

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Continuous pagination/
Pagination continue
- Includes index(es)/
Comprend un (des) index

Title on header taken from:/
Le titre de l'en-tête provient:

- Title page of issue/
Page de titre de la livraison
- Caption of issue/
Titre de départ de la livraison
- Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
						✓					

THE CANADA EDUCATIONAL MONTHLY.



THE CANADA
EDUCATIONAL
MONTHLY

AND

“SCHOOL MAGAZINE.”

EDITED BY ARCHIBALD MACMURCHY.

VOL. XVI.

JANUARY TO DECEMBER,

1894.

TORONTO:

THE CANADA EDUCATIONAL MONTHLY PUBLISHING COMPANY.

G. B. ROBINSON, PRINTER, 5 JORDAN STREET, TORONTO.

CONTENTS.

	PAGE.
Ability to do Things, The.....	17
Amsterdam.....	301
Apperception.....	338
<i>Theodore B. Noss, Ph.D.</i>	
Are Arithmetic and Grammar as Well Taught Now as Formerly?.....	327
<i>Arthur Brown, I. P. S.</i>	
<hr style="width: 10%; margin: auto;"/>	
British North America Act.....	144, 205, 321
<i>Peter McEachren, B.A.</i>	
<hr style="width: 10%; margin: auto;"/>	
Canada-Coal.....	139
Canadian Grace Darling, A.....	387
Cause and Effect in Education.....	381
Child-Study.....	10
Claims of Classics.....	45
<i>Prof. G. A. H. Fraser.</i>	
Co-Education in the West.....	9
Common Faults in Teaching.....	245
Common Schools and Farmers, Our.....	176
Composition.....	291
<i>Catharine H. Shute.</i>	
Contemporary Literature.....	39, 77, 116, 158, 193, 238, 279, 318, 359, 398
Culture of the Imagination.....	150
<i>Prof. George A. Coe.</i>	
<hr style="width: 10%; margin: auto;"/>	
Department High School Teaching.....	268
Devices in Recitations.....	173
<i>Claude Mel'ot.</i>	
Discipline of Life and Character, The.....	81, 121, 201
<i>Prof. Wm. Clark D.C.L., F.R.S.C.</i>	

	PAGE.
Discussion.....	39, 74, 111 156, 190, 308
Drawing in General Education.....	65
<i>D. R. Augsburg.</i>	
Eclecticism in Education.....	325
Economic Geography.....	174
Editorial.....	31, 76, 113, 157, 191, 234, 274, 309, 347, 387
Education and Instruction.....	129
<i>Lord Coleridge.</i>	
Educational Institute of Scotland, The.....	97
Education for Crime, An.....	67
Education in Canada.....	12
Education in Upper Canada.....	373
Education Versus The Gold Fever.....	93
<i>Miss Estella V. Sutton.</i>	
English in Secondary Schools.....	369
<i>Samuel Thurber.</i>	
Evil Aspects of Knowledge, The.....	335
Examinations	361
<i>A. H. Ycung, M.A.</i>	
Formal vs. Concrete Studies in College.....	214
<i>President De Garme.</i>	
French View of Education for Women A.....	374
Fuller Study of Geography, The.....	217, 255, 296
<i>Arthur Montefiore.</i>	
Geography.....	27, 72, 110, 155, 187, 233, 272, 305, 345, 386
Geometry, How to Learn.....	224
<i>E.M. Langly, M.A.</i>	
Ghost of Education, The.....	133
<i>A. H. Morrison.</i>	
Grammar and High Schools, Our.....	121, 165
<i>W. J. Robertson, M. A.</i>	
History of Early Education, The.....	56
<i>S. S. Laurie.</i>	

Contents.

iii.

	PAGE.
History in Secondary Education.....	210
<i>Ray Greene Huling.</i>	
Imperial Idea, The.....	18, 51
<i>Mr. Lecky.</i>	
Ingratitude in Citizenship.....	148
Invisible Stars, How we Find.....	170
<i>Sir Robert S. Ball.</i>	
Inspiration in Education.....	364
<i>John E. Bradley.</i>	
Manners and Manner.....	14
Manual Training and Objective Education.....	6
<i>R. H. Cowley, M.A.</i>	
New North West Passage to the Orient, The.....	206
<i>J. Macdonald Oxley.</i>	
Notes for Teachers.....	22, 69, 107, 153, 182, 227, 271, 305, 343, 384
Poems.....	32, 73, 110, 156, 189, 233, 273, 307, 346, 383
Popular Education.....	300
Popular Education and Crime.....	379
Post-Graduate Courses in the University of Toronto.....	242, 283
<i>Prof. J. Squair, B.A.</i>	
Possibilities of Education, The.....	267
Psychology, The New.....	151
Punishment of Children, The.....	333
Public Opinion.....	25, 70, 108, 154, 184, 229, 270, 303, 344, 385
Practical Ethics.....	340
Religious Education, "The Week" on.....	127
"Respective Persons," Dr. Dale on.....	336
Restful Teaching.....	286
<i>Annie Payson Call.</i>	
Secondary Schools, To Improve.....	62
Schools, The Old.....	261
School Work.....	33, 76, 118, 159, 196, 235, 275, 310, 349, 388
School-Room Courtesy.....	181
<i>Caroline B. LeRow.</i>	

	PAGE.
Science and the Schools	146
<i>Hon. A. S. Draper.</i>	
Status of Geography Teaching, The	60, 101
<i>J. W. Redway</i>	
—————	
Teacher's Equipment for Work in English Literature, The.....	104
<i>S. Thurber.</i>	
Teacher's Difficulties, A	263
Teacher's Inner Life, The.....	250
<i>Emerson E. White.</i>	
Teaching English in the Schools.....	15
Teaching of Civic Duty, The.....	84
<i>James Bryce</i>	
Teaching of Mathematics, The.....	179
<i>Prof. W. H. H. Hudson, M.A.</i>	
Text Books in English Grammar, Some Errors in.....	281
<i>A. Stevenson, B. A.</i>	
The Bible as Literature.....	382
The High Ground	376
The Standing Schoolmasters.....	366
—————	
Watch School, A.....	339
What is Cram ?.....	330
<i>Ellen E. Kenyon.</i>	
Whole to Part and From Part to Whole, From.....	t, 41
<i>Prof. J. A. McLellan, M.A.</i>	
Woman's Suffrage, Why I am Opposed to.....	323
Women's Residence, The	241
Worth of Public Order, The.....	265

THE CANADA
EDUCATIONAL MONTHLY
AND SCHOOL MAGAZINE.

JANUARY, 1894.

FROM WHOLE TO PART AND FROM PART TO WHOLE:

AN APPLICATION TO THE STUDY OF LITERATURE.

BY PROF. JAMES A. McLELLAN, M.A., LL.D., TORONTO.

THAT there has been in the past few years a marked improvement in the teaching of literature in our schools, will be readily admitted by all who are conversant with past and present methods. Literature has been at least partially emancipated from the tyranny of things that are not literature. Less attention is now given to the judgments of literary critics and to the opinions of non-literary annotators. Grammar and Philology and perplexing distinctions of figures of speech *a la* Bain's Rhetoric are no longer considered of supreme importance; the literature lesson is not made the occasion for the exercise of a perverse ingenuity in questioning; irrelevant matter is more carefully excluded; while facts and principles having a more or less direct relation to the theme, are held in due subordination. Our best teachers now present the lesson in literature with a better knowledge of the laws of mental action, and with a rational enthusiasm

that creates a love of literature—a love which alone qualifies the student to perceive the beauty and the truth of it, and so makes for the culture of the æsthetic and moral sensibilities, which is the high purpose of literary studies.

But, while all admit that, so far as literature is concerned, the present methods are better than the former, all will be equally willing to admit that the goal of highest excellence has not yet been won.

In all schools, from the highest class to the lowest, there is possible a growth towards better things. To this growth, a full appreciation of the following things will, we venture to think, contribute in no small degree. The value of Psychology as the basis of rational method in literature as in every other branch in the curriculum; the value of literature as a means of Ethical and Æsthetic culture, the high function of Oral Reading in the study of literature;

the value of literature for Intellectual Development ; and, as connected with all these, the idea of Unity in Literature. Without considering at present the application of this idea in the study of poetry,* let us see how it works in prose literature as the basis of the principle, from *whole to part and vice versa*—a principle which is essential in *all* rational method.

In every piece of prose composition worthy to be called literature, there is a logical sequence, an orderly movement of ideas towards a definite end.

In the case of a strong and cultured mind working under a clear and ever present conception of its purpose, this movement of ideas seems to be spontaneous—a self-movement of constantly increasing clearness and force. This logical sequence of ideas is determined by the discriminating and unifying action of the intellect upon the material presented by association. Grasping clearly and firmly the central thought of his purpose, the author proceeds from whole to part, from the leading thought to the main divisions, the sub-divisions, and so on, to the primary unity, the single thought as expressed in the sentence ; and completes his thinking by *explicitly* relating thoughts and groups of thoughts, finally welding all the parts into a more perfect whole. This fact suggests at once the rational method to be followed in the study of a piece of *literature*. The genesis of thought and expression in the student's mind will follow the genesis of thought and expression in the author's mind. Just as the author proceeds from a whole through related unities to the ultimate unity, and returns through all the related parts to the perfect whole, so the learner thinks the author's thoughts after the manner of the author—

passes from larger unity to smaller, and consciously returns through the series of parts with increased unifying power to a rich and well defined whole.

To exemplify the idea thus briefly set forth, let us take what all our readers are familiar with, Huxley's famous exposition of a "Liberal Education"—p. 412, High School Reader—a unity well chosen from a larger whole, and worth the student's attention alike for its matter and its style. If we were to follow the plan which used to prevail, and which, judging from some recent books and articles on method, is not yet altogether obsolete, we should first have the student read the extract, and then immediately charge upon him with a mob of questions beginning with "suppose" and ending with "interpreter." But the idea of unity in literature and the law of unity of attention suggest what at least bears some resemblance to a more rational method.

Upon attentively reading the extract, there will be found little difficulty in grouping the thoughts into four main divisions—or three, if one of these is considered to include two parts. The *first* division, the introduction, paragraphs 1-4, treats of the nature and necessity of natural education ; the *second*, paragraphs 5-8, develops chiefly by two suppositions and an application, the principal thought of the introduction ; the *third*, paragraphs 9-10, briefly shows the nature and necessity of artificial education ; the *fourth*, paragraphs 11-12, gives the grand conclusion, the famous definition of a liberal education. Treating the first part in a somewhat similar way, we find that it includes as already intimated, four paragraphs, the first and second constituting a startling metaphor, the third a mitigation of this, and the fourth a partial definition of education, *i.e.* a definition of *natural* education.

*See M. F. Libby's *Studies in Poetry*—A book abounding in good suggestions.

Proceeding in this way with all the cardinal divisions, we arrive at the following scheme of thought relations for the entire selection :

PART I : THE NATURE AND NECESSITY OF NATURAL EDUCATION.

1. Suggested metaphor : Man's all staked on a game of chess. Must learn the game.

2. Metaphor strengthened and applied : Nature's game with man—infinitely more difficult than chess.

3. Mitigation of this startling thought : Opposing player *not* a fiend but a calm, strong angel.

4. Hence natural education is knowledge of (a) laws of nature—things and their forces—physical phenomena. And (b) laws of human nature—men and their ways—moral and social phenomena.

PART II : EXPOSITION OF (a) AND (b).

5. Nature educates *all* through things and their forces—physical phenomena : *Suppose an Adam*, etc. Education by things and forces.

6. Nature educates *all* through men and their ways—moral and social phenomena. *Suppose an Eve*, etc. Education by men and their ways.

7. Nature educates all from beginning to end of life.

8. Her rewards : Success for the honor-men, toleration for the poll, and extermination for the plucked.

PART III : NECESSITY OF ARTIFICIAL EDUCATION—I.E., EDUCATION THROUGH CONSCIOUS INTERVENTION OF MAN.

9. *Nature's* education is compulsory ; therefore harsh and wasteful : She treats ignorance as a blunder and incapacity as a crime.

10. Intervention of man needed to make good the defects of nature's method. Partial definition of *liberal* education. It is natural education supplemented by artificial education.

PART IV : CONCLUSION : ELABORATED DEFINITION OF A LIBERAL EDUCATION.

11. The complete definition : It includes something about the body—about the intellect and stored knowledge. About the emotions and the will.

12. Happy results from such an education. The harmony of man and nature.

The mind will deal in a similar way with each of the four parts, and if the principal analysis has been thorough, this final step will be comparatively easy. For example : in Part I, having noted the meaning of the first paragraph, the game of chess, and its relation to the second, we know what to expect in the second : the more difficult game ; the players, the chess-board, pieces and rules of the game ; the player against man—his character ; the stakes to the winner ; the penalty to the loser.

We may treat similarly the well-known definition, which no doubt many readers have gone over again and again without retaining the essential thoughts, to say nothing of the language. After such an analysis of the extract, we are prepared to see what the complete definition will embody ; something about the body, something about the intellect and stored knowledge—since these always go together, something about the will and the emotions—the æsthetic and moral sensibilities. And all these elements we do find. Thus, aiding memory by analysis-synthesis (thought), we may make the definition a permanent possession by attention to the related thoughts :

I. THE BODY.

That man has had a liberal education who has been so trained in youth that his body is the ready servant of his will, and does with

ease and pleasure all the work that as a mechanism it is capable of ;

II. THE INTELLECT.

(a) *Power and Facility*, Whose intellect is a clear, cold logic engine, with all its parts of equal strength and in smooth working order ready like a steam engine to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind ;

(b) *Stored knowledge*, whose mind is stored with a knowledge of the great and fundamental truths of nature, and of the laws of her operations ;

III. THE WILL AND THE EMOTIONS.

One who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will the servant of a tender conscience ;

Moral and æsthetic sensibilities, who has learned to love all beauty whether of nature or of art, to hate all vileness and to respect others as himself.

A longer piece may be handled in like manner. Take, for example, Spencer's essay on "*What Knowledge is of most Worth*" — a production which might well be studied by advanced classes in High schools, especially the "teacher" classes. To such classes it would, we doubt not, be of far more "worth," both as knowledge and for discipline, than the scraps of "science" which, having never organized into real knowledge, they leave behind them when they "leave" the school. In carefully reading over this production of a great thinker, we find resting places, as it were, in the movement of his thought—giving us four chief divisions of the discourse. The *first* division, the introduction, determines the data for the solution of the problem ; the *second* discusses the

primary determinant among the data for solution of problem, viz : What knowledge is of most worth as bearing necessarily upon the *principal activities* of life ; the *third* discusses the next important determinant, viz : What knowledge is of most worth for discipline, intellectual, moral, religious ; the *fourth*, the conclusion, is an animated summary in exaltation of science above all other knowledges. Passing now to an examination of the *first* division, as an exemplification of all, we have a scheme of thought relations approximately as follows :

PART I: DETERMINATION OF DATA FOR SOLUTION OF THE PROBLEM.

1. INTRODUCTION. *Undeveloped character of present education* accounted for.

1. Decoration precedes dress. Illustrations.

2. So as to mind : Ornamental more valued than the useful.

3. Especially so in the case of the "other sex."

4. Reason of this. Social needs dominate individual needs ; and chief social need—control of individuals.

5. Further proof. Question of knowledge worths not discussed—standard of values not even conceived.

2. THE QUESTION OF QUESTIONS. How decide in conflict of studies.

1. Question *not* has the study value? But its relative value?

2. How determine relative values?

3. Must have a measure of value. This *indicated* by the common question—what use is it? *i.e.*, what effect on human happiness, etc.

4. Therefore how to live completely. How to treat the body, the mind, affairs, etc. These the principal activities of life.

5. This test never used even partially. Must be rationally determined.

3. THE TEST. 1st determinant. *Activities of Life*.

1. *The Activities* as to direct preservation of life, indirect preservation of life, the family, the state, culture—(tastes, etc.)

2. These stand in proper order of subordination :

(a) Knowledge of things is *necessary* to all, therefore before all.

(b) Industrial functions before parental.

(c) Family before the state.

(d) The state before culture, (leisured life, etc.).

3. *Summary of these Activities.* Concession—activities not sharply defined.

4. *Ideal education.* Complete preparation for all these activities.

4 THE TEST, SECOND DETERMINANT.

1. Bearing of a subject on activities as necessary or contingent.

2. Acquirement has two values, for guidance, for discipline.

5. CONCLUSION. Hence general conditions for solution of the problem.

1. Life—several kinds of activities of decreasing importance.

2. Worth of each order of facts as regulating these, intrinsically, or quasi-intrinsically, or conventionally.

3. Regulative influences, as knowledge and as discipline.

In a similar way the remaining three cardinal divisions of this famous essay may be treated.

A few remarks by way of conclusion must suffice for the present.

1. We do not *begin* with this formal analysis for the student. On the contrary, he is to be led, with more or less help according to his ability, through almost unconscious groupings of the thoughts and unities to a conscious recognition of their vital relation with one another and with the organic whole.

2. We do not *begin*—e.g. in the extract "A Liberal Education," with a preliminary vocabulary of the "unfamiliar" words. The meaning

of a word is fairly known from its context, and the context from *its* relations, and so on; and thus, after the analysis, an explanatory word or two *then* makes the meaning *perfectly* definite.

3. It is clear that this course trains the higher correlative activities of mind, analysis and synthesis.

4. And therefore trains the memory—and the best kind of memory. For good thinking means good memory.

5. It is equally plain that the student's vocabulary and power of expression are increased. The thought-process is of course, to be completed in *expression*—written and especially oral. Delivered from the bondage of minute and futile questioning, the student will have ample time for this most essential step.

6. After such an analysis-synthesis we are prepared for the lesson on style—the factor co-ordinate with thought in the best literature.

7. Of course, not all that passes under the name of literature is worth so thorough a treatment. But for masterpieces, thoroughness is the rule. The power of analysis comes from the practice of analysis, and therefore one effective thought-lesson is worth a score of fact-lessons. The habit of facile analysis once formed, the student has the power to grasp quickly and to retain firmly knowledge that is worth retaining; and, what is of equal importance, he can tell almost at a glance whether section, or chapter, or book is vital with "the precious life-blood of a master-spirit," or is, at best,

"Words, words, mere words, no matter from the heart."

Children have more need of models than of critics.—*Foubert.*

It is with narrow-souled people as with narrow-necked bottles: the less they have in them, the more noise they make in pouring it out.—*Pope.*

MANUAL TRAINING AND OBJECTIVE EDUCATION.

AN ADDRESS DELIVERED BEFORE THE OTTAWA TEACHERS' ASSOCIATION.

BY R. H. COWLEY, M.A., OTTAWA.

WHILE introducing this subject for your discussion I do not feel free to advocate Manual Training in any exclusive or restricted sense of the term, but would confine myself to urging a more general application of its underlying principles than we find at present in our public school system.

The literal meaning of the term is hand-training, and as the hand is the great symbol of doing and a prominent medium in the work of humanity, manual training may appropriately stand for the practical and the useful and the objective in education.

In offering a line of criticism on the status of education in our elementary schools, I would like to say by way of preface that I view the present condition of our system in no spirit of complaint or depreciation. During the past twenty years and particularly within the last decade our progress on the whole has been steady and substantial, yet, having cause to rejoice, there is no reason to rest satisfied, no reason to settle down into an inert state of self-complacency. It will surely be a black day for Ontario when those who labor in her educational fields have no criticism to offer, or no improvements to suggest.

From the standpoint of those who have faith in manual training, our public school education is too subjective. The currency of the school is words. The teacher makes his presentations to the pupils almost entirely through words. The reproductions of the pupils are also embodied in words. Now we all know very well that words are simply the wings or the vehicle of thought. They are of

much use in transmitting thought. But the business of education is not so much with the transmission of thought as with the begetting of thought. Thoughts arise primarily from the contact of the mind with the things or matter of the surrounding world. Our system then is too artificial if it continually places the teacher or his words between the mind of the pupil and the world of objects.

Of course in a sense words are the *symbols* of thought, so too are things. Why use the former exclusively? What if every book and slate and blackboard were suddenly banished from the schools! Could not the processes of education go on? Perhaps we would then set about establishing a better basis for education.

Manual training would urge the objective side as complementary to our present subjective aspects of teaching. Its plea is that we should bring our pupils into a vital contact with things, for every object in the world will pay its tribute to the human mind. A piece of ice, for instance, is a wonderful embodiment of the Creator's thought; this table too is an interesting presentation of man's thought. But what meaning do you and I ordinarily take out of such a thing. In the school-workshop such a piece of furniture would probably represent the labor of half a dozen different persons: the measuring, the sawing, the planing, the turning, the fitting, the finishing, etc. Division of labor, but unity of purpose. Independent effort, but interdependent achievement. All striving together for a common end. Here, too is silently taught a beautiful les-

son of community of interest, a lesson difficult to impress under our present system which in its competitive aspects rather fosters an unhealthy spirit of rivalry and individualism.

Again the subjective system pays little heed to bodily development. It usually leaves that to the haphazard of the playground and to the natural tendency of youth to be frolicsome. As for those who do not incline to play, they may go to the wall. It seems to me a most remarkable anomaly that we should practically keep our pupils' bodies passive for the six best hours of sunlight while we are endeavoring to educate their minds, just as if the mind were a factor that could readily be isolated from the rest of the being. Surely this is dividing the living child in two more effectually than any king's sword could do it. In the name of harmonious development let us recognize that the whole child comes to school.

The class system is a prominent feature in subjective education; and while it is expedient to keep in view the greatest good to the greatest number, we have as a result a too common overlooking of the individual. There is in our class-teaching to-day even a merciless suppression of individuality. The class is organized and managed on the basis of resemblances. All trying to do the same thing, at the same time, in the same way, and in the same position.

Hence we know little of our pupils as individuals. We can learn more of them in the playground in an hour than in the class in a month. So also in the workshop, for here there is provision for the development of characteristic tendencies. Self-reliance and independent self-direction are inculcated too in a concrete way. For while class-teaching is marked by much work on the part of the teacher in proportion to that which the pupil does, the very spirit and atmosphere of the Manual Training Shop is a

minimum of direction and a maximum of independent production. The pupil learns here that no teacher can teach him other than himself. He must be his own teacher.

But this system is to be commended not only as a corrective in public school education but also for what it would positively add. It lays strong emphasis on the useful and practical in an age in which fact is supreme. Education should fit for life. Revolution is fast giving place to evolution and development as a mode of progress. There is to-day a strong demand for men with highly developed constructive faculty, men in whom the ability to conceive is balanced by the power to execute. We are placed in this world to conquer and subdue it. Man's mission is to overcome, but we can never gain the victory over matter by resolving to ignore it. It is worth while noting that whenever, in any age, the human mind has been brought to bear earnestly on the elements, life has been elevated and enriched. All the great inventions of the race are a testimony to this fact. It is high time we had shaken off the mediæval notion that matter is essentially evil. The world itself is the court of the highest in which we dwell, and there is no curse here but the curse of man's ignorance and man's wrong. A right ideal of this life transfigures the common place, removes the lines of distinction that false sentiment has drawn between the secular and the sacred, and consecrates the practical and the useful as lawful ends of a true education.

At the same time Manual Training is a powerful lever in the development of character. If we make our system of education loyal to life we make it loyal to moral ideas too. Practical work, downright doing, in the science laboratory, or the Kindergarten, or the industrial school, where hand and mind and senses are acting

in unison, must develop self-reliance, perseverance, self-control if doing has any meaning in it at all. How soon, for instance every pupil, in the workshop sees the consequence of his errors whether they be due to ignorance or carelessness. No room for luck, a sufficient cause for everything. If any one of the co-workers makes a mistake the pieces won't fit. The error is visibly and concretely traceable to its specific source. The workshop is a little world in which the failure of one has a hindering effect on all, and in this way the pupil may learn that every wrong is at once an injury to society and a permanent loss to its author.

My argument in behalf of Manual Training, then, is not less of the objective, not less of words but more of things, not less of theory but more of the practical, not less of sentiment and imagination but more of the concrete. For I am firmly persuaded that an education that will fit children to enter into a life of close and sympathetic contact with the objective world, understanding its laws and controlling its forces, is at the same time an education that will strongly stimulate them to seek after the higher things. Perhaps some one will say that the live, earnest teacher can attain under our present system all the ends which I have commended in connection with Manual Training. Probably he can; but the way is not easy for him. He is working against odds; there is a loss of power; nevertheless, while it would be a great aid and a quite practicable feature to have laboratories and workshops in connection with schools in cities and towns, a good deal may now be done by teachers who sympathize with these ideas. Reforms must begin with ourselves and not with the authorities at head quarters. If we have an ideal in our work, let us amplify one power continually by adding to our knowledge. We shall

then see there are some improvements we may make without transgressing the Public School Regulations.

Drawing is Manual Training; but do we teach it in a way to develop the constructive faculties of our pupils, or is it simply a copying of straight lines and curves whether from engravings or objects? Then we have provision for writing, object lessons, physiology, hygiene, arithmetic, geography, etymology etc., all subjects in which there is grand scope for object-teaching. In addition to this the Education Department has practically placed Friday afternoon of each week at the disposal of the teacher to arrange such programme as he sees fit. After all, the chief factor needed is our own desire and fitness for the work. If we really want object teaching we may have much of it next week, and along with it considerable real Manual Training too. Let us know that the trustees and the people are ready to give us any aid and opportunity of which we can render reasonable account.

The objective side of education commends itself to us as one still sadly neglected, one of remarkable possibilities, one that when wisely incorporated with our present modes of school work will afford a more unique and perfect system of popular education than any that has yet arisen; a system that will fit the young people of our land for a larger and more fascinating life than we ourselves are competent to enjoy; an education that will develop faculty and energize the soul, sending into society a type of manhood endowed with the faith and the heart-power to enter courageously into the business of life, and gifted with the insight to discern in nature the eternal spirit of wisdom, love and right; a full orb'd man, all the faculties of his being the efficient servants of a good and enlightened will.

CO-EDUCATION IN THE WEST.

It is, perhaps, difficult for persons living in the Eastern States, where the admission of women to men's colleges is an innovation and a hard won privilege, to appreciate the absolutely matter-of-course way in which co-education is regarded in the West. Nevertheless, it is in the West, where the experiment has been most frankly tried, that doubts are beginning to arise among those best acquainted with the system. In order to see the experiment of co-education tried fairly, fully and without prejudice, we should go to a Western college town. There the girls are no older, no more advanced and no more serious than the boys. They all go from the high school to the university. Some colleges have dormitories and boarding-houses for the girls, but the more general custom, particularly in the larger institutions, is for them to select their boarding places quite independently. It is an extremely rare thing for a parent to ask any one to assume the least control over the girl. She would resent it, and it is not considered necessary. She is as independent as her brother, free to make what friends she likes, to keep what hours she likes. Her comings and goings concern no one but herself. Luckily, she generally chooses to do well, according to her lights; but, frequently with the best intentions in the world, she makes unfortunate mistakes.

I believe it is claimed by the advocates of co-education that the system will tend to elevate young men, both mentally and morally, and will especially improve their manners. This latter claim scarcely seems well founded when one observes the extreme familiarity with which the young men treat their girl classmates. Doubtless they do not mean to be indecorous or

uncivil; they treat women as well as they treat one another, and no better. But, unfortunately, it is just the old-fashioned attitude toward women that is relied on to elevate college men. There are, of course, many who behave with perfect propriety and treat women with all the respect that can be desired, but *en masse* they have not a respectful manner, and instances of ill-bred familiarity can be multiplied by any one who chooses to take the trouble to use his eyes.

In the matter of study, it may be doubted whether the lessons learned by a young man and a young woman, sitting out of doors under the shelter of one sun-umbrella, are really as well learned as they would be under less distracting circumstances. As to the claim that the standard of morality will be raised by the constant companionship of women, I think that any professor who has worked under both systems will say that there is about the same element of lawlessness to contend with in one college as in another, and that gambling, for instance—the great vice of the West—is probably not diminished by the fact that women are admitted to the colleges. In considering the effect of co-education on women, it must be understood, once for all, that only the average college girl is considered, and that there are brilliant exceptions to all that is said of either boys or girls as a class. In respect to scholarship the girls are on the whole equal to the men, perhaps in some directions superior.—*Fane Cooper Sinclair, in the North American Review for October.*

The great high-road of human welfare lies along the old highway of steadfast well doing.—*Smiles.*

CHILD-STUDY · THE BASIS OF EXACT EDUCATION.

THE study of children is now attempted by very different methods, for purposes quite diverse, and with all degrees of scientific exactness. The points of view here taken, and the literature, now numbering many hundred titles, are so new that I can find nowhere any attempt at a general survey of the various lines of work now under way. Most of this vast and growing material has been wrought out by investigators who made little attempt to coordinate their work with what others had done. The doctors, the anthropologists, the psychologists, parents and teachers, have each given little attention to each other's work. We may cross-divide all this work by age into four convenient groups. A—Studies of the human embryo, such as Preyer and others have made. B—Studies of infancy up to the ages of three or four years. Here belongs the work of Preyer, Perez, Compayre, Tracy, Shinn, and many earlier observers. For this work the term Psychogenesis is often used, on the often denied assumption that the fundamental elements of the soul are here being developed. C—Many studies have been published of the early years of school life, especially the first. For this period Mr. Chrisman has suggested the term Paidology. D—Lastly, come the studies of youth or adolescent years, beginning at the age of thirteen or fourteen, and lasting perhaps ten years to full maturity or nubility. Here the term Ephebics might do duty till a better one appears. The vast field here outlined is thus the cycle from adolescence in one generation to adolescence in the next, and is, therefore, co-incident with instituted education to which only such studies as these can ever give

a scientific or philosophic character. I pass over the first periods—the embryo, and the period of early childhood up to the ages of three or four years; and I pass to the first years of school life. Special studies of this period are generally averages of tests made upon large numbers of children. The method is simple: if children are to be measured or questioned, they are taken two or three at a time into the dressing-room of the school where the calipers are applied for the diameter of head or body, the tape for lengths and circumference, scales for weighing, dynamometers for testing strength, and many other more especial devices; teeth, eyes, lungs, nose, throat, hearing, accuracy and rapidity of movement, etc., are tested with every precaution for uniformity and for the avoidance of error. If knowledge is to be tested, considerable tact and cross-questioning by an expert and sympathetic person is often necessary. Nearly all tests, however, can be made, if suitably directed, by almost any good teacher or parent in a few minutes per child without interrupting the work of the school or in any degree whatever offending the child's delicacy of consciousness. The digesting and presentation of these returns, when very voluminous, is sometimes a difficult matter. Just what rubrics should be chosen, how the tables and the curves should be presented, especially the value and treatment of variations from the average, involve often the most complex methods of the statistician. The value of Galton's method of percentile grades, of equations estimating the thickness of shoes and clothing, the interpretation of unexpected results, the value of exceptions, involve technical expertness.

A new and simpler method devised by Principal E. H. Russell, of Worcester, Mass., eight years ago, has worked well with normal students. He does not limit the field of observation by proposing definite lines or points of inquiry; any salient act or remark of a child is noted in the most accurate and objective way. These records are filed in groups under convenient headings, like memory, imagination, anger, deceit, egotism, etc. These topics cover the whole field of psychology and the best of these records are used in teaching it in the place of a text book. The collection of such data has had excellent effect upon teachers. They tend to focus effort upon individual children rather than upon the "pedagogic phantom called The Child." Passing to results, we will begin with measurements. The first notable studies here since Quetelet were by Prof. H. P. Bowditch who took weight and height of 24,500 Boston pupils. He found that until the age of eleven or twelve boys were taller and heavier than girls. The girls then begin to grow very rapidly and for the next few years surpass boys in both height and weight. The boys, however, overtake and pass them soon after and remain taller and heavier. He found children of American parents taller and heavier than children of foreign parents, and urged that mental effort be reduced during the period of most rapid growth. The sons of non-laboring parents are taller and heavier than those of laboring parents. Dr. G. W. Peckham measured about 10,000 children in Milwaukee and found urban life less favorable to stature than rural life, and greater growth from May to November than during the rest of the year. Axel Key concluded from 18,000 subjects that boys pass three distinct periods of growth, a moderate increase on the sixth and seventh years, a weaker growth from

the ninth to the thirteenth, and a much greater one from the fourteenth to the sixteenth year. Other results suggest seventeen as a stationary year. Malling Hansen found that children grow little from the end of November to the end of March; grow tall but increase little in weight from March till August, and increase mainly in weight and little in height from August to November. During this latter period the daily increase in weight is often three times as much as during the winter. Many now believe that growth focuses now upon one set of organs and functions and now upon another. The eye, hand and arm, voice, chest, and other centers and functions seem to have a "nascent period" during which they grow far more than for a long time before or after.

The pedagogic utilization of these inductions is yet more obscure than they are unsettled; some think that during rapid general growth instruction should be general, suggestive, and call for little exactness or effort of will; that then new ideas are best grasped but best worked out at other times. Again, if a law of nascent periods were established it would give a natural basis for all curricula. Before its major period, eye, hand or voice, etc., are easily overstrained; after it they can endure sometimes many times the work, and, if proper increase of work is lacking, they may be forever dwarfed. Certain it is that periods of exceptional growth require exceptional treatment; it is no less certain that arrested growth out of the season is one of the surest and earliest signs of disease. Growth and liability to illness seem almost inversely to each other. We now want more detailed measurements of size and function of different parts of the body, head, hands, etc., and more measurements of individual children continued for a long term of years.

Young children differ relatively in their mode of growth, and when older they grow very differently according to race, climate, nationality. From measurements of over 30,000 children, W. E. Porter shows that precocious children are heavier and dull children lighter than the mean child of the same age, thus establishing a physical basis of precocity and dullness.—*Prof. G. Stanley Hall, in the Forum for December.*

Against stupidity the gods themselves are powerless.—*Schiller.*

Remember this: they that will not be counselled cannot be helped.—*Benjamin Franklin.*

To be happy at home is the ultimate result of all ambition; the end to which every enterprise and labour tends, and of which every desire prompts the prosecution.—*Dr. Johnson.*

EDUCATION IN CANADA.

THE wise men of the East went to Toronto recently to learn what they could of Ontario's educational methods. And the wise men of Toronto answered them according to all that was in their heart; there was no question that they answered them not. They went away well filled both in body and mind to use the knowledge they had learned for the benefit of the State of New York. It is a rule with the educational authorities of that State to keep informed to the very last point as to the working of their own educational methods and of those of others. There is scarce anything to be learned from self-contemplation which the education of our day does not know. The study is, however, chiefly subjective—a study of the plough and the threshing machine and the farmer, rather than of the soil and its fruits. If we find a well-trained farmer who knows everything we could teach him, and the best of tools, equal to those at the last World's Fair, do we go away and assure ourselves that agriculture is prosperous without looking with, at least, equal care at the soil and its fruits? Agricultural experts would not do this, because soil is easily inspected and its

fruits easily compared, but educational experts seem a little inclined to leave Hamlet out of the play. The proof of the pudding is in the eating of it, and the proof of an educational system is the condition of the people of the country in which it exists. We are satisfied that if Ontario has not the most perfect educational system in the world, it has, at least, the most complete one. It is a wonderfully complicated machine, all of whose parts work automatically into each other. Every teacher must be pulled through a given hole before he can be allowed to teach in that favoured land. His natural adaptation may be of the highest, his education that of the British universities, but if he has not been pulled through that hole—the pedagogic course of the Province—he may not teach. If he has been pulled through he may, he must teach, and that with almost no principle of natural selection to prove whether he has any natural fitness or not. The great thing in the profitable manufacture of machines is that all the parts of one machine be alike and interchangeable with those of another. Too big is as bad as too small. What is wanted is that each shall drop into

its place in the machine and work from the word go without any creaking or fuss.

Ontario has, as we have said, and as all the world admits, a beautifully complete educational system. Man for man, its population is naturally as intelligent as any in the world. The other Provinces of Canada are also well provided with schools and with educational soil. The one debatable question is, whether with all these advantages we are producing as much knowledge to the acre as some other countries, or as we might. What we should like now would be an investigation by the same wise men into the product. Our North American communities have so long seen themselves in the van of education as compared with the rest of the world, that we have perhaps got out of the habit of looking over our shoulders to see if the tortoises of Europe are not catching up—possibly even passing us in the race. Wonderful are the strides which Europe has made since she freed herself from ecclesiastical leading strings. As for China, she has always been out of sight ahead of us in the matter of reading and writing, though in arithmetic she is, we suppose, still bound to the calculating stick. The Chinese who settle among us, we are constantly told, are the lowest off-scourings of Hong-Kong and the surrounding districts of the puny south, and are no samples of what Chinamen really are. However that may be, they can all read and write, and that is more than can be said of the same class in Canada. The Italian navvies who swarm upon our railway embankments and in our street cuttings seem to be all able to read and write. At least, a post office official who had to receive and deliver the mails for a gang of these men in the country says they seemed to be all able to write neat letters and got similar letters in return, the mails being

surprisingly large. Every German who comes to the country can read and write, even though in acquiring those arts he has had to overcome difficulties which do not confront the English learner. French mechanics who come among us often seem to be what we would term educated men. What of all that, says the Canadian; cannot all our native people read and write, too? Certainly the census gives but a small proportion of native illiterates. There are many, however, who would be indignant in the extreme should anyone say they could not read and write, who, nevertheless, practically never use either accomplishment, for the good reason that they have not enough facility in either for its practical use. This fact is pointed out by a writer in the *Herald* as characteristic of our own Province, and even in Ontario there are districts where newspaper agents report that there is little use in trying to place newspapers, because of the ignorance of the people. Things are, undoubtedly, getting better and not worse, but are they getting better as fast as they should? Among French Canadians the tremendous development of the newspaper press within the past ten or twelve years proves a very considerable progress in the proportion of the people who are able to enjoy a newspaper. This progress has itself proved an incentive to demand still better things, and the cry is going up for more general and more practical school training. A similar demand will soon be rising from the English-speaking population. The people will not be satisfied with having the best of education within the reach of all. They will ask that here, as in the European countries, compulsion be used to make that education real to all the people.—*The Witness*. (*Montreal*).

Happiness is made, not found.—*Quiver*.

MANNERS AND MANNER.

SELF-RESTRAINT in the presence of those he fears or respects has always marked the first footsteps of man on the pathway of civilization. The artificial nature of the restraint drops off as he advances, and conformity to a more or less arbitrary code is gradually transformed into the semblance at least of unselfishness and delicate consideration for the susceptibilities of others.

As usual, the natural progress of the race is wont to repeat itself in the training and progress of the individual. The child's conventional greeting, the ceded place, the subdual of noise and rush and jostle, the suppressed manifestation of hunger or weariness—all these little initial sacrifices must be made to decency before anything deserving the name of good manners can be thought of.

Every good teacher knows how to make himself the barrier between the child and that loss of self-control which must issue in bad manners. But he knows, too, that the personal influence once withdrawn, there will be a relapse; that the child's language and demeanour will very likely become vulgarized. In certain strata of society we cannot but find a continual stumbling block between the manners we require in the school and those which pass muster with the world outside. And this will continue to be felt until the good manners are inspired by a feeling within rather than by a restraint without.

Then good breeding passes from the lower region of manners to that almost indefinable and much higher quality which we call *manner*.

Do we not all know the influence of a happy *manner*? The soothing of it; the absence of fidget and nerve worry; the lessening of friction in the inevitable world of wear-and-tear. How

is it we are less annoyed, as the old proverb says, "when one man steals a horse" than when another "only looks over a hedge"? The reason must lie in that difference of manner to which we are all susceptible, and which affects children so much more than their elders.

Good manners can be taught by precept, but manner is a much harder matter to reach. It can scarcely be taught, but it can be *caught*; and that is why a good manner is so important to a teacher. Not only does it make every task easier, but it communicates itself in a peculiar way to his pupils.

There are few things we ourselves remember in childhood more distinctly than the curious nervous discomfort that we knew in our minds as being "fidgetted" by some people's ways. Their admonitions were frightful things; their instruction too ghastly an experience; their good nature a thing to be fled from with every sense of alarm. And whence came all this unnecessary trouble? Simply from an annoying manner. Yes; the teacher needs a nice manner to supplement his "of course" good manners. It must be neither pompous, nor dull, nor low-spirited, nor irritable, nor patronizing, nor undignified. Calm, bright, sympathetic, elevating, winning, with an air of distinction, of dignity; this is the ideal manner, of which we can recall some notable examples, as we write. No weakness in that manner and no over-strenuousness—always in it a sense that more remained behind.

We once found the pupil of an almost *ideal* teacher in a curiously-impressed state after an apparently slight reproof.

"But he was not angry," we said.

"Angry! He was *displeased*—that

means as much as half-a-dozen passions in anyone else. It's like beef-tea essence—a whole ox in a small bottle," said the boy.

It was the sense of a powerful nature behind the quiet words that produced the impression.

Never to show *too much*; never to lessen the distance of excitability between teacher and pupil; never to accept any provocation from the children—these are initial necessities of a good manner. In short, that command of temper which comes of the deepening of our own nature and the

quiet habit of a life hidden in the divine sanctuary of repose.

See, dear friends—to go back to a very old parable—we are the seals, the minds we are forming the wax. How needful is it to look often and thoughtfully at the impression we have made, questioning earnestly, with ourselves, "Whose image and superscription is this?"—*Exchange*.

Real worth floats not with people's fancies, no more than a rock in the sea rises and falls with the tide.—*Fuller*.

TEACHING ENGLISH IN THE SCHOOLS.

WE may assume that whatever the end of a schoolboy's education, whether he be bound for college, for a technical school, or for immediate contact with the business of life, the function and the nature of his studies in English should remain constant. We may assume that any plans which devise one system of teaching English for one purpose and a different system for another are archaically mistaken, except of course so far as they are due to such inevitable exigencies as the increased demands on time of classics in an academic course, of physics or mathematics in a scientific. Even then, any system of instruction which should vary the teaching of English in kind, as distinguished from varying it in quantity, we may assume to be mistaken.

For whatever the end of a boy's training, or a girl's either, for that matter—I use the masculine form only for convenience—the study of a mother tongue must have in that training a place peculiarly, distinctly its own. The study of the classics, of mathematics, of any science or

practical art, even of bookkeeping or trades, is inherently bound, the further it proceeds, to increase its technicality in specialization. The advanced student or the skilful workman is, and ought to be, constantly more and remote from the everyday untutored man, whom for the moment we will assume to be not his fellow specialists. In a phrase, we may say that the essence of excellence in general scholarship is knowing things that other people do not know. In broad contrast to this, the essence of excellence in such scholarship as should result from the intelligent study of English is knowing things that other people do know.

Obviously true of the study of English composition, a term under which I venture to include etymology, grammar, rhetoric, and so on, this perhaps catch-penny phrase is really just as true as the study of English literature. For the intelligent study of that literature—of the lasting expressions of the meaning of life which have been phrased in our mother tongue—results not in mechanically memorized

lists of names and dates and other dead or dying facts, but in a sympathetic understanding of the ancestral experience of our own race, that experience which is the vital form of natural heredity still animates the living world of which we form a momentarily conscious part. Whether they actually know the facts of English literature or not, the everyday human beings about us are still instinct with its spirit. The ripest student of that literature, old or young, is he who best appreciates his fellow men.

With English composition, in its broadest sense, the trait which I have in mind is far more obvious. The task of the writer is to inform other people of what he knows or feels. Very clearly, to do this he must always be sympathetically considerate of the public he addresses, large or small. Very clearly, too, the wider this sympathetic appreciation of the living people all about him, the greater the power of informing, influencing, stirring, pleasing them. There is no more pregnant commonplace in the books of rhetoric than perhaps the oldest. The ultimate secret of the art these books try to teach, in its very highest forms, is learned by those who think the thoughts of the wise, and who speak the language of the simple.

In truth, then, what distinguishes the study of English, in our English-speaking country, from all other studies is this: while other studies tend toward various kinds of special culture and training, more and more remote from actual life, the study of English tends, or surely should tend, rather toward a broad, general culture and training, whose ultimate result should be the closest and most sympathetic appreciation of the very world we live in. In this trait, I think, and in the implied consequences of it, lies the real secret of the

importance which in a blind sort of way has of late years been attached to the study. Other studies, people begin to recognize, draw the student further and further away from everyday life; the study of his native language brings him constantly nearer and nearer to it. The deepest, most important function of the study, then, is to bind the student, with strengthening bonds, to the living world from which his other work is constantly distracting him. Here, and here only, specialist and layman may always fraternize in the growing consciousness of common humanity.—*Prof. Barrett Wendell, in the School Review for December.*

METALLURGY is tending to become one of the most efficient producers of manures in the world. Twenty years ago, says the *Annales Industrielles*, twenty thousand tons of phosphoric acid were as a poison to the two million tons of cast iron which England produced, while English ships were ransacking the most distant regions of the globe for phosphoric acid for agriculture. The basic process has been the end of this anomaly. Apparatus attached to the furnaces in Scotland for the recovery of the ammonia out of the furnace gases have furnished a new and important source of sulphate of ammonia for agriculture.—*Popular Science Monthly.*

Reason is progressive, instinct stationary. Five thousand years have added no improvement to the hive of the bee, nor to the house of the beaver.—*Colton.*

A world without a Sabbath would be like a man without a snail, like a summer without flowers, and like a homestead without a garden.—*H. Ward Beecher.*

THE ABILITY TO DO THINGS.

IT is complained of the times that they make too many specialists. The economical division of labour seems to demand that workers shall confine themselves to a particular detail of a job, which passes out of their hands to be completed. Editors no longer set type and write up local occurrences. Physicians, in increasing numbers, confine their ministrations to the eye, or the ear, or the throat, or the vermiform appendix. Among artisans it is the exception when a single tailor completes a coat, or one machinist makes a complete machine. Consequently specialists abound and all-around men are scarce.

Now, it is economical and profitable on various accounts to be a specialist, but there are charms and even a measure of advantage about being an all-around man; and means that tend to preserve the capacity to deal with things in general without sacrificing the mastery of something in particular, are worth cultivating in the interest of general development. That must be the developing specialist's justification in cultivating the branch of domestic industry known as "chores." It is apparently wasteful for a man who can earn several dollars an hour at the work which is his specialty, to spend any of his time in labour which can be better performed for him by the man whose time is worth very much less. If the better paid man lets his chores encroach upon the hours that belong to his special work, he certainly is wasteful, but it does not prove that it is wiser for him to forego chores altogether. In moderation and at proper times, they are good for him. As a rule, the better he is paid for the hours he spends on his regular job, the fewer hours he works at it. That is not because he

is satisfied with less than he can earn, but because high-priced work is usually exhausting, and cannot be long kept up without loss of quality. So the best-paid men commonly have some leisure, part of which they should devote to culture and various supplementary duties, and part, I maintain, to chores which cannot be left out without appreciable detriment.

We are used to being told that it is not enough to give mere money to charity, and that our benefactions, if they are to do the most good to us and to those whom they help, must include personal service. We seem to owe a measure of personal service to domestic life as well as to charity, and if we do not pay it, domestic life does not yield to us all that we might get out of it. The ability to do things depends partly upon our willingness to do them now and then. But the ability to do things is power, and power is very sweet to have and to exercise, and that not only in great things but in small. The man who cannot do the ordinary small tinkering that has to be done from week to week in an ordinary modern house, denies himself a consciousness of power which is very cheap at the price it costs. Not to be able to put washers on a leaking water-faucet, to take off or put on gas-burners, and to remedy the simpler maladies of plumbing, is to admit one's self to be the mere occupant, but not the master, of the modern house. To put in glass takes too much time, and altogether it is not necessary to the modern, as it was to his grandfather, that he should know how to be his own glazier. So with most carpenter work. It takes too long to do well any job of consequence; better have in the adept from his shop. And yet some tools and the ability to use them

seem to be indispensable to the householder's self-respect. Not to be able to plane the top of a door or the edge of a drawer when it sticks ; or to drive a nail straight, or send home a screw without splitting the wood, or fit a key, or mend a child's toy, must involve a humiliating consciousness of inefficiency. Yet there are men who strive to reconcile with self-esteem all these incompetencies, and another more inexcusable than either of them—the inability to run a furnace and raise or lower the temperature of one's habitation at will.

Tuning pianos and mending dor-

mant clocks are accomplishments, and do not come under the head of ordinary chores. Moreover they are occupations of elegant leisure, and not for the odd moments of a busy life. But with true chores it is different. Their is a flavour about them which is too valuable to be lost out of life. A house-holder who has none that he recognizes might almost as well live in a hotel. He is the sort of man who rings for a servant when the open fire falls down. Poor helpless one, who misses so much of the luxury of doing things for himself!—*Scribner's Magazine.*

THE IMPERIAL IDEA.

By MR. LECKY.

MR. LECKY, who was received with cheers, said : I have been asked on the present occasion to deliver a short address which might serve as an introduction to the course of lecture and conferences on the history and resources of the different portions of the Empire which are to take place in the Imperial Institute. In attempting to discharge this task my first reflection is one which the very existence of the institute can hardly fail to suggest to any one with any knowledge of recent history. It is the great revolution of opinion which has taken place in England within the last few years about the real value to her both of her colonies and of her Indian Empire. Not many years ago it was a popular doctrine among a large and important class of politicians that these vast dominions were not merely useless but detrimental to the mother country, and that it should be the end of a wise policy to prepare and facilitate their disruption. James Mill, who held a

high place among these politicians, wrote an article on the colonies which clearly expresses their view. Colonies, he contended, are very little calculated to yield any advantage whatever to the countries that hold them, and their chief influence is to produce and prolong bad government. Why, then, he asks, do European nations maintain them? The answer is very characteristic both of the man and of his school. Something he charitably admits is due to mere ignorance, to mistaken views of utility, but the main cause is of another kind. He quotes the saying of Sancho Panza, who desired to possess an island in order that he might sell its inhabitants as slaves, and put the money in his pocket, and he maintains that the chief cause of our colonial empire is the selfish interest of the governing few, who valued colonies because they gave them places and enabled them to multiply wars. In more moderate and decorous language an eminent writer who is still living

wrote a book, the object of which was to show how desirable it was that this Empire should be gradually but steadily reduced to the sweet simplicity of two islands. Similar views prevailed very generally in the Manchester school. Cobden frequently expressed them. The question of the colonies, he maintained, was mainly a question of pounds, shillings, and pence; he proved, as he imagined, by many figures that they were a very bad bargain, and he expressed his confident hope that one of the results of free trade would be "gradually and imperceptibly to loosen the bands which unite our colonies to us." About our Indian Empire he entertained much stronger opinions. He described it as a calamity and a curse to the people of England. He looked on it in his own words "with an eye of despair," and declared that it was destroying and demoralizing the national character. It was the belief of his school of politicians that all the nations of the world would speedily follow the example of England and adopt a policy of perfect free trade; that when all men were able to sell their industries with equal facility in all countries it would become a matter of little consequence to them under what flag they lived, and that this complete commercial assimilation would soon be followed by a general disarmament which would put an end to all fear of future war. Many politicians who certainly cannot be classified with the Manchester school held views tending in some degree in the same direction. Even Sir C. Lewis in his treatise on the "Government of Dependencies," which was published in 1841, summed up the advantages and disadvantages of a great empire in a manner that gives the impression that in his own judgment the disadvantages on the whole predominated. In the autobiography of that

great writer and excellent public servant Sir Henry Taylor, who for many years exercised much influence in the Colonial Office, we have a curious picture of the opinions which were held on this subject about 30 years ago both by Henry Taylor himself and by Sir Frederic Rogers, who was at this time Permanent Under-Secretary of State for the Colonies. They both agreed that all our North American colonies were a kind of *damnosa hereditas*, and that it was in a high degree desirable that they should be amicably separated from Great Britain. Sir Henry Taylor frankly wrote that at a time when your Royal Highness "was employing yourself so successfully in conciliating the colonies" your Royal Highness was "drawing closer ties which might better be slackened if there were any chance of their slipping away altogether."

I do not believe that opinions of this kind, though they were held by a large and powerful section of English politicians, ever penetrated very deeply into the English nation. One of the causes of Mr. Cobden's "despair" was his conviction that the English people would never be persuaded to surrender India except at the close of a disastrous and exhausting war, and in his day the policy of national surrender was certainly not that of the statesmen who led either party in Parliament. No one would attribute it to Mr. Disraeli, in whose long political life the note of Imperialism was perhaps that which sounded with the clearest ring, and it was quite as repugnant to Lord Palmerston and Lord John Russell. In an admirable speech which was delivered in the beginning of 1850 Lord J. Russell disclaimed all sympathy with it, and I can well remember the indignation with which in his latter days he was accustomed to speak of the views on this subject which were then frequent.

ly expressed. "When I was young," he once said to me, "it was thought the mark of a wise statesman that he had turned a small kingdom into a great empire. In my old age it appears to be thought the object of a statesman to turn a great empire into a small kingdom." I do not think that any one who has watched the current of English opinion will doubt that the views of the Manchester school on this subject have within the last few years steadily lost ground, and that a far warmer, and, in my opinion, nobler and more healthy feeling towards India and the colonies has grown up. The change may be attributed to many causes. In the first place what Carlyle called "The Calico Millennium" has not arrived. The nations have not adopted free trade, but nearly all of them, including, unfortunately, many of our own colonies, have raised tariff walls against our trade. The reign of peace has not come. National antipathies and jealousies play about as great a part in human affairs as they ever did, and there are certainly not less than three and a half millions, there are probably nearly four millions, of men under arms in what are called the peace establishments of Europe. It is beginning to be clearly seen that with our vast, redundant, and ever-growing population, with our enormous manufactures and our utterly insufficient supply of home-grown food, it is a matter of life and death to the nation, and especially to its working classes, and there should be secure and extending fields open to our goods; and in the present condition of the world we must mainly look for these fields within our own Empire. The gigantic dimensions that Indian trade has assumed within the last few years, and the extraordinary commercial development of some other parts of our Empire, have pointed the moral,

and it has been made still more apparent by the eagerness with which other Powers, and especially Germany, have flung themselves into the path of colonization. In an age when all the paths of professional and industrial life in our own country are crowded to excess the competitive system has combined with our new acquisitions of territory to throw open noble fields of employment, enterprise and ambition to poor and struggling talent, and India is proving a school of inestimable value for maintaining some of the best and most masculine qualities of our race. It is the great seed plot of our military strength; and the problems of Indian administration are peculiarly fitted to form men of a kind that is much needed among us—men of strong purpose and firm will, and high ruling and organizing powers; men accustomed to deal with facts rather than with words, and to estimate measures by their intrinsic value and not by their mere party advantages: men skilful in judging human character under its many types and aspects and disguises.

If, again, we turn to our great self-governing colonies, we have learnt to feel how valuable it is in an age in which international jealousies are so rife that there should be vast and rapidly-growing portions of the globe that are not only at peace with us, but at one with us; how unspeakably important it is to the future of the world that the English race through the ages that are to come should cling as closely as possible together. As the distinguished statesman who now represents the United States in England lately, said with an admirable point, if it is not always true that trade follows flag, it is at least true that "heart follows flag," and the feeling that our fellow-subjects in distant parts of the Empire bear to us is very different from the feeling even of the

most friendly foreign nation. Our great colonies have readily undertaken the responsibility of providing for their own defence by land, and even in some degree by sea. If the protection of their coast in time of war might become a great strain upon our Navy, this disadvantage is largely balanced by the importance of distant maritime possessions to every nation that desires to maintain an efficient fleet; by the immense advantage to a great commercial power of secure harbours and coaling stations scattered over the world. It is not difficult to conceive circumstances in which the destruction of some of our main industries, occurring perhaps in the midst of a great war, might make it utterly impossible for our present population to live upon British soil, and when the possession of vast undeveloped territories under the British flag and in the hands of the British race might become a matter of transcendent importance. Think for a moment of the colossal and indeed appalling proportions which our great towns are assuming; think of all the vice and ignorance and disease, of all the sordid abject misery, of all the lawless passions that are festering within them, and then consider how precarious are many of the conditions of our industrial prosperity, how grave and how numerous are the dangers that threaten it, both from within and from without.

Who can reflect seriously on these things without feeling that the day may come, perhaps at no distant date, when the question of emigration may overshadow all others? To many of us, indeed, it seems one of the greatest errors of modern English statesmanship that when the great exodus from Ireland took place after the famine, Government took no step to aid it, or to direct it to quarters where it would have been of real benefit to the empire. Many good judges think

that the advantages of such an interference in allaying bitter feeling, in softening a disastrous crisis, and in permanently strengthening the empire, would have been well purchased if it cost half or even two-thirds of the sum which has been lost in England within the last four months by our disastrous strike. In dealing with this question of emigration in the future colonial assistance may be of supreme importance. And those who have understood the significance of that memorable incident in our recent history, the despatch of Australian troops to fight our battles in the Soudan, may perceive that there is at least a possibility of a still closer and more beneficent union between England and her colonies—a union that would vastly increase the strength of both, and by doing so become a great guarantee of peace in the world. It would be a calumny to suppose that the change of feeling I have described was solely a calculation of interests. Patriotism cannot be reduced to a mere question of money, and a nation which has grown tired of the responsibilities of empire and careless of the acquisitions of its past and of its greatness in the future would, indeed, have entered into a period of inevitable decadence. Happily we have not yet come to this. I believe the overwhelming majority of the people of these islands are convinced that an England reduced to the limits which the Manchester school would assign to it would be an England shorn of the chief elements of its dignity in the world, and that no greater disgrace could befall them than to have sacrificed through indifference, or negligence, or faintheartedness an empire which has been built up by so much genius and so much heroism in the past. Railways and telegraphs and newspapers have brought us into closer touch with our distant posses-

sions, have enabled us to realize more vividly both their character and their greatness, and have thus extended the horizon of our sympathies and interests. The figures of illustrious colonial statesmen are being familiar to us. Men formed in Indian and colonial spheres are becoming more numerous and prominent in our own public life. The presence in England of a High Commissioner from Canada and of Agents-General from our other colonies, constitutes a real though informal colonial representation, and on more than one recent occasion our foreign policy has been swayed

by colonial pressure. These young democracies, with their vast, undeveloped resources, their unwearied energies, their great social and industrial problems, are beginning to loom largely in the imagination of Europe. They feel, we believe, a just pride in being members of a great and ancient empire, and heirs to the glories of its past. We, in our turn, feel a no less just pride in our union with these coming nations which are still lit with the hues of sunrise and rich in the promise of the future.

(To be continued.)

NOTES FOR TEACHERS.

INSIGHT. — Healthy development cannot go on without some amount of direct sympathetic insight on the part of the teacher. It is not only that the wrong words must not be spoken, but the teacher must learn how to make his influence felt by his mere presence. There is a force in character which underlies and is superior to all spoken words. And, indeed, words are only useful in so far as they correctly embody this subtle force. A teacher can never be successful who does not consciously or unconsciously develop this force in himself, and learn how to use it.—*The Journal of Education.*

There is danger of overdoing the matter of illustration in teaching. Illustrations should appeal to something in the mind of the pupil; it is intended as an aid to apperception, or the process of mental assimilation. Since illustrations appeal to what the child knows, the less the child knows the less use is there for illustrations. Hence, in primary work, illustrations

should be few, very simple, and exceedingly direct. The multiplying of illustrations is very apt to produce confusion of thought, and the single point of the lesson be wholly lost in the multitude of illustrations. When presenting a new fact or thought to a child, it is better first to present it in its simplest form, in the most direct manner, giving the mind of the child time to try to grasp it in that form by its own processes; then in case of failure add the simplest possible explanation or illustration, and then firmly hold the child's mind to the new fact or thought until he grasps it. "Examples may be heaped until they hide that which they were made to render plain."—*Ex.*

But training is, of course, not everything; figs cannot grow on thistles—there must be the inborn character of a teacher. What, then, is the special gift, the differentia, or the criterion of a teacher?

I think it is as clearly marked as that of the painter or the musician;

and if it be true that each of us has a place to fill, a work to do in the world, then we may infer that each has the special gifts—*χαρίσματα*—to enable him to do it. We may call the gift genius. The artist is possessed by the passionate desire to give expression in form to the visions of beauty which he sees. The born ruler has the power to sway the wills of men (such a genius we see in Napoleon) The educator is one who feels, with our great poet, that the "incidents in the development of a soul" are of the highest interest, that "little else is worth study."

The teacher's joy is (as Socrates expressed it) to bring to the birth human souls. He needs, of course, a clear understanding, a power of expression, and many incidental gifts, but the essence of a teacher is the sympathetic joy in the growth and development of other minds and souls, specially of those which have not yet attained their full stature. It is the possession of this inexplicable desire (not chiefly that we should know and understand ourselves, but that others should)—this didactic spirit, which is so often a nuisance when not kept in check—yet we must have it, or we shall find teaching an intolerable drudgery, and the science of education incomprehensible; without it, we have not eyes to observe the facts, or power to classify and infer. Yet this, like all other gifts of genius, is quickened and stimulated by sympathy, by association with kindred spirits. Hence the good of a college, for there, as Bacon says, "example teacheth, company comforteth, emulation quickeneth."—*The Journal of Education*.

A penny is the most ancient of English coins. The word was originally used for money in general. It is first mentioned in the laws of Ina, King of the West Saxons, about

the close of the seventh century, and was of silver deeply indented with a cross so as to be easily broken into four parts. It is the radical denomination from which English coin is numbered, weighing twenty-two and one-half grains Troy, being the two-hundred-and-fortieth part of a pound. It is stated elsewhere that Ethelbert, King of Kent, coined pennies between 560 and 616 A. D. Edward I. coined gold pennies. In 1797 copper pennies were issued, and bronze ones in 1860, valued at half the copper ones. The United States coined copper cents and half-cents in 1793, in 1857 a nickel cent, and in 1865 a bronze cent.

The word penny is derived from the old German word *pfant*, a pledge. It was the coin current among the Anglo-Saxons. After Edward III. the coin decreased in value. To the lowest coin Robert Morris gave the name of "cent," because it was the hundredth part of a dollar. The first coinage was in 1793—*Lippincott's Magazine*.

NOT WISE.—The great ambition of the country school teacher is to get into a graded school. We can very easily imagine that the desire haunts her dreams at night. But really the teacher in the ungraded school occupies the vantage ground. The conditions are more favourable for growth both of herself and pupils. Indeed, we have no hesitancy in saying that the young teacher, if she has regard for her own development, cannot afford to surround herself with the conditions which are present in the graded schools of the larger towns. In the ungraded school the teacher gets at the individual mind, a condition essential to any successful teaching. And in thus dealing with the individual as a unit, she, if wise and thoughtful, is taking lessons from the only source that will give her know-

ledge, power and skill in her chosen work. Moreover, nature is all around her, and not the artificial conditions of the town. And here is the evidence that our contention is true. The educated thought of the country is to-day seeking some way by which the graded school can become ungraded, by which, as one writer has it, the tendency "to stunt and develop and retard at one end, and crowd and cram and drive at the other, in order to keep the grade moving on together," can be prevented. Cambridge is trying to solve the problem by so arranging the work in the grammar grades that the more forward children can accomplish it in four years instead of six. Other schools here and there are seeking to reach the same end by placing two and three grades in a room, but a short distance apart in time, thus allowing the brighter pupils to jump the narrow chasm with ease. This was the plan of Commissioner Harris when superintendent of the schools of St. Louis many years ago. We are inclined to think that owing to the prejudice of teachers and the penuriousness of the average tax-payer and citizen, the problem is not going to be an easy one to solve. We shall watch with interest the experiments.—*Popular Educator.*

THE HERBERTIAN "STEPS OF INSTRUCTION."—The subject matter of each branch is supposed to be divided into suitable lesson-units. In arithmetic, such a lesson-unit might be "The Division of a Fraction by an Integer;" in geography, "The Basin of a River;" in United States History, "The Battle of Gettysburg." In teaching the lesson, the teacher will, according to the theory of formal steps, observe and pass through the following stages successively:

1. Preparation, that is, recalling the previous lesson and other know-

ledge familiar to the child as aids to appreciation, indicating also what is the aim of the present lesson.

2. Presentation, the gathering of all the facts on the lesson topic in hand. The method of presenting the facts will, of course, vary with the nature of the lesson.

3. Comparison, viz., of facts with facts to discover their meaning. (A fine field for the cultivation of a most useful mental power, too often neglected.)

4. Generalization, that is, the pupil's reaching, as the fruit of his own investigation, those conclusions commonly called principles, definitions, laws, rules, formulas, etc.

5. Application, that is the bringing back of the laws and principles already learned and applying them to new particular cases in science, business, and social, political, moral or religious life. This completes the cycle. The pupil starts from individual facts or events, and returns again to them, but this time with power to interpret them. Higher than this no knowledge rises; greater power none can possess. Herbart's system is by no means mechanical, although thoroughly systematized and formulated. On the contrary it brings into the elementary school the charm of reality and invests each subject with greater interest. It promotes correct thinking habits, gives clear apprehension of knowledge, economizes thought and effort and furnishes to the pupil the broadest and best basis for future acquisitions. Herbart and his followers have given to Germany a body of over eight thousand enthusiastic teachers, who follow progressive and scientific methods in pedagogy. It is not given to one man to grasp all of truth, or to perfect any system of education, but may it not prove that Herbart, more than any other, has solved the problem of Elementary Education?—*Selected.*

PUBLIC OPINION

THERE is an expression used sometimes of the physician, the lawyer and the preacher, and is very significant ; " He has got his growth." When used of a man these five words have a meaning no other combination can equal. The one least likely to rust is the lawyer ; then comes the physician ; next the preacher. The same expression is beginning to be used of superintendents, principals, and professors. Once the teacher was too insignificant, but the electric light is being turned on him. Woe be to him when the school board hears the expression, " He has got his growth." It will be but a short time before he will be enquiring for another position.

The advancement of the teacher will be in knowledge and power. The teacher's power does not wholly come from knowledge ; an increase of knowledge does not necessarily mean an increase in power. There must be an organization of the knowledge, and an adaptation of it to some well defined end. The gathering of bricks and lumber does not mean a building ; these must be organized according to some architectural design for some specific purpose. So the teacher must unite the new knowledge with the old, so that it shall add to his ability to develop mind.

The physician, for example, obtains such a knowledge of the human body that he sees its condition when the patient is talking to him, and advises the necessary steps to take to have it regain health. The teacher must have some such a grasp of the mind. He must see the needs of the young person ; he must see what is needful to be done to further the ends of growth and development. He must take a larger view than to measure to

the course of study. " You don't know your ' sixes,' and so you go into the seventh grade."

This means a knowledge of psychology ; it means, too, the perception of means, whereby the psychological processes, that lead to development, may be carried on. This is quite different from knowing that a child is ignorant of the names of the rivers of his country, and setting to learn them as soon as possible. Cramming is one thing, education another.

Once there was no demand that the teacher should think at all professionally ; that is, should know the underlying principles, should philosophize concerning education, but that time has passed, never to return. The wheel of progress has turned around, and education, for many reasons, is coming into a place of importance. All the processes of the school are to be inspected. A teacher had kept a boy in at recess for some misdemeanour, and was astonished beyond measure to receive a note from a parent saying : " No matter what wrong C——has done, he should not be deprived of air and rest." It fairly took his breath away. For twenty-five years he had kept boys in at recess, but the time had come when he could do it no longer.

A teacher of Latin remarked a year since, " I have taken twenty-two classes through Cæsar and Virgil. I never felt I needed any further study than what I gave when the class was before me. But a change has taken place ; I don't see how it is or where it is. The demand seems to be that the work I do shall be done more in accordance with the mode of thought the boy naturally pursues. At all events, the coming class will be handled quite differently."

Practically the teacher must know

the educational process of the mind. The Creator implanted the power of education, which is a force like magnetism or gravitation. It has ways of manifesting itself like the chemical force. The study of this force is like a study of the forces in psychology, chemistry and physics. There is a history in the matter that reaches back 2,000 years; there is a literature that goes back as far; there are discoveries and applications of discoveries along this entire period.

Nor are we at the end, nor in sight of the end; we seem to be just entering on a period of larger discoveries. There is an appearance of willingness to study upon education. The old is passing slowly away, and it would pass much faster if we knew just what could be put in its place.

Practically, the teacher, no matter whether it be in the kindergarten, the primary school, the advanced school, the high school, the normal school, or the college, must be a student of education; he must have a library upon the subject of education; he must have before him for daily study the thoughts and conclusions of other labourers in his field. Said Ralph Waldo Emerson, in a letter to his daughter, "It matters little what you study, but everything who teaches you." This covers the whole ground. To be a *professional* teacher is to know how to direct the educative processes implanted by the Creator. To be a *non-professional* teacher is to lay out a quantity of knowledge, and demand that the pupil absorb it. The former has existed in a partially developed state in many places; there is now a serious attempt to separate itself definitely from the latter class."—*The Teachers' Institute.*

TAXATION.—There is no doubt that the school taxation in this country is becoming burdensome. In a great number of cases the school tax is

equal to the municipal rates, but who is to blame? Not the trustees, for they must keep up standard schools, or go without the State help. School trustees have no option but to act, and to raise money at their command, backed by the Provincial Government. If they refuse to act, the first fine is \$5, and after that \$20 and if they do send large estimates for councils to pay, it must be done, for the law makes them do it.—*London Free Press.*

THE GERMANS.—During an interview with the Dekan of the Faculty of one of the most widely known of German Universities, the professor was asked about what per cent. of the students took their degrees. He replied that he could not say exactly. "As many as, say, 10 per cent.?" "Oh, no, not so many as that." "Then would 3 per cent. be too low?" "I hardly know; I should think 3 per cent. finished their course," was his reply. "Then we should be quite safe in saying that the average would be much less than 10 per cent., and probably more than 3 per cent.?" The professor agreed. This fact is somewhat startling. It means that by far the larger half of the students do not work, do not attend lectures, but do, as many of their English and American contemporaries, have a good time while up at their Universities.—*The Journal of Education.*

It is necessary to have a corner of the mind always open and free, to leave a place there for the opinions of one's friends, and to entertain them as they pass by. It becomes really intolerable to talk to men in whose brains the divisions are filled up, and into which nothing from without can enter. Let us strive after hospitable hearts and minds.—*Sainte Beuve*

GEOGRAPHY.

THE EARTH IN SPACE.—There is a curious fascination in putting side by side the myth and science of astronomy. The old legends of the sun and moon, of earth and sky, of heaven and the stars, tell us of the self-same objects whose place and size, whose weight and nature astronomers are chronicling to-day. The difference is great indeed between the guesses of early times and the methods of modern science; nowhere else, perhaps, is the contrast seen so well between the infancy and the maturity of the mind of man, and no part of astronomy shows it so clearly as that which tells of the earth's place in the universe. To the Greeks, eight centuries before Christ, the earth was flat, surrounded by the sea, and covered by the canopy of sky, which is the floor of heaven, the abode of the Olympian gods. Greece was at the centre of the earth, and Delphi at the central point of Greece. As to other worlds scattered through the sky depths, science has lately been learning much; something of their nature, their number, their distance is constantly being learned, while the way is being prepared for gaining some real insight into the relations of the stars among themselves, and for fixing our own position in regard to other suns and systems than our own.

We have to invent a new measure for talking of their distance, since, finding miles too small, we talk of "light years," which means the distance that a ray of light, travelling some hundred and eighty-six thousand miles a second, would traverse in a year. Before we get too used to talking of light years it may be well to try to get a notion what a light year really is. It means a journey that would take an express train more than eleven million years.

It means a velocity that the periphery of a gigantic fly-wheel one hundred miles in diameter could not keep up with, though it made five hundred revolutions in a second. It means a distance traversed in one second that sound will not pass over in ten days. And this is the unit for the quantities that modern astronomy deals with when treating of the distribution of stars in space. Sometimes one hears a cubic light year spoken of—that is, an imaginary cube with each side a light year long. It was long after men saw how to measure the distance of the stars before they succeeded so as to feel much confidence in the results obtained; but now the distances of a few stars are known with comparative accuracy and certainty, many measures having been made that probably come within twenty or thirty per cent. of the truth.

The nearest star that has been found is Alpha Centauri, with a distance of $4\frac{1}{3}$ light years. Probably next in order is a small star, numbered 21,185 in Lalande's catalogue. It is about $6\frac{1}{2}$ light years off, while 61 Cygni, the most frequently measured of any star, is about 7 to $7\frac{1}{2}$ light years off. But let us take our nearest neighbour and try to see something of the isolation of our solar system in space. Let us try to conceive of a sphere of which the sun is centre, with a radius of 4.35 light years, so placing our nearest stellar neighbour on its circumference—translated into the more familiar unit, its diameter is over fifty billion miles and its cubic contents nearly three hundred and fifty cubic light years, or seventy thousand sextillions (7 with 40 ciphers) of cubic miles, for a cubic light year is rather more than two hundred sextillions of cubic miles. Here is isolation indeed. The sun, with all its vastness, does

not fill one two hundred-thousand-trillionth (2 with 23 ciphers) part of the sphere that has our nearest stellar neighbour on its surface; the gigantic volume of the sun in such a space is like an isolated shot containing but one-half of a cubic inch immersed in the whole water of the sea, while a little speck less than the two-millionth of a cubic inch suspended in the three hundred and seventy-three trillion gallons of the sea would represent the earth suspended in the sphere, the radius of which reaches only to the nearest star.

Did we set the Pole—star at the limits of our space sphere, the volume of the sphere would be three thousand times as great; and the sun must be thought of as occupying the six thousandth part of an inch in the four hundred million cubic miles of sea. Were Vega, at a distance of ninety-six light years, on the boundary of our sphere, the space that reaches to our nearest neighbour must be increased ten thousand times in volume, and the earth becomes a different microscopic object in the vast abyss of sea. These are all stars whose distance has been measured with more or less accuracy, but there are other objects more remote that have defied all attempts to measure them—in literal fact, they are immeasurably remote distances. The figures given here to show the position of the earth in space are wholly paltry and inadequate compared with the (as yet) unknown reality. Much has been learned and the way prepared for yet greater advances. Man has dethroned himself from the chief position in the universe, has seen his world cease to be the centre round which all else revolves; has recognized his abode as the tiniest imaginable speck in space; man—

Who sounds with a tiny plummet,
Who scans with a purblind eye,
The depths of that fathomless ocean,
The wastes of that limitless sky

—yet has a longing to penetrate still farther through the star depths to win yet other secrets from the mysteries of space.—*Prof. Wm. Schooling, in Knowledge for October.*

DEEP-SEA DEPOSITS.—The deep-sea deposits are essentially made up of the remains of pelagic organisms and volcanic products. Terrigenous material is almost entirely absent. The proportion of carbonate of lime decreases as the depth increases; below 2,000 fathoms; this is owing to the solvent action of sea-water on the calcareous organic remains. The deposits of the greatest depths are, therefore, almost entirely derived from siliceous organisms and volcanic material.

Proceeding outwards from the shore, we first meet with the variable deposits of the littoral and shallow-water zones—banks of sand heaped up under the influence of tidal currents, and wide stretches of mud in the deeper and quieter regions. Here and there occur local accumulations of shells and shelly *débris*. Near the 100-fathom line blue muds are found, and as these are followed down the continental slope, they merge, near its base, into Globigerina ooze—a deposit which extends with wearisome monotony over immense areas. As we descend into the abysses of the ocean, to depths exceeding 2,500 fathoms, the globigerina ooze passes into “grey” ooze, and this again into red clay—the most widely distributed of all the deep-sea deposits.

The physical conditions at great depths are practically the same from the equator to high latitudes. Seasonal changes are absent, and the temperature is uniform. Notwithstanding this, there is a marked variation in the character of the organic remains found in the deposits. Foraminifera are larger and more varied in form in the tropical regions. Cocoliths, rhabdoliths, and the

remains of the pelagic mollusca are entirely absent from the deposits of high northern and southern latitudes. These variations with latitude are due to the fact that the organisms which make up so large a portion of the deposits live at the surface, where their distribution is determined by the distribution of temperature.—*J. J. H. Teall.*

NEWSPAPER SCIENCE.—Some of our British daily newspapers occasionally recognize the fact that scientific news may be included among the topics of current interest. This is satisfactory. But general articles by journalists on matters relating to science are capable of doing either good or harm; and we fear the leading article on "Young Collectors," published in the *Daily News* of February 6, falls within the latter category. It is calculated to deter parents from encouraging scientific pursuits, as the following extracts will show:—

"Boys will go collecting things—it is difficult to say why. Indeed, it is not easy to explain why anybody collects anything. Probably the pleasure consists—first, in having what other collectors have not; and, secondly, in the passion for perfection and the enjoyment of the chase.

The things which people will collect, judging from the list of Manuals for the Young, are numerous, nor do they all excite a well-regulated cupidity. Butterflies, beetles, and moths we could do without, but London is a great place for moths, and the young collector, with the aid of sugar, may even in London pick up some moths, and a little knowledge of natural history. For fungi it is quite vain to pretend any enthusiasm.

Fossils are heavy, but harmless, and there are some who consider marine shells decorative objects; among these amateurs con-

spicuous are the keepers of lodging houses. . . . There is probably no great harm in amassing a collection of diatoms, if they do not smell disagreeably, but boys were more in the habit of collecting dormice in the years that were. We suspect diatoms, as they appear to live in ponds with algæ and the like. . . . People should be very careful how they put these things into the heads of boys."

The general tone of this article is unfortunate, to say the least, for science owes much to collectors. Many distinguished naturalists laid the foundations of their knowledge upon the collections they made, in the days of their youth.—*Natural Science.*

The love of country is more powerful than reason itself.—*Ovid.*

Train up a child in the way he should go, and when he is old, he will not depart from it.

A man really owns only so much as he can nestle into the inmost heart.—*George Mac Donald.*

The teacher can no more think for a pupil than he can walk, sleep, or digest for him.—*Joseph Payne.*

The primary principle of education is the determination of the pupil to self-activity.—*Sir. Wm. Hamilton.*

My country's good, with a respect more tender,
More holy and profound than mine own life.

—*Shakespeare.*

In advising a mental sufferer, first learn to look upon his case as if it were your own, and then teach him, on the other hand, to consider and deal with his own case as coolly and dispassionately as if it were another's.—*Fosiah Royce.*

DISCUSSION.

To the Editor of THE EDUCATIONAL MONTHLY :

SIR.—In your last issue “Head Master,” writing with reference to the university matriculation examinations, expresses the hope that hereafter all honor and scholarship candidates will be required, as formerly, to write in the university examination hall under the eyes of the same presiding examiner. As far as those competing for scholarships or for relative honor standing are concerned I reluctantly agree with him. I say *reluctantly*, because some really well prepared and deserving students would not consider their chances good enough to make it worth their while incurring the expense of going to Toronto to write. For instance, I think I know of one scholarship winner this year who would not have gone to Toronto, and of another candidate last year, from another school, who would, as her standing showed, have won a scholarship if she had written in Toronto. If, however, “Head Master” means that candidates seeking merely honor standing should also be required to go to Toronto to write, I decidedly dissent from his opinion, and fail to see the slightest necessity or justification for such a retrograde step. In the case of those competing against one another, we all know that the slightest deviation from the regulations might give some candidates a material advantage over their rivals, and with candidates writing at a large number of centres it would be difficult, if not impossible, after last summer’s experience, to make those most interested feel assured that the regulations had been observed with absolute uniformity at all the centres, and hence that all the competitors had

written under precisely similar conditions. When, however, all that is sought is absolute standing, i.e. whether a candidate is entitled to honors, and if so whether first or second class, I cannot think it at all impossible to secure such an observance of the regulation as will make it just as safe to have honor as well as pass and senior leaving candidates write at their own centres. If presiding examiners, whether inspectors or deputies appointed by them, prove incompetent, careless, or untrustworthy, let the department see to it that they are not employed again in a similar capacity; but surely it will not be said that it is impossible to make regulations and instructions so explicit that no one can misunderstand them, or to find in each county experienced and trustworthy persons who are just as competent to act as presiding examiners as any university professors.

H. I. STRANG.

P.S.—By the way, are we not to be allowed to see the report of the commission that was appointed to inquire into the irregularities reported to have occurred at the last examinations? Surely after the grave charges that were made, the teachers and candidates who were interested in the results are as much entitled as the university senate to know just how far these charges were found to be substantiated by evidence; and surely too, it is but reasonable to suppose that confidence in the management of these examinations will be best restored by letting the public know the facts of the case as far as they have been brought out by the investigation.

To the Editor of THE EDUCATIONAL MONTHLY:

SIR,—As my suggestion *re* contributions from teachers is regarded with favor by you, I venture to follow it up with an illustration, which I had not time to add when writing before.

On the recommendation of a brother master of unquestionable standing as a scholar I sent for Genung's *Outlines of Rhetoric*, which, by the way, I notice you review very favorably in your December issue. Since receiving it I have looked pretty well through it, and while I find much to commend in it, I have been surprised, and if I may use the phrase, fairly staggered to find in the "Glossary of words, idioms, and phrases which are in frequent misuse" that many expressions which I have been wont to regard as good English are condemned by Professor Genung.

I submit a few of the many that I have marked, and invite an expression of opinion by English masters as to the correctness of the professor's *dicta*, and the soundness of his judgment.

1. "One can catch up with a train, but not catch a train."
2. "Champion, not to be used as a verb; as to champion a cause."

3. "Confess, not to be used in the sense of admit; e.g. 'As any one will confess.'"

4. "Consequence, not to be used in the sense of importance or moment; as 'this is of no consequence.'"

5. "Constantly, not to be used for often or continually."

6. "Consider, not to be used in the sense of regard; as 'he is considered a very able financier.'"

7. "Convene. A person cannot be said to convene a body." Pray how does the professor account for the word *convener*?

8. "Don't, plural; not to be used with singular subject." What about 'I don't'?

9. "Empty, not to be used of a river, in the sense of to flow into, to discharge."

10. "Execute, not to be used of a personal object, in the sense of put to death."

11. "Journal, not to be used of a monthly or quarterly magazine."

12. Same—as, not to be used for same—that, as, 'this is the same picture as I saw yesterday.'"

MASTER.

EDITORIAL NOTES.

WORK IN SECONDARY SCHOOLS.

WE have more than once referred to the committee of ten appointed by the National Educational Association of the United States of America for the purpose of considering the best course of studies for secondary schools, keeping in view the difficult work of these schools, viz., preparing

pupils for colleges, professions and for work in ordinary life.

The committee of ten appointed nine conferences of ten each, the members of each conference experts in the subjects on which they were asked to report. That is, here we have a hundred teachers, professionals in the proper sense of that word, engaged for sometime past, preparing a report on this very important

question. The final report of the committee of ten is not yet ready and will not be for some time.

At the last meeting of the N. E. Association of Colleges and Preparatory Schools, President Eliot of Harvard University reports some points which are almost certain to appear in the report of the committee of ten. On the teaching of languages there are four separate conferences and they were all unanimous in recommending to read aloud the language to be studied, to write in the language to be studied, and not to dissociate the writing of the language from translating the language; they all desire accurate and idiomatic translation.

There is a remarkable agreement among all the conferences that, in their opinion, the teaching of every single subject in a secondary school should help the teaching of every other subject. All were agreed, conferences and committee of ten, that no distinction ought to be made in the manner of teaching a pupil in a secondary school because of his destination. President Eliot stated that no pupil in a secondary should have more than twenty-five recitations per week.

Considering the compositions of these conferences and the committee of ten, the care and labour which they are bestowing on the work in hand, all educators will watch with interest for the appearance of the final report, meanwhile they will welcome these general conclusions and give due effect to them in the general conduct of secondary schools.

IN THE TWILIGHT.

Men say the sullen instrument,
That from the Master's bow,
With pangs of joy or woe,
Feels music's soul through every fiber sent,
Whispers the ravished strings
More than he knew or meant;
Old summers in the memory glow;

The secret of the wind it sings;
It hears the April loosened springs;
And mixes with its mood
All it dreamed when it stood
In the murmurous pine-wood
Long ago.

The magical moonlight then
Steeped every bough and cone;
The roar of the brook in the glen
Came dim from the distance blown;
The winds through its glooms sang low,
And it swayed to and fro
With delight as it stood,
In the wonderful wood
Long ago!

Oh my life, have we not had seasons
That only said, Live and rejoice?
That asked not for causes and reasons,
But made us all feeling and voice?
When we went with the winds in their
blowing,

When Nature and we were peers,
And we seemed to share in the flowing
Of the inexhaustible years?
Have we not from the earth drawn juices
Too fine for earth's sordid uses?
Have I heard, have I seen
All I feel and I know?
Doth my heart overween?
Or could it have been
Long ago?

Sometimes a breath floats by me,
An odor from Dreamland sent,
That makes the ghost seem nigh me
Of a splendor that came and went,
Of a life lived somewhere, I know not
In what diviner sphere,
Of memories that stay not, and do not,
Like music heard once by an ear
That cannot forget or reclaim it,
A something so shy, it would shame it
To make it a show;
A something too vague, could I name it,
For others to know,
As if I had lived it or dreamed it,
As if I had acted or schemed it,
Long ago!

And yet could I live it over,
This life that stirs in my brain,
Could I be both maiden and lover,
Moon and tide, bee and clover,
As I seem to have been, once again
Could I but speak and show it—
This pleasure more sharp than pain
That baffles and lures me so,
The world should not lack a poet,
Such as it had
In the ages glad,
Long ago!

—JAMES RUSSELL LOWELL.

SCHOOL WORK.

EXAMINATION PAPERS IN ENGLISH LITERATURE.

By MISS H. CHARLES, B.A., Goderich Collegiate Institute.

"Lady of the Lake."—*Junr. Leaving Class.*

I. Describe the chase in Canto I.

II. "Yet often paused, so strange the road,
So wondrous were the scenes it showed."

Tell what these scenes were.

III. Describe Ellen's first appearance on the scene, and her meeting with Fitz James.

IV. Quote the poet's description of Ellen, or of Fitz James.

V. (1) Tell the speaker of each of the following extracts, and the connection in which the speech occurs.

(2) Explain fully what is meant by the italicized expressions.

(a) "A summer night in Greenwood spent
Were but tomorrow's merriment."

(b) "I'll lightly front each high emprise,
For one kind glance at those bright eyes."

(c) "My sire, *in native virtue great*,
Resigning lordship, lands and state,
Not then to fortune more resigned
Than yonder oak might give the wind."

(d) "Forgive, my friend, a father's boast
O, it *outbeggars all I lost!*"

(e) "What *grace for Highland chiefs* judge ye
By fate of *Border Chivalry*."

(f) "Roderick will *keep the lake and fell*,
Not *lackey*, with his freeborn clan,
The *pageant pomp* of earthly man."

"High School Reader," Lessons 58, 69, 70, 79, 80, 81, 97, 98.—Primary Class.

I. Quote "Break, break, break," or four consecutive stanzas of "As ships becalmed at eve."

II. Tell the story of the "Revenge," preserving as far as possible the spirit of the poem.

III. (a) Give the title of the poem from which each of the following is taken, and name the author.

(b) Explain clearly the meaning of each of the italicized expressions.

1. "I've grown so learned day by day,
So *Machiavolian in this wise*."

2. "They must *revere* thee, thou *blue-cinctured* isle of England."

3. "And they stared at the dead that had
been so valiant and true,
And *had holden the power and glory*
of Spain so cheap."

4. "'Tis the *blind non-recognition*,
Or of goodness, truth or beauty,
Save by *precept and submission*."

5. "And *her spirit changed within*."

IV. "Little thinks, in the field, you red-
cloaked clown
Of thee from the hill-top looking
down ;

The heifer that lows on the upland
farm,
Far-heard, lows not thine ear to
charm ;

The sexton, toiling his ball at noon,
Deems not that great Napoleon
Stops his horse, and lists with de-
light,

While his files sweep round yon Al-
pine height ;
N'r knowest thou what argument
Thy life to thy neighbour's creed has
lent.

All are needed by each one—
No hing is fair or good alone."

(a) Show the connection between the general statement in the last two lines and the four definite examples given before.

(b) Show how the poet further develops the same general statement throughout the remainder of the poem.

CLASSICAL DEPARTMENT.

QUESTIONS ON CÆSAR. BOOK IV.
CHAPTERS 6-12.

By H. J. STRANG, B.A.

I. Translate Chapter 8, turning Cæsar's speech into *Oratio recta*.

1. Parse *alienos, querantur, hoc*.

2. Construction of *quæ, sibi, verum*.

3. Distinguish *suos, (eos), (eorum), fines ;*
apud se and secum.

4. Give 3d sing. fut. ind. of *visum est*, *possint*, *velint*, *dari*, *quarantur*.

5. Change the speech to *Oratio recta*.

II. Translate Chapter 12, *At hostes—nos tri venissent*.

N. B.—Break the first sentence into three, taking first the main statement, then making two sentences of the parenthesis.

1. Construction of *induciis*, *consuetudine*, *uga*.

2. Classify the subjunctives in the extract—

3. Conjugate *suffossis egerunt*, *resistentibus*, *desiluerunt*, *conspexerunt*.

4. *quod discesserat*. When is the conjunction *quod* followed by the indicative, and when by the subjunctive?

5. "quum ab hoste non amplius passuum duodecim *millibus* abesset" (Chap. 11), and "quum ipsi non amplius octingentos *equites* haberent" (Chap. 12). Account for the difference in the case of the italicized words.

III. Translate idiomatically:

1. Neque tamen recusare silaccensatur quin armis contendant.

2. Petebant ut sibi potestatem faceret in Ubios legatos mittendi.

3. Huc postero die quam frequentissimi convenirent.

IV. Translate into idiomatic Latin:

1. They had set out for the camp sooner than usual.

2. Not even the Germans were a match for them.

3. These rivers form many large islands before emptying into the ocean.

4. He gave them permission to approach nearer the river.

5. To put them to flight, to come in sight of them, they had come according to agreement.

V. 1. State the general rules for the changes of moods in turning from *oratio recta* to *oratio obliqua*.

2. Give the usual meaning of *occupo*, *auctoritas*, *obtineo*, *respublica*, *exspecto*, *injuria*.

3. Make the present of *amicus*, *obtulit*, *incitat*, *Oceano*, *considero*, *recusat*, and distinguish *cecidit* and *caecidit*.

4. Inflect the tense of *fertur* and *oritur*,

pointing out any irregularities, and mentioning any other irregularities of *orior*.

5. Mention any peculiarity of *induciis*, *neminem*, *jurejurando*, *dii*.

6. Distinguish *si-nulo* and *dissimulo*.

7. Conjugate *permulsis*, *possederint*, *delectis*, and compare *maturius* and *magnopere*.

8. Form nouns from *aqua*, *consuesco*, *ago*, *legatus*, *conspicio*, *postulo*.

9. Account for the difference in the mood of the italicized verbs in "quoad *potuit* fortissime restitit," and "Si ipsi *lacesserentur*, sustinerent quoad ipse proprius *accessisset*."

ENGLISH DEPARTMENT.

EXERCISES IN ENGLISH GRAMMAR

By H. J. STRANG, B.A.

For Junior and Entrance Classes.

1. Change the following sentences to the plural:

(a) This tooth of mine is aching.

(b) Has he lost the knife I gave him?

(c) That lady was making a doll's dress for her child.

2. Fill the blanks with the proper parts of the verbs lie, lay, sit, set, raise, rise.

(a) She could not get the bread to _____ properly.

(b) I found these books _____ on the floor.

(c) Who's that girl _____ near the window?

(d) It must have _____ there for a long time.

(e) He found that the river had _____ several inches.

(f) In what direction does it _____ from here?

3. Fill the blanks with correct forms of pronouns:

(a) You wouldn't think that _____ and are of the same age.

(b) It must have been _____ for there was no one but _____ and _____ in the room since that.

(c) Between you and _____ I believe it to be _____.

(d) Boys like _____ and _____ think it good fun,

(e) ———did he say was to go with you and———?

4. Give all the active participles of fly, lie(2), ride, deride, forgive, undergo, occur, begin, mistake.

5. Give the corresponding passive forms of "they saw," "he will strike," "to do," "Does he teach?" "he shook," "to have heard," "I may permit," "you might have asked," "having told," "forgetting."

6. Write the plurals of Mr., money, painful, shelf, atlas, crocus, terminus, Hindoo, son-in-law, stepson, governor-general, catfish, fish-hook, German policeman.

7. Analyze the following simple sentences :

- (a) The chill weight of the winter snow
For months upon her grave has lain.
- (b) At last the great logs, crumbling low,
Sent out a dull and duller glow.
- (c) Another guest that winter night
Flashed back from lustrous eyes the light.
- (d) There, too, our elder sister plied
Her evening task the stand beside.
- (e) Our uncle, innocent of books,
Was rich in love of fields and brooks.
- (f) All day the gusty north wind bore
The loosening drift its breath before.
- (g) The sun that brief December day
Rose cheerless over hills of gray.
- (h) Brisk wielder of the birch and rule,
The master of the district school
Held at the fire his favoured place.
- (i) Down the long hillside treading slow,
We saw the half-buried oxen go,
Shaking the snow from heads upmost,
Their straining nostrils white with frost.

8. Classify the words ending in "ing" in the sentences for analysis in No. 7, and give the relation of each.

9. Select from the sentences in 7 examples of (a) nouns used as adjectives, (b) adjectives used as nouns, (c) nominative in apposition, (d) nominative absolute, (e) adverbial objective.

10. Distinguish inflection, derivation, and composition, selecting from the sentences two examples of each.

11. Classify the italicized words and give the relation of each.

12. Write sentences to show that each of

the italicized words may have other grammatical values, specifying the value in each case.

EAST MIDDLESEX AND KENT.

PROMOTION AND REVIEW EXAMINATION,
NOVEMBER, 1893.

SPELLING—3RD TO 4TH CLASS.

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

1. The men presented very nearly the appearance of a herd of cattle in the deep shadows and completely deceived the sentinel.

2. "I have seen another," says Goldsmith, "go to a gentleman's pond at the word of command, drive the fish into a corner, and having seized the largest bring it off to its master."

3. The wind carried the ashes and cinders in such a direction as to deluge the City of Pompeii.

4. "Gone twenty years—a long, long cruise,—

'Twas wicked thus your love to abuse!

But if the lad still live,

And come back home, think you, you can

Forgive him?" "Miserable man!

You're mad as the sea."

5. "The Golden Touch," continued the stranger, "or a crust of bread?"

"A piece of bread," answered Midas, "is worth all the gold on earth."

6. Whence straight he came with hat and wig,

A wig that flowed behind,

A hat not much the worse for wear,

Each comely in its kind.

7. I know the definition of each of the following terms used in geography: Peninsula, isthmus, island, channel, strait, parallels of latitude and meridians of longitude.

SPELLING—2ND TO 3RD CLASS.

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

1. They played about and watched the fishes in the brook; they picked the pretty flowers and ate the berries, and although they looked yet no Walter could be seen.

2. He ruffled up his black feathers, fluttered his wings and then flew slowly across the fields to join some friends in the woods beyond.

3. The cruel, terrible tiger is a very close relation to the gentle, purring Puss.

4. In India elephants are employed to do a variety of work and no animal does its duty more faithfully.

5. "Good friend," said Hal, and sighed the while,

"Farewell I and happy be;
But say no more if thou'dst be true,
That no one envies thee."

6. And half-forgotten that merry air:—

"Bob-o-link! Bob-o-link!
Spink, spank, spink;
Nobody knows but my mate and I
Where our nest and nestlings lie."

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

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

1. Write an advertisement of between thirty and fifty words for a strayed or stolen cow. Give description, age, address. Offer a reward. (12)

2. Country, Sweden, Norway; Chief towns, Stockholm, Christiana; Situation, Islands of Lake Maelar, Skagerack; museums; timber, tar, iron, copper. Grand scenery; timber, iron, fish. (12)

Write in sentences (in two paragraphs) the information given in the above.

3. Write a composition on your work and progress in the Third Class. You may use these and other topics:

When promoted from Second Class.

What subjects you have studied.

Which you learn easily, which with difficulty.

Your teachers since promotion from Second Class.

(The length of this Composition should be nearly a page. (25)

4. (a) When should quotation marks be used?

(b) Write a question containing quoted clause.

(c) Write an affirmative sentence containing a quotation. (15)

5. Write to a cousin a letter containing at least three paragraphs—one about what you are engaged at this week, one about the London or some other fair, one about what you would like to do or be when you grow up. (25 marks if the Composition is perfect; 8 marks for perfect mechanical arrangement.

Make a drawing of the envelope for No. 5, and on it write the address. (38)

Count 100 marks a full paper; 33 minimum to pass.

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

1. Divide 34020678 by 196.

(a) by long division.

(b) by factors, using 7 first, then 4 and so on. (11)

2. If thirty-four head of cattle require 16 quarts of water each, twice a day, how often must a tank holding 1632 gallons be filled in three weeks to keep them supplied with water? (15)

3. (a) A has a lot 55 rods wide and 440 rods long; B's lot is the same width, but contains 2 acres less. How long is B's lot?

(b) How many yards of fencing would be required to enclose A's lot? (15)

4. A dealer has 294000 lbs. of wheat which he can either sell at 72 cents a bushel, or have ground into flour—40 lbs. of flour to the bushel—worth \$3.50 per barrel of 196 lbs. How much more profitable is one plan of disposing of the wheat than the other. (12)

5. A dealer sold 180 cords of wood at \$4.75 per cord. He gained \$143.75 after paying the cost of delivering the wood, which was \$36.25. How much per cord did he pay for the wood? (12)

6. (a) A room 18 ft. long, 15 ft. 9 inches wide, will require how many yards of carpet, 27 inches wide?

(b) If a yard, running measure, weighs 2 lbs. 4 oz., what will the whole carpet weigh? (5)

7. On September 8, 1893, Mrs. Ball sold to L. Wood 4 bushels 3 pecks of apples at 40 cents per bushel, 3 bags of potatoes at 75 cents a bag, 36 lbs. of grapes at 5 cents a lb. She bought from him the same day 56 lbs. of sugar at 16 lbs. for the dollar, 30 fruit jars at \$1.10 per dozen. On September 16 she got 4 lbs. of tea at 62½ cents per lb., 20 lbs. of oatmeal at 3½ cents per lb., and sold him 5 baskets of peaches at \$1.13 per basket. On September 28 she brought in 9 lbs. 8 oz. of butter at 22 cents per lb. The balance of the account was paid in cash. Make out the bill correctly and receipt it. (2 marks for correct heading, 2 for correct dating, 1 mark for each entry correctly made and calculated and 5 for correct receipt. (18)

Including mental arithmetic (Nos. 8, 9, 10; 11 & 12), count 100 marks a full paper; 33 minimum to pass.

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

GEOGRAPHY—3RD TO 4TH CLASS.
TIME 2 HOURS.

1. Define and locate a Canadian example:

- (a) Wooded country.
- (b) Prairie.
- (c) Mining district.
- (d) Marsh.
- (e) Fruit-growing county.
- (f) Agricultural tract. (18)

2. Describe the use of, and tell where one is:

- (a) Telephone.
- (b) Canal. (6)

3. Illustrate by a drawing the shape of a peninsula, of an island, of a gulf, of a river, and of a mountain range. (10)

4. Draw a general outline of the map of the three Counties of Essex, Kent and Lambton, marking the boundaries and county towns. (10)

5. (a) Draw an outline map of N. America.

- (b) Mark the Countries.
- (c) Mark the Provinces of Canada.

(d) Mark Winnipeg, Chatham, London, Toronto, Montreal. (27)

6. Describe a trip from here to St. Petersburg, Russia, naming in order the countries passed through and the most important cities on your route. (10)

7. In what respects do the physical features of North America resemble those of South America? (10)

8. (a) Name four kinds of native trees.

- (b) Tell how to distinguish them.
- (c) Tell a particular use for each. (10)

9. (a) Of what use may it be to a person to know the position of the North Star.

- (b) Tell how to find it. (6)

Count 100 marks a full paper; 33 minimum to pass.

GRAMMAR—3RD TO 4TH CLASS.
TIME 2¼ HOURS.

Insist on neat and legible writing. One mark off for every mistake in spelling. Pupils may have their text books in Grammar.

1. Analyze the following sentences models may be found on page 82.

(a) The time that you name will suit me.

(b) The great traveller, Livingstone, explored the Zambesi, a large river flowing eastward in Africa.

(c) Go over the above rhymes again and point out which ones are faulty. (19)

2. Parse the words in the following sentences according to the table in Exercise 58, page 51:

I could have won the prize if I had attended school more regularly. Ah! there is an "if" in the way. (18)

3. According to the model on, page 59, parse the following words :

They are never alone who have companionship with noble thoughts. (15)

4. Tell the kind and relation of each subordinate clause in the following (quote the clause in full) :

(a) The boy who helped us is not here.

(b) I cannot find the place where I left the basket.

(c) That he made a mistake is quite certain.

(d) I came because you asked me to come.

(e) The girls read to day better than the boys did.

(f) Come as soon as you can.

(g) You saw that he avoided us.

(h) The fact that you were to blame is evident. (24)

5. Tell why each pronoun in the following is indefinite, personal, interrogative, relative, or demonstrative, as the case may be :

(a) John has a pencil ; you may keep mine.

(b) She has taken a pencil. May I take another ?

(c) Which does Mary prefer ?

(d) That is the pencil which Fred chose. (24)

6. Correct the errors in the following sentences :

(a) Was George and Charlie with me when you saw them ?

(b) Come with Katie and I to the store.

(c) I don't know how he done it. (6)

Count 100 marks a full paper ; 33 minimum to pass.

LITERATURE—3RD TO 4TH CLASS. TIME, 2½ HOURS.

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

LESSON LVII., PAGE 152.

1. Tell in complete sentences as briefly as you can what each of the eight paragraphs in this lesson is about. (24)

2. Show how adjectives are used in the 2nd paragraph to make the descriptions more interesting. Give at least four examples. (6)

3. By drawing a line across the page, indicate the directions of the humming bird's flight. (2nd paragraph.) (5)

4. Choose words as different as you can from those used in the book to express the meaning of the last four lines on page 152 ("small" to "fear"). (6)

5. 6th paragraph, at the foot of page 153. Illustrate this paragraph by a drawing ; show the nest, the flower bush to which the bird will fly for food, and the line of flight. Mark the direction of flight by arrows. (5)

6. (a) Which of the five sentences on page 154 shows the best composition ?

(b) Give reasons for your answer. (5)

LESSON LXIV., PAGE 171.

7. Explain, in complete sentences, underlining quoted word :

"Village smithy," "sinewy," "brawny," "like the tan," "looks the whole world in the face," (10)

8. What comparisons are made in the 1st, 2nd and 4th stanzas on page 172? Make the comparison in your own words. (12)

9. "Hard, rough hand." Give a reason for the poet's mentioning the hardness of his hand in connection with the tear in his eyes. (4)

10. "Toiling, rejoicing, sorrowing." To which preceding stanza in the poem does each of these words refer? Quote the references. (12)

16. Page 173. "The lesson thou hast taught." Tell fully in your own words what the lesson is. (6)

12. (a) Describe the construction of the stanzas of this poem in reference to the arrangement of the lines and the rhymes.

(b) Show where the 1st stanza has one more rhyme than the last. (8)

13. Quote at least four lines from any other poem written by the author of "The Village Blacksmith." (4)

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

CONTEMPORARY LITERATURE.

Overland or January will be a special New Year number with beautiful illustrations.

Any good short stories going are sure to be found in *Littell's Living Age*. In December 23rd we find "Out of the Workhouse," "Temple Bar and the Caretaker."

"Rembrandt and the Dutch School" and "The Garden that I Love" are specially good articles.

To a lover of books it would be hard to find a more charming Christmas number than that of the *Book Buyer*. The illustrations are taken from the best of the year, and the literary criticisms are by such writers as Lyman Abbott, Richard Henry Stoddard, Lawrence Hutton and John C. VanDyke.

The issue of December 30th is a particularly fine one of the *Illustrated London News*. There is a well-illustrated paper on "Prof. Tyndall," and notes on the important events of the day. The French Chamber of Deputies and the French warships are both given large plates. The story running at present is "Young Sam and Sabina," by Walter Raymond.

The January number of the *Popular Science Monthly* smells of the sea. F. G. Carpenter writes of "Uncle Sam's Life Savers," and Mr. Littlehales tells how the sea is sounded. A much-needed article at the present time is the one by L. C. Loomis on "Recent Railroad Disasters." Other specially valuable papers are on teaching deaf children to speak, and on "Logical Methods in Biology."

There is a strong romantic element in the complete story of January *Lippincott*. The story is interesting and well written, and it is refreshing to come across a writer nowadays who can believe that people exist who approach perfection. "Frenchy" is a bright, short story by Molly Elliott Seawell. The Canadian, Gilbert Parker, contributes the first three parts of a novel, which will run for some time. "The Recollections" of M.E. W. Sherwood are particularly interesting.

The January number of the *Atlantic*

Monthly is unusually strong in fiction. Besides the serial "His Vanished Star," a new one is begun by Margaret Deland, entitled "Philip and His Wife." There are also two short stories, "The Only Rose," by Mrs. Jewett, and "Wolfe's Cove," by Mary Hartwell Catherwood. Students of literature will be more specially interested in "Ten Letters from Coleridge to Southey" and in a "Talk at a Country House," by Sir Edward Strachey, concerning the Camelot of Maclurg's Morte d'Arthur. Educationists will find an able paper by N. S. Shaler on the "Transmission of Learning through the Universities."

BOOKS RECEIVED.

Heath's Pedagogical Library. One of the first numbers of Messrs. D. C. Heath & Co.'s new Pedagogical Library is a translation of Herbart's work on Education, by Mr. and Mrs. Felkin, with a preface by Oscar Browning. Herbart was a great thinker, and education was the chief work of his life. This book is, therefore, one that ought to be in the hands of every teacher. The introduction by the translators gives a good account of Herbart's life and work. It abounds in wise thoughts in regard to the general principles of education and practical applications of them to the teacher's daily work.

Other two volumes of the same series are the First and Second Series of Object Lessons, by George Ricks, B.Sc. (London), Inspector of Schools to the School Board for London. These lessons are elaborately detailed and carefully graded; in the second volume, which is intended for "Grammar" grades, we notice a good many lessons on Elementary Science, and a few on Elementary Mathematics.

The same firm has just issued Parts I. and II. of Atwood's Graded Arithmetic. Part I. contains work for the 4th and 5th grades, and Part II. is intended for the three highest grades in the public schools. The Lessons

are arranged and planned ready for use, and definitions, rules, etc., are given at the end of the book. The examples are carefully selected, and the book, we think, is a very good one in many respects. Possibly it is a little too convenient.

Messrs. Ginn & Co. have issued another volume of School Classics—Virgil, *Æneid* VIII. The editor is Mr. John Tetlow of the Boston Girls' High and Latin School, and it contains scholarly notes, an introduction and an excellent vocabulary. A special feature is the appendix on word groups, i. e., groups of related Latin words.

The Beginner's Greek Composition. By W. C. Collar and M. Grant Daniell. The editors of this book are both experienced head-masters, and have prepared a book to meet the requirements of intending matriculants. Eighty-five exercises, based on the first book of the *Anabasis*, with copious notes and examples of idioms and constructions similar to those given in the exercises, form the main part of the book. There are also pages for translation, etc. Altogether the book appears to be very suitable for its purpose. Ginn & Co.

An excellent number of Heath's Modern Language Series is De Vigny's *Cinq Mars*, edited by Mr. Sankey, one of the assistant masters in Harrow school. The editor's work is exceedingly well done—the text has been somewhat abridged, the excellences have not been obscured, and the introduction and notes are very satisfactory.

Handicraft and Design. By W. A. S. Benson. London: Macmillan & Co. This is a book beautifully executed and written with much care and skill on the subject of Manual Training. It is very practical.

We have also received from Messrs. Ginn & Co. a *Teachers' Edition of School Needlework*, by Olive C. Hapgood, teacher of sewing in the Boston Public Schools. The book is well illustrated and beautifully printed, and is an excellent text book.

Prof. Phelps, of Yale, has just published (Boston: Ginn & Co.) a study in *Eighteenth Century Literature*, entitled "The Beginnings of the English Romantic Movement,"

which will be read with interest and attention by English scholars. Mr. Phelps has established, we think, the fact of the real force of this movement in English literature, and probably few will dispute his statement that the spirit of romanticism has never been wholly absent from English literature. The book will repay careful reading.

Theoretical Mechanics. By Prof. Zgiwet, of the University of Michigan. Part I., Kinematics. London: Macmillan & Co. The author has written this book mainly with a view to the requirements of the American student, and it is intended to publish a second part on Statics and Dynamics, and a third part on Kinetics. The present book is comprised in two chapters: I., The Geometry of Motion; II., Kinematics. For engineering students and others taking up this subject, this book will be found of great value.

The School Singer. Compiled by George A. Veazie. Boston: Ginn & Co. This is a compilation of good popular songs and choruses adapted for school use, printed in large, clear type. There are also a few operatic selections from noted composers.

Elementary Course of Practical Science. Part I. By Hugh Gordon, M.A. This elementary science primer is the outcome of Mr. Gordon's work under the London School Board, and deals with measurements of length, weight, etc., the barometer, thermometer, distillation, filtration, evaporation and solubility. The aim, as the author says, is to teach young scholars the art of helping themselves,—of thinking about what they see and do—and of working exactly with an object, and the primer keeps this aim in view. It is sensible, and clearly written.

Helps to the Study of the Bible. Oxford: At the University Press. We note with pleasure the appearance of a revised and enlarged edition of this book, almost a library in itself. It contains introductions to the several books, essays on the "History and Antiquities of the Jews," the results of modern discoveries and the "Natural History of Palestine," besides a concordance, many tables, sixty-four plates and a new series of maps, beautifully executed. It may easily be seen that this hand-book to the Scriptures has few rivals. Its statements are brief, exact and very much to the point, and it has been compiled with great care and skill.