-

The Unwritten History of our Forefathers.-

Mackensie.
The Sky Lark.—Hogg.
The Soldier's Dream.—Campbell. The Charge at Waterloo.—Scott.
Harold Skimpole.—Dickens.
"He giveth His Beloved Sleep."—Browning. The Black Hole of Calcutta. - Macaulay. Sunset Wings.—Rosetti.
The Black Prince at Crecy.—Stanley:
The Water Fairy.—Swinburne.

#### SELECTIONS FROM CANADIAN READER SERIES.

Ye Mariners of England.—Campbell.
The Taking of Roxburgh Castle.—Scott.
The Town Pump.—Hawthorne.
The Cloud.—Shelley. The Sagacious Cadi-I. and II .- Household The Canadian Boat Song .- Moore. Dare to do Right.—Hughes.
The Death of Wellington.—Disraeli. A Psalm of Life.—Longfellow.
The Eve of Quatre Bras.—Byron. The Burial of Sir John Moore. - Wolfe.

#### TIME TABLE OF THE EXAMINATION. JULY, 1885. FIRST DAY.

9 A.M. TO 10:25 A.M	Geography.
10:35 A.M. TO 12 NOON	··· Composition.
3120 P.M. TO 3.35 P.M	Writing.
3:40 P.M. 70) 4:20 P.M	Drawing.

#### JULY, 1885, SECOND, DAY.

Reading is to be taken on either day or on both days, at such hours as may best suit the convenience of the Examiners.

#### VALUATION OF THE ANSWERS..

Reading	50
Writing	50
Writing Orthography and Orthogpy	50
Literature	100
Arithmetic	100
ArithmeticGrammar	100
Geography	75
Composition	100
History	75
Geography Composition History. Drawing.	50
	<u> </u>

One-third of the maximum of the marks on each paper is

N.B.—(1) Of the marks for writing, 15 will be assigned to the paper on that subject, and a maximum of 5 marks may be assigned for writing and meatness in each of the following papers: Orthog aphy and Orthobyp, Literature, Grammar, Arithmetic, Geography, Composition, and History.

- (2) The 50 marks for Orthography and Orthogpy will be assigned to the paper on that subject; but in valuing the answers in Literature, Grammar, Geography, Composition, and History, one mark is to be deducted for every mistake in spelling. Such misspelt words are to be indicated by the Examiner, on the candidate's papers.
- (3) Of the marks for Composition, 70 will be assigned to the paper on that subject, and a maximum of 15 to History, and of 15 to Literature.
- (4) Of themarks for Drawing, 25 will be assigned to the paper on that subject, and a maximum of 25 may be awarded as the result of the inspection of the candidate's drawing book.
- (5) In examining in Reading, the local boards will pay special attention to the following:—Pronunciation, Emphasis, Inflection, and Pause.
- (6) As in the case of the Fourth Book and Spelling Paper for December, 1884, the value of the correct answers to the questions set on each paper will exceed the maximum prescribed above, except on Writing, Reading, Orthography and Orthogre, Eust the papers will be so constructed that a well-prepared candidate may obtain the prescribed maximum within the given time.
- AT The object of the preceding regulation is to allow the Departmental Examiners to present a greater variety of questions, and thereby enable the candidate to show more readily than heretofore whether he is in a condition to ben-efit by a High School course.

# THE EDUCATIONAL WEEKLY,

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JOHN E. BRYANT, M.A., Editor.

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