THE EDUCATIONAL REVIEW.

FOR THE ATLANTIC PROVINCES OF CANADA.

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The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

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Notice of Change of Address should be promptly sent to EDUCATIONAL REVIEW, St. John, N. B. The former as well as the new address should be given.

EDITORIAL NOTES.

THIS ISSUE closes the second volume of the REVIEW. To our subscribers who have, by their generous encouragement, done so much to help the REVIEW during the past year, and to those who have assisted greatly in extending its influence, and contributing to its columns, we extend our sincere thanks.

THE programme of the N. S. Summer School of Science has been issued. It furnishes a very admirable and complete working course in natural science, together with illustrative lectures, valuable to teachers. The school will convene on Monday, July 22nd, in the rink at Parrsboro, and will close August 2nd. The opening address will be delivered by Principal A. H. MacKay. Prof. F. H. Eaton, of the N. S. Normal School, is the President, and from his activity and energy, combined with the strong corps of talented instructors in the several departments of science, there is every reason to expect a prosperous and interesting session.

THE N. B. Natural History Society has conducted a series of elementary lectures for teachers and students during the past winter in chemistry, physiology, geology and botany. During the spring months the members of the class have been making Saturday afternoon excursions in the neighborhood of St. John for the purpose of carrying on practical work in geology and botany.

THE Executive Committee of the N. S. Educational Association met at Truro, Good Friday, and arranged a programme of subjects for the forthcoming meeting which will take place during the second week of July.

THE summer course in botany, in connection with Harvard University, will be held at the Botanic Garden, Cambridge, beginning Monday, July 1st, at 9 a. m., and ending Saturday, July 27th. It will be under the instruction of Mr. W. F. Ganong, assistant in botany in the college, assisted by Mr. G. J. Pierce, of the Lawrence Scientific School.

WE have to thank the Superintendent of Education of British Columbia, S. D. Pope, Esq., B.A., for a copy of the seventeenth annual report on the public schools. We have not been able to complete the study of this highly interesting and most creditable exposition of the school system and work in our Pacific Province. Suffice it to say at present, that in some respects we in the east are behind. For instance, the examination papers for admission to the high schools, show one paper on "Anatomy, Physiology, and Hygiene." The mid-summer high school examination papers are published, and among them we find a paper on "Education," and another on "Music." Teachers have to pass for second-class, Grade B, a very stiff examination on *music* and the ordinary staff notation. For second-class, Grades A and B, a long paper on *linear drawing*. For second-class, Grade A, a long paper on *zoology*, and another on *astronomy*; and for first-class Grades A and B, a formidable paper on *geology*, in addition to such subjects as are required of our teachers here. British Columbia has already been moving in the direction which the REVIEW has been commending to the consideration of the people of the Atlantic Provinces.

CONVOCATION at Dalhousie College, Halifax, took place on Thursday, April 25th, when the degree of B. A. was conferred on sixteen graduates, and the degree of Bachelor of Laws on ten graduates. The governor-general's medal was won by A. G. Laird. The year just closing has been a very prosperous one for Dalhousie. The number of undergraduates in attendance is greater than that of any previous year of its history.

PROF. BURWASH, of Mt. Allison, and Prof. Kierstead, of Acadia College, have been appointed degree examiners by the senate of the University of N. B., in place of Rev. Dr. Macrae and G. Herbert Lee, Esq., resigned.

THE Report of Superintendent Montgomery, of the P. E. Island schools, for 1888, is received. The total number of enrolled pupils was 22,478; daily average attendance, 12,248; percentage of attendance, 54.49; number of teachers employed, 509; total expenditure for education, $147,455.28. The following is the average salaries paid to teachers: Male, first class, $438.00; second class, 267.77; third class, $212.75; female, first class, $375; second class, $217.52; third class, $150.67.

THE *Forum* and the EDUCATIONAL REVIEW for one year for $5. Price of the *Forum* alone, $5. Begin with the June number of the REVIEW, the first of Volume III.

The following Atlantic Province students graduated as Doctors of Medicine at the College of Physicians and Surgeons, Baltimore, recently.

S. Whitfield Hartt, Fredericton, N. B. (Prize man in anatomy).

F. D. Mosher, Hants Co., N. S.

R. M. Smith, Hants Co., N. S.

The following passed in undergraduate examinations:

S. S. Smith, Pictou Co., N. S.

Chas. M. Weeks, Hants Co., N. S.

DR. J. G. FITCH, who has had good opportunities to observe American schools, believes "that for accuracy and solidity in acquirement, for mental activity, and for interest in their work, the scholars in the best of our English elementary schools would hold their own, and compare most favorably, age for age, with the scholars in the best schools I have ever visited."

INSPECTOR SMITH of New Brunswick says, "From what I can learn I believe the assessment law would be more acceptable to the people if it were so amended as to make all property taxable in the district in which it is situated.

WE hope that Arbor Day in New Brunswick will be suitably observed by the planting of trees on schoo grounds. Much has been done in the past few years to improve the surroundings of school-houses and make them more pleasant and attractive. Much depends on giving the pupils of our schools stimulus and proper direction in this important matter. Whoever plants a tree and ensures its growth by care and attention is a public benefactor.

THE Pictou Academy Gold Medal for 1889, has been won by Geo. E. Ross, Newport, Hants Co., N.S. The Silver Medal has been won by James Albert Arbuckle, Pictou, at the terminal examination just closed.

The *Quarterly Journal* of the Geological Society for November, 1888, publishes a paper by Sir J. William Dawson, K.C.M.G., etc., on the Eozoic and Paleozoic Rocks of the Atlantic Coast of Canada, in comparison with those of Western Europe and of the interior of America. He sums the whole at the close in the following words:

"In the rocks from the Laurentian to the Trias inclusive, we have on the two sides of the Atlantic a continuous parallelism in the following points:

1. In mineral character and order of succession of aqueous deposits.
2. In the occurrence of great earth-movements of elevation, depression, and plication at corresponding times.
3. In the ejection of like kinds of igneous rocks in connection with like members of the aqueous series.
4. In the order and introduction and extinction of animals and plants.
5. In the specific identity of animals and plants in corresponding formations.

All this, I think, points to an actual contemporaneity of the successive changes on the two sides of the Atlantic basin, and to a special correspondence of the formations of the respective marginal areas as contrasted with those of the continental plateaus. It also indicates a persistence, on the whole, of the oceanic character of the Atlantic depression.

Lastly, it shows the necessity in any system of geological classification of distinguishing the continental plateaus, the lines of great foldings and of igneous action, and the ancient ocean margins from each other, and of adapting our arrangements and nomenclature to their actual diversity. In order to do this, while adopting common designations for the great ages of geological time, and for those systems of formations which mark the successive submergences and emergences of the continental plateaus, separate classifications must exist for the different kinds of areas in their details. It is also, I think, necessary that we should not tie ourselves down to hard and-fast lines, either as to the limits of systems or as to the relative values of their divisions in widely separated localities, as these differ in nature, and nothing is to be gained by conventional arrangements overlooking these differences.

Finally, I can imagine that many questions which have not occurred to me may present themselves to the minds of other geologists who may read or hear this paper. Should I possess any facts tending to the solution of such questions, and not stated in the above pages, they will be at the service of any one desirous to use them for the advancement of science."

FORESHADOWED CHANGES.

No one can think of charging the educational department of Nova Scotia with a lack of caution in the introduction of reform. Not only has the goodness of the change to be thoroughly demonstrated, but the readiness of the people to receive it must be understood. While this procedure may appear too slow for those who feel the pressing need and the evident advantage of a change to put us in harmony with our changed environment, it is, nevertheless, the only safe method. Nothing is more necessary than faith in the stability of order. Change, when predicted and expected, is simply adaptation. It is the jar of the unexpected that strains the social fabric. Here is what is foreshadowed. We quote from the report of the Superintendent of Education for 1888:

In my last report I suggested the desirability of importing into our standards of license more distinctively professional features than they now contain, and in the same connection submitted in outline a scheme for the reconstruction of our examination system, which has remained practically unchanged for upwards of twenty years. The general purpose and plan of this reconstruction have met with a very considerable degree of approval. Still, as the changes proposed are important and somewhat far-reaching in their consequences, I am not so anxious to press them forward for immediate adoption, as to prepare the way for their successful introduction when matters of detail have been carefully worked out, and a still stronger public opinion created in their favor.

Scholarship, though of prime importance, is not in itself a sufficient preparation for the highly complex work of training youth Our existing tests should be taken to prove, not that a successful candidate is qualified to assume charge of a school, but simply that he has intellectual acquirements and culture qualifying him for entrance on a special course of preparation for that duty. Scholarship, in short, is but one of a number of essential qualifications. A too common experience proves that even a high degree of it may co-exist with fatal incapacity to realize in practice the most commonplace ideal of a successful school.

I respectfully re-submit for consideration the substance of the recommendations contained in my last report.

1. The awards of the Annual Provincial Examination shall be simply certificates, according to class, of sufficient general scholarship, but shall in themselves confer no authority to teach.

2. This authority must be acquired by adding to a general scholarship certificate graduation at our own or other approved normal school, or a diploma certifying due professional competency, obtained at a properly searching and comprehensive examination in the theory and practice of teaching.

I am convinced that every sphere of educational activity would be benefited by the differentiation thus proposed. The various classes of schools—normal, academic and common—freed from hurtful competition, would each have its proper work to do in training teachers for our youth. A powerful check would be given to the excessive and injurious influx into the teaching body of half-grown boys and girls, many of whom now enter, with ignorant indifference, a profession for whose duties they have made no proper preparation. As to the beneficial bearing of the proposed changes on the dignity, permanency and emoluments of the teacher's own position there can be no doubt whatever.

It is natural that inquiry should be directed to the ability of the normal school to meet the increased burdens likely to be laid upon it by the proposed re-adjustments. Considering this question, we should bear in mind that in any given year, the number of persons seeking professional preparation would fall very much short of the number who at its commencement had obtained non-professional certificates, which no doubt would be sought by many as valuable testimonials of scholarship, without any intention of putting them to an ulterior use. While it would not be in the interests of education that very extensive advantage should be taken of the alternative professional examination, that provision would meet the convenience of some, especially of teachers applying for advance of grade, and would so far lessen the strain on the normal school facilities. Further, I am of opinion that some separate or special arrangement should be made for the professional training of teachers of the third class, so long as the retention of that class may be deemed necessary. In Ontario, where first and second class diplomas can only be obtained by classification at one of the two provincial normal schools, the training of third class teachers is effected by an arrangement with the managers of high schools, one or more of which in each county are organized for professional purposes for an annual term of ten or twelve weeks as "County Model Schools." Classification at one of these model schools is the necessary condition of obtaining third class licenses. Though there are some difficulties in the way, I am of opinion that a similar use of our county academies, or a certain number of them, would not be found impracticable. And on the whole subject, I conclude, that the normal school, relieved of the large amount of ordinary class instruction now forced upon it, would meet all the demands likely to accrue under the suggested re arrangement, and at the same time operate more directly and much more powerfully for the general advantage of education.

The country is ready, waiting for some such development of its educational system, we believe. If any are in doubt of this we give them now the best opportunity we can to correct or modify our impressions.

Friday, May 17th, has been chosen as Arbor Day by Inspectors Wetmore and Carter for the schools in their respective districts. It is quite probable that this will be the date decided upon by the other Inspectors.

Dr. Edward Judson is expected to lecture before the Athenæum of Acadia College on the evening of the 23rd of May.

Atlantic Province Teachers in the Pacific Province.

H. M. Stamberg, Esq., B.A. (Dalhousie), a Pictovian, is Principal of the High School in New Westminster, British Columbia.

Robt. Landells, Esq., B.A. (Dalhousie), is Principal of the Cedar Hill School, B. C.

Miss Jessie R. Olding, late of the Pictou schools, is Principal of the Metchosin School, B. C.

J. P. McLeod, Esq., B.A. (Dalhousie), is Principal of the Victoria High School.

Robert G. Gordon, Esq., a Pictovian, has charge of the Lillooet School, B. C.

Michael McKinnon, Esq., M.A. (Halifax), has charge of the Mayne Island School.

D. Wilson, B.A. (N. B. University), is Inspector of Schools at New Westminster, B. C.

We understand that there are many more Atlantic teachers in the Maritime Province on the other ocean, but we have not yet definitely heard from them. With such well known and able teachers in leading positions, British Columbia, though younger, may possibly lead the Eastern Provinces in educational development.

COLLEGE ANNIVERSARIES.

The anniversary exercises at Acadia will occur this year on Thursday, 6th of June. The usual public exercises of that day will begin at 11 a. m. In the evening the Alumni will give an "At Home" in the college hall. The public exercises of the Seminary will be held on Wednesday evening, June 5th, and those of the Academy in the afternoon of the same day. The Senate will hold its session on the 5th of June. It is understood that the Senate and Governors will deal with some important questions touching the reconstruction of some educational departments at Acadia.

The following is an outline programme of exercises of Mt. Allison convocation week:—Sunday, May 26th, 11 a. m., Anniversary Sermon of Theological Union, by Rev. W. W. Brewer, St. John; 7 p. m., Baccalaureate Sermon, by Rev. W. H. G. Temple, A.M., Boston. Monday, May 27th, 9 a. m., Anniversary of Male Academy; 3 p. m., Annual Meeting of University Senate; 7.30 p. m., Theological Union Lecture, by Rev. F. A. Wright, M.A., Hillsburg. Tuesday, May 28th, 9 a. m., Anniversary of Ladies' College; 2 p. m., Gymnastic Exhibitions; 4 p. m., Business Meeting of Alumni and Alumnæ Societies; 7 p. m., Alumni and Alumnæ Anniversaries, addresses by Miss Sarah Smith, St. John, and Principal Anderson, LL.D., Prince of Wales College, Charlottetown; 9 p. m., Conversazione in Memorial Hall. Wednesday, 29th, 9 a. m., University Convocation; 3 p. m., Annual Meeting of Board of Regents.

THE POETRY OF ROBERT BROWNING.

An introduction to the poetry of Robert Browning by W. J. Alexander, Ph. D., Munro professor of English language and literature, Dalhousie College and University, Halifax, Nova Scotia. Ginn & Co., Boston.

We entirely agree with Dr. Alexander when he says in his preface "that he is strongly averse to that study of literature which consists in reading about books rather than in reading the books themselves." But we are of opinion that we may go farther and express it as our conviction that the discipline, both intellectual and moral, which one has to submit to in unravelling the complexities of a really difficult book without any external aids, more than compensates for the time and pains which have been expended upon the work. Whatever analytical power one may be gifted with, whatever faculty he may possess of realizing the situation and assuming the place of his author, and thus divining the sequence of his thoughts, whatever resolution to strive in spite of many a failure he may be capable of, all his experience in the solution of perplexing questions, and all the resources of his knowledge and ingenuity are called into requisition, and are not more than sufficient for the task. And the result is not only an extension of his knowledge, but from the magnitude of the effort which he had to put forth, a more thorough assimilation of his acquirements and a greater mastery of his powers.

The majority of readers, however, have not time, and comparatively few, inclination to undertake such work. They either leave it alone or avail themselves of the assistance which may be within their reach. In books of poetry particularly this has been most noticeable, and in the works of no great poet so much as in those of Robert Browning. The language is in many cases so obscure, and the difficulties in following the thoughts so numerous, that many people who read poetry with pleasure, and are capable of sympathizing with Browning if they could but understand him, have been deterred from reading his poems. Hence there has been no recent poet about whose productions so much has been written by way of elucidation, and concerning whom opinion has been so divided. The latest addition to the Browning literature is the book before us. Dr. Alexander is well fitted for the performance of such a task. He is known in these provinces as a very successful teacher of English literature, and having observed the influence of such comments and disquisitions upon his students he very properly concludes that they will not be without interest and instruction to the general reader. An ardent admirer of Browning, and qualified by taste, scholarship and sympathy to become his interpreter,

Dr. Alexander has presented us with a work fitted in no slight degree to smooth the way for those who have heretofore declined to grapple with the obstacles of style, language and method which at the outset have sorely tried the patience of so many readers.

And yet we must confess that we miss in the "introduction" what we deem necessary to a true understanding of any writer, but absolutely indispensable to a comprehension of Browning and the work which he has given us—a fairly minute *resume* of the incidents of his life. It is true that a few facts are mentioned at the beginning of the chapters on "development," but these are inadequate for the purpose. In the case of a metaphysical poet like Browning, whose eyes are open and whose understanding is clear to all that is transpiring around him, we need a lucid, it may be concise, narrative of his career, so that we may comprehend the conditions under which he wrote, and all the forces within and without him which moulded his character and opinions, and contributed to make him the great poet and potent influence for good which he undoubtedly is. Dr. Alexander says, and there is truth in the remark, that "a man's work is determined not only by the character of his genius, but also by the conditions of his age." Surely, if that is the case, we ought to have detailed in the most forcible manner possible the leading features of the great social, political, religious and philosophical questions which agitate the public mind in as far as their influence is observable in the works of Browning. But we hold that every truly original man who has a message to deliver to his fellows, and is gifted with the faculty of utterance, be he poet or preacher, man of letters or social reformer, is not the mere reflex of his age, but is much in advance of it; and hence his difficulty in finding an audience. It is only by constant repetition, by being instant in season and out of season, by ignoring failure and hoping against hope that at last he succeeds in obtaining a hearing, and wrings from his listeners an acknowledgment of the truth, while to him is reserved the satisfaction which springs from the consciousness that he has not lived in vain. So has it been with Browning. People have long admitted the high and generous aims of the poet, but too many have been willing to accept on trust the opinions of the few who read and felt and understood. They were repelled by his obscurity, his eccentricities of style and expression, and his endless discussion of metaphysical topics; but aided by the patient and pious toil of such scholars as Dr. Alexander and others the appreciative reader can dig deep in the vast mass of original material which he has given to the world, and bring up pure untempered gold.

It is deeply to be regretted that Browning did not profit by such experience as is to be gained at the public school and the university. Educated in private he pursued only such courses of study as might fit him for the career of a poet. Besides the restricted view which he thereby obtained of a liberal education, he was exposed to the danger which threatens all who are privately or self educated, of becoming narrow in his sympathies and opinionative in his judgments. In the rough-and-tumble of school and college life, many corners and rough edges are rubbed off the student's character; he must mingle with his fellows and is not allowed to dream alone. Idealist and transcendentalist as he was, Browning would have been all the better of closer association with his kind, and his works would have borne, in a less degree, the impress of the recluse. It would in no way have impaired the force or dimmed the brightness of his favorite ideas "that spiritual discipline and consequent growth are the proper object and end of the existing system of things; that imperfection is a necessary and beneficial attribute of our present sphere; that here truth, beauty, goodness, are but relative,—dim and imperfect inages that serve to kindle our aspirations and lead them upwards towards the absolute;" but it would, by bringing him into more intimate and more sympathetic relationships with mankind at large, have greatly facilitated the reception of the communications which he had to make to them.

In his selection of illustrative passages from the works of Robert Browning, Dr. Alexander has shown admirable taste and judgment. In his comments, though we cannot always agree with him, he exhibits careful study and a knowledge of the literature of his subject, wide and intimate. He discusses with acuteness and discrimination the distinguishing intellectual and moral characteristics of the great master of psychological monologue and the dramatic lyric, and satisfies us that though the gold is sometimes hard to find, still it is there to reward the patient seeker.

We do not suppose that Browning will ever become a popular poet. His foreign subjects and exceptional types of character go far to prevent it. But among those who think, his readers will always be on the increase, and Dr. Alexander has undoubtedly contributed to this result by the publication of his Introduction to the Study of the Poetry of Robert Browning.

The teaching of grammar, in a good many instances, is a matter more of memorizing definitions than in appealing to the proper qualities of the mind to be brought in operation in the pursuit of this study.—*Inspector Bridges, N. B.*

AMONG THE CONSTELLATIONS.

An Astral Alphabet.

V.

The Hyades, in Taurus, form a V, beginning with Alpha (Aldebaran), first magnitude, half way down, two fourth magnitudes, Theta (1), Theta (2), at the angle, a fourth magnitude, Gamma, half way up, a fourth magnitude Delta, and, at the upper end, a fourth magnitude, Epsilon. In our star map Epsilon has been displaced towards Aldebaran, thus spoiling the outline of the V. We shall have this corrected the next time we use the cut.

X.

Sirius (the dog-star) is at the vertex of two remarkable triangles, the base of the upper one forming an equilateral triangle, being a line drawn from Betelgeuse in Orion to Procyon, and the base of the lower one a line drawn from Phaet in the Dove to Naos in the Ship. These two triangles being joined at their vertices, in Sirius, present the figure of an enormous X, called by some the Egyptian X. The two lower stars of the figure (Phaet and Naos) are seldom seen above the horizon.

W

Between Taurus and the north pole star, in the milky way, is the constellation *Cassiopeia*, or the old woman in the chair. Its principal stars form a double V, one of the V's not being exactly of the same size and shape as the other.

A.

Autumnal A is a brilliant outline in the region of the sky occupied by the sun in autumn. It can easily be picked out from the following directions, this time of the year:

The vortex of the A is Beta Leonis (Denebola), the lowest star in the trapezium in Leo. The end of the lower leg of the A is Alpha, of Virgo, called *Spica*, a star of the first magnitude, down towards the southeast, in the evenings in April. The other leg ends in Alpha, of Bootes—that is, *Arcturus*, a magnificent first magnitude star. These three stars, *Denebola*, *Spica*, and *Arcturus*, form nearly an equilateral triangle. Produce the two last stars in the tail of the Great Bear towards the east and it will pass near enough to *Arcturus* to point it out. Produce a line from the pole star, through Mizar, the star in the middle of the Great Bear's tail, down towards the southern horizon, and it will indicate Spica.

The stars forming the cross-stroke of the A are as follows, going northerly, Gamma, Delta, and Epsilon, of Virgo, all of the third magnitude. Gamma Virginis is one of the most interesting double stars in the heavens. It is nearly midway between Denebola and Spica.

Astronomical Notes for May.

Mercury on the 1st will be in Aries, on the 6th in Taurus, three or four moon-breadths below the Pleiades; on the 12th above Aldebaran in the Hyades, about fifteen moon-breadths; on the 21st eight or nine moon-breadths above or north-east of Zeta Tauri; in the first week of June it will pass above or northward of Eta Geminorum, one of a pair of third magnitude stars close together. Its eastward course will then become stationary and move southward between the pair of stars and slowly proceed westward to meet the sun on the 19th (*inferior* conjunction).

Venus will be morning star, moving westward towards Alpha Arietis until the 20th, when it will be about four moon-breadths north of the star, it will then commence to retrace its course slowly.

Mars will be five or six moon-breadths below the Pleiades on the 6th; above Aldebaran in the Hyades on the 23rd about twelve moon-breadths, and about the 1st of June it will be on our star map (see April REVIEW), near where 5h. right ascension is intersected by 23° north declination. In a word Mars will be near Aldebaran during the whole month.

Jupiter is still low in Sagittarius but slowly moving west. It souths during the month from about 4 a. m. at the beginning to about 2 a. m. at the end.

Saturn is still in Cancer, and moving very slowly towards the Sickle in Leo, and from the "Praesepe" or Beehive in Cancer. During the whole month, however, it will not make the progress of three moon-breadths. Whitaker's almanac is in error when stating that Saturn can be seen in Leo during this month. It will not cross into Leo until about the 25th of June. Saturn is now in a favorable position for obtaining a good view, with an ordinary telescope, of its rings. These rings are sometimes seen edgeways, at other times they are at an inclination of twenty-seven degrees to the observer on the earth. They may now be seen at an inclination, which, though not the greatest, yet is favorable for observation.

The *moon* about the 1st of May will pass between the Pleiades and Hyades in Taurus. On the 7th it will pass a little over two of its own breadths above Saturn in Cancer. It will cut the handle of the Sickle in Leo between the 8th and 9th, passing midway between Regulus (or Alpha) and Eta. It will leave Leo on the 11th and enter Virgo near the equinoctial, thus describing a slanting line across our star map if its course were plotted on it. On the 17th it will, with half its own breadth above Jupiter in Sagittarius, be in conjunction with Venus in Aries on the 26th, and with Mars in Taurus on the 29th.

FERNDALE SCHOOL.

No. XXII. A Domestic Fish.

Our plenteous streams a various race supply,
The bright-eyed perch with fins of Tyrian dye,
The silver eel, in shining volumes roll'd,
The yellow carp, in scales bedropped with gold;
Swift trout, diversified with crimson stains,
And pikes, the tyrants of the watery plains.

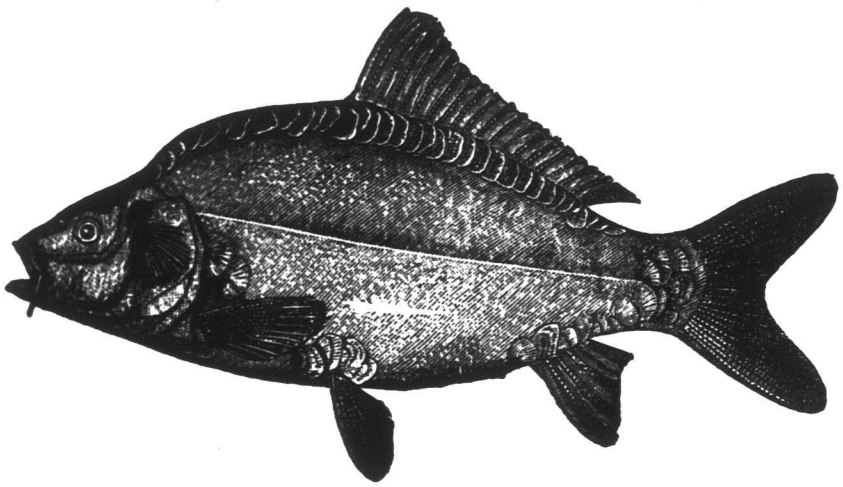
Pope – *Windsor Forest*, Line 141.

S. But the carp isn't yellow, with golden scales.

T. The poet refers to the goldfish, which is a species of carp.

S. But we never saw any carp in our brooks, like the specimen before us.

T. True enough. Our specimen has been presented by Mr. Thomas McDonald, of Durham, Pictou County, who only a few years ago got some from Washington; and it is only twelve years since they were brought to the Washington carp-culture ponds from Germany.



The Carp.—(*Cyprinus carpio*).

S. How could they be taken alive from Washington to Nova Scotia?

T. A gallon tin of water will accommodate 20 of them for a long journey.

S. And where does he keep them?

T. In a large shallow pond.

S. And do they grow fast?

T. In a good warm pond they grow very rapidly and multiply at an extraordinary rate. A five pound fish may deposit in one season half a million eggs.

S. And what do they eat?

T. Insects, leaves, roots and sods of grass. Or they may be fed by throwing on the water boiled grain, dough, bread, cabbage, lettuce, pumpkin, boiled potatoes, etc., if they are cut into small pieces.

S. Why, they are just like pigs, that is why you call it a domestic fish.

T. Correct. The culture of carp commenced as early as 1227, in Austria; and at the present day it is of great magnitude in Germany. The annual product of one estate alone being about 500,000 pounds.

S. Is it hard to make carp ponds.

T. No, not so very hard. I will tell you some day how Mr. McDonald makes his. Perhaps some of your parents might like to try it.

S. Yes. One might change a good-for-nothing piece of swamp into a beautiful shallow lake, with millions of beautiful carp in them; and whenever we wanted fresh fish we would only have to go to the pond.

Another S. Yes, and a great number of them might be sold every year and a good deal of money made by them.

T. That is why I give you this lesson. You can talk about it when you go home. In Nova Scotia, New Brunswick and Prince Edward Island, a great many people could have beautiful and valuable ponds on their farms. And an acre of pond would return more money than any other acre. But we shall talk of the proper kinds of ponds again.

S. The carp might be frozen during the winter or starved.

T. No. The pond should have a deep muddy bottom in one portion. During winter they are very easily kept, for they go down into the mud and live like the bears and the bees, in a state of hibernation. You would not have to house them or feed them during winter as we do our pigs or cattle.

There are three kinds of carp cultivated, the *scaled* carp, the "leathery carp" without any scales, and the "mirror carp" which we have before us.

S. What large shining scales it has just only on some parts of its body.

T. You will notice that it has on the back ——

S. A large fin.

T. How many? One. The Latin for back is *dorsum*. The fin is therefore called the dorsal fin.

S. Some fish have two dorsal fins.

T. Correct. "Pectus," "pectoris," means the breast. Do you know any word derived from it?

S. Pectoral balsam.

T. Very well, the first pair of the lower fins are—

S. Pectoral fins.

T. The next are the ventral fins and the last the anal fin. You notice the lobes of the tail or caudal fin?

S. Yes, two equal lobes. Have all fish such tails?

ANOTHER S. No. The shark they caught at the shore had one lobe longer than the other.

T. Try the fins, are they bony spines or soft and pliable?

S. They are soft and pliable.

T. The Greek for soft is "malakas;" and accordingly a large division of fish is called the *malacopteri*—soft finned. Can you name others like the carp in this respect.

CHORUS. Trout, salmon, herring, minnows.

S. Wouldn't it be nice to have a carp pond?

Plants in their Homes and in the School Room.

Part V. How to Form a School Herbarium.

We have been asked to give a few directions how to form a school herbarium, or to make a collection of the plants of the neighborhood for preservation and future study. This may be accomplished with a little care and pains, and will add greatly to the interest of plant study. The whole school may take an interest in this, and procure specimens for preservation; but the teacher, and a few of the older pupils to aid him, should attend to the pressing and drying of the plants, which requires considerable care and patience. The process will take between a week and a fortnight, according to the weather. Very little apparatus is needed. Two smooth boards, 18 to 20 inches long, and 12 to 15 inches wide, with a weight (a flat stone) of twenty or twenty-five pounds, will make a good plant press. Some sheets of porous paper—newspaper will serve the purpose very well—cut in sizes of 18x12 inches, will complete the apparatus.

Let all the pupils be interested in procuring and bringing in the plants. Especially let those plants which are made the subject of study be preserved. A tin box or a portfolio is usually taken to the field, in which plants may be brought home in a fresh state for preservation; but these are not essential. By taking up the plant carefully, root and all if a small plant, with some earth attached, and carefully placing it in a newspaper, it may be brought fresh to the school room. Carefully detaching the earth from the roots the plants may be placed with leaves and flowers spread out so as to show to the best advantage between the folds of the drying papers. When the plants are thus placed (several on one sheet if they are small enough) two or three layers of paper may then be added, other specimens placed on these, and so on; care being taken that the plants are not too close together, and that several folds of paper are placed between each layer. They may then be placed between the boards and the weight put on top. Plants will dry more rapidly where they are exposed to the sunshine and a good draught. The dryers should be changed every day for the first four or five days, and then every other day, until every particle of moisture is removed.

Collect for preservation only complete and perfect specimens. Suppose it is the Mayflower. Do not take a part of a plant, but dig down, get the root and the whole cluster that grows from it, only let the specimen be such as can be placed on a sheet of paper when mounted of sixteen and one-half by eleven and one-half inches, for that is the standard size of botanical mounting paper. When the specimens are thoroughly dried they may be affixed to sheets of white paper, moderately stiff, of the size above mentioned. Paper for this purpose is prepared and sold. Glue may be used to fix the plant to the paper, or it may be allowed to remain loose on the paper or between two sheets, which will be the better way if the plant is to be examined on future occasions and serve for illustrations to classes; and that is the object in making collections of dried plants.

After plants have been pressed so that all the moisture is removed, it is customary to place them carefully away for future mounting, with a label attached. This should be put with the plant when first laid in press, on which is written the name of the plant, the locality in which it is found, and the date of collecting. If you are unable to determine with exactness the name of the plant, send it to some friend who perhaps has had more experience in such matters than you have had.

In this way the beginning of a collection, which in future seasons will represent the complete flora of the neighborhood, may be made. Perhaps not more than twenty species can be collected this season. Let them be perfect specimens, carefully selected and dried. It is just as much trouble to dry a poor specimen as a good one. And above all, let the plants so collected and preserved, represent the work done for the season in the class; that is, let them be studied as carefully as the capacity of the pupils will admit.

There need be no expense—beyond a few cents expended for white paper on which to mount the plants—and only a moderate amount of skill and patience in making a school herbarium. If there is no school cabinet in which to preserve the plants a large portfolio may be made, into which the specimens may be placed after they have been dried and mounted. Binder's board or some stiff material may be used as an outside cover for the portfolio; then folios of stiff paper in which all the species of a family may be placed. If the family is large two or more of such folios should be used. For convenience of reference the names of the family should be neatly written on the *lower right hand* corner of the covers containing the species, and the name of each species with locality and date of collection written on the lower right hand corner of the sheet which contains it.

HINTS FOR THE SCHOOL ROOM.

PHYSIOLOGY—DIGESTION.

(Continued from the February number.)

III. Pepsin.

T. The stomach is the alimentary tube enlarged into a great curved pouch, which may be about a foot long when filled, and four or five inches in cross diameter. It is generally much smaller than this. The lower end of it is just below the end of the breast bone, and on the right side of it. The principal bulk of it is higher up, and on the left side of the middle of the breast bone. The rough drawing on the blackboard will show its shape and position.

S. If a person were to eat bread in a hurry would not the saliva swallowed into the stomach change the starch into glucose sugar?

T. No. Ptyalin will not convert starch in an acid fluid. The walls of the stomach are filled with innumerable minute glands besides the mucus gland, and these pour out a thin colorless fluid which should always be acid, and is called the gastric juice.

S. Couldn't a little soda be taken to make the gastric juice alkaline, so that the *ptyalin* could act on the starch?

T. Yes. But a still greater mischief would then be done. The most important substance in the acid gastric juice is *pepsin*. If I were to chop up some small pieces of meat or the solid white of an egg, and put them into a glass test tube before you, with a little warm water and a few drops of hydrochloric acid and then add sufficient *pepsin*, in a few hours the solid meat or white of an egg would be dissolved into a whitish liquid. If the liquid was not made acid the pepsin would not dissolve the solids.

S. Then the stomach cannot digest starchy foods?

T. No; it is impossible. But it can dissolve what we call albumen or proteid foods, such as lean meat, gelatine, the gluten or gummy portion of bread. It changes all these into a whitish fluid, which are called peptones, and which can be absorbed through the mucus lining of the alimentary canal, and taken into the capillary blood vessel, lymph vessels and lacteals, by which they are carried to the larger vessels.

S. I thought you said there was digestion going on all through the alimentary canal. The stomach then must fail to digest all the food.

T. You are correct. The starch remains unchanged, and so do the fats. They may collect into little drops like oil in the midst of the *chyme*—the grey pulpy mass into which the food is now changed—but these oil drops cannot be absorbed. Then again, albuminoid food which has not been broken up by the teeth into the finest fragments, can only be dissolved slowly on the outside.

S. Then if a person "bolts" his food without sufficient mastication it may not all be dissolved in the stomach.

T. Precisely, although the stomach may do its very best.

S. How does it do its very best?

T. Well, as soon as food is come into it the glands begin to pour out the gastric juice copiously. As much as twenty-four pints per day is supposed to be secreted on the average. And all this is made out of the blood by the glands in the walls of the stomach. In the second place, the stomach keeps constantly working up, rolling over and pressing together the food with these juices, although we are not conscious of the motion.

S. Then, thorough mastication is just as necessary to assist the complete digestion of albuminoid foods?

T. Certainly. Then when the stomach is tired of its work it commences to expel the *chyme*, whether all the food is digested or not, through its narrow neck, which is called the pylorus, into a tube which is bent right back beneath the stomach, and which is called the *duodenum*. This constitutes the third *foot* of the alimentary canal, or the first foot in length of the small intestines, which we shall consider in our next lesson.

IV. Bile and Pancreatic Juice.

T. The duodenum—so called originally because it is about twelve finger-breadths in length, is the commencement of the small intestines; but its digestive work is so important that it is always considered as a distinct division.

S. Is all the digested *chyme* absorbed by the walls of the stomach?

T. By no means. Some is; but absorption of the digested food occurs principally in the small intestines.

S. The end of the duodenum is only three feet from the mouth. Then the food has to go through twenty-five feet more.

T. Correct. But let us follow the course of the food after passing through the pylorus. The acid chyme, bathing the walls of the intestine, causes an abundant flow of the golden red bile fluid through a small tube which opens into the duodenum. This fluid is alkaline, and drenches the greyish and acid chyme as it passes, changing its color and reducing its acidity.

S. Where does the bile come from?

T. From the liver, which is therefore a great gland secreting or making the reddish-yellow bile fluid out of the blood, to the amount, perhaps, of from two to three pints per day in the average man.

S. When the chyme is made alkaline by the bile the pepsin coming from the stomach must stop dissolving the proteids. And will the ptyalin commence then to change the starches to sugar?

T. A good idea. A portion of the chyme goes on a long way before it loses its acidity, and peptic digestion is still going on there. But the use of the bile appears to be two-fold. It commences to dissolve or emulsify the fats so as to make them capable of absorption. But it especially prepares the chyme for the *pancreatic* fluid, which is poured into the duodenum from the *pancreas* immediately after the bile. The pancreatic fluid is strongly alkaline and contains trypsin, which dissolves proteids or albuminous matter more powerfully than pepsin. It has also a second ferment, which changes starch into sugar like the ptyalin of the saliva; and a third ferment or substance, which dissolves or makes a cream of fats.

S. Then the bile and the pancreatic fluid is the most universal solvent of all the different kinds of food.

T. Quite correct. And if the chyme were not made alkaline by a sufficient quantity of bile the pancreatic fluid would have no solvent effect at all.

S. So then, in the mouth the food is necessarily digested in an alkaline medium, in the stomach in an acid medium, and in the duodenum in an alkaline medium again.

T. You are right. And after this stage the chyme is changing into a whitish milk-like fluid called *chyle*, which is absorbed through the walls of the smaller intestines, which are covered with a fine velvet-like pile, offering a large surface for absorption.

V. Conclusion.

S. What are the parts following the duodenum?

T. First comes the *jejunum*, so called on account of its generally being found empty after death, about seven feet long; then the *ileum*, about twelve feet in length, so called on account of its position in the lower half of the abdomnal cavity, where it lies much convoluted. Last of all comes the large intestine, about five feet in length. It starts from near the base of the abdomen, at the right side, where the slender ileum enters its wall at right angles as it were, a short distance from its lower end, which is closed, and is called the *cæcum*, the first division of the large intestine. The second division, called the *colon*, ascends at the right side of the bowels, then goes right across in close proximity to the stomach and duodenum to the left side, and then descends the left side and terminates in the portion named the *rectum*.

S. Are there any digestive fluids poured out into the food in the small intestines?

T. There is what is called the intestinal juice; but much that is certain is not known of it. That the nineteen feet of the small intestines is where the greatest amount of absorption takes place there is no doubt. The material is moved along by contractions like those we have noticed in the act of swallowing in the gullet, only the contractions are not so violent. They are called *peristaltic* movements. The chyle, after passing through the thin scarf skin of the intestines, is collected into innumerable very minute, lymphatic capillaries, which are generally called lacteal vessels from the milk-like nature of the fluid. These capillaries unite as small streams do into larger ones, and the larger vessels pass away through the *mesenteries* which bind the intestines in their proper place to the wall of the abdomen. From thence it is carried to a greater vessel, the thoracic duct, and finally is thrown into the blood current entering the heart and becomes new blood itself, ready to build up any wasting portion of the body, whether it should be nerve, bone, muscle or gland material.

T. What do you think now? Can there be good health with bad digestion?

S. No. Because the food taken does not become a part of the body to repair the waste in the blood, nerves, gland substances, muscle and bone.

T. How may bad digestion be brought about then? Let me see how many different answers I can get.

S. By swallowing food hurriedly without mixing with saliva. By swallowing it in lumps so that the digestive fluids can not get at more than the surface.

T. Yes; such food will undergo putrefaction instead of digestion.

S. Anything that will change the natural character or quantity of the saliva, the gastric juice, the bile, the pancreatic juice or the intestinal fluid must injure digestion.

T. Very good indeed. Now what do you think might have such an effect on digestive secretions?

S. Gum chewing, tobacco chewing, tobacco smoking, rum drinking, anything poisonous, too much cold water, too much tea, too many pickles, too many sweeties, too much of anything, anything which makes a person feel bad.

Notes on the Mayflower of the Loyalists.

By G. F. Matthew, M. A., F. R. S. C.

It has been suggested that the delicate and modest little flower which we call the Mayflower should be adopted as the emblem of the Loyalists, because it is in full bloom at the season of the year when they landed on these rocky shores. In this connection it may not be out of place to inquire as to the use of the word "Mayflower" or "May blossom" in the past; and specially to ask what was the *Mayflower of the Loyalists?* Was their Mayflower identical with our spring favorite; or was it some other plant, to us unknown; or if known, called by some other name?

Our Mayflower has been named by botanists *Epigæa repens*, or the plant that *creeps on the ground*—a name very appropriate to its habit of growth as it forms patches of foliage, branching and spreading on the ground from a central root. The flowers are found at and near the ends of the branches, and are almost concealed from view by the thick, leathery, shining, dark-green, round-oval leaves. The Mayflower delights in a rocky and not too fertile soil. When it grows in richer land it is apt to be choked by the surrounding plants better adapted to such situations; and in very shady places it will not blossom. It craves a well mulched surface with gravelly, or rather stony soil beneath, and seems to enjoy itself most where granite and trap rocks, or quartz rocks prevail. On and around reefs or ledges of such rock, on the border of the forest, the Mayflower spreads its refreshing green, and perfumes the air with its delicate fragrance. It is as wild by nature, and as hard to tame, as the savage that once roamed master of the wilderness where it still abounds; hence, many attempts to cultivate it have failed, for it is easily killed by kindness or injudicious care. The Mayflower belongs to the great family of the Heaths, and its nearest allies in this country are the Bearberry*, Spicy Wintergreen† and Teaberry‡. They, like the Mayflower, have evergreen leaves, and differ in this respect from most of the American Heaths.

The barren and gravelly soils of many tracts in North-eastern North America, and its moist climate are particularly well suited to the Mayflower, and it flourishes here in abundance. Warned by the experience of many seasons on the Atlantic coast, it does not open its petals when the spring rains first remove the snow, but awaits the advent of warm weather, knowing full well that the warm days of early spring are deceptive, and that the chilling winds from the Gulf of Saint Lawrence and the snow-clad hills of Labrador, will, later on, chill the air and interfere with the development of its tiny tubular blossoms, protected though they are by enveloping scales and sepals without, and by a fluff of woolly hairs within. On Lake Superior and the inland region generally the Mayflower has greater confidence in the sun's power, and as soon as the snow is gone, confidently opens its petals to the vernal breeze.

But the purpose of these remarks is not so much to describe the Mayflower and its habits as to enquire whether this flower of ours was the Mayflower of the Loyalists. The writer was very much surprised, many years ago, on being told by an old lady who came here with the Loyalists, that our plant (*Epigæa repens*) was *not* the Mayflower. Among wild flowers that were afterwards shown to her, she at once recognized one as the true Mayflower. This was the plant which is now called the Spring Beauty (*Claytonia caroliniana*), a delicate little plant with two opposite leaves, which are not unlike an Indian's canoe-paddle in shape, and having a cluster of nodding pink flowers between the leaves. The short stem which the Spring Beauty annually sends up comes from a little brown tuber, buried deep in the rich mould of the hardwood forest. The plant differs from *our* Mayflower in preferring a rich and moist soil, and its stem is soft and succulent like its ally the Purslane (*Portulaca*); while the stem of *our* Mayflower is strong and woody, and its leaves thick and hard.

The family to which the lady belonged, who spoke of the Spring Beauty as the true Mayflower, came from Connecticut; and it is easy to see why our Mayflower was not theirs. In the region where they had lived the Epigæa would blossom in April and the term "Mayflower" would be inappropriate to it; hence, some other blossom would with them have borne the name of "Mayflower." The name and the associations connected with it were dear to those New England colonists. With what object more attractive could they have associated the ideas and the name, than the delicate Spring Beauty—a plant which abounds in the rich woods, covering the mountains and hills of Western New England and New York? To the Loyalists of Connecticut, therefore, the word "Mayflower" carried a different meaning from that which it bears with us.

And to the Loyalists of New York and New Jersey, where the Epigæa was known as the Trailing Arbutus, the idea of "Mayflower," as applied to this plant, was equally foreign. Their name for our Mayflower, however, was not happily chosen, as the Arbutus was one of those European heath-plants, which casts its leaves in the autumn, and in this resembles such

*Arctostaphylos. †Gaultheria. ‡Chiogenes.

American heath-plants as the Leather-leaf (*Cassandra*) and the Lambkill (*Rhodora*). These cover the "barrens" with foliage and flower in June and July, but are bare and brown in the winter. As the term "Trailing Arbutus" was used in the Middle States for the Epigæa within a short time after the Loyalists left there, it was probably current in their time as well. Whether the Spring Beauty was their Mayflower or not, it is sufficiently clear that the Epigæa was not.

But to go one step farther back in the history of the "Mayflower," Washington Irving, in his "Knickerbocker History of New York," describes in a very amusing way the helplessness of the Dutch Governors of New York in their attempt to oppose the colonizing tendencies of the New Englanders. He describes the encroachment of the Yankees upon the territory of their Dutch neighbors on the northern shore of Long Island Sound, and they even swarmed over into Long Island, displacing the Dutch or occupying the country in advance of them. These Puritan farmers carried with them the tradition that their ancestors came over from England in the "Mayflower." Many of them settled in Connecticut, and their descendants formed the bulk of the emigrants from that State whom we know under the name of Loyalists. It is quite clear, however, that the Mayflower for which the ship of the Pilgrim Fathers was named was not the "Mayflower" of the Loyalists, any more than the plant so designated by the latter is the Mayflower of the Maritime Canadians, for neither the Epigæa (repens) nor the Spring Beauty were known to Europeans before the discovery of America. They are both natives of this continent and are unknown in the old. The Mayflower of the Pilgrims must, therefore, have been some other plant—perhaps the Hawthorn (*Cratægus oxyacantha*), which appears to be alluded to by Mickle in the following lines:

> "By this stream and the *May blossomed* thorn
> That first heard his love-tale and his vows."

And by Spencer in the following:

> "To gather *May busket* and smelling brere
> And home they haste the postes to dight."

And in Chaucer there is the following line:

> "And fresher than the *May* with flowres newe."

The Hawthorn still bears in England the name of "The May," and there can be little doubt that its fragrant blossoms suggested the name borne by the pioneer ship of the Plymouth colony.

As the location of the Sacred Mount—the point of dispersion of a primitive people—was transferred by the migrating Indo-European nations from one country to another in the Old World, so the Saxon emigrants to and in the New World, successively transferred the name of "Mayflower" to a new species of plant, as they lost their familiarity with the old. To us, living in a region where Epigæa abounds, and blossoms in May, it very appropriately bears the name of Mayflower, not only on account of its beauty and its fragrant flowers, but because it blooms in the spring. It is rightly chosen by the descendants of the Loyalists as a fitting emblem of those who, a little over one hundred years ago, first set foot on the shores of New Brunswick. Its home is in that region of the North American continent which extends from the Atlantic coast of Nova Scotia, through New Brunswick and Maine, to Eastern Ontario, Lake Superior, and the rocky wilds of the North West. In Ontario and the Atlantic Provinces of Canada is the home of the Loyalists, and when the first detachment of these people landed on the rocky shores of St. John harbor, in the spring of 1783, there can be no doubt that they found the Mayflower (*Epigæa*) blooming around them. In its leaves, fresh and green from beneath the winter snows, they would have seen an emblem of their own preservation through adversity in the past; and in its modest and fragrant blossoms an omen of content and prosperity in the future.

In conclusion it may be added our reflections upon the Mayflower lead to the following result:

The Mayflower of the Pilgrims was not the Mayflower of all the Loyalists.

The Mayflower of the Loyalists was not the Mayflower of the Maritime Canadians.

The Mayflower of certain of the Loyalists was the Spring Beauty.

The Mayflower of the Maritime Canadians (*Epigæa*) may very fittingly be dedicated to the Loyalists.

Or, to consider the matter from a chronological standpoint, it may be said that two hundred years ago the Hawthorn was the Mayflower. One hundred years ago the Spring Beauty was, to some Loyalists, the Mayflower.

Now, the Epigæa is to the descendants of the Loyalists, the Mayflower.

One hundred years hence, to such of the children of these descendants as shall have migrated to the great plains of the Canadian North West, *some other plant* will be the Mayflower.

> Moss-embowered trailing Epigæa,
> Clear as Diana's alabaster brow,
> The gem of April's robe—sweet Epigæa!
> Thy purity is stamped upon my heart
> In "angel whiteness," and thy odorate breath
> Redeems the grossness of the earth and links
> Our senses to the spirit world beyond!

For the REVIEW.]

School Music.

In a former paper I endeavored to present a plea for the introduction of music into our public schools, as a pleasure and benefit for one and all; and now I wish to speak of some of the difficulties to be met, and suggest some method whereby the best results may be obtained, and the subject made clear and interesting.

Music is more analogous to language than to any other study, and should be taught in a similar manner, the principles underlying both being the same.

Let us first consider the youngest child attending our public schools—the average age we will call six years—and assume that he has received no previous musical training. Look back for a moment to the time when his mother first taught him to lisp the baby words, by associating them with objects familiar to him, and thus slowly built a vocabulary into his mind. Gradually he puts the words together, and when he enters school is able to speak quite readily. At this period music should be taken up in the same way.

Eminent psychologists have agreed that the faculties of the mind are developed by four natural and successive steps. The first, sense perception, which enables the child to see the object; second, sense conception, by which faculty he begins to realize something about the object; third, imagination; and fourth, reason. So with music as with other studies we must awaken the child's senses, and gradually develop them as he becomes able to grasp new ideas.

Returning in thought to the first school days, let us place music before the child as the mother does the first steps in speech, and teach him pure rote singing. By this I mean singing from a good example or model. This plan at once appears practicable and natural, and has been strongly endorsed by Matthew Arnold, Locke, Frœbel and Pestalozzi, and many other men of broad and gifted minds. By this method the highest aims in teaching children may be realized. And just here we might appropriately consider what these aims should be in music.

I would answer that the same principle which actuates every earnest worker in imparting knowledge to others should prove its value in music as well. The opportunity is ours to begin to train the child's musical ear for life; and did all realize how much depends upon these early lessons more care and attention would be given to the work. The tendency with children is to sing too loudly; seemingly they think the one who makes the most noise does the best. But we should strive for softness and purity of tone. Make them understand the sentiment of their little pieces, that an appreciation of and sympathy with their work may be aroused and developed as their knowledge increases.

Great care should be paid to the correct pronunciation of words, and this may be aided in a great degree by constantly reminding the child to open his mouth naturally, and let the words flow freely as in speaking. Also, attention should be paid to the pitch or starting point. In all of the first songs no tone lower than F should be selected as a key note. Otherwise the chest tones are exercised too much, which has a tendency to make them coarse and unpleasant, and the pure head tones—the sweetest part of the voice—are neglected when they should be strengthened and improved.

There is some diversity of opinion concerning the amount of work to be accomplished by the children during their school course. If they have never sung I think the first six months might very profitably be spent in pure rote work, placing before them a good variety in the selections, and taking special care that the habits thus early formed be correct and helpful toward future good results. Should it chance that some previous training had been theirs, the teacher can easily determine how much rote singing is needed towards training the ear and cultivating a taste for the best kind of music. Then, by degrees, I would introduce to them the first step in the theory of music until they have a full comprehension of the "staff," "bar," "double bar," "clef," the value of the different kinds of notes and rests, the scale, ascending and descending by number, letter and syllable, and the places the letters occupy upon the staff.

At the beginning of the third year's work some exercises may be taken by the class that the teacher constructs upon the scale; and in all of the work particular attention should be given to the quality of the tone produced, the erect position, good attention, careful pronunciation of words, and pure air in the room. It will often happen that they grow restless, and seem not to enjoy the work. At such a time do not—for the satisfaction of gaining an immediate result—force the work upon them. A change to something of a different nature will often work wonders. I would not have the first aim abandoned but accomplished in another way. A certain amount of diplomacy and tact is creditable in teaching music as well as in other subjects.

Following the school course into the grammar grades we realize how much the preparatory work has done towards singing by note, which should now be

introduced. I would recommend singing in unison most of the time for the next two years, as neither the boys nor the girls are strong enough (musically speaking) to sustain separate parts. The first three months the children should be trained entirely in reading the notes in the key of C., it being the simplest and easiest to understand.

By making this key an example, each variety of note and rest may be explained from it, and each complication in time—that all-important subject in respect to which musicians and teachers find so great a lack of understanding on the part of pupils.

When these principles have been mastered, the transposition into the different keys is comparatively easy, and should follow the sight reading in the key of C. When once the pupil understands that each line and space is marked by a letter, the position of which never changes, but simply that we use different letters as a starting point and apply the syllables accordingly, the first letter always being *do*, the second *re*, and so on, the work is easily accomplished.

In the sixth year two-part singing may be commenced, and let none be discouraged if his success at first seems small. At the beginning I would divide the school, having all the girls sing the upper and the boys the lower part, and later on, if any wish to change allow them to do so. With a little discretion on the part of the teacher music may be given them to suit the range of their voices. Place before them all the variety possible, and only of the highest type. For as some one has truly said, "Only the best is good enough for children." By spending twenty minutes each day in practice the desired results will surely follow; and so systematic and progressive is the work that it cannot fail to aid in the one great purpose for which all school life is designed, the fuller development of the mind.

After looking over this outline should anyone chance to ask: "How can we find time for music when the school course is already so crowded?" I would answer him by another query: "Life is so full of necessary duties which constantly stare us in the face, showing how serious life really is, and how short is the time in which to achieve any of its great possibilities—how can we spare time for any mere amusements?" We trust the reply is demonstrated in the life of the individual; for all know that the pleasurable side instead of proving a drawback acts as an impetus to our work. And in the same way music in schools adds much happiness and benefit, and awakens, brightens and inspires for other duties. It is a relief to the tired mind and not an added care.

The question as to a person untrained in the art of music being able to instruct others has often been discussed; and as I have lately come in contact with just such a one a word concerning the case may not seem inappropriate. The teacher to whom I refer made herself proficient so far as the principles went, but lacked all power to sing. However, determined to succeed, and aided by a pitch pipe, she gave the children the correct sound at starting, detected their errors and explained how they could be corrected, and I have rarely entered a school where the pupils did so well. All cannot be professionals; but each one can aid in the advancement of this much-needed and powerful agent in elementary education—"school music."

I will close by a few remarks upon the system of music which has for so many years served all who have made use of it, from grand old masters to young ambitious beginners—the staff notation. Its good qualities are often painted in such sombre hues that the clear and systematic outline of music written in this notation seems wrapped in clouds of mystery, and only a few favored ones may behold its development. But far other is the case. We have a course in staff notation founded upon the work of the great and gifted German, Hohmaim, whose work in Germany, the land of music, has been so thoroughly endorsed, by being made the basis of school music in that country. It deals with all grades, from the lowest primary through the highest classes. We have surely a grand list of talented men when we mention Mozart, Mendelssohn, Bach and Beethoven and many others who have given us compositions suited for both young and old.

No testimony that I might write would half express the value of this notation as do the successful results that have been achieved by its use; and while other methods may aid, nothing can supplant or take the place of this one, which is thoroughly systematic and complete in its development throughout, and holds a rank high and grand for the good work accomplished by its use in the past and the rich promise it gives for the future.

M. U. G.

Truro.

But give me, Lord, eyes to behold the truth;
A seeing sense that knows the eternal right;
A heart with pity filled and gentlest ruth;
A manly faith that makes all darkness light;
Give me the power to labor for mankind;
Make me the mouth of such as cannot speak;
Eyes let me be to groping men and blind;
A conscience to the base; and to the weak
Let me be hands and feet; and to the foolish mind;
And lead still further on such as thy kingdom seek.

For the REVIEW.]

"We Agree to be Kind to Animals."

We are not apt to realize that our conduct influences not only those among whom we live but that animals as well become good, bad or indifferent, according to the character of those by whom they are surrounded.

The benefit that children derive from having the care and responsibility of pets is often spoken of, and very often a girl or boy is highly commended because he or she is known to be the possessor of a cat, dog or bird. On the other hand it would oftentimes be interesting to know just what that pet thought of its owner. One naturally supposes that the boy or girl who has a pet gives it the very best care and attention, but warm beds, freshly aired houses and plenty of food do not make the sum total of "good care." How would a boy feel if his father or mother never said a pleasant word to him, never asked after his welfare, or expressed delight in his enjoyments? And how many boys there are who never think it necessary to talk to the pets committed to their care.

It is ridiculous to say that animals cannot understand nor do not appreciate such attentions, because it has been proved time and again that such is not the case. Among the pets in a certain household are crows, dogs, pigeons, rabbits, canaries, a pony, a tiny marmoset, and a pretty grey Java sparrow. These animals are all great favorites with the children, and are treated by them as companions in the broadest sense of the word. The canaries, from having been talked to, have come to know what is said to them —in a limited sense, of course,—but still they know when they are spoken to and when they are the subject of conversation. The sparrow, who has always had its freedom during the day, was at first caged at night, as it was feared he might fly into the lamps or strike against some bright object in the room. If by any mischance his cage was not opened for him as soon as the daylight faded he would fly down upon the table, chirping and hopping from place to place until the desired attention was attracted, and he was safely housed until the next morning, when he would stand before the door waiting for it to be opened and his liberty given him again.

The rabbits are the tamest, but perhaps it is because rabbits are invariably so shy, that these seem particularly noticeable. They know no fear whatever, but will come to be petted as soon as they see anyone, and are never happier than when being talked to. The crows have picked up one or two words and say "hello" distinctly; they bark like the dogs, imitate many sounds, and resolutely refuse to allow strange boys to enter the barn in which they live, regarding it, evidently, as their personal property. It is the same with the other pets, and it is only to show how very friendly and companionable animals will become when the opportunity is given them that these instances are cited.

We have known and heard of animals, on the contrary, belonging to apparently kind boys who were timid, cross and stupid. It is not an unfrequent thing to hear of a parrot that is in the habit of swearing, and this accomplishment has, too, been spoken of with pride, the poor bird's owner forgetting that its words were only a repetition of his own thoughts.

Apart from the simple justice of treating animals, humanely and considerately, such a course will add to their value as protectors of mankind and promoters of civilization. For instance, in one family was a big Newfoundland dog, a great pet and play-fellow. He had been taught to consider the children, particularly the baby, as his especial charge. Wherever the little ones were there was "Major" keenly alive to all dangers. Often at night he would go from room to room looking into the beds to see if all were safe. If any restless little sleeper had burrowed out of sight beneath the clothes, "Major" would hunt until his search was rewarded by finding what he sought. Nothing was more pathetic than to see him grown old, blind, lame and deaf, trying to join the children in their games, and painfully seeking out and keeping near the one who, "though older grown," was still the baby.

All are familiar with the brave St. Bernard dogs and their lives devoted to the saving of human life. Would they be as gentle to the lost traveller if they, themselves, were not treated with love and kindness? Next to the nobleness of the St. Bernard, stands, I think, the confidence of a beautiful Irish setter, who brought the pretty little pup—her only one—that she had accidentally killed and laid in the lap of one of the family, sitting down beside her with a look in her great brown eyes that was heartbreaking. The poor dog had known only love and care, and felt sure that in this case what she could not accomplish would be an easy task to those who had always shown her such kindness.

And this kindness, gentleness and patience to animals must help to develop our own lives and to enable us to influence for good the lives of those about us. A very lovely story is told of Mr. Corliss, the inventor and engine builder. He had a number of men at work blasting out some rock for building purposes. One day some of them found in a cleft of the rock a nest, on which a little bird was sitting. They knew that the next blast would destroy the nest and showed it to Mr. Corliss. The great man—for

this act stamps him great, if nothing else does—when he saw the nest with its tiny eggs and the anxious little mother fluttering near, ordered the men to stop working, and for six weeks or until the birds were ready to leave the nest, the great engines stood idle, and the men waited patiently until the little bird led her family to other homes. Mr. Corliss did not allow his men to suffer during the period of their enforced idleness, but found them other employment or paid them regularly while they waited for the "flitting of the birds."

Mr. Henry Longfellow, who loved everything that had life, tells a pretty story of the Emperor Charles of Spain. During one of his campaigns a bird built her nest on his tent; when the time came for the Emperor to return from the battlefield, the eggs were not hatched, so the Emperor ordered his soldiers to leave his tent—

> "So it stood there all alone,
> Loosely flapping, torn and tattered,
> Till the brood was fledged and flown,
> Singing o'er those walls of stone
> Which the cannon shot had shattered."

In another poem Mr. Longfellow tells of the benefit the birds were to the farmers in destroying all the insects that despoiled the crops, but the farmers only realized that the birds stole the corn, and had them all killed; the next summer, however, they saw their mistake, for—

> "In the orchards fed myriads of caterpillars, and around
> The cultivated fields and garden beds
> Hosts of devouring insects crawled, and found
> No foe to check their march, till they had made
> The land a desert without tree or shade.
>
> "But the next spring a stranger sight was seen,
> A sight that never yet by bard was sung,
> As great a wonder as it would have been
> If some dumb animal had found a tongue!
> A wagon, overarched with evergreen,
> Upon whose boughs were wicker cages hung,
> All full of singing birds, came down the street,
> Filling the air with music wild and sweet."

They had been brought from the neighboring country by the anxious farmers, who at last saw that the stolen corn was more than amply repaid by the birds they had so harshly condemned.

Let us all, when we repeat the words of the Band of Mercy pledge, agreeing "to be kind to animals," remember that it means something more than merely plenty to eat and drink, and that—

> "He prayeth best, who loveth best
> All things both great and small,
> For the dear God that loveth us
> He made and loveth all."

St. John. M.

Educational Institute of New Brunswick.

To the N. B. Editor of the Educational Review:

Allow me to correct an error which was unfortunately made in the programme of the Educational Institute as published in your last issue. The days should be Wednesday, Thursday and Friday, instead of Tuesday, Wednesday and Thursday.

Of the gentlemen invited to open or take part in discussions upon the subjects of the papers to be read, the following have expressed their consent: John March, Esq., M. A., J. R. Dunn, Henry Town, W. M. McLean, A. B., Inspector Smith, C. H. Cowperthwaite, A.B., R. P. Steeves, A.M., G. R. Inch, Sc.B., N. W. Brown.

HERBERT C. CREED,
Sec'y-Treas. Ex. Com.

For the REVIEW].

Volapuk.

How is Volapuk progressing in Canada? This is a question which there is at present no means of answering satisfactorily. As it is desirable that some one should be able to report on the subject the writer respectfully requests that

ALL STUDENTS OF VOLAPUK IN CANADA

will at once send him their names and addresses, with a brief statement of their attainments in the language, and the number of Volapukans in their localities. Also, if there are any Volapuk clubs let them be reported.

Lio Volapük mostepom in Kanadan? At binom sak ut keli no sibinom atupo medot gesagona plidiko. Bi binos viplikos das ek okanomov nunodon tefu din at, penel at begom stumafuliko das

STUDELS VALIK VOLAPUKA IN KANADAN

osedoms ome lesuno nemis e ladetis omsik, ko sesag blefik do dagetam omas in puk at, e num Volapukanas in topofs omas. Leigo, si binoms-la vpaklubs sembal panunodosos.

EDUCATIONAL AND OTHER PERIODICALS IN CANADA

are respectfully requested to publish the above request, with this one appended:

The writer has had correspondence in Volapuk with France (St. Maurice), Italy (Venice and Vicenga), Russia (St. Petersburg), Hanover (Hildesheim), Prussia (Breslau), England (Hull), the United States (New York, Boston and Worcester), and Nova Scotia. At present there are before him recent letters and post cards addressed to a friend in Volapuk, from Strasburg, Buda-Pesth, Hildesheim, St. Galles, and Salzburg.

(Address), HERBERT C. CREED,
Fredericton, N. B.

April, 1889.

QUESTION DEPARTMENT.

SUBSCRIBER.—Can you inform me through the REVIEW, if there is in Canada or the United States a school for preparing students to teach English in a foreign country by the Berlitz method? Where can I write for catalogue of such institution?

EDUCATIONAL OPINION.

Latin and French should evidently be accorded a place in the B syllabus of examination. Teachers now holding first-class licenses might remain undisturbed. But a fair knowledge of Latin and French should be added to the requirements of this grade for the future. In the neighboring Province of P. E. Island the elementary classics are taught in all the schools of the first-class—with what result? Every village and hamlet can point with pride to the brilliant record of its young men, both in their native Province and on many a well-contested field here and across the Atlantic.—*Inspector Gunn, N. S.*

More gratifying than the material improvement in our schools, above noticed, is the decided advance in the *professional spirit* of the teachers in this part of the Province. They seem anxious to attain a higher plane of thought and adopt broader views of education, and to have learned that the only way to do this is by a diligent study of the principles which underlie all educational processes. Many of them not only subscribe for and carefully read our own educational journal, the REVIEW, but have provided themselves with such works as "Thring's Theory and Practice," "Fitch's Lectures," "Browning's Educational Theories," etc., with a determination to learn the views of these great masters in the profession.—*Inspector Mersereau, N. B.*

While complaint may be heard that teachers may be hampered for want of material for the oral part of the course, the fact should be noticed that trustees are beginning to understand its importance, and to include apparatus in their estimates. At Lockeport there is an excellent collection of minerals. The trustees of the Shelburne Academy have made a useful addition to their chemical stock. At the former school I saw many specimens of forest growths of Nova Scotia cut into triangular sections, showing the natural grain of the wood, the bark and the smoothed surface. Young ladies pointed out the differences and the many uses to which these products are turned in the industrial world. Evidently much more is done in a good many schools than is made manifest at a superficial glance. This sort of work is comparatively new. The majority of teachers have received no training for it. They have to contend against a natural timidity, but they are showing a desire for a better preparation. The development of taste in this direction is shown by the large number of copies of the EDUCATIONAL REVIEW and other papers of a similar character which are taken in the district. A reference to the tables will show the extent to which the high school studies have a place in the schools. The Yarmouth Academy leads the way, having a registered attendance of eighty-seven pupils. The programme of subjects for the summer term included the whole course except physics, chemistry and geology. The following tables, though not exhausting the list of subjects taught, show the schools and the number of pupils in each doing advanced work. It is in these schools that most of our young people, especially those qualifying for the higher grades, receive their training for licenses.—*Inspector Munro, N. S.*

I think that many of the teachers would be encouraged and stimulated in their work if more frequent visits were made to the schools by the trustees and parents. Public examinations are a species of educational fireworks pleasant to observe but usually giving a very inadequate idea of the solid work of the school or the methods employed. Much misconception regarding the work of our schools would be removed by a more intimate acquaintance by people interested with their every-day work.—*Inspector Carter, N. B.*

BOOK REVIEWS.

THE POCKET GAZETEER OF THE WORLD, edited by J. G. Bartholomew, F. R. G. S., etc., London. This little volume is so valuable and convenient for reference that none should be without it. Not like the large and cumberous volumes that have hitherto served as gazeteers, which adorned book shelves rather than served for use, this one can always be kept at hand. It is beautifully bound and printed. It seeks to answer the question concerning every place of any importance on the globe—"Where is it?" and "What of it?" and this it does for 35,000 places. In addition it has nine maps, illustrating general features of geography. For sale by J. & A. McMillan, St. John, N. B.

EVANGELINE, decorated with leaves from Acadian forests. Nothing could better illustrate the skill of the bookmaker's art than this beautiful volume. It gives a fresh attraction to the story which possesses such a deep interest for Acadian readers. With such a volume as this before him, decorated with "garlands of autumn leaves" of every possible hue and shape, the poetic reader will receive fresh inspiration. For sale by J. & A. McMillan, St. John.

HALIBURTON, the man and the writer, by F. Blake Croffon, Provincial Librarian of Nova Scotia. This is the title of No. 1 of a series of annual publications to be issued by the Haliburton Society of Windsor, N. S., which has for its object the development of a distinctive literature in Canada. Mr. Croffon's paper is a valuable one, and its selection by the society as their initial publication is appropriate. Prof. C. G. D. Roberts, the president of the society, contributes a prefatory note.

THE MIND OF THE CHILD, PART II. THE DEVELOPMENT OF THE INTELLECT; by W. Preyer, Professor of Physiology,

University Jena; D. Appleton & Co, New York, publishers. This remarkable contribution to the science of psychology is the ninth volume of the International Education Series, edited by Dr. W. T. Harris It is translated by H. W. Brown, of the State Normal School, Worcester, Mass., with a clearness and force not always found in translations from the German. It is so readable that anyone will be interested in a cursory perusal, whilst its science of the unfolding of the intellect of the child from the earliest period is so full and complete that the mastery of its contents will require careful study. Preyer began his observation of his boy five minutes after birth, and continued them three times a day with very few interruptions for three years. The facts and phenomena recorded are grouped under three headings, "Senses, will and intellect," these again being sub-divided. A conspectus of thirty-one pages brings into easy view for comparison this record, which (excluding theory and hypotheses) deals simply with facts noted down at the moment. Pains were taken to keep the child unconscious of these observations and from all influences, such as learning by rote things he could not possibly understand and silly tricks of mimicry, so that his development should be natural and unforced. *Is there any thinking without words?* In opposition to Max Muller, Preyer, we think, proves to a demonstration that while intellectual development is stimulated by language it is not wholly dependent upon it. Like many another knotty point that philosophers may discuss *ad infinitum* in the closet, the appeal to nature and the study of a child show us that long before he can speak, or even understand speech, he has ideas. It has become fashionable to preserve photographs of children from an early age, and if a diary of facts accurately observed and carefully recorded went with them much light might be thrown on child life, which, as a guide to the educator, would be invaluable If some of our readers will undertake the task they will find a model and guide in the conspectus But the desire to prove "forwardness" in a child must be rigorously excluded The seventeenth chapter on "Parallel between Disturbance of Speech in Adults and Imperfections of Speech in the Child" is a masterly *resume*. * * * * The intelligent reader will agree with Preyer "to observe the child every day through the first thousand days of his life, in order to trace the historical development of speech, was possible only through self-control, much patience and great expenditure of time; but such observations are necessary from the physiological, the psychological, the linguistic and the pedagogic point of view, and nothing can supply their place."

Elementary Chemical Technics, by George N. Cross, A. M.; 123 pages. Price $1.25. Eastern Educational Bureau, Boston, publishers This is an admirable little work to aid the teacher of chemistry in manipulating his experiments. The directions are clear, terse and accompanying with drawings, and the teacher who uses this book cannot fail to arouse a new interest in his class work.

Elementary Synthetic Geometry of the point, line and circle in the plane, by N. F. Dupuis. M. A., F. R. S. C., Professor of pure mathematics in the University of Queen's College, Kingston, Canada. (London: MacMillan & Co., and New York, 1889).

Professor Dupuis is a genius in his way, and his little octavo of some 300 pages contains a most interesting presentation of the subject, altogether free from the cumbrous logical machinery of Euclid. Euclid is a classic; but the impression is growing stronger and stronger upon us that we are sacrificing too much to the idolatry of the antique. The method of treatment in the book before us is simple, yet comprehensive. Its logic is as convincing as that of Euclid, while coming more directly to the conclusion. Both the methods and terms used connect more intimately with the common algebraic, trigonometric, and more modern developments of mathematical science.

Analytic Geometry, by A. S. Hardy, Professor of mathematics in Dartmouth College, and author of "Elements of Quaternions." (Ginn & Co., publishers. Boston, 1889).

We have had, a few years ago, made an acquaintance with Professor Hardy's work in his charming introduction to quaternions above mentioned. The present work which is a handsomely bound, beautifully printed volume of 229 pages, is just such a lucidly arranged treatise as we would expect. We have not had time to test the accuracy of the book in detail, but from a general examination we can say we have never seen the subject treated in a clearer manner for the student who has to work his own way.

Scott's Rokeby, edited with notes and vocabulary by Michael MacMillan, B. A., Oxon. London: MacMillan & Co., and New York. The editor thinks that *Rokeby* has never been as great a favorite as it deserves to be. He claims that it is quite able to bear comparison with the very best achievements of Scott's genius. The introduction is a fine critical essay, and the notes excellent.

Shakespeare's The Winter's Tale, edited by K. Deighton, B. A., with introduction and notes. London: MacMillan & Co., and New York. This is a neat and beautifully printed little volume. One excellent feature about the notes is that they do not tell what the average reader ought, unaided, to find out for himself, but are rather suggestive and replete with passages of literature corresponding to those found in the text.

Nature Readers: Sea-Side and Way-Side, No. 3, by Julia McNair Wright. D. C. Heath & Co., Publishers, Boston, Mass. Those who have read with such delight Nos. 1 and 2 of this series will welcome this volume, not inferior to the others in interest and wealth of illustration.

Stickney's Readers, Nos. I., II., III., IV. Published by Ginn & Co., Boston. This is a series of graded readers for use in schools. They are beautifully illustrated and printed, and seem to be admirably adapted to interest and instruct children.

Second Spanish Book. Publishers, A. S. Barnes & Co., New York. This is a work, interesting to students of the Spanish language, by Prof. J. H. Worman. In it, as well as the First Spanish Book, the author works out the natural method of instruction.

HINTS FOR TEACHERS OF PHYSIOLOGY. No. XIV., of "Guides for Science Teaching." (Boston: D. C. Heath & Co., 1889).

A cheap, small volume in paper of 58 pages, giving practical hints and convenient experiments, for the effective teaching of the leading principles of physiology. Just the book every teacher in our common schools should spend a few cents to obtain and enjoy. It "shows how a teacher may supplement his text-book instruction by means of simple observations and experiments on living bodies or on organic material."

FIVE HUNDRED CHOICE SELECTIONS from prose and poetry for grammatical exercises and memorizing, with a drill book for review in English grammar and analyzing, by Frances W. Lewis, A. B., Rhode Island Normal School. Boards, pp. 160. Price 75 cents. Boston: Eastern Educational Bureau, 50 Bromfield street. Many teachers in high schools, academies and normal schools, in attempting to induct the students into the principles of rhetoric, have found that the pupils required review in grammar and analysis before they were fitted to grasp the broader and more practical applications of rhetoric. This book is the outcome of the careful study of these difficulties and a very successful mastery of them.

A CLASS-BOOK OF GEOGRAPHY, by C. B. Clark, F. R. S. London: MacMillan & Co., and New York. This is a revision of a popular class-book in geography, published by the MacMillans in 1878. It has been revised and brought up to date in late geographical information, such as the population of towns and the mention of those places which have become important in late years; the bringing up to date of the political geography of Egypt, Turkey and other countries. This book has many excellent features, such as a description of the plants and animals peculiar to the countries described, eighteen colored maps in which the British possessions are made prominent, and in which important cities are figured in side maps on a larger scale, and an appendix in which astronomic geography and chartography are briefly but clearly treated.

OUTLINES OF LESSONS ON BOTANY, by Jane H. Newell. Boston: Ginn & Co., publishers. This work, designed for the use of teachers, or mothers studying with their children, is valuable to those who would give instruction in botany in a practical and interesting way. It takes up the study of buds and branches, growth from seeds, etc., and gives some excellent hints to the working teacher.

THE LEADING FACTS OF FRENCH HISTORY, by D. H. Montgomery. Ginn & Co., Publishers, Boston, Mass. The object of this volume is to present, within the compass of about two hundred and fifty pages, the most important events of the history of France, selected, arranged and treated according to the soundest principles of historical study, and set forth in a clear and attractive narrative. The work is based on the highest French authorities—Guizot, Rambaud, Martin and Duruy. It is illustrated with fourteen maps and complete genealogical and chronological tables. It is also furnished with explanatory foot-notes where they seem to be required. Each section of the history is followed by a brief summary of the ground gone over.

BOOKS RECEIVED.

THE CHORAL BOOK, for home, school and church, mailing price, 70 cents; published by Ginn & Co., Boston, Mass.

HOMER'S ODYSSEY, Books I.–IV. Mailing price $1.50. Published by Ginn & Co., Boston, Mass.

NOS ENFANTS ET LEURS AMIS; published by MacMillan & Co., London and New York.

EXCHANGES.

The Popular Science Monthly for May has a finely illustrated and valuable article, "Beginnings in Science at Mugby School."....*Garden and Forest*, published by D. A. Munro, New York, is especially interesting and valuable this time of year in its articles on gardening and tree planting....In the *Forum* for May, President Hyde, of Bowdoin College, Me., shows the ill effects of school examinations. He analyzes the part that examination properly conducted should play in the work of education, and he shows how examinations, as actually conducted, really defeat the purpose of education and make school work an injury rather than a benefit. It is a practical suggestion by a practical teacher....*St. Nicholas* for May, with its finely illustrated pages and pleasant stories, is at hand....*Treasure Trove*, published by by E. L Kellog & Co., New York, is a capital magazine for young people. Its pages are filled with interesting and instructive reading matter.