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JOURNAL OF EDUCATION,

Upper  Canada.

Vol. XI.

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No. 4.

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FREE PUBLIC LIBRARIES IN UPPER CANADA.

In the last number of this Journal we presented a brief view, with illustrations, of what has been done, and is now doing, in home manufacture of School Furniture, Maps, Globes, and various School Apparatus. In this number we present a tabular view of what has been done in another branch of Public Instruction—the circulation of books in Free Public Libraries.

In this Journal, for February, 1856, we inserted a table showing the number of volumes which had been procured at the Department during each month from 1853 to 1855 inclusive. We now insert, in continuation of that, another table, showing the number of volumes supplied by the Department on the application of Municipal and School authorities, during each month of the years 1856 and 1857 :—

STATEMENT OF THE NUMBER OF VOLUMES SENT TO THE FREE PUBLIC LIBRARIES OF UPPER CANADA :

During the Months of	In History.	Zoology.	Botany.	Phenomena.	Physical Science.	Geology.	Natural Philosophy.	Chemistry.	Agricultural Chemistry.	Practical Agriculture.	Manufactures.	Literature.	Voyages.	Biography.	Fables, Sketches, &c.	Teachers' Library.	TOTAL.
Total sent out from 1853 to December, 1855, as per statement in Journal of February, 1856. }	20266	9187	1635	3636	2540	1070	1823	988	589	5404	5705	11819	8417	12391	30534	1218	117292
January, 1856	36	4	...	3	24	9	36	11	3	8	36	22	4	5	2	10	245
February " .....	...	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	90
March "	261	41	4	10	27	...	30	16	...	...	...	2	10	...	...	...	37
April "	137	20	2	21	8	5	2	1	1	30	12	62	41	81	140	...	671
May "	106	10	...	5	4	1	1	1	1	18	2	41	41	32	173	...	434
June "	150	49	14	36	6	5	7	2	2	35	12	74	61	207	108	26	794
July "	236	129	12	83	13	12	11	6	2	46	58	184	154	313	515	22	1796
August "	77	6	...	5	21	3	9	...	2	1	7	55	30	...	103	4	351
September "	19	...	...	...	...	...	...	...	...	...	5	4	...	11	227	2	272
October "	228	87	30	46	25	3	27	2	...	40	61	54	53	109	284	21	1050
November "	382	104	32	50	35	7	16	5	3	76	116	268	167	378	548	59	2544
December "	870	197	24	135	112	23	65	12	14	111	99	495	369	644	1094	69	4233
January, 1857	691	258	46	51	171	35	66	37	9	150	217	464	804	566	1259	31	4435
February "	1049	410	73	110	182	35	98	30	16	274	300	546	847	723	1326	53	5573
March "	1386	439	96	146	215	59	136	39	19	323	417	622	684	1023	2057	58	8619
April "	177	87	22	48	38	10	29	7	6	99	74	100	96	162	295	9	1261
May "	302	108	25	67	34	9	24	4	4	115	82	68	203	195	1073	26	2283
June "	566	172	18	62	57	20	27	1	8	127	99	242	257	319	594	23	2595
July "	405	149	23	41	51	18	36	16	1	107	76	115	156	248	539	20	2000
August "	261	75	11	49	35	4	23	...	1	46	22	90	106	119	342	16	1290
September "	125	32	2	9	8	5	9	...	2	10	14	49	19	40	123	1	448
October "	18	9	4	16	5	...	1	...	...	7	5	26	21	47	194	4	357
November "	78	9	...	9	1	...	...	...	...	3	3	6	9	12	42	...	179
December "	237	15	...	24	20	...	6	...	1	16	16	19	49	62	875	...	691
Total to 31st December, 1857.....	28059	11602	2074	4665	3644	1342	2482	1157	687	7169	7435	15733	11639	17751	43585	1720	160794

Large supplies of books for libraries having been sent out during the years 1854 and 1855, the orders for them in 1856 were much reduced; while the number of volumes sent out in 1857 was greatly increased. An average of little more than

1,000 volumes per month was sent out in 1856; while in 1857 it was nearly 2,500 volumes per month. In this table, *Prize Books* (which have been ordered and supplied as rewards to meritorious pupils in the schools, are not included. These

amount to 2,306 volumes. The aggregate amount of the books, maps, and apparatus which have been ordered by school authorities and supplied by the Department during the last year, is a little over \$40,000—about twice the amount of any preceding year.

Of the nature of these helps and encouragements in school instruction, too high an estimate can scarcely be made. In a few of the School Sections and Townships the library-books procured are little read or valued; but in the very great majority of Sections and Municipalities which have procured them, they are sought after and read with great eagerness, and are exerting the most salutary influence. In some of the Municipalities, in the first instance, large libraries were ordered, and many of the books selected were standard works of permanent value, but too dry and elaborate for popular reading, though useful to particular individuals, and useful as books of reference. In other cases, a variety of smaller popular reading books was in the first instance selected, which have been increased, from time to time, by the addition of new books, and some works of reference. The latter method appears preferable. The addition of new books to the library every year, adds much to its attraction and usefulness. The selection of books by the Municipal and School authorities from the new catalogue, is greatly facilitated by its division into two parts,—the one containing books for popular reading, and the other books for reference. Copies of this catalogue have been sent out to each School Section, Board of Trustees, and Local Superintendent.

It would afford us pleasure to insert here extracts from the reports of Local Superintendents for 1857, illustrative of the influence of the Public Libraries, and the manner in which the books are sought after and read in many Municipalities; but these will appear in the Annual Report of the Chief Superintendent. The fact that applications have been made from the Municipalities (chiefly rural) for nearly 2,500 volumes per month during the past year, besides applications for school maps and apparatus, and the sending forth of such a continuous stream of enjoyment and instruction to the remotest parts of the Province, is at once an indication of the progress, the spirit, and the prospects of the country, at which every patriotic heart must rejoice.

II. THE FREE PUBLIC LIBRARY OF BOSTON—SPEECHES AT THE DEDICATION.

ADDRESS OF THE HON. R. C. WINTHROP AND THE HON. E. EVERETT.

The principal address on the dedication was delivered by the Hon. Robert C. Winthrop, chairman of the building commissioners. He spoke long and eloquently, and concluded in the following terms:—It remains for me, as President of the Board of Commissioners, and in their name, to deliver to you, Mr. Mayor, these keys of the principal doors of the building which we have erected, at once as a symbol that our work is finished, and as an earnest of the delivery of the building itself to the city over which you preside. We do not presume to present it to you as a faultless piece of architecture. But we do present it as a convenient, substantial, spacious structure entirely adapted to its purposes, and carefully arranged for the most economical administration of the institution for which it is intended—capacious enough for two or three hundred thousand volumes, and for as many readers as are ever likely to visit at one and the same time—with no deficiency of light or air—secure, we have full confidence, from the dangers of fire—and which, while it is devoid of any ostentatious ornament without, and while it exhibits no excessive or fanciful embellishment within, is yet in no respect unworthy, either within or without, of the liberal and enlightened community in whose service it has been erected.

We present it to you, indeed, Mr. Mayor, a mere mass of naked walls and columns and arches. But these vacant alcoves will soon be occupied. These empty shelves will soon be filled. Gems and jewels, more precious than any which the mines of either continent can ever yield, will soon find their places in the cases and cabinets which have here been prepared for them;—and living jewels, like those of the Roman matron of old,—even the sons and daughters of our city,—will soon be seen clustered around them.

It was a poetical and beautiful conceit of the great philosopher of our mother land—of Bacon, I mean—the contemporary and fellow countryman of our Pilgrim Fathers,—that “Libraries are the shrines where all the relics of ancient saints, full of true virtue, and that without delusion or imposture, are preserved and reposed.” But Cicero methinks did better justice to the theme. We are told that when that illustrious orator and statesman saw the books which composed his precious private library fairly arranged in the apartment which he had provided for them, in his villa at Antium,—he wrote to his friend Atticus: “Postea vero quam Tyranaio mihi libros disposuit, mens addita videtur meis ædibus.” Now that my books have been put in their places by your learned Greek, Tyranaio, a Soul seems to have been added to my dwelling.”

And our own American Cicero is at this moment at your side, sir

—prepared to receive these keys from your hand, in behalf of the trustees over whom he so fitly presides; and under his auspices, and with the aid of his associates, it is hardly too much to say that a living, breathing, imperishable soul will have been infused into this now merely material structure. Yes, my friends, within these walls shall soon be gathered—not merely the mighty masters of philosophy and rhetoric, of history and poetry whom the Roman Cicero recognised and revered as introducing a soul into his dwelling—but the great lights of all ages, the wise and learned of all climes, and those, especially, who have adorned a civilization, and vindicated a liberty, and illustrated a Christianity which that Cicero never conceived of, shall be congregated around them.

Here soon shall many a waiting heart be kindled into something of the exultation of that good old Bishop of Norwich, when he exclaimed on the sight of a great Library,—“What a happiness is it that without all offence of necromancy, I may here call up any of the ancient worthies of learning, whether human or divine, and confer with them of all my doubts!—that I can at pleasure summon up whole synods of reverend fathers and acute doctors, from all the coasts of the earth, to give their well studied judgments on all points and questions which I may propose!”

And not the reverend fathers and acute doctors only shall answer to our call—but here also the poets of all ages shall ever be ready to sing to us their choicest strains;—the dramatists of all ages to rehearse to us their richest scenes of wit or of woe—the orators of all ages to recite to us the triumphant argument, or the thrilling appeal, which may have shaken empires from their base, or changed the current of the world's affairs. Here, too, the practical inventor and ingenious mechanic shall exhibit to us his specifications, his plans, and his drawings. Here the great Interpreters of Nature shall unfold to us the mechanism of the Heavens, the testimony of the rocks, and the marvels and mysteries of animal and vegetable life. Here the glowing pictures of fiction and fancy shall pass and repass before our visions, beneath the magic wand of a Scott, a Dickens, or a Cooper;—the living portraits of Sages and Patriots, of other lands and of our own land be displayed to us by a Guizot or a Brougham, a Carlyle or a Campbell, a Sparks or an Irving;—and the grander panoramas of History be unrolled for us by a Gibbon or a Grote, a Hume or a Macaulay, a Bancroft, a Prescott, or a Motley.

Let me conclude, Mr. Mayor and gentlemen, by thanking you once more, in the name of my associates and in my own name, for the confidence with which you have honored us in the execution of our commission.

May God, in his goodness, grant that increased supplies of wisdom and knowledge and virtue, for us and our posterity, may be its rich and abundant fruits;—that it may be so sanctified by His grace to the highest interests of the whole community, that here, at least, the tree of knowledge may never be disunited from the tree of life;—and that constituting as it will, the complement and the crown of our great republican system of popular education, it may do its full part in bearing up and sustaining, for a thousand generations, a well compacted and imperishable fabric of freedom; of that freedom which rests upon intelligence, and must be regulated by law, and which can only be maintained by piety, philanthropy, and patriotism.

SPEECH OF EDWARD EVERETT.

The Hon. Edward Everett also made an elaborate and eloquent speech, we give a portion of it. He said;—

I am aware that there is still floating about in the community a vague prejudice against what was called book learning. One sometimes hears doubts expressed of the utility of public libraries; opinions that they are rather ornamental, than necessary or useful, and the fact that our time-honored city has subsisted more than two centuries without one, is sufficient proof that, until within a very few years, their importance, has not been practically felt.

There is perhaps even now a disposition to claim some superiority for what is called practical knowledge—knowledge gained by observation and experience (which most certainly the trustees would not disparage), and a kind of satisfaction felt in holding up the example of self-taught men, in supposed contradistinction from those who have got their knowledge from books; and no name, perhaps, is so frequently mentioned in this connection as that of Franklin, who, because he had scarce any school education, and never went to college, has been hastily set down as a brilliant example to show the inutility of book-learning. It has been quoted to me in this way, within three days.

Now, Mr. Mayor, I need not tell you that there never was a greater mistake in point of fact. A thirst for books, which he spared no pains to allay, was the first marked trait disclosed in the character of Franklin; his success throughout the early period of his life, can be directly traced to the use he made of them; and his very first important movement for the benefit of his fellow-men, was to found a public library, which still flourishes;—one of the most considerable in the country. Franklin, not a book-man! whoever labors under that delusion, shows that somebody else is not a book-man, at least so far

as it concerns the biography of our illustrious townsman. We happen to have a little information on that subject, in a book written by Franklin himself. He there gives a very different account of himself, and I would ask any one who entertains the idea to which I am alluding, at what period of Franklin's career he supposes this taste for books began to be manifested by him; how soon he ceased to be self-formed man?

Perhaps after he had struggled through the years of his youthful poverty,—escaped to Philadelphia,—set up in business as a printer, and begun to have a little money in his pocket. I need not tell you, sir, that it was earlier than that. Was it, then, while he was a clever apprentice to his brother, the editor of a journal, and wrote articles for its columns in a disguised hand, and tucked them under the office door enjoying the exquisite delight of setting up his own anonymous articles; was it then, at the age fifteen or sixteen, that this fondness for reading, under the stimulus of boyish authorship disclosed itself? Earlier than that. Well then at the grammar-school and Master Brownell's writing school, which he attended from eight to ten, (for there are boys who show a fondness for reading, even at that tender age); was little Benjamin's taste for books developed while yet at school? Earlier than that. Hear his own words, which you will permit me to read from that exquisite piece of autobiography to which I have already alluded:

From my infancy I was passionately fond of reading, and all the money that came into my hands was laid out in purchasing books. I was very fond of voyages. My first acquisition was Bunyan's works, in separate little volumes. I afterwards sold them to enable me to buy R. Barton's Historical collections. They were small Chapman's books and cheap, forty volumes in all. My father's little library consisted chiefly of books in polemic divinity, most of which I read. I have often regretted (and this is a sentence that might be inscribed on the lofty cornices of those noble columns) that at a time when I had such a thirst for knowledge, more proper books had not fallen in my way. ** There was among them Plutarch's lives, which I read abundantly, and I still think that time spent to great advantage.

"There was also a book of Defoe's, called an Essay on projects, and another of Dr. Mather's, called an 'Essay to do good' which"—did what sir? For I am now going to give in Franklin's own words (they carry with them the justification of every dollar expended in raising these walls) the original secret of his illustrious career—what was the effect produced by reading these two little books of Defoe and Cotton Mather! "they perhaps gave me a turn of thinking, which had an influence on some of the principal future events of my life." Yes, sir, in the reading of these books was the acorn, that sprouted into the magnificent oak; there was the fountain drop which a fairy might sip from a butter cup, from which has flowed the Missouri and the Mississippi,—the broad, deep river of Franklin's fame winding its way through the lapse of ages, and destined to flow on till it shall be engulfed in the ocean of eternity.

From his "infancy," sir, "passionately fond of reading," nay with the appetite of a vulture, with the digestion of an ostrich, attacking the great folios on polemic divinity in his father's library. Not a dull boy, either, sir; not a precocious little book worm; fond of play; doesn't dislike a little mischief; sometimes as he tells us, "led the other boys into scrapes." But in his intervals of play, in his leisure moments up in the lonely garret, when the rest of the family were asleep, holding converse in his childhood with the grave old non-conformists, Howe, and Owen, and Baxter,—communing with the austerest lords of thought the demigods of puritanism—

Non sine dies animosus infans.

Franklin not a book-man? Why he goes on to tell us that it was "this bookish inclination which at length determined his father to make him a printer," against his own inclination, which was for the sea; and when he had thus by constraint become a printer, his great consolation was, as he says, that "I now had access to better books. An acquaintance with the apprentices of booksellers enabled me sometimes to borrow a small one, which I was careful to return soon and clean. Often I sat up in my chamber reading the greatest part of the night, when the book was borrowed in the evening and to be returned in the morning lest it should be found missing."

Then he made the acquaintance of Mr. M. Adams, an ingenious, sensible man, "who had a pretty collection of books." He frequented the printing office, took notice of the bright little apprentice, and "very kindly proposed to lend me such books as I chose to read." Having taken to a vegetable diet at the age of sixteen, he persuaded his brother to allow him in cash half the price of his board—living on potatoes and hasty pudding—soon found that he could save half even of that little allowance (which could not have exceeded two and sixpence a week, lawful money), and this poor little economy "was an additional fund for buying books."

What would the poor underfed boy who was glad to buy books on the saving of his potato diet, have said could he have had free access to a hall like this stored as it soon will be with its priceless treasures?

Further, sir, while working as a journeyman in England, he says, "I made the acquaintance of one William Willcox, a bookseller, whose shop was next door. He had an immense collection of second hand books."—Circulating libraries were not then in use, but we agreed that on certain reasonable terms, which I have not now forgotten, I might take, read and return any of his works. That I esteemed a great advantage, and I made as much use of it as I could."

Finally, sir, as I have already said, Franklin's first important movement for the good of his fellow men was the foundation of the public library in Philadelphia. At his instance the members of a little club to which he belonged, tradesmen and mechanics of narrow means, threw into common stock the few books which belonged to them. A subscription was then obtained from fifty young men, principally tradesmen, of two pounds each and ten shillings per annum, and with this little fund they began. "The books were imported, the library was opened one day in the week for lending them to subscribers, on their promissory notes to pay double the value if not duly returned." "This was the mother," says Franklin, "of all the North American subscription libraries, now so numerous. It has become a great thing itself and continually goes on increasing. These libraries have improved the general conversation of the Americans, made the common tradesmen and farmers as intelligent as most gentlemen from other countries, and perhaps, have contributed in some degree to the stand so generally made throughout the colonies in defence of their privileges."

These are the words of Franklin, Mr. Mayor, which I read from his own books. Our excellent friend, the president of the commissioners, has justly felicitated himself on having been the first person publicly to raise his voice in this noble hall. He must be a happier man than I who can speak an earlier or an abler word than his; but I claim the credit of having read from the first book opened in this hall; and what is more, sir, I mean to have the satisfaction of presenting the first volume given to the library since it came into the care of the trustees. In your presence, Mr. Mayor, and that of this vast assembly on this first of January, 1858, I offer this copy of Franklin's Autobiography, in Spark's edition, as a New Year's gift, to the Boston public library.

Nay, sir, I am going to do more, and make the first, and perhaps the last, motion ever made in this hall; and that is, that every person present, of his own accord, if of age—with the consent of parent or guardian, if a minor—man, woman, boy or girl, be requested, on going home, to select one good book, and, in memory of the poor boy, who half fed himself to gratify his taste for reading, present it as a New Year's gift to the Boston public library. I make you that motion, Mr. Mayor, and I call upon all present to give me their voices; especially I ask the co-operation of the fairer and the better part of creation. If no where else, woman's rights shall be respected in this hall, while I have anything to do with it. I pray you, Mr. Mayor, put the question, and then I'll finish my speech. [Much laughter.]

His Honor, the Mayor, then rose and stated the question, which was seconded by Mr. Winthrop. The Mayor particularly called on the ladies to vote, and an unanimous and emphatic aye resounded through the vast hall. The negative was then called and no response made. His Honor, amidst great cheering and laughter, pronounced it a unanimous vote.

Mr. Everett resumed—

No, sir, if there is one lesson more than an other directly deducible from the life of Franklin, it is the close connection of a thoroughly practical and useful life and career with books, libraries and reading. If there is a thing on earth would have gladdened his heart could he have anticipated it, it would be the knowledge that his native city, in two generations after his death, would found a library like this to give to the rising generation and to the lovers of knowledge of every age that access to books, of which he so much felt the want.

And could it be granted to him, even now, to return to his native city, which dwelt in his affections to the close of his life, his first visit would be to the centre of the ancient burial ground, where in after life he dutifully placed a marble slab on the graves of his parents; his second visit would be to the spot in Milk street where he was born; his third to the corner of Union street and Hanover street, where he passed his childhood, in a house still standing; his fourth visit would be to the site of the free grammar school-house, where, as he says in his will, he received "his first instruction in literature," and which is now adorned with the statue which a grateful posterity has dedicated to his memory; and his last and longest would be to this noble hall, where you are making provision for an ample supply of that reading of which, "from his infancy, he was passionately fond."

The trustees have done what they could to connect some reference to Franklin with an institution which would have been the object of his warmest affections by providing that every Franklin medal boy shall be entitled to its privileges; and inasmuch as the accumulating fund which he bequeathed to the city, and which now exceeds \$70,000, has proved almost wholly unavailing for the primary object of the bequest, it deserves consideration whether, when it has reached a sufficient mag-

nitide, as it will before the end of this century, the interest of the fund, if it can be legally done, might not advantageously be appropriated, as a permanent endowment for the support of the library.

III. THE USE OF SCHOOL LIBRARIES.

"Read thou first and well approve the books thou givest thy child."

There is a certain transition state, a period in which, most of all, children need a parent's fostering care and guiding hand, when their minds are in a chaotic state, and are suffered too often to run wild—to vegetate where they will—and to wander without company or guide. These are the neglected ones—and neglected, at the most critical period of their lives. Now take such a child, interest him in reading, or in listening to the reading of useful and instructive books, and his education is begun, and not only begun, but so well begun, that it may be said to be half done. Now if parents will not take upon themselves the responsibility of this part of a child's education, an education which begins with the first development of thought, but will force it prematurely upon the teacher, then let the proper course be pursued at school. Instead of driving him to his A B C, teach him first of all, to love books—to love the knowledge they contain—teach him to think, to reason, to philosophize, to analyze. Then, after he has arrived at an age in which he can read for himself, furnish him with books, direct and encourage him in reading, and you have laid a foundation for his education, broad, sure, and deep, upon which he will not fail to build a fitting superstructure. To accomplish all this, we need books at the school room to which pupils can have daily and easy access.

With these prefatory remarks, we are led to the consideration of the subject before us: The use of libraries in schools. Were our wishes to take the form of a resolution, they would be embodied in the following words:

Resolved, that we recommend to each and every school section, the purchase and introduction into the schools of said section, of suitable libraries for the exclusive use of persons connected therewith.

We would urge the adoption of this resolution for the following reasons:

1st. The insufficiency of other public libraries to meet the wants of the young. These libraries are confined to the cities and large towns, so that but a small proportion of the population of the county have access to them. Many of those public libraries belong to mechanics' institutes and young men's associations; and of course, are intended for their exclusive use. Even if these libraries were designed for general circulation, the selection of books would be ill adapted to the capacities of children.

2nd. The same fault may be found with township libraries, with the additional objection, that they do not contain books sufficient to supply any considerable portion of the community. Libraries without books present a strange anomaly. From these township libraries, the trustees have the privilege of drawing a certain number of volumes for the use of the schools in their district. But the proportion of books to the number of pupils, must be extremely small. In instances which have come under our observation, the proportion has been about 1 to 10, and more than one half of these books were very unsuitable for young persons.

3rd. Were family libraries general there would be no necessity for school libraries. A family library is the best of all libraries.—Besides being always accessible, always available, always select, children form an attachment for the books they daily and hourly see and use, they become to them old familiar friends, and they learn to cherish and revere them in after life. But such libraries are not general, either for want of means, or lack of interest on the part of parents. A few odd volumes, of doubtful interest, are the most that many, and perhaps a vast majority of families, can boast.—How few parents take sufficient interest in the improvement of their children or have the ability to direct or encourage them in their reading.

4. There are as yet but few section libraries in the county; but the testimony of those teachers who have them, is that they are of vast utility, and invaluable auxiliaries in the education of the young.—A section library selected, as it necessarily would be, with reference to the ages, the attainments and tastes of the pupils in attendance on such schools, would meet, more than any other could, his actual wants.

"Remembering the weakness of his thought, and that wisdom for him must be diluted, let him taste the strong wine of truth, in the honied waters of infant tales." Books for the young should be adapted to their capacities. Knowledge, encumbered with abstruse thought, becomes repulsive. The selection of books for section libraries, would of necessity be entrusted to those best acquainted with the capacities and wants of the pupils, as well as with the books to be purchased. Kept in the school building and if necessary during vacation, at the residence of the teacher, such a library would be not only accessible, but a place of daily resort. It would be a source of attraction, drawing many into the school who would not otherwise attend. It would render important service to the teacher, as an auxiliary in imparting in-

struction, in inciting an interest in study, and in securing obedience to the rules and requirements of the school.

A section library should, to a certain extent, supply the wants of the teacher. The successful teacher must be a diligent student. The present standard demanded of the teacher, is such that constant application to books will be necessary in order to meet that demand. The teachers' profession is the worst profession in the world for personal improvement or literary attainments. Required to teach such a diversity of subjects, with a moment's thought bestowed upon this, and a moment upon that, here a little, and there a little, his mind must be, to a certain extent, broken up, and his powers of concentrated thought dissipated, if not fatally impaired. By continually bending or lowering his own capacities to meet those of the child they become weak. This is sometimes termed the levelling process. Now, to counteract all this tendency to lower his own standard of attainment, he should have constant resort to books of the most elevating character; and so marked should be his daily progress, that the influence should not only be seen, but *felt* by his pupil. No teacher can safely trust to past attainment. Not a section is under obligation to furnish a teacher's library as a part of the section library. The salaries of most teachers will not allow of their having very extended libraries for personal use.

Again, a section library would be a source of interest and improvement to parents. Books drawn by children would be taken home and read at the fireside to the profit of the whole household. They would also have a reflex influence, leading parents to take a deeper interest in the school and their children's progress in their studies. The economy of this system is another argument in its favor. In a community of fifty families, an annual contribution of one dollar each would furnish them with sufficient reading matter. This, to all practical purposes, would amount to so many distinct family libraries, for each family has the benefit of the whole fifty volumes, and that too at a place nearly as accessible as if at their own dwelling.

Two points only remain to be considered: What books should be read and how they should be read. For a small library, fifty dollars would be a fair beginning; and for this we might name a few familiar histories, and other books. But for a complete library, each district should be furnished with,

- 1st. Books for circulation among the pupils.
- 2d. Books for parents and patrons.
- 3rd. Books for reference, such as Encyclopedias, Dictionaries.
- 4th. Books on Schools and School Systems, for officers of schools and for parents.
- 6th. Books on the theory and practice of teaching, and on Education generally.

How should books be read? They should be kept at the school building in a suitable case, and always under lock and key. Pupils should be allowed to draw but one book at a time and to keep the cover on till returned. Books should be delivered to those only who by diligence and good deportment have proved themselves deserving. The drawing of the books should always take place in the presence of the whole school, who should be made to feel that the use of the library is not only a privilege but a great honor. The teacher should frequently read choice selections to the school, making such comments as will give them a better understanding of the subject investigated and offer such criticisms as the case demands. That a library may be made of the greatest utility, the teacher should be not only familiar with its contents and able to make just criticisms and exhibit the beauties of the various works, but also to give some general instruction in respect to habits of reading, and the application of the knowledge acquired. A good library in the hands of such a teacher is a mine of wealth from which can be brought forth jewels of untold worth.—*E. L. Ripley before the Michigan State Teacher's Association.*

IV. ADVANTAGES OF AN AGRICULTURAL LIBRARY.

The man who guides the plow is no longer a slave—he thinks. He turns up the soil in unquestioning silence no longer—he reasons—he inquires. The sun is to him no longer a vast plan, unstudied and unknown. The man who guides the plow is no longer the most deplorably ignorant of all the sons of men; he no longer considers mind culture, opposed to agriculture. Such has not always been the case; farmers have improved as a class. The cause of their improvement is the reading of printed matter, prominent among which stands that relating to their own pursuits.

The reading of agricultural literature like the labor of agriculture, is without any contaminating influences. The heart of him who reads of agriculture, is elevated, instructed, and refined. The result may be favorable to the cultivation of the farm, but its greater value is in the cultivation of the mind. The day when the farmer is ashamed to be an educated man only in "figgers," has passed away; he now has books of his own, papers of his own, thoughts of his own, and libraries of his own; and only supported by him. The day of his abasement is gone. That antiquated annual, provided to tell the changes of the moon, and sun's rising and setting and the day of the month, is less consulted,

superstition is losing in the number of its slavish followers. The plowman dares to inquire, doubt, and to reason.

There has been a manifest improvement in the mass of farmers, since our early memory. A change for the better brought about by the reading of agricultural literature. The agricultural library had its uses as well as the plow. The mind has to be cultivated as well as the broad acres. The library of the man is an index of the man—it shows the currents of his thought—the desires which prompt him and the ambition, the success of which would reward him. For the great conflict of life, a knowledge of agricultural science is worth more than all that may be added in a college course, and a full knowledge of chemistry is of more value than all the dead languages.—The value of the latter is lilliputian, compared with the former; and chemistry is feeble in its claims compared with strictly practical agricultural literature.

The influence or the advantages of an agricultural library are beyond mention. Farmer's children love to read the truths of literature in the description of the birds and beasts of the farm earlier than they would paintings of fiction. It is not so much the superior cultivation of the farm as of the man, that we claim as an advantage gained by agricultural libraries. We have shown that the farmer has progressed. The truths which should be stored in every farmer's library are the cause of that progression. We care not through what channel it may have reached him—the columns of the newspaper, the agricultural paper, or the address or lecture. The legitimate office of the agricultural library is the transmission of such knowledge, such man improving truths, as shall elevate him from the position of the unthinking ploughman to the intelligent citizen. The time is at hand when the agricultural library will be the ladder by which the mere man will climb into mind, and avail himself of the labor of worthy intellects gone before. The time is not distant when the farmer will study yet more closely the mysteries of his occupation. We are but witnessing the clearing away of the fog of superstition and prejudice—the symbolical almanac is scarcely dethroned as yet; the result will be when man has put off his superstition. Let it come! Let the light of knowledge shine!

V. ON READING FOR INSTRUCTION.

The object of all reading should be instruction. If you do not grow wiser, in some way, by what you read,—that is, if you are *only* amused, and not instructed, by what you read,—you are throwing away the greater part of the time spent in reading. To gather instruction from the pages of a book, you must understand them; and you can not understand without consideration and thought. While it is desirable that you should select such books and publications as you can master, it is indispensable that you should exercise the powers of your own mind, and be determined to master them.

Do not complain of the words of many syllables that a writer uses, so long as he speaks to you in fair and honest English. It is better for you—better a thousand times—that you should come upon a word or a phrase, now and then, the meaning of which you should have to seek out by inquiry, or by the help of the dictionary, than that you should be written to in such words and forms of expression only as you are already acquainted with. If authors were to write down to the comprehension of the lowest intellects, they would never succeed in raising them to a respectable standard; and instead of promoting the popular improvement, they would retard it.

It is an old saying, that if you wish to make a person a dunce, you have only to treat him as a dunce, and he is sure to become one. There is much truth in this, and it is not less applicable to a class than to an individual. If the uninstructed classes are written down to, be sure of one thing—they will be kept down.

When a man or a lad acquires a taste for reading, he makes a grand discovery; he enters upon a new world—a world as new to him as America was to Columbus when he first set foot upon it—a world full of marvels and mysteries, and, what is better than these, full of wealth and wisdom of which he may help himself to as much as he can carry away, and make it honestly his own.

The great drawback is, that he finds he can not carry much of it. The land of literature is to him a strange land, and its language, to a considerable extent, a strange language. In this dilemma he is apt to make the mistake of supposing that if simpler language had been used, he should have understood the subject at once, and enriched himself by a new possession. In the present day this idea is generally without foundation.

There was a time when knowledge, which was not thought good for the common people, was boxed round with a kind of learned pedantry which rendered it accessible only to a few; but that time has gone by, and the best writers now address themselves to the largest classes—for a very sufficient reason, namely, that in these days, when books are sold so cheap, it is only from the patronage of the multitude that they can hope for adequate remuneration. It is the interest of all popular writers to simplify their propositions, whatever they may treat of, as far as possible; but this practice of simplifying can only

be carried out to a limited extent, after all, for a reason which, on a moment's consideration, will be obvious.

What are words? Words are nothing more nor less than the names of ideas; if any combination of letters of the alphabet suggests no idea to the mind, such combination is mere gibberish, not a word. All the words that an illiterate man is acquainted with have their corresponding ideas in his mind; and all the ideas in his mind have their corresponding words in his memory.

Now, if he turn the faculties of his mind to a new subject,—a subject entirely different from anything which has before occupied his attention,—it is as certain that he will meet with new words as that he will meet with new ideas; and, simplify as much as we may, it is not easy to perceive how he is to make himself master of any new subject through his old stock of words. Thus, in order to get new ideas, you *must* get new words; and in the proportion that you master their meaning will be your knowledge of the subject to which you turn your attention.

To profit by literature, then, you must learn its language. All that has been done, or can or will be done, in the simplifying processes, will never do away with that necessity. Remember that the language you have to learn is your mother-tongue; that the words whose signification puzzles you are on the lips of your fellow-countrymen every day and all day long; that you have a living dictionary in your teacher or parent, who will help you; that you can buy a Webster's pocket Dictionary for a quarter of a dollar; and remember, too, that every step you advance will render the next step easier.

Take advice, if it suits your case. Select a volume of average reading. Begin the perusal of it with a determination to understand the whole before you have done with it. Do your best with every sentence, using your dictionary with discretion. A sentence which may not be plain enough on the first reading may be so on the second or third. By this means you will learn the meaning of thousands of words which you did not know before.

The language of literature once acquired, the world of literature is before you. It is a boundless field of delightful and exciting inquiry, if you make the right use of it. We will not promise that it shall lift you to worldly prosperity, but it shall build you up to a nobler state of being, and make you a credit and an ornament to any position you may be called upon to fill.—*Sargent's School Monthly.*

VI. READING TO PUPILS.

It is an excellent practice to select, occasionally, a passage or paragraph, full of instruction on some practical subject, to be read by the teacher to the pupils of a school, or, it may be, to an older class, according to its nature and application. In a school where there may be a class of lads looking forward to business, the following selection may be read with advantage, to be followed by judicious remarks from the teacher, drawing a parallel between the performance of duties in the school-room and in the employment of the merchant.

Few boys will fail of receiving a stimulus from counsels so tersely presented as these. The lad who cannot be made to perceive and feel that the spirit, manner, and tact which business will demand of him hereafter must begin to be exhibited in the school-room, may be set down as an unpromising candidate for success in the great school of life.

The passage is taken from that most valuable publication, *Hunt's Merchant's Magazine.*

COUNSEL TO MERCHANTS' CLERKS.

Make yourself indispensable to your employers; that is the golden path to success. Be so industrious, so prompt, so careful, that if you are absent one half hour out of the usual time you will be missed, and he in whose employ you are shall say—"I did not dream George was so useful." Make your employer your friend, by performing with minuteness whatever task he sets before you; and above all, be not too nice to lend a hand to dirty work, no matter how repugnant; your business in after years depends upon how you deport yourself now. If you are really good for anything, you are good for a great deal. Be energetic; put your manners into your business; look as well as act with alacrity; appear to feel an interest; make your master's success your own, if you have an honest one. Let your eye light up at his request, and your feet be nimble; there are some who look so dull and heavy, and go with so slow and heavy a pace, that it is irksome to ask them what it is your right to demand of them: be not like these.

Be the arch upon which your employer may rest with safety; let him feel that he may entrust with you uncounted gold.

If you do an errand lightly, you begin to lose his confidence; if you forget twice some important request, you cannot be trusted.

If you accustom yourself to loose and untidy habits, you will gain no respect, but rather contempt. Avoid theatres, card-rooms, billiard saloons, as you would a pestilence; little faults are like so many loopholes in your character, through which all that is valuable sifts out, and all that is pernicious sifts in to fill the empty places.

But you say you want some pleasure! Make your work a pleasure. There are two ways of seeing sunrise,—one with a dull, complaining spirit, that if it could, would blot out the great luminary with its washy flood of eternal complaints; the other with joyous, lark-like pleasure, soaring out upward, and seeing along the western path, gates of gold and palaces of ivory. So there are two ways of doing work; one that depresses the soul by its listless, formal, fretful participation; the other that makes labor a boon and a blessing,—pursues it not only for gain, but the higher exaltation of the mental and moral being.—*Massachusetts Teacher.*

VII. PROFANE WORDS.

As polished steel receives a stain,
From drops at random flung;
So does the child, when words profane
Drop from a parent's tongue.
The rust eats in, and oft we find
That nought which we can do,
To cleanse the metal of the mind,
The brightness will renew.

VIII. Biographical Sketches.

No. 4.

LORD LYNDHURST.

(From the *Boston Evening Traveller.*)

Lord Lyndhurst was born in this place on the 21st May, 1772, and consequently is little more than eighty-five years old. He was the son of John Singleton Copley, the eminent American painter. Mr. Copley was a loyalist and of good family, being descended, on his mother's side, from the Winslows, two members of which family were Governors of the Old Colony, namely, Edward Winslow, in 1633 and 1644, and Josias Winslow, his son, from 1673 to 1680. Both were men of eminent talents. Edward Winslow was one of the signers of the first instrument of government ever adopted by the English race in America, and on many occasions exhibited the qualities of a statesman. His son was not only a skilful civil ruler, but distinguished himself as a soldier in the war with Philip. He commanded the army which the United Colonies sent against the Nahragsansetts, and which won a victory of the first magnitude over the valiant tribe, an action, all things considered, equal to any ever fought on American soil.

Governor Winslow lived in much state at Careswell, where he exercised a liberal hospitality. His wife, a member of the Pelham family, was a woman of great beauty and accomplishment. The family continued prominent throughout the whole colonial period, the most distinguished member of it in the last century being General John Winslow, perhaps the ablest soldier our country ever produced while it belonged to England. Altogether, they were the "first family" in New England, in every respect; but the Revolution proved fatal to their greatness. They were loyalists, and fell with the royal cause. Since then the name has been little known here, and Mr. Sabine is right in saying that "the Winslows of British America are, probably, at the present time, the nearest direct descendants of Edward Winslow, the Mayflower Pilgrim." He might have added, that Edward Winslow was one of the founders of the first American Union, "The United Colonies of New England," which was formed in 1643.

Descended from such a family, Mr. Copley was naturally a loyalist. He was married to a daughter of Richard Clarke, a Boston merchant, and prominent on the same side. He and his sons were among the consignees of the tea sent here in 1773, and it was at his warehouse, in King (now State) street, that the famous interview took place between the Whig Committee, of which Warren was a member, and the consignees. "I shall have nothing to do with you," was Clarke's rough and peremptory answer to the requirement that the teas should be sent back in the same bottoms in which they were shipped. Mr. Copley was present at one of the anti-tea gatherings, and asked the question, "Will it be safe for the consignees to appear in the meeting?" which was answered unanimously in the affirmative; but they came not.

He left America for ever before the American nation had an existence, and when the future Chancellor of England was but a little child. From all that we know of him, he was, like many of the loyalists, not only a man of cultivated mind, but very amiable. Hawthorne introduces him pleasingly in one of the best of his stories, "Drowne's Wooden Image." His merits as an artist were early acknowledged, and many of his works, or engravings from them, are to be found in all parts of the world where people are cultivated. Both America and England are proud of him. He died in 1815, at the age of seventy-seven, before his son had attained to high honors, but not before his talents had been recognized and admitted. The Clarke family, it may be added, were harshly treated. Richard was pro-

scribed and banished, and went to England in 1776, where he died twenty years later. His son Isaac was mobbed at Plymouth, when there on business. It may be safely asserted that no party was ever more thoroughly exterminated than the American loyalists.

Lord Lyndhurst, then Mr. John Singleton Copley, was here more than sixty years since. Mr. Sullivan, in his "Familiar Letters," describes him as a "tranquil, quiet gentleman," and adds,— "He had the reputation of being a good scholar; but he gave no indication at that time, that he was thereafter to be Lord Chancellor. He was rather above the common stature; of thin person, light complexion, and large blue eyes; and of very courteous manners. He was born in Boston, and was carried to England when about two years old, before the Revolution. He had many friends here, and in other places at the South, and was much esteemed." Even now he is said to be an eminently handsome man. Besides other high legal offices, he has three times held the post of Lord Chancellor,—in the Ministries of Canning, Goderich, and Wellington; when Sir Robert Peel was first made Premier in 1834-5, and when the same statesman was in power a second time from 1841 to 1847.

Of all living English statesmen he is unquestionably the ablest, his mental powers having experienced no decline. The noblest speech made on the Russian war, in the British Parliament, fell from his tongue. A youth of eighteen when William Pitt sought to stay the march of the Czarina Catherine II. upon Constantinople, he, after the observation of more than sixty-four years, urged his countrymen, in words of reason and eloquence, to undertake and to persevere in that expedition which had for its object the destruction of the city which Catherine had founded, with the view of enabling her successors to have a point whence they should be able to strike an effective blow in the realization of her policy. In this respect his career is quite without a parallel.

IX. Papers on Natural History.

No. 8.

The Pine Marten. (Mustela martes.)

MUSTELA MARTES.—(Linn.)



The Marten, also called the Pine Marten, is larger than the mink, and almost always of a lighter colour. The body is slender, the head long and pointed, ears broad and obtusely pointed, legs stout, eyes small and black, and the toes with long, slender and compressed nails concealed by hair; tail bushy and cylindrical. Hair of two kinds, the outer long and rigid, the inner soft and somewhat woolly. The length from point of nose to root of tail is about eighteen inches, length of tail seven inches.

The colour varies a good deal in different individuals, but it is generally yellowish, shaded with more or less black,—the throat is yellow. The Marten is an exceedingly active and destructive little animal,—but as its habits confine it to the depths of the forest, it seldom visits the farm yard, and consequently is no annoyance to man. Its food consists of birds, mice, squirrels, and other small animals, and its activity is such that it climbs trees with great facility. The female brings forth six or eight young at a litter, in a burrow under ground, a hollow tree, or in some warm nest constructed in a crevice among the rocks. The species is found in the Northern and Eastern States, throughout Canada, and in all the wooded districts of the Hudson Bay Company's Territories. It ranges across the continent from the Atlantic to the Pacific, and is supposed to be identical with the species of Northern Europe. Sir John Richardson, the celebrated Northern Traveller, in the North West, says that particular districts produce different varieties of this animal, the fur of some of the varieties being of more value than that of others. It is easily caught with traps. "A partridge's head with the feathers is the best bait for the log traps in which it is caught. It does not reject carrion, and often destroys the hoards of meat and fish laid up by the natives, when they have accidentally left a crevice by which it can enter. When its retreat is cut off it shews its teeth, sets up his hair, arches its back, and hisses like a cat. It will seize a dog by the nose and bite so hard, that unless the latter is well used to the combat it escapes.

Easily tamed, it soon becomes attached to its master, but is not docile. The flesh is occasionally eaten, but not prized by the Indians. The females are smaller than the males, go with young about six weeks, and produce from four to seven at a time, about the end of April. When caught in traps this species is often devoured by its near relation the Fisher. Pennants marten (*Mustela Canadensis*.)

As an article of commerce and of luxurious and ornamental dress, the fur of this animal is well known. It is said that 100,000 skins are annually taken to Britain. Yet as the species is very prolific, it is still a common animal in the large forests. In the settlements, however, it soon becomes exterminated. The fox lingers around among the agriculturists, and pays his attentions to the farm-yard long after the marten has left the scene of advancing civilization.—*From the Canadian Naturalist & Geologist.*

THE CANADIAN NATURALIST AND GEOLOGIST.—B. DAWSON, Montreal.

We take the foregoing from the December number of this excellent periodical. The following notice of its utility and object, we take from publisher's notice.

The utility of such a publication as the present is admitted on all sides. The scarcity of large libraries, and the small number and high prices of books noticing the Natural History of Canada, have long called for it. Hitherto Canadians, for the most part, have been more thoroughly acquainted with the Natural History of other countries than with that of their own.

In aiding the studies of the youth of the Province it is considered that this Magazine is of great value. The young Zoologist or Botanist will find described and classified here objects which he has met with in his rambles, of which the notices in books are scanty and often beyond his reach. His knowledge will thus acquire a distinctness which it could not have had, and the pursuit of his favorite science will be rendered much more pleasant and profitable.

Purely Canadian in its objects and aims, this Magazine has peculiar claims to Canadian support. While other countries not more advanced have many periodicals devoted to the extension of knowledge concerning their natural resources, those attempted in Canada have generally languished for want of support. Surely the time has arrived when a Canadian non-political literature ought to commence.

But it is not on this ground alone that the Naturalist stands. The quality of the matter is such as would command attention anywhere. The late Hugh Miller in reviewing some of the earlier numbers in the columns of the *Witness*, speaks of it as "an interesting and useful periodical admirably suited to direct and give consistency to the curiosity excited by the productions of the country, and exactly such a work as will aid the student to systemize his knowledge."

This volume contains 500 pages, prepared by some of the first talent of the country, illustrated (though by a Canadian) in a manner which would not disgrace a foreign Magazine; and for subject matter what can be more interesting than the inhabitants of our own lakes, woods and streams, the productions of our own soil, and the qualities of our own mines and minerals?

X. Papers on British North America.

I. BRITISH NORTH AMERICAN EXPLORING EXPEDITION.

Three very important reports to Mr. Labouchère, the Secretary of State, on the progress of the North American Exploring Expedition, under Mr. Palliser, were lately brought before the Royal Geographical Society. They were dated Saulte Sainte Marie, June 10th; Fort Garry, July 16th; and Fort Pembina, July 27th.

The portion of the British Empire the North American Exploring Expedition has been sent out to investigate is likely to attract so much attention in connexion with the Hudson's Bay Company during this session of Parliament, that we present our readers with an abstract of Mr. Palliser's communications to the Government. Mr. Palliser left England May 16, and landed at New York on the 28th. On the 2nd June he started for Detroit. On the 10th Mr. Palliser reached the Saulte Sainte Marie, where he found two birch canoes and sixteen rowers awaiting him. He then made an arrangement with the captain of the steamer to take him with his men boats, &c., to Isle Royale, in Lake Superior.

On the 12th of June the island was sighted, when Mr. Palliser and his party left the steamer in their canoes. They reached the mouth of the Kaministiquia at nightfall, and arrived at Fort William at 10 P. M. the same evening. Starting on the 13th, they encamped some miles from the fort, and arrived on the 14th at the mouth of the White Fish River. The mouth of this river might readily be passed unobserved by those travelling in canoes on the Kaministiquia, owing to its taking a sudden bend before flowing into that river. The White Fish River is from 40 to 60 yards broad and 5 feet deep at its mouth. Rapids render it unfit for navigation. For the first day's journey up the

river the barometer indicated a proximate ascent of 75 feet in 12 miles; for the second, a rise of 100 feet in six miles. Here, a tree falling on one of the canoes and disabling it, Mr. Palliser and Dr. Hector determined to start on foot through the thick larch woods to the falls of the Kakibies. From his experience of the country between the White Fish and Kaministiquia rivers, Mr. Palliser apprehends there would be little difficulty in connecting them either by a rail or common road. On the 23rd they reached the height of land, and next morning crossed the Savannah Portage into the Savannah river, and commenced the descent of the watershed towards Lake Winnipeg. Fort Frances on Lac la Pline was reached on the 1st July. Here they met with a deputation of the Lac la Pline nation of Indians, headed by their old chief. The Indians had heard a rumour of Mr. Palliser's arrival. The tone of the chief was bold and dignified. He said:—"I do not ask for presents, although I am poor, and my people are hungry; but I know that you have come straight from the great country, and we know that no man from the great Queen ever came to us and lied. I want you to declare to us truthfully what the great Queen of your country intends to do to us when she will take the country from the Fur Company's people. All around me I see the smoke of the white man to rise; the Long Knives, (i. e., the Americans), are trading with our neighbors for their lands, and they are cheating them and deceiving them; now we will not sell or part with our lands." Mr. Palliser assured the chief that he had no desire to purchase their lands, and that if they conducted themselves peaceably with the white faces, as they had hitherto done, the Queen would never send soldiers to take away their land by force.

An Indian of a friendly tribe requested the chief to obtain this promise in writing. He refused, saying he could trust the white man's word. The poor old chief complained that their animals grew scarce, the Company would give them no goods except in exchange for skins, they had no implements for cultivating the land, and no one to show them how to use them if they had; they had nothing to subsist on except the few fish they could take, and therefore many of them starved and died. Mr. Palliser promised to write the old chief's words to the big men who were in the habit of giving good advice to the Queen, and so parted good friends with the Indians.

The expedition camped on Sturgeon Lake, at the mouth of what has been hitherto called the Sturgeon River, on 5th July. From this point Dr. Palliser and Dr. Hector started to explore back again in a southeastern direction towards the White Fish River. What appeared to be a river turned out to be a passage to a very large lake; crossing this in an easterly direction to search for an outlet, they discovered a fine water fall. Walking through the woods for a mile and a half they found another lake nearly as large as the other.

The whole country between the watershed and Sturgeon Lake appeared to be a mass of lakes and islands. Should the country hereafter become inhabited, by means of a little engineering it would enjoy much facility for steanboat communication. On the 8th of July the island portage was reached, from whence there is uninterrupted communication by water across Lake Winnipeg to lower and upper Fort Garry, and as far as Fort Pembina on the other side of the frontier.

Four miles from Lower Fort Garry, on Sunday, the 12th, Mr. Palliser found a large attentive congregation of Scotch people and half breeds of various shades of color. The summer was warm, and the crops by their rapid growth seemed to make up for the long dreary winter of the country. On the 21st July, Mr. Palliser having engaged additional men and horses, leaving Fort Garry, crossed the river Assamboie, proceeded up the Red River nine or ten miles, crossed the River Sale (which is not in the maps) nine miles from Fort Garry, and emerged on the open prairie. Over the prairie was a well defined road, indicating considerable traffic. The wood on the right bank of the river consisted of oak trees, and the country through which Mr. Palliser passed indicated agricultural resources superior to those of the Red River Settlement.

The Rivière-qui grate was passed over in pontoons on the 22nd, 38 miles south of Fort Garry; on the 23rd Fort Pembina was reached. Upon the Pembina River, 23 miles from the fort, Mr. Palliser heard that there was a flourishing American town, called St. Joseph, which is not to be found on any of the maps, in consequence of its recent establishment.

At Pembina a meridian altitude of the sun was taken to determine the position of the 49th degree of latitude, but as Mr. Palliser's observations differed from a post driven into the ground by an American gentleman to mark a similar observation by 370 yards, Mr. Palliser adopted the latter, as it was in favor of Her Majesty. From Port Pembina Mr. Palliser forwarded his last despatch, together with the astronomical observations on the boundary line, and other matters, made by the officers of the expedition.

At a later meeting of the Royal Geographical Society, a paper was read containing "Further Particulars of the British North American Exploring Expedition, as far west as lon. 109 on the Lower Saskatchewan, by Captain Palliser." The gallant officer in his despatch states that on the 27th of July he had reached St. Joseph, an American town,

about seven miles from the British frontier; he found that the greater portion of the settlers employed themselves in buffalo hunting, and that while the men were absent on the hunt the town had on several occasions been attacked and plundered by the Indians. The bend of the Pembina, near St. Joseph, is entirely within the American territory; but as the river for a great portion of its course flows through British ground, it had been carefully surveyed. After visiting the Turtle Mountains, the expedition reached Fort Ellice on the 15th of August. From thence Dr. Hector proceeded with a party to examine an alleged coal mine which was stated to exist at some distance, and found coal of a very fair quality. On the 13th of September, the expedition reached the Qui Appelle Lakes, on which is the most western station now occupied by the Company's traders. The Indians who come there for trade are beginning to feel the difficulty of finding buffaloes to hunt, and might with little difficulty be induced to turn their attention to agriculture. On the 14th of September the expedition started for the elbow of the Saskatchewan, and in the course of their journey they were for the first time obliged to carry a supply of wood with them. The country which they passed was overrun with buffaloes. It formed the great battle ground between the Black Feet and the Cree Indians, and as the herds were not hunted, they had become extremely numerous. On reaching the Saskatchewan, they found it a large stream, and the observations made left no doubt that it was navigable from the point which they had reached, 109 degrees of longitude, to the Red River for large boats or small steamers. On the 9th of October, Captain Pallisser started for Fort Carlton, the winter-quarters of the expedition. From thence he proceeded by the most direct route to Fort Pelly, and thence to Detroit and Montreal. On his way back he had engaged guides and a party of men for his intended operation in the coming summer, when he would start for the south branch of the Saskatchewan, and as his route lay through the territory of the Black Feet he did not think it desirable to travel with a smaller party than thirty men. Sir R. Murchison bore testimony to the qualification of Captain Pallisser for the task he had undertaken, and expressed a hope that next summer his expedition would meet and join that which government were about to dispatch to the Rocky Mountains.

2. THE INTERIOR OF NORTH AMERICA.

Professor Henry, of the Smithsonian Institution, has collected facts respecting the interior of the United States, which will command the attention of scientific men and statesmen. The induction from these facts is, that the entire region of the United States west of the 97th degree, west longitude, (say the western boundary of Minnesota) with the exception of a small portion of Western Texas, and the narrow border along the Pacific, (including California,) is a sterile waste, of comparatively little value, and which can never be available to the agriculturist. The importance of this statement will be more fully comprehended when it is considered that the line of Professor Henry, which extends southwards from Lake Winnipeg to the Mexican Gulf, will divide the surface of the United States into two nearly equal parts. The intense heat and extreme dryness of this region, which will make the Great American Plains a barren waste forever, is caused to a large extent, according to Professor Henry's theory, by the fact that the returning Trade Winds, sweeping over the elevated masses of the Rocky Mountains, are deprived of their moisture; in other words, the heated air which ascends at the equator, saturated with moisture it has extracted in its passage over the ocean, after depositing a portion of its vapour in the tropics at the "rainy seasons," is farther desiccated by the ridges and mountains which it meets, the vapor being condensed on the windward side by the cold due to the increased vertical height, and it finally passes over and strikes the plains as dry as a sponge that has been thoroughly squeezed. Without moisture there can be no fertility, no agriculture; and a great portion of this wilderness, according to Professor Henry, is as irredeemably barren, for the purposes of agriculture, as the deserts of Africa. If this theory be true, it will greatly modify the opinions which have been entertained by politicians and statesmen, of the future destiny of the Great West.

XI. Papers on Practical Education.

1. INFLUENCE OF MOTHERS IN THE EDUCATION OF THEIR CHILDREN.

The various factors which combine to form the education of a child may be divided into three classes; education by *nature*, by *men*, and by *things*. The first comprises the growth and natural development of our organs and our bodily and mental powers. The second is the use which the child is taught to make of these powers. The third is that stock of wisdom and experience which the child gathers by coming in contact with, and observing the things around him. A

child can be well educated only when these three factors go hand in hand and act in perfect harmony. The education by nature does not all depend on men; nature goes her own way and acts according to her own laws. Neither does the education by things depend much on men; every child has an experience of his own, and he receives impressions and comes to conclusions entirely different from other children. The education by men is the only one which is in our control. But this control is a very feeble one, because it stands between nature and the individuality of the child; it ought to lean on the former and yet give fair play to the latter. Besides, it is divided between parents and teachers, relatives and strangers, friends and foes, all of whom have their short-comings and act seldom in union.

The child ought to be brought up as a *unit*, not as a fraction. The latter is done more than is needed by school and church, by society, business and the State. The first is therefore to be done in the family-circle at home. The father's employments usually call him from his family during the hours of the day. Morning and evening are the only periods when his children might be benefitted by his presence. Frequently a part of these hours is claimed by social gatherings, meetings of societies or other callings, so that to the greatest extent the education of the children devolves upon the mother.

The great cause of educating the young, or the duty of a mother to her children, may appear to different persons in a different light, entirely according to the standing-point taken by the observer. There is a bird's-eye view, which makes a fine steeple appear as a small dot, and a man of the same height as his own shadow. This view is taken by mothers who fulfil only those duties which are absolutely imposed upon them by nature. Writing or reading books, making fashionable calls and receiving visitors, necessary preparations for balls, parties, journeys, or the theatre,—these and many other engagements seem to compel mothers to leave the care of their dearest treasures almost exclusively in the hands of hired and often uncultivated domestics. When a nurse is hired to press the little child to her bosom, while the mother attends to her pleasures, how can such a child feel affectionate towards its parents? When the governess and teachers thus are made the nearest fountains of wisdom, how can the child be expected to come to its mother for advice and help? When world and fashion are the deities adored in the family, how can a child be hoped to bow its knee before the objects of religion?

There is a low or partial view, taken from an enclosed point of observation, which enables the observer only to see a part of the object, and by which part a conclusion is made upon the whole. Thus the Bunker Hill Monument may appear to a carpenter a huge mass of stone, to a countryman a puzzle, or to some professors an excellent point for teaching geography. There are mothers who constantly complain. If they have few children, they wish for many; if they have many, they desire to have but few. If children are well and lively, they require a great deal of care; and if they are sick and feeble, they cause much anxiety. Some mothers have their favorite wishes with regard to their children's talent or occupation, without examining whether these wishes agree with the peculiar gifts of their children. Others, by their anxiety to do all they can, or by their neglect to do what is needed, sow the seed of fear, irresolution, and doubt, or of daring boldness, lawlessness, and sin, in the hearts of the young, and are astonished when the moral weeds make their appearance. Many other instances might be mentioned, where mothers fail to take an all-sided, elevating view, fall short of doing their whole duty, and are finally disappointed.

Mothers will come nearest the truth by looking at the important subject of education from all sides, by close observation, by much thought and prayer. Comparatively little has been done to aid mothers in the discharge of their duties. The early nature of the young mind has been greatly disregarded. The season when influences are operating which modify the child's character for life, has been suffered to pass by disregarded, and mighty impressions have been left to the action of chance and circumstance. The books which have been written for mothers have been generally inadequate. Philosophers have seldom stepped into this important field of inquiry, in order to collect facts and establish principles to aid the mother. Rousseau began the work nobly; his *Emile* is even now unsurpassed as far as regards observation and application of principles. Most of the other books have been limited in their instructions to later stages, or restricted to the physical details of early nurture. The higher nature in the child is mostly passed over in silence. Mothers have too long been deemed more as the nurses of the child than as mental and moral guides; not as agents whose influence operates on the whole nature and determines the future character and happiness of the young.

If a mother wishes to proceed, the child must be her first and chief care; all other engagements are but collateral and secondary. Only by so doing will she gain an intelligent confidence in her labours and faith in their results.

The child is a living manifestation of its true wants, and, therefore, of what the mother is to do for it. The germs of its faculties and powers are committed to her for expansion and guidance.

The child is endowed with senses which are particularly vivid and require appropriate culture to fit them for their respective offices. They are the media which connect the child with the outward world. Each of these senses requires particular training, and by such training, hand and tongue are set free and put to work. Here is a wide field for the assisting hand of a mother. Primary school teachers usually can tell very well how much attention mothers have given to their children.

The child has appetites and passions, designed for preservation and defence, which require faithful discipline and direction. They are to be subjected to the guidance of reason, and the mother is placed beside the child to aid him. When the child is weak, she is to sustain him; when in passion, to restore tranquility; when in his ignorance he falls, she ought to raise and encourage him; when in his knowledge he is successful, she is to reward him by pointing out higher aims. Without the mother's aid, he must err, fall, and sink deeper and deeper.

The child has affections, through which he becomes connected with others. Sympathy is awakened in his bosom and faith dawns in his experience. He learns to regard the welfare and happiness of his fellow-men. Religion enters, and he begins to pray. This is another great field ripe for the harvest. The child's happiness and purity depend on a mother's faithful labors.

The child has intellectual powers, understanding, and reason; it has moral powers and spiritual faculties. Although these develop and grow at a more advanced age, when school, church, and society begin to exert an influence, yet the roots of these higher powers are hidden in, and draw their nourishment from, the soil of past acquirements, experience, and labor. What is the use of an awakening conscience or good reasoning powers, when bad habits have already gained possession? The young sinner will repent, pray, and resolve to-day, and yet commit the same wrong again to-morrow. He will be an easy prey to temptation, because his lower propensities, which have grown strong by habit, are willing to yield, while the still, small voice of conscience is drowned. If mothers could but see how deep impressions are made upon the tender souls of children by early experiences, which often exert an influence through their whole lives; if they would remember that the life to come will be in close connection with the purity of heart which is attained during our earthly career; if they would understand that to educate immortal souls is one of the highest callings, more attention would be given to a subject so important.—*Massachusetts Teacher.*

2. DR. ARNOLD.—THE TRUE TEACHER.

A little more than fifteen years have passed away since the remains of the great and good Arnold were laid in their resting place beneath the communion table in the chancel of Rugby chapel. We call him "great and good," but although he was truly great, yet we would gladly leave off this adjective from his name, was it not that mere goodness, however exalted, finds few worshippers in the world.

Arnold was born in 1795; entered upon his duty as head master of Rugby in 1828; died in 1842. He was not remarkable at school for any special endowments. After leaving college he devoted himself for several years to the instruction of a few young men. He then became a candidate for the Rugby school. One of those who recommended him for the situation wrote: "If Mr. Arnold is elected, he will change the face of public education all over England." A prophecy full of apparent rashness, whether uttered in the full burst of a friend's affection, or in the clear light of a reason that looks forth far into the future, and sees the ripening harvest, bending with yellow ears to the ground. Rash prediction! but how nobly was it fulfilled!

Said Squire Brown, as Tom is about leaving him, "I won't tell him to read his Bible, and love and serve God; if he don't do that for his mother's sake and teaching, he won't for mine. Shall I tell him to mind his work, and say he's sent to school to make himself a good scholar? Well, but he isn't sent to school for that,—at any rate, not for that mainly. What is he sent to school for? Well, partly because he wanted to go. If he'll only turn out a brave, helpful, truth-telling Englishman, and a gentleman, and a christian, that's all I want."

We cannot but think that here lies the true secret of a true education, an education that most schools know nothing of. How many of our teachers try to make their pupils "brave;" brave in battle against temptation and evil in any form, brave to tread it down with the strength of a conqueror, brave in showing "disdain at the very thought of meanness and of fraud?" How many of our teachers try to make their pupils "helpful;" helpful in doing the duty nearest to them, and doing it *themselves*, not falling back upon the maxim, "Qui facit per alium, facit per se?" How many of our teachers try to make their pupils "truth-telling?" Here is one of the hardest fields of the teacher's labor, for there is a school-boy code of morals, which lays down the law that whatever is done in the school, *honor* forbids any reparation, and requires a falsehood to be

either spoken or acted, if any endeavor is made to find out the guilty one. There are means to discover the author of wrong, without seeming it, and every way should be tried so as not to compel the pupil to fall back upon this soul-destructive creed of right. And, above all, how many of our teachers make the "Christian" law, the foundation-stone of their own requirements? How many are there, who when they give any rule of conduct, say that it must be complied with, and not because *they* say so, but because *God* says so, because it is *right*, by all of Heaven's eternal laws of truth and right? All this was one of the secrets of Arnold's superiority. Boys said it was a shame to tell him a lie, "for he always believes us." O what a loving care was that of his, which so tenderly guided the youthful soul along that fearful path which conducts from the trusting, obedient child by the mother's side, through the disbelieving, head-strong period of the young lad, up to the perfect type of manhood! Elijah has departed, but where is the Elisah upon whom his mantle has fallen?—*Extract from N. H. Journal of Education.*

3. SCOTTISH EDUCATION.

A movement is now going on across the Atlantic which has an interest for every man who feels any concern about the progress of education. For years past there has been a growing feeling in Scotland that the universities of that kingdom needed, and were susceptible of various improvements. They had undoubtedly accomplished much, but times have changed, are changing, will change, and Scotchmen fancied that their universities should grow with them, so far, at all events, as to fit into the turns which the events are taking. The people of that ancient royalty were further roused by the sneers of men South of the Tweed; which sneers grew unbearable when coupled with the fact, that in the competition for certain governmental appointments, the Scotch university men were distanced by those who came from the colleges of England or Ireland. An agitation gradually arose and continued to increase, till it took shape in the present "Association for the Improvement and Extension of the Scottish Universities;" and this body has just held a meeting in Edinburgh, under the presidency of Lord Campbell, which, in spite of the sneers of the *Times* and the Edinburgh *Scotsman*, has arrested the attention of the educated throughout Great Britain, and cannot fail to lead to the most important results. The proposals of these educational reforms may be gathered from the resolutions and addresses passed and delivered on the occasion. The second resolution is to the effect that, while professional instruction should be so aided as to make the present system more efficient, all must be done "in such a manner as to preserve the distinctive character of the Scottish universities." Dr. Candlish spoke to this theme, but we confess to have gathered little information from his somewhat prosy address. Two things are contemplated: what *is*, must not be radically altered; yet what *is*, must be greatly improved. Means must be found for carrying students further than they now go; but yet, an eye must be had to those students who only desire to do as heretofore. To this end it is proposed that provision be made for assistant professors; while the English tutorial plan is opposed and rejected. Meanwhile, whatever is done must be done in such a way as not at all to take from the Scottish universities their peculiarly popular character. They were made for the people and not for a class, and for the people they must still be kept. It were no reform, if any attempt to improve schools, should drive away from the place of learning the ambitious poor, hitherto sent thither from every village of the land. The universities of Scotland are to be kept open there, not for a wealthy class only, but for the nation to whom they pertain. The third resolution shows the need for duly endowing Professorships, and for providing proper retiring allowances for these aged sons of science when no longer able to teach their generation. Mr. Stirling of Keir, himself a Cambridge man, moved this resolution, and in doing so said:—"At Trinity College, Cambridge, to which he (Mr. Stirling) belonged, there was a long avenue of lime trees, the college windows at the end of which looked along to the spire of the small parish church at Coulton; and it used to be a saying in the college that the view down the avenue was a fair representative of the average prospects in life of a college Fellow—a long perspective and a small living in the distance. (Laughter.) To the Scottish Professor, who corresponded to the English Fellow, a similar lot was presented, with a slight difference, they had the long perspective, but the small living was omitted."

The fifth resolution was moved by Principal Tulloch of St. Andrew's, known to many by his recent essay in connection with the Burnet bequest. It is of great moment:—"That it is desirable that the graduates of each University should have some share in its government, and that they should, by this and other means, be led to retain a permanent interest in its prosperity and advancement."

On this point Lord Campbell spoke a good deal better than Prin-

cipal Tulloch. Besides shewing the need for insisting on the ordinary degree, and providing for another degree with high honors, he added:—I would also strongly advise you to consider whether the graduates ought not to have a powerful voice in the management of the Universities. (Cheers.) It is so at Oxford and Cambridge; it is so at Dublin; and I think that all the graduates ought to have a voice in the election of Chancellor, in the election of Rector, and in the election of some of the Professors. I think that thus you would attach the graduates to the seat of learning where they had received their education, and from that intercourse the most beneficial consequences might be fairly expected." He also referred to the coming Reform Bill, and urged, "that if there be such a measure brought forward, there ought to be a demand upon the Parliament that the Scottish Universities ought to have members as well as the Universities of Cambridge, of Oxford, and of Dublin. (Cheers.)"

Mr. Baxter, M. P., not unknown to us as a traveller in, and writer about the United States, moved as follows:—That it would tend greatly to the benefit of our Universities were an improved system of examination adopted, with a view better to test the progress of the students, and to enhance the value of degrees."

Such were the principal themes debated on with more or less fullness by the respective and respectable speakers. We miss one point, however, which we had expected to see named, the creation of a Central Board for examining all candidates for degrees. We suspect that the existence of no fewer than five colleges in so small a population as that of Scotland, each of which enjoys University powers, has a very great deal to do with the present low state of certain branches of learning in that kingdom. On this point Sir John McNeill spoke strongly in his noble address, recently given to the affiliated societies of the University of Edinburgh; but at this meeting it seems to have been intentionally avoided. Nevertheless, we cannot help thinking that in any scheme of educational reform in these institutions, this plan should be well weighed ere it be rejected; since, albeit, not materially interfering with the rights of any college, it would put an end to any possible degradation of honors for unworthy ends, such as the gaining of a few more students by the prospect of an easily won title. At this distance, however, it is neither possible nor desirable for us to enter more into detail. We have indicated a movement in which many of our fellow-colonists are in more ways than one, deeply interested; a movement, than which none of more importance has been debated in Scotland for a quarter of a century. People laughed at the cry for Scottish rights so long as it referred only to the "lion and the unicorn fighting for the crown;" but on this grave occasion, though the *Times* sneers, the people of Britain listen and applaud. It is well, however, while men speak of reforms that they should not forget the past. These very universities have made and kept Scotland what she is. If they have of late years turned out few Latin versifiers, they have regularly sent forth numbers of broad thinking, practical, energetic, refined students, and their influence is at this moment felt in every quarter of the habitable globe. What is wanted is, not that they should be less practicable than heretofore, but that in addition to their present excellencies, they should seek to raise their standard, so that men who would go farthest in any branch of learning, may do so, without being compelled to carry on their studies in strange, or at best, sister lands.—*Globe*.

XII. Miscellaneous.

1. "MAMMA'S PET."—AN INCIDENT AT CALCUTTA, AFTER THE RELIEF OF LUCKNOW.

Women and Children!—what a sight
Was there when, gathered to her breast,
After their bloody breathless flight,
Calcutta bade the victims rest!
Strong men, with voices weak and low,
Stood by to ask their names, their woe.

Some answered, but with choking sighs
And wringing hands; and some stood there
Heedless, with their unconscious eyes
Fixed in a bland, a ghostlike stare:
Some told their tale in screams, and some
Covered their faces and were dumb.

One of the throng, a little child,
A fair-haired girl, was all alone;
No mother on her darling smiled,
No brother spoke in cheering tones:
All, all alone, with eyes serene,
She gazed upon that strange sad scene.

They came to her, these prying men,
And one beside her knelt, and took
The orphan to his breast, and then,
With gentle voice, and gentler look,
"Dear child, what is your name?" he cried:
"I'm mamma's pet," the child replied.

The wild moustache, the rough black beard
Quivered; upon her golden head
He laid his broad brown hand, and cleared
His husky throat: "Poor child," he said,
"You are called something more—say yet
Your name."—"I'm just mamma's sweet pet."

O mother in your dismal grave,
O murdered father, hear us vow
Our homage to the fond and brave,
To lavish on that baby brow,
To pay in love our sacred debt—
For yours shall be the Nation's pet!

—[*Chambers' Journal*.]

2. RAGGED KIRK AND SCHOOL AT ABERDEEN—THE PRIVATE LIFE OF THE QUEEN AT BALMORAL.

The following pleasing account of what may be called the inner life of royalty at Balmoral, was given at the annual conference of the Evangelical Alliance in London, by Mr. J. A. Wilson, of Aberdeen: He said that a Ragged kirk and school were originated in a little room, which was rented at 1s. 6d. a week. At length they got professors of the Free and National churches to aid in the work; so he thought they ought to try and get the patronage of royalty. He wrote to her Majesty an account of what he was doing, and her Majesty sent him a letter expressive of her gratification at the objects of his labors, and the success which had attended them, and inclosed a cheque for £20. Two years and a half afterwards he was commanded by her Majesty to report the progress he had made in the interval; and he sent up a statement, especially answering the inquiries which her Majesty had made, as to whether he was doing anything to promote the education of the poor children of the district. He gave an account of the school in which the children paid a penny a week; and her Majesty sent him down £25 towards the expenses of it. In 1850 he formed these poor people into a Christian church, which now numbers nearly a hundred members. They built a little kirk of wood, and, on reporting progress to the Queen, her Majesty sent him £50 towards the expenses. When the Queen went last to Scotland, three hundred of these poor people turned out to greet her; and they were honored by the gracious smile of their sovereign. If he were to tell them half what he knew respecting the movements of the Queen in Scotland, the Christian people of this country would have a higher opinion of her Majesty's religious character than many of them now had. The fact was, that the gay side of the Queen's character was constantly brought under notice; but of the other aspect of it they heard little or nothing. He could tell that *there was not a family in Balmoral which had not been visited by the Royal Family, and supplied with the sacred scriptures where they did not possess them*; and he spoke in feeling terms of the very affectionate interest which the Princess Royal took in the poor people of that locality. He referred also to the number of Evangelical Ministers the Queen had commanded to preach before her in the little church of Crathie, a very humble edifice, which hundreds of London Christians would hardly like to enter. With respect to his Ragged Kirk, they had an average attendance of from three to five hundred every sabbath. They had a Penny Bank, in which these very poor people had deposited £1,800 in three years.

The kindness of heart and womanly sympathy of her Majesty is thus brought out in another light by the following anecdote: When Jenny Lind first sang in private before the Queen, she was accompanied by the Queen's pianist, who, as connected with a rival theatre, played some tricks, which annoyed Jenny exceedingly; this the quick ear of her Majesty—who is an excellent musician—instantly detected; and as Jenny stood up for the second song, she motioned the pianist aside, saying quietly, "I will accompany Miss Lind," which she did to perfection. How perfectly does this little incident accord with the characteristics of kindness, benevolence and tact for which her Majesty is remarkable.

3. BRAVE AND NOBLE WOMEN.

There are three attitudes in which men generally view women. The first, and most natural one is, when such appear as their compan-

ions, adding the last touch of gladness to prosperity. The second is that indicated so well by Scott:—

"Oh woman! in our hours of ease,
Uncertain, coy, and hard to please,
And variable as the shade
By the light quivering aspen made;
When pain and anguish wring the brow,
A ministering angel thou!"

The third is that peculiar one, when she suffers without a murmur, or stands, as taller trees crack and quiver, unalterable and hopeful in the tempest which threatens to crush all but herself. This last, the power of woman to endure mightily,—their passive courage and strength,—though associated necessarily, with much that is painful or even terrible, has a peculiar attraction for the thoughtful, and wins from such, a silent but intense admiration. One sees not the source whence, when so frail a being is strong, strength comes, making the most fragile of her kind a very Titan beside the most vigorous and sturdy of men. More than this wondrous passive strength, we do not, however, look for from what we suggestively call the gentler sex. We do not look for great physical power; neither do we expect to see women with towering crest, wrestling in scenes of terror and danger. We rather expect them to shun such. We do not even smile at their fears, but feel that these are most natural, and that to men is reserved the risks and suffering attendant on active courage. And women themselves are willing to admit the justness of this line of demarcation. They know where they are strong, and they are strong enough to know where they are weak. The vanity of men leads them often to overrate their own capacities, and to underrate those of their fair companions; but while a woman never can give up her claim to matchless endurance in a season of suffering, she has no wish to assert her valour in the battle-field.

To every rule, however, there are exceptions, and this one resembles all others. The world, in each generation, has had its heroic woman, who, drawn out by some peculiar danger, has taken her place in the tented field, and shown herself capable of daring death in its most awful forms. Among such we scarcely reckon the Maid of Orleans, for she, poor soul, was less a woman than the wild enthusiast. But among such we do reckon the Maid of Saragossa; for none can forget how she fired her countrymen as they battled France from street to street, and from hearth to hearth. Our own countrywomen have for centuries had fewer opportunities for displaying this kind of courage than most others; for while Britain has ever had wars enough and to spare, her insular position has long kept the foe from her soil, and only her sons have invaded his. Hence the sterner virtues of which British women are capable have not latterly been called into play. Time was when it was otherwise. Two years ago, that time seemed so fully past, that we were inclined to ask with Spencer:—

"Where is the antique glory now become
That whilom wont in women to appear?
Where be the brave achievements done by some?
Where be the battles, where the shield and spear,
And all the conquests which them high did rear,
And matter made for famous poet's verse,
And boastful men so oft abashed to hear?
Be they all dead, and laid in doleful hearse?
Or do they only sleep and shall again reverse?"

Alas, that occasion has since arisen for their renewed exercise! Happy are we that when it came, their virtues, unsuited to the woman as they seem, have again shone forth in undiminished vigor! India has been the theatre in which those at home in scenes of gentleness and peace, have stood side by side with red handed warriors, and won laurel for laurel with the best.

And first in order comes the name of Skene. Mrs. Skene, her gallant husband, and his friend Gordon, pent in the little room, long kept at bay the bloodhounds who swarmed below. Without this lady, brave as they were, these two soldiers could have done nothing. She stood beside them, calm as they, if calmness can be mentioned in such a struggle, and loaded fast as they fired the deadly rifle. The issue of the contest could never have been doubtful. Gordon's death accelerated it. When his fellow fell, Skene saw that resistance was ended. All that was left him now was to disappoint and defy the fiends. And that hand honestly given to his noble wife, ended in one moment, her sorrows and his own. The Sepoy with a yell, burst into the room. He was too late. Quivering in their warm blood lay three shattered forms, but the tenants whom they had cabbined were already far away.

Again, we have the story of Miss Wheeler. Her father slaughtered, friends and sisters insulted, she was led to the home of the trooper, there to lead a life of degradation. But the sleeping Sepoy little dreamed of the fire which burned beside him. He could not know the fierceness of an English maiden's heart, nor when so maddened, the strength of that gentle creature's arm. At the dread hour of midnight she rose, and sending him by a sudden stroke to the bar of an offended God, she sought death and protection in the pit where her friends already lay, mangled indeed, but sorrowing no more. Can we wonder as our blood curdles at this tragedy, that

he plaided soldiers grimly swore on her bloody locks that terrible revenge which this day they are so terribly exacting?

Again, we have the glorious tale of Lucknow. Month after month passed, and the beleagured handful, diminishing, famishing, sinking, still held their own. Grimly they stood within their miserable fortress, and grimly they defied their miserable foes. But why a defence, than which the annals of war know nothing grander? They fought for dear life; but was this all? They fought for glorious Britain; but was this all? No! Behind them cowered sickly children, and beside them stood noble women. The helpless and the good nerved every arm, and when the heart failed, a glance at these was an elixir. And they were worthy for whom they dared so much. Again, we record the names of Birch, Polehampton, Barber and Gall. Names immortal! Names woven into the bloodiest and most thrilling page in Britain's history. Names which our children's children shall repeat with a thrill! Names which the world shall record as classic, and shall venerate forever! We hope we do not overvalue our noble countrymen. We know now that we cannot overestimate our glorious countrywomen. And sure are we, that could the poet whom we quoted, look over the scenes we have recorded, he could again take his pen, and add to his "Faery Queene" a stanza, to tell that names renowned in ancient story, had in this day been matched, and that Britain, the home of the free, was still the birth place of a race of women, worthy a great Empire, and fitted under God to ensure its permanent grandeur.—*Globe*.

4. HISTORICAL ANTITHESES.

(Prepared from the Chronology of Tytler's General History.)

Inachus founds Argos, the most ancient city of Greece	B. C. 1856
Destruction of Sebastopol by the Allies	A. D. 1856
Birth of Esau and Jacob	B. C. 1836
Accession of Her Majesty, Queen Victoria	B. C. 1837
Death of Abraham	B. C. 1821
Death of Napoleon I.	B. C. 1821
The Deluge of Ogyges in Attica	B. C. 1796
The French overrun Italy under Napoleon	A. D. 1796
The death of Joseph in Egypt	B. C. 1635
The treaty of Prague with the Protestant Estates of Germany	A. D. 1635
The Chronology of the Arundelian Marbles begun	B. C. 1582
The New Style, or Gregorian Calendar, commenced	A. D. 1582
Pharaoh's edict and the Birth of Moses in Egypt	B. C. 1571
The Massacre of St. Bartholomew	A. D. 1572
Cecrops founds the Kingdom of Athens	B. C. 1556
Elizabeth ascends the Throne of England	A. D. 1558
The foundation of Troy by Scamander	B. C. 1546
The death of Martin Luther	A. D. 1546
The Council of the Amphictyons first instituted	B. C. 1522
First Voyage Round the World accomplished	A. D. 1522
The building of Corinth	B. C. 1520
Sweden and Denmark united	A. D. 1520
Cadmus builds Thebes	B. C. 1493
Columbus discovers America	A. D. 1492
Cadmus introduces Letters into Greece	B. C. 1493
The Arabs introduce Algebra into Europe	A. D. 1494
Moses brings the Israelites out of Egypt	B. C. 1491
Ferdinand drives the Moors out of Spain	A. D. 1491
Canaan taken by the Israelites	B. C. 1451
Constantinople taken by the Turks	A. D. 1453
Writing of the Pentateuch	B. C. 1452
Engraving on Copper Invented	A. D. 1459
Minos, King of Crete	B. C. 1406
James I., King of Scotland	A. D. 1406
The Argonautic Expedition, (Newton, 937)	B. C. 1263
The First Parliament of England	A. D. 1264
Semiramis, Queen of Babylon	B. C. 1215
Magna Charta granted by King John	A. D. 1215
The Trojan War begins	B. C. 1192
Saladin defeated at Ascalon by Richard Coeur de Lion	A. D. 1192
Troy taken by the Greeks, (Arun. Marb., 1209)	B. C. 1184
Jerusalem taken by Saladin	A. D. 1187
Ireland conquered by Henry II.	A. D. 1172

Saul, King of Israel.....	B. C.	1079	Cæsar passes the Rubicon.....	B. C.	49
William the Conqueror, King of England, (Doomsday Book).....	A. D.	1079	St. Paul Preaches at Athens.....	A. D.	50
David, King of Israel.....	B. C.	1055	Julius Cæsar killed in the Senate House.....	B. C.	44
The Turks take Bagdat, A. D. 1055, and Jerusalem.....	A. D.	1065	St. Mark writes his Gospel.....	A. D.	44
The Temple of Solomon dedicated.....	B. C.	1004	End of the Roman Commonwealth.....	B. C.	31
Churches first built in the Gothic Style.....	A. D.	1005	Crucifixion of our Saviour.....	A. D.	33
The Poems of Homer brought from Asia to Greece.....	B. C.	886	Temple of Janus shut.....	B. C.	10
The University of Oxford founded by King Alfred.....	A. D.	886	BIRTH OF THE SAVIOUR OF THE WORLD.		
Destruction of Nineveh by Arbaces.....	B. C.	820	5. APPARATUS AND THE TEACHER.		
Saxon Heptarchies united into the Kingdom of England.....	A. D.	827	Few of the youth of ten years in the public schools of this country, are ignorant of some of the uses of the lever; and almost every one has, at some time, witnessed the raising of stones and timber by means of ropes and pulleys. And certainly the habit of coasting, so prevalent during the winter season, has given to all the practical idea, or working, of the inclined plane. "The old oaken bucket that hangs in the well," they have many a time brought up, swimming full, by a tug at the wheel and axle. They have observed the splitting of rocks and the cleaving of wood by the wedge. They will laugh at the idea of driving a screw with the hammer. In a word, they are all in a state to learn, and keenly to relish, something of the true mechanical philosophy.		
The first Olympiad begins.....	B. C.	776	But many of these schools in the country are still destitute of the apparatus with which to begin this work. The true teacher, however, can in a measure supply it. He can make his levers himself; then, laying his plan before his pupils, he will find no difficulty in procuring weights to use with them. For now a contribution will be levied upon every old catch-box in the district, and the old iron will be forthcoming; and the experiments may commence.		
Charlemagne sole monarch of France.....	A. D.	772	Taken for the closing general exercise, two or three days will suffice for the teacher to draw forth from his experiments a variety of facts, which he can group into formulæ for calculation. And the very crudity of his apparatus will give time for the more tardy intellects to comprehend more fully their fundamental principles; while no doubt will remain with himself as regards the interest which has been created by the mode in which his apparatus has been brought together.		
Foundation of Rome.....	B. C.	752	In the application of these formulæ, his pupils will find the tables of weights and measures take meaning, and spring into life. The scales and the steelyard, the rule and the yardstick, will assume in their hands talismanic power.		
Foundation of the Moorish Kingdom in Spain.....	A. D.	756	To make additions to his apparatus, the teacher will find to be an easy matter; and no very long time need elapse before he has fixed in the minds of his pupils just ideas of all the mechanical powers.		
Sennacherib invades Judea.....	B. C.	711	In unfolding next the law of falling bodies, or, in other words, the phenomena due to gravitation, a few ingenious experiments, made out of the school-room, will be found very advantageous;—for instance, noting the times in which a bullet falls from several different heights previously measured. Then, the delineation, upon the black-board, of a number of examples of the combination of the constant horizontal velocity with the accelerating velocity due to gravity, will be adequate to prepare the pupils to understand the true philosophy of projectiles; and enable them to follow their teacher in his development of the requisite formulæ for calculation. A stream of water, issuing from an aperture in the side of a vessel, will afford one beautiful example for the application of these formulæ, and yield a visible testimony to the truths which may be reached by rightly interrogating nature.		
The Saracens conquer Spain.....	A. D.	713	Following these lessons with the consideration of circular motion, and the investigation and measure of the centrifugal force, the teacher will open to his pupils one of the richest fields of scientific research; and on all sides, in the machine-shop and the mill, at home and by the way, their attention will be drawn to a series of phenomena, begetting some of the most useful habits of investigation.		
Judith kills Holofernes the Assyrian General.....	B. C.	688	Passing from the terrestrial to the celestial phenomena, I would recommend to the teacher to commence with an explanation of sunrise; availing himself, in doing it, of a large drawing upon the black-board. And I would have the exercise begin a little before the appearance of the sun, on some splendidly clear morning. At the close of it, the singing together of some appropriate song, welcoming the "king of day," would leave a charming impression, both of the lesson and its accompaniments. The occasion would go down as an epoch in the history of every pupil. The rising and setting of the moon and stars, and the diurnal motion of the heavens, could all be brought in as belonging to this lesson.		
The Saxons totally subdue the Britons who retreat to Wales.....	A. D.	685	The phases of the moon and the tides, and some general notions of eclipses, would form a series of lessons not difficult of apprehension, but full of interest, and naturally following the former.		
The Forty Years of Ezekiel begin.....	B. C.	627	To these may properly succeed general lessons in meteorology; as on the formation of clouds, the deposition of dew, the fall of rain, snow, and hail; the winds, the rainbow, and shooting stars, or fire-balls; thunder and lightning, and the aurora borealis.		
The Era of the Hegyra begins.....	A. D.	622			
Nebuchadnezzar takes Jerusalem; Jews' captivity.....	B. C.	606			
The Pantheon at Rome dedicated to Christian worship.....	A. D.	607			
Birth of Cyrus the Great.....	B. C.	599			
Conversion of the Saxons to Christianity.....	A. D.	596			
Cræsus reigns in Lydia.....	B. C.	562			
Italy conquered by the Lombards.....	A. D.	568			
Confucius the Chinese Philosopher born.....	B. C.	551			
The Kingdom of Poland established.....	A. D.	550			
Cyrus takes Babylon and ends the Empire.....	B. C.	538			
Bellarius takes Rome and subdues the Ostrogoths.....	A. D.	537			
Daniel prophesies.....	B. C.	534			
Justinian publishes his Civil Code.....	A. D.	529			
The Jews rebuild the Second Temple.....	B. C.	520			
Computation of time by the Christian Era commenced.....	A. D.	516			
The Tarquins expelled from Rome.....	B. C.	509			
Paris made the capital of France.....	A. D.	510			
Institution of the Saturnalia at Rome.....	B. C.	497			
Conversion of the Franks to Christianity.....	A. D.	497			
Battle of Marathon.....	B. C.	490			
Battle of Soissons.....	A. D.	485			
Athens rebuilt by Themistocles.....	B. C.	476			
Rome taken by Odoacer: fall of the Empire.....	A. D.	476			
Great eruption of Ætna.....	B. C.	476			
Great eruption of Vesuvius.....	A. D.	472			
The Persians driven from Greece.....	B. C.	449			
Attila overruns Italy.....	A. D.	448			
Malachi the last of the Prophets.....	B. C.	430			
The Romans finally withdraw from Britain.....	A. D.	426			
Retreat of the 10,000 Greeks.....	B. C.	401			
Alaric, the Goth, ravages Italy.....	A. D.	400			
Philip of Macedon.....	B. C.	361			
Julian the Apostate.....	A. D.	361			
Pyrrhus defeated by the Romans.....	B. C.	276			
Zenobia defeated by Aurelian.....	A. D.	273			
Library of Alexandria founded.....	B. C.	283			
Dioclesian, Emperor of Rome.....	A. D.	234			
Defeat of Perseus; end of the Kingdom of Macedon.....	B. C.	167			
Martyrdom of Polycarp in Asia.....	A. D.	167			
Antiochus besieges Jerusalem.....	B. C.	135			
Adrian rebuilds Jerusalem.....	A. D.	137			
Marius and Scylla.....	B. C.	98			
Trajan forbids Christian assemblies.....	A. D.	98			
Jerusalem taken by Titus.....	B. C.	70			
Jerusalem taken by Pompey.....	A. D.	63			
Cataline's conspiracy.....	B. C.	62			
Boadicea's triumph over the Romans.....	A. D.	61			

Lessons upon the topics I have here enumerated, will be appropriate for any one of the seasons. But in the season of flowers, birds and insects, no doubt they should, in a similar way, come in for a share of attention in our course of public instruction.

I know it is frequently said that we attempt to impart too much instruction to those of a tender age. I believe it. And I would by no means favor the idea of introducing these lessons, to the danger of diminishing in any degree the attention now given to the branches usually pursued in our public schools. I am persuaded that they should be taken up only as general exercises, and as side-views of the rich scenery in the midst of which we are all moving. And why not a game, if you please, in the application of mathematical and philosophical principles, as well as at marbles, or of chess?

Beginning with lessons on the simple mechanical powers, the young may be taught most effectually to employ their reasoning faculties, because they can find, for themselves, tests of the degree of accuracy they can attain by their use. This I consider a very important step in their intellectual life; and going to form a just and wholesome confidence, mingled with distrust, in the use of their own powers. "Come and let us reason together," is the Divine voice which invites to the initiatory step into the higher moral and spiritual life. By a course of exercises, such as I have indicated, let the earnest teacher lead his pupils to a clear apprehension of some of the great laws of the physical world, as another utterance from the same being; and adding his own worthy example, wrought out through a living faith in him, — I hesitate not to say that he will be leading many into that higher life.

Every experienced educator knows that this kind of knowledge is peculiarly fitted to develop some of the most valuable characteristics in the minds of the young, and leads not indirectly to a thousand happy issues.

Who, with most appropriate feelings, beholds the opening of the day, and watches while its closing hours bring on the dusky eve and unveil the "heavenly host," — he who understands little or nothing of these movements? or he whose mind is imbued with a knowledge of those laws which show forth the greatness and power of the Creator? If in any case ignorance may have been the mother of devotion, least of all can it have been so here. And whatever may be the special pursuit of an individual, he cannot fail to derive, in various ways, signal benefits from an intimate acquaintance with the physical world. Rightly regarded, every thinking man admits it to be an aid in drawing near that ever-present spirit, which "glows in the stars and blossoms in the trees," and seeks a dwelling in every human soul.

True, on commencing such a course of exercises as herein described, the teacher will occasionally find some discouragement. A parent may say, "My son is not to be a mechanic;" or, "My daughter will have no use for this kind of knowledge." But let him proceed with his plan; and, if he is judicious, that son or daughter will soon eloquently plead his cause, in disarming the old prejudices of the parent, and leading him to take higher views in respect to the whole subject of training the young.

We write no fiction. We speak from what we know, and testify concerning what we have seen. A teacher of the olden time, also, has recently related to me a very interesting case in her own experience.

During a four months' summer school, taught by her many years since, she was in the habit of giving out, daily, some four or five questions, on some subject of natural science, history, or biography. These questions were taken home by the pupils, and gave rise to frequent conversation with their parents, who, as well as their children, became intensely interested in the school. The consequence was, that in fifteen or sixteen weeks of the term, her pupils had learned nearly two hundred important facts, pertaining to the subjects just mentioned. The pupils, according to the intention of the teacher, took these exercises as recreations; and so far from interfering with the regular daily lessons of the school, they operated to increase a love of study, and thus to quicken the progress of the pupils in them.

It was the fashion in those days to "board around;" and in this case a number of the parents desiring at the same time the presence of the teacher in their families, vied with each other in offering the board at fifty cents per week.

Years have rolled by, and those parents are gone; but the men and the women of that beautiful valley still remember that summer school.

I hold it to be impossible for the youth, in any of our schools, to go on in a dull way, when thus treated to a single daily exercise in some one of the departments before named. They will talk of these matters by the way, and at home; and parents will be questioned in respect to them. Ere they are aware, their interest will be excited, and they will come to co-operate with the teacher. The little differences and animosities which may have been long prevalent in the district, will begin to disappear, giving place to a spirit of union, and

generating an internal heat sufficient to melt down the old apathy in respect to the glorious cause of human elevation.

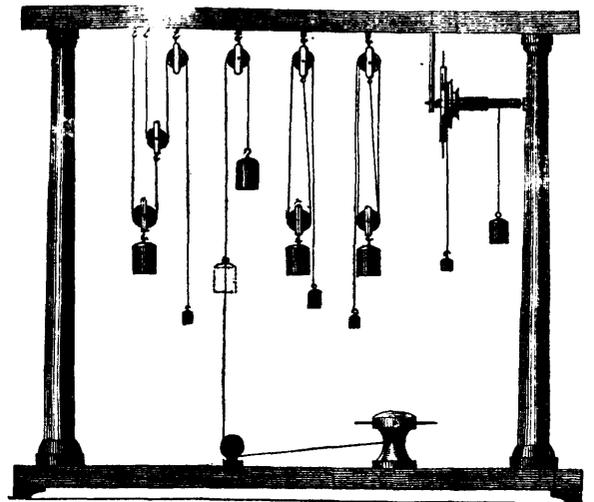
It is a general complaint that parents lack interest in the education of their children. But if the teacher is thoroughly prepared for his work, he can gain some portion of the family table-talk, upon matters that must awaken interest. — *Massachusetts Teacher.*

XIII. Illustrations of New School Apparatus.

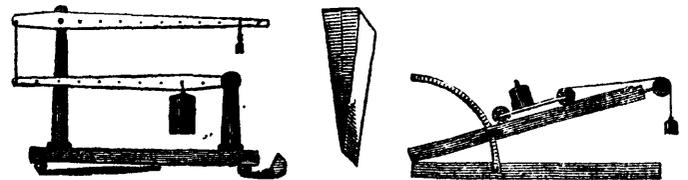
(Continued from page 48.)

NATURAL PHILOSOPHY.

MECHANICS.



SET OF MECHANICAL POWERS—(CANADIAN MANUFACTURE.)



COMPOUND LEVERS AND WEDGE.

The Mechanical Powers are certain agents, applied to machinery constructed in accordance with the laws of nature, to enable man to overcome resistance in raising weights, moving bodies, &c.; they consist of the Lever, the Wheel and Axle, the Pulley, the Inclined Plane, the Wedge and the Screw, although by these contrivances man is enabled to perform any work in proportion to the speed of power he can command, yet, the advantage gained is simply an advantage of pressure, not of work; for what is gained in pressure is lost in speed; whenever power is gained something is lost to counter-balance it, practical men express this law by saying "what you gain in power you lose in speed." If a man can lift a hundred pounds with his hands alone, he may be able to lift one thousand pounds by the aid of a lever, but it will take him ten times as long to lift it through the same space.

The real advantage to be derived from the use of these models, is not only a practical knowledge of the appliances of the simple machines, but, to impress upon the mind of the pupil that one man, by working proportionably longer, can perform the work of many men acting at once, whom it might be impossible from various causes to bring together at one time. To illustrate this a printer, by means of a screw, can press a sheet of paper against the type, so as to take of a clear impression; to do which without the aid of the press, the pressure of men would scarcely be sufficient, besides forty-nine out of the fifty men would be idle, except just at the instant of pressing. Hence the screw may be said to do the work of fifty men.

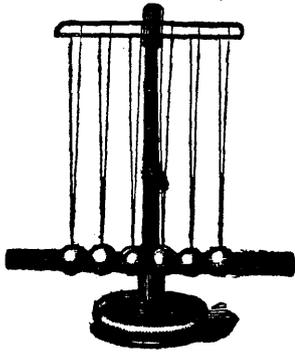
40. Johnson's Philosophical Diagrams.—Natural Philosophy Rotary Map-stand.—This stand contains six maps or a continuous web of cloth same as engraving No. 1, page . Natural Philosophy Map-case same as engraving No. , page .

List of Plates.

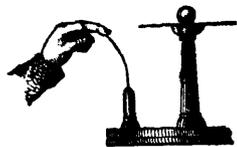
- I. Properties of Bodies, containing 37 Diagrams.
- II. Mechanical Powers, containing 47 Diagrams.
- III. Hydrostatics, containing 28 Diagrams.
- IV. Hydraulics, containing 36 Diagrams.
- V. Physiology, plate 1, containing 28 illustrations.
- VI. Physiology, plate 2, 42 illustrations completing the subject.

Size of map 4 feet 2 inches by 3 feet 6 inches; size of stand 6 feet 9 inches by 4 feet 8 inches. Price of the six, already published, in the Rotary stand \$25. Price singly, with hand-book, \$2.38.

41. Chambers' Scientific Charts of Natural Philosophy.—I. Laws of Matter. II. Laws of Motion. III. Laws of —, etc. Price \$1 each, as published, on rollers.



COLLISION BALLS,



INERTIA APPARATUS.

42. Mechanical Powers, mahogany frame, with three sets brass pulleys, with silk cord, and balanced, two sets brass weights, simple and compound levers, wheel and axle, screw and lever with nut, screw as an inclined plane, wedged in sections, inclined plane with arc and binding screw carriage, ship's capstan, &c., complete (as above.) Price \$16.

43. Collision Balls, mahogany stand, six 1 1/2 inch balls. Price \$3.50.

44. Bent Lever, convertible into a Toggle Joint Press with weights, and description. Price \$1.50.

45. Inertia Apparatus, (a card being projected by the spring and leaving the ball upon the pillar.) Price 60 cts.

46. Centre of Gravity Apparatus.—A set of eight illustrations for centre of gravity, viz., 1, 2, 3, blocks of various figures, with centres of gravity, and suspension 4, two balls on rod, with centre of gravity; 5 Leaning Tower of Pisa, with two centres of gravity; 6, loaded wheel on tand, with centre of gravity and magnitude; 7, mechanical paradox—a double cone appears to roll up hill; 8, horseman, balanced on two points. This set also includes a brass plumb, cord and handle, for supporting the various articles on centre of gravity. Price of set, \$8.75.

47. The Brachystochrone, or line of swiftest descent; six feet in length, made of mahogany, with two ivory balls. The curved path is that of a cycloid, and when two balls are released from the top of the inclined plane and the cycloidal curve at the same time, the latter will reach the bottom first, although the path in which it rolls is the longest. Price \$10.

48. Prismatic Cylinder to recompose white light. This is attached to the centrifugal machine, pp. 86, Descriptive Catalogue. Price \$1.65.

49. Falling Bodies.—Apparatus for illustrating all the principles of the laws of falling bodies, with a set of apparatus attached to illustrate the theory of the pendulum. Price \$30.

50. Centre of Gravity.—Two parallelepipeds of a rhomboidal form, to illustrate centre of gravity. They stand firmly on end when separate, but when placed on one another, they are on the point of falling. Price 25 cts.

51. Oblique Cylinder in two pieces to illustrate the same as preceding. Price 25 cts.

52. Screw.—Apparatus for illustrating the principle of the action of the screw; size of the screw 6 inches long, 3 inches diameter, with square bottomed thread, mounted on a spindle with handle. Price \$1.25.

53. Lock—Large wooden model of a lock, with spring and tumbler, mounted on a blackboard, 15 inches by 10 inches, with an iron key. Price \$1.80.

HYDROSTATICS AND HYDRAULICS.

54. Forcing Pump, or fire engine; with stand, cistern, and hose, with lifting pump, glass barrel, cistern and receiving tunnel on the same stand. Price \$14.

55. Lifting Pump.—Working model of a common lifting pump, with a glass barrel about 10 inches long and 2 inches diameter; gives a continuous stream of water. Price \$1.80.

56. Water wheels.—Models of water wheels—overshot, breast, and undershot. Price \$10.80.

57. Hiero's Fountain, of copper, 12 inches diameter, 40 inches high, with stop cocks, &c. Price \$6.50.

58. Hiero's Fountain, of glass, by which the operation is seen. Price \$8.50 to \$12.

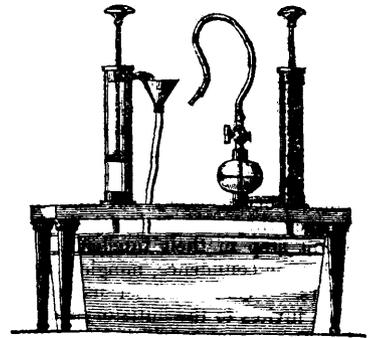
59. Archimedes' Screw Pump, with stand and cistern. Price \$2.70 to \$5.40.

60. Barker's Mill, the moving cistern with four sprays; mounted on a frame. Price \$1.80.

61. Centrifugal Pump, Glass model of the. Price \$7.

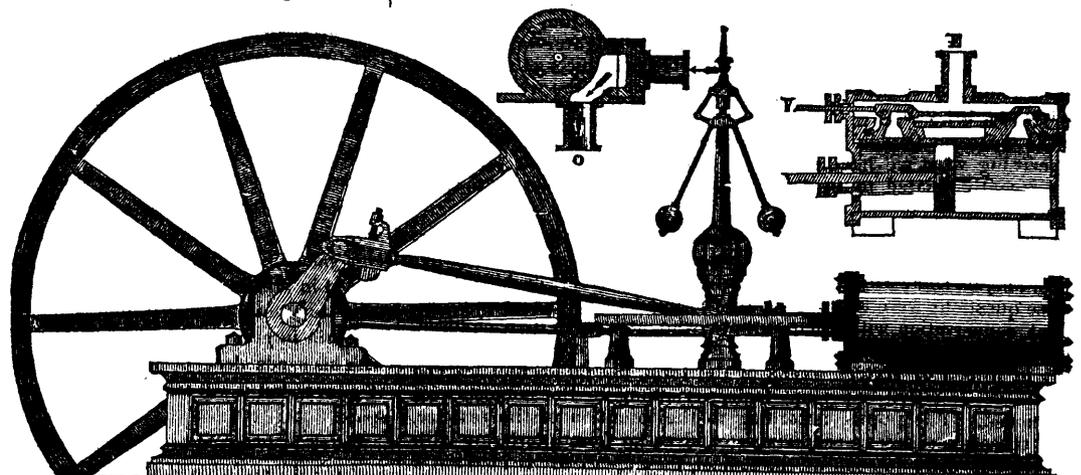
62. Glass Syphon of the common form. Price 15 cts.

63. Tate's Mercurial Hydraulic Pump, consisting of a bent glass tube with a metal cistern and a wooden plunger. This pump works with about 1/4 lb. of mercury put into the end of the tube. It requires no valve. It must be used with a tall glass cylinder kept nearly full of water. In pumping, the downward motion must be slow and the upward quick. Price \$1.25.



FORCING AND LIFTING PUMP.

STEAM.



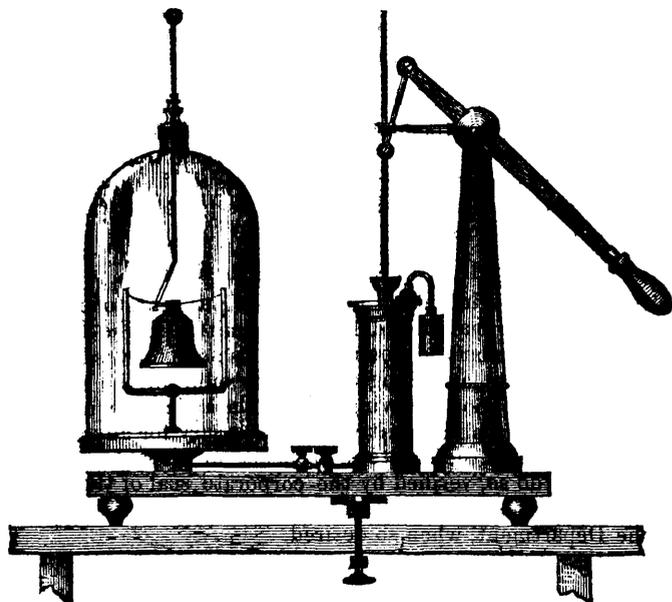
64. Wightman's Sectional Model of Watt's Low-Pressure Steam Engine and Boiler, with Furnace. Beam 16 inches. \$38 00
The parts in this model are truly sectional—the appearance of one side being an exterior view, while the reverse shows the interior, with the piston and valves in motion, as in the real machine.

65. Miniature Steam Engine, High-Pressure, of Brass 13 00
This model is put into motion by a small spirit lamp, and is an interesting illustration of the action of steam as applied to machinery.

66. Revolving Steam Jet, of Brass, complete in itself; illustrates How's Steam Engine. 1 70

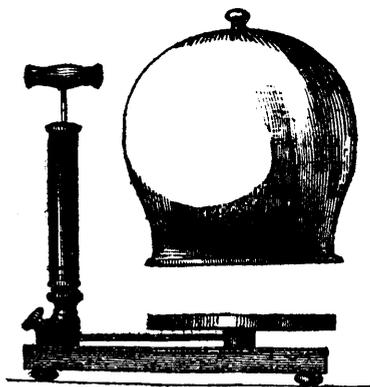
67. Wollaston's Illustration of Low-Pressure Steam Engine. 9

PNEUMATICS.



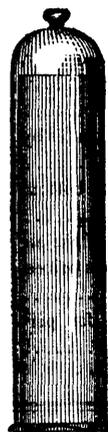
AIR PUMP.

- 68. Air Pump; basement of Mahogany; two barrels; plate 8 inches, barrel 7½ by 2 inches; works by a double lever, with bell glass..... \$50 00
- 69. Double Acting Condenser and Exhauster; barrel 7 inches by 1½; the change is effected by simply turning the base half round..... 8 70
- 70. Condenser; barrel 7 inches by 1½; by reversing the piston and Valve, it acts as an Exhauster 5 40
- 71. Tate's Double Action Air Pump; length of barrel 16 inches, bore 1½, stroke 8 inches; will freeze water over sulphuric acid under a receiver of 300 cubic inches in 150 strokes; it is mounted on a massive brass clamp with a transfer plate, &c., to convert the apparatus into a condensing pump..... 18 00



- 72. Swelled Bell Glasses; 4 sizes; one gallon, \$1.50; two gallons \$2.40; four gallons \$4.20; eight gallons 8 50
- 73. Swelled open top Bell Glasses, with glass covers; capacities, one gallon \$2.40; two gallons \$3.60; four gallons..... 4 80
- 74. Bell Glasses with screw caps, to receive a stop-cock, &c., (also suitable for collecting gases), six sizes; two quarts \$1.80; three quarts \$2.40; four quarts \$3.00; six quarts \$3.60; eight quarts \$4.20; twelve quarts..... 5 40
- 75. Hand Glass to show pressure of air for mercury tunnel, &c.... 0 90
- 76. Stand, Lever and Fulcrum, used with hemispherical cup for weighing a column of air..... 5 40
- 77. Freezing Apparatus, bell glass, pan for acid, improved silvered water cup and stand..... 4 80
- 78. Revolving Jet, for condensed air fountain 1 20
- 79. Double revolving Jet, revolves in opposite directions 2 20
- 80. Bell for vacuum, with stand; the bell is entirely is entirely insulated. \$1.40 and..... 2 75
- 81. Brass Plate and Wood Cylinder; illustrating the porosity of wood, pressure of air, &c..... 1 10

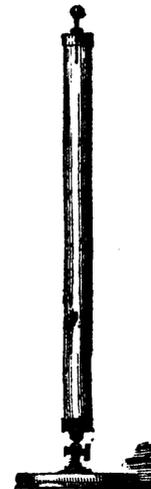
- 82. Lock for striking flint and steel in vacuum..... \$2 20
- 83. Barometer in vacuo; bell glass, 33 inches high, tube, cup and cap..... 3 60
- 84. Artificial Fountain, or fountain in vacuo, with stopcock and jet, stand, &c., 20 inches 4 60



No. 83.

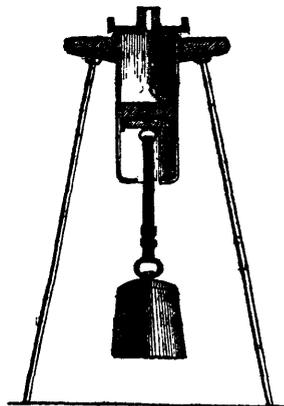


No. 84.



No. 85.

- 85. Guinea and feather apparatus, with tall conical receiver, with sliding rod plate, drop tables, &c; 3 feet, \$8.40; 4 feet.... 12 00
- 86. Guinea and feather apparatus; two falls, ground brass plate and stuffing box; for extra hook for use with the Bell, &c..... 4 50
- 87. Guinea and feather tube; improved, capped at each end, with stopcock and stand, and made heavy and strong for showing the resistance of condensed air [also fitted for Aurora Tube for Electricity]; 2½ feet, \$4.80; 3 feet 7 50
- 88. Mercury Tunnel for showing the porosity of wood, pressure of air, &c. \$0 85



UPWARD PRESSURE APPARATUS.

- 89. Upward Pressure Apparatus; glass bell; brass cap, with India rubber bag, to which weights are attached; tripod stand and strap..... 5 40
- 90. Bursting Squares; for expansion or pressure, per doz..... 1 80
- 91. Wire Gaurd for Bursting Squares..... 0 60
- 92. Water Hammer; hermetically sealed, showing that the collision of water in a vacuum produces a sharp noise like solid bodies.. 1 20
- 93. Sliding Rod; with packing screw, regulating serews, hook and pincers, &c..... 1 60
- 94. Sliding Rod, with Packing Screw..... 1 20
- 95. Sheet Rubber Bag, with cap and hook, \$1.35; with stop cock 2 20
- 96. Large Copper Condensing Chamber; globe form, with foot, ten inches in diameter, with stop-cock and interior jet..... 10 80
- 97. Pneumatic and Hydrostatic Paradox (for supporting a ball on a jet of air water) includes paradox, tunnel and ball..... 1 63
- 98. Plate Paradox, with mica disk, the disk, though lying loose upon the plate, cannot be blown off..... 1 10
- 99. Pipe Paradox, with balls..... 1 10
- 100. Small Thermometer to suspend in the Flask..... 0 90

101. Wood Cylinder, and weight for sinking when the air is removed from the pores.....	\$0 30
102. Cartesian Bottle Imp, with a glass jar, 12 inches by 3 inches, on foot, with a piece of caoutchouc, 6 inches square, to tie over the mouth of the jar when the imp is put into the water, \$3. 25, and.....	1 10
103. Jar, with foot 15 inches high, 2 inches diameter, with light glass flask to swim in the jar, to illustrate specific gravity....	0 60
104. Bacchus Experiment—a pair of narrow bottles connected by a tube, to show the transfer of liquids from one vessel to another, by the pressure of air under the receiver of Air Pump.....	0 40
105. Bacchus Experiment with brass caps, &c.....	1 80
106. Fire Syringe or Pneumatic Tinder Box, for igniting tinder by compressed air.....	0 90
107. Magic Bottle, from which water will flow through the bottom when the stopper is removed.....	0 90
108. Perforated Tin Bottle to show the upward pressure of the air	0 60
109. India Rubber Spherical Bags, for expansion; various prices. Japanned Tin Oiler.....	0 45
110. Barometer Tube, 31 inches long, with small funnel for performing the Torricellian experiment.....	0 50
111. Brass Stop-cocks, Connecters, &c.; various prices.	

XIV. Literary and Scientific Intelligence.

— PENN AND MACAULEY.—Lord Macauley has replied to Mr. Hepworth Dixon on the subject of William Penn and the pardon-brokerage at Taunton. An elaborate note to the second volume of the new edition of his History of England sets forth the argument. "If it be said (his lordship concludes) that it is incredible that so good a man should have been concerned in so bad an affair, I can only answer that this affair is very far indeed from being the worst in which he was concerned. For these reasons I leave the text, and shall leave it, exactly as it originally stood."

— PERPETUAL MOTION.—The editor of the London *Builder* thinks the following instances come as near perpetual motion as any one can desire: In the rotunda at Woolwich Barracks there is, he says, a clock moved by machinery, which has been going for more than forty years. He further states that he knows a gentleman who has had a watch in his possession for more than 30 years, hermetically sealed, which there is no means of winding, which tells the day of the week, the hours, minutes, seconds, months, and he believes years, and how far you walk in the day. It cost £500, and was made by a Frenchman in Paris. It was left with Mr. Oldham, of the Bank of Ireland, for six weeks, and locked up in his strong box, when the gentleman went into the country, about 25 years ago, and the watch goes well, he believes, to this moment.

PARIS LIBRARIES.—Paris at present possesses 35 large libraries. Some are public, others only partly so, and the greater number are exclusively devoted to certain establishments. The public libraries are: the Biblio. thèque Imperiale, with 1,400,000 printed volumes, about 300,000 pamphlets, and 80,000 manuscripts; the Arsenal, 220,000 volumes and 6,000 manuscripts; Sainte Genevieve, 150,000 volumes, 4,000 manuscripts; Mazarin, about 120,000 volumes, 5,000 manuscripts; the Sorbonne, 80,000 volumes; the city of Paris, 65,000 volumes, 300 manuscripts; the Ecole de Medicine, 40,000 volumes; the Museum of Natural History at the Jardin des Plantes, 35,000 volumes; the Invalides, 30,000 volumes; the Conservatoire des Arts-et Metiers, 20,000 volumes; and the Conservatoire de Musique, 8,000 volumes.

XV. Departmental Notices.

NORMAL SCHOOL TEACHERS.

The present Session of the Normal School closes on the 15th of April. The next Session will commence on the 15th of May. Applications should be made in person not later than during the first week of the Session.

PUBLIC SCHOOL LIBRARIES.

The Chief Superintendent of Education is prepared to apportion *one hundred per cent.* upon all sums which shall be raised from local sources by Municipal Councils and School

Corporations, for the establishment or increase of Public Libraries in Upper Canada, under the regulations provided according to law. Remittances must not be in less sums than five dollars.

PRIZES IN SCHOOLS.

The Chief Superintendent will grant one hundred per cent. upon all sums not less than five dollars transmitted to him by Municipalities or Boards of School Trustees for the purchase of books or reward cards for distribution as prizes in Grammar and Common Schools.

SCHOOL MAPS AND APPARATUS.

The Chief Superintendent will add 100 per cent. to any sum or sums, not less than five dollars, transmitted to the Department from Grammar and Common Schools; and forward Maps, Apparatus, Charts, and Diagrams to the value of the amount thus augmented, upon receiving a list of the articles required by the Trustees. In all cases it will be necessary for any person, acting on behalf of the Trustees, to enclose or present a written authority to do so, verified by the corporate seal of the Trustees. A selection of articles to be sent can always be made by the Department, when so desired.

SCHOOL REGISTERS.

School Registers are supplied gratuitously, from the Department, to Grammar and Common School Trustees in Cities, Towns, Villages and Townships by the County Clerks—through the local Superintendents. Application should therefore be made direct to the local Superintendents for them, and not to the Department. The present year's supply for Common Schools has been sent to the County Clerks. Those for Grammar Schools have been sent direct to the head Masters.

PENSIONS—SPECIAL NOTICE TO TEACHERS.

Public notice is hereby given to all Teachers of Common Schools in Upper Canada, who may wish to avail themselves at any future time of the advantages of the Superannuated Common School Teachers' Fund, that it will be necessary for them to transmit to the Chief Superintendent, without delay, if they have not already done so, their annual subscription of \$4, commencing with 1854. The law authorizing the establishment of this fund provides, "that no teacher shall be entitled to share in the said fund who shall not contribute to such fund at least at the rate of one pound per annum." This proviso of the law will be strictly enforced in all cases; and intimation is thus early given to all Teachers, who have not yet sent in their subscriptions, to enable them to comply with the law, and so prevent future misunderstanding or disappointment, when application is made to be placed as a pensioner on the fund.

PUBLIC SCHOOLS--CITY OF TORONTO.

THE Office of LOCAL SUPERINTENDENT of the Public Schools of the City of Toronto, having become vacant by the retirement therefrom of the present Incumbent, and the Board of Trustees having decided that said Office shall hereafter be separated from that of Secretary to the Board.

Prepaid Applications (with Testimonials) for the aforesaid situation of Local Superintendent will be received by the Undersigned until the 1st of May, proximo.

The Gentleman who may be selected to fill the vacancy will be required to devote his time and attention exclusively to the duties appertaining to the Office.

Salary not to exceed £300 (\$1,200) per Annum.

By order of the Board of School Trustees.

G. A. BARBER,
Local Superintendent and Secretary.

Toronto, Western Insurance Buildings,
29th March, 1858.

ADVERTISEMENTS inserted in the *Journal of Education* for three cents per word, which may be remitted in postage stamps, or otherwise.

TERMS: For a single copy of the *Journal of Education*, \$1 per annum; back vols., neatly stitched, supplied on the same terms. All subscriptions to commence with the January number, and payment in advance must in all cases accompany the order. Single numbers, 12½ cents each.

All communications to be addressed to Mr. J. GEORGE HODGINS,
Education Office, Toronto.