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CONTENTS

| PAGE | | PAGE | |
|--------------------------|--|---------|---|
| 7 | Address Delivered, <i>M. E. Sadler</i> | 356 | Manual Training in Canada..... |
| 368 | Address, Technical School, Manchester, <i>J. H. Reynolds</i> | 333 | Manual Training in Public Schools, <i>J.</i> <i>W. Robertson</i> |
| 50 | Advisable Differences, <i>Pres. Goucher</i> | 79 | Mathematics..... |
| 106 | Benefits of Medical Inspection, <i>H. G.</i> <i>McAdam</i> | 58 | Mission Work in Canada, <i>R. Johnston</i> ..32, |
| 203. | Books and Magazines, 40, 78, 120, 163, 243, 282, 323, 360, 402. | 187 | National System of Technical Education |
| 302 | British Army and the British Schoolboy, <i>The, J. J. Findlay</i> | 269 | Naturalist's Trip on the Assiniboine River, <i>A. G. E. Atkinson</i> |
| 22 | Child's Right to Religious Instruction, <i>The, T. R. Slicer</i> | 55 | Nurture of the Moral Impulses, <i>The, H.</i> <i>Savin</i> |
| 74 | "Come Then" (poetry), <i>K. E. Pierce</i> .. | 19 | Objections to the Heuristic Teaching of Geometry, <i>H. L. Coar</i> |
| 148 | Commercial Education..... | 180 | Place of America in World Politics, <i>The,</i> <i>D. P. Hill</i> |
| 215 | Commercial Education, Secondary Schools, <i>A. Karn</i> | 223 | Present Status of Education, <i>The, W. P.</i> <i>Harris</i> |
| 222 | Compulsory Attendance and the Truancy Act, <i>J. H. Knight</i> | 103 | Prof. Clark on South Africa..... |
| 285 | Conflict Between Education and Knowl- edge, <i>The, John Millar</i> | 267 | Prophetic Office of the Press, <i>The, Ian</i> <i>McLaren</i> |
| 21, 322, 402 | Correspondence..... | 24 | Queen, <i>The</i> |
| 240, 276, 320, 352, 395. | Current Events, 38, 76, 115, 157, 200, 276, 320, 352, 395. | 21 | Reforming That Reforms, <i>W. M. Van-</i> <i>denburg</i> |
| 210 | Davis Salary Schedule, <i>The</i> | 311 | Relation of the Physician to the Public Schools, <i>Katharine Miller</i> |
| 98 | Developing Aptitude for Business, <i>Prof.</i> <i>Millar</i> | 84, 257 | Religious Element in the Poets, <i>The,</i> <i>Boyd Carpenter</i> |
| 62 | Early Voyages in the Upper St. Law- rence, <i>Prof. Short</i> | 265 | Religious Instruction in Education..... |
| 238, 275, 315, 348, 388. | Editorial Notes, 36, 74, 114, 156, 194, 275, 315, 348, 388. | 78, 359 | Science, <i>J. B. Turner</i> |
| 273 | Education Department..... | 300 | Schools for Girls in Canada, <i>A. M. Mc-</i> <i>Lean</i> |
| 245 | Education in British South Africa, <i>J. G.</i> <i>McCormac</i> | 41 | Secondary Education in Practical Life, <i>M. E. Sadler</i> |
| 325 | Education in Newfoundland, <i>J. G. Mc-</i> <i>Cormac</i> | I | Sir William Dawson at McGill, <i>C. W.</i> <i>Colby</i> |
| 171 | Education in New Zealand, <i>J. G. Mc-</i> <i>Cormac</i> | 139 | Some Difficulties in Discipline..... |
| 305 | Education in Tasmania, <i>J. G. McCormac.</i> | 263 | Speed as an Element of Weakness..... |
| 341, 376 | Educational Solution of Race Problems, <i>The, G. L. Lorimer</i> | 175 | Study of the Social Sciences, <i>A. M. Mc-</i> <i>Lean</i> |
| 112 | England's Debt to Milton..... | 143 | Teaching Manual Training, <i>R. M. Smith</i> |
| 96 | Firs and Their Relatives, <i>L. F. Griffin</i> .. | 165 | Teaching the Bible in our High Schools, <i>A. W. Wright</i> |
| 131 | Great Discovery, <i>A. G. M. C. Robbins</i> .. | 91 | Teachers' Salaries, <i>C. B. Dyke</i> |
| 136 | Greatness of England, <i>The, W. Dale</i> .. | 330 | Text Books..... |
| 152 | German Education..... | 373 | Text Books, Reply, <i>Prof. W. H. Fraser</i> |
| 105 | Hon. Mr. Asquith..... | 89 | Things That Need Fighting For..... |
| 26 | Indian Summer, <i>G. S. Hodgins</i> | 125 | Transition from School to College, <i>L. B.</i> <i>R. Briggs</i> |
| 235 | In The Spirit, <i>T. S. Loudon</i> | 384 | University Question, <i>Graduate</i> |
| 205 | In What Sense Ought Schools to Prepare Boys and Girls for Life? <i>M. E. Sadler</i> | 249 | Unstable Questions of Method, <i>Dr.</i> <i>Wormell</i> |
| 328 | Is It Wise? <i>A. H. Young</i> | 81 | What Can We Do to Secure Religious Instruction in Public Schools, <i>W. O.</i> <i>Armstrong</i> |
| 29 | James L. Hughes..... | 2 | What Shall We Do for a Living? <i>E.</i> <i>Garrett</i> |
| 70 | Land of Burns, <i>The, G. L. S.</i> | 12 | What Will the Boy Become? <i>F. D.</i> <i>Evans</i> |
| 100 | Lapse of Religious Training, <i>The</i> | | |
| 365 | Manual Training, <i>Lord Minto</i> | | |

THE CANADA
EDUCATIONAL MONTHLY

JANUARY, 1900.

SIR WILLIAM DAWSON AT MCGILL.

PROF. C. W. COLBY, M.A., PH. D. (HARVARD).

By the death of Sir William Dawson we have lost one of our most distinguished students and one of our most useful citizens. The eminence which he reached among men of science was a great thing for the country, because at the time when he began to publish his papers on Canadian geology, few native born Canadians had won even a local recognition of their scientific attainments. While favored by fortune in having a large, unexplored territory at hand, he must have been hampered during his early years by defect of means and by a certain isolation from those who were working in the same department of knowledge. His publications give proof of unusual diligence, and the honors which he received set a seal upon the quality of his performance. In 1882 he became President of the American Association, and was awarded the Lyell Medal of the London Geological Society. In 1885 he became President of the British Association. These distinctions are chosen for notice out of many, on the ground that they attest his professional standing among geologists. He was also the first President of the Royal Society of Canada and a knight, but he probably owed such marks of

dignity to his general prominence and services.

While Dawson thus won in science a reputation which brought credit to the Dominion, he did not confine himself to the labors of erudition. By his writings he gave an impetus to Canadian scholarship, and by unstinted perseverance he developed a large university out of almost nothing. It would be idle to discuss the question whether he gained wider fame from his connection with geology or education, but he certainly became a source of widely diffused good when he took charge of McGill's interests in 1855. For thirty eight years he represented Protestant education in the Province of Quebec, not only through his connection with McGill, but by virtue of his keen sympathy with the academies and elementary schools. He possessed creative talent; he never lacked a policy, and, by the sincerity of his own zeal for learning, he carried conviction to the wealthy men of Montreal. The story of his purposes and success deserves to be told in a special memoir.

During his later years, Dawson collected materials for a history of Protestant education in Lower Canada since 1791. Although he never

began the composition of a book on this subject, the mere fact that he had set it before his mind means a good deal. He always brought a generous spirit to bear on matters which affected McGill. He regarded his own institution as occupying a distinct place, but also as having relations with other parts of a large scheme. The unity of the educational system meant much to him. Every branch of mental training and every stage of instruction attracted his notice. One might almost say that he attended with equal regularity the meetings of the Teachers' Association and the Convocations of the University. However, we must be content at this time with giving some idea of the special work which he wrought for McGill. What he accomplished can only be understood in the light of the obstacles which he overcame, and these are best explained by a glance at the early state of the University.

The will of the founder, the Hon. James McGill, is dated January 8th, 1811. It "devised the estate of Burnside, situated near the city of Montreal, and containing 47 acres of land, with the Manor House and buildings thereon erected, and also bequeathed the sum of ten thousand pounds in money unto the Royal Institution for the Advancement of Learning." The corporation which bore this ponderous, though stately name, had already existed for ten years, and, while it owned no property worth mentioning, it at least showed that the Protestants of Lower Canada were not dead to the need of creating a college or university. Mr. McGill provided funds for a beginning, but his whole gift, including the land and Burnside House, amounted to but £24,000. Nor could a subsidy be expected from the Provincial Government.

Even when Mr. McGill died in 1813, his legacy was not peacefully paid over. One delay after another postponed the opening of classes till 1829.

McGill College—(for it could not by any stretch of language have been called a university at that time)—began with a small endowment and a very small number of students. During its first thirty six years, 1829-55, the only vital part of the institution was the Medical School. How completely the Arts Faculty languished may be seen from a few facts. Twenty years after, classes were opened in Burnside House, the college proper could only muster thirteen students, and the total revenue derived from fees only equalled one half the sum which is now given to an instructor of the lowest rank. Between 1829 and 1849 the average number of undergraduates, taking one year with another, fell below ten. The curriculum simply covered or attempted to cover the fields of mathematics and classics. Logic and ethics were grouped with mathematics. Little attention was given to English, and none to modern languages and natural science. The course extended over three years, and each session was divided into three terms, bearing respectively the names Michaelmas, Lent and Easter. A secretary's return shows that as late as 1849 instruction was wholly confined to mathematics and classics. A note added to the statement of the course in these branches assures the public that: "In the first and second years the students are exercised in Greek and Latin composition, and go through a course of Ancient History and Geography. In the third year they are exercised in English composition"

Canada had few scholars of her own in those days. Cambridge gave

McGill her first principal, and during the period under review almost all the members of the teaching staff came from Oxford, Cambridge, Edinburgh or Aberdeen. From 1835-1846 the *de facto* principal (he never received a formal appointment), Rev. John Bethune, filled the chair of Divinity at the College, and also acted as Rector of Montreal. Moreover he did not possess any university degree. His successor, Mr E. A. Meredith, was Assistant Provincial Secretary, and received no salary whatever from the college at whose head he stood. After three years of unpaid labor, 1846-49, he withdrew from McGill. Then followed an interregnum of six years, during which the college remained without a principal, and Archdeacon Leach, the Professor of Classics, alone prevented the Arts Faculty from falling into complete decay. Fortunately the Medical School continued to be successful and the city of Montreal grew more and more prosperous. Its population increased rapidly, wealth accumulated, and the wretched state of McGill became a source of compunction to the leading merchants and professional men. As a result of these different circumstances a genuine awakening of educational interest occurred, and it was stimulated by the sympathy of Sir Edmund Head.

After the reorganization and development of McGill had been decided upon by a group of leading citizens, the appointment of a new principal took precedence of every other question. A professional teacher was required, not simply a clergyman who would give to the College whatever time he could conveniently spare from the charge of his parish. A great many qualifications were desired, and yet they could hardly be demanded, for the governors had no large salaries

within their gift. Every one concerned with the matter felt, espe-



SIR WM. DAWSON.

cially in the light of previous experience, that the appointment of an unsuitable principal might mean the ruin of their hopes and the delay, for at least a generation, of the project to which they had pledged themselves. In this dilemma an appeal for advice was made to Sir Edmund Head, and he at once recommended Dawson.

The new Principal came to Montreal from Nova Scotia at the age of thirty five, and, although almost unknown in the two Canadas, he had for ten years past been rising to prominence in the Maritime Provinces by a display of scientific and practical ability. Some brief notice of his intellectual nurture is necessary at this point.

*John William Dawson was born

*These biographical facts are based on a sketch of Dawson's life which appeared in the Popular Science Monthly, 1895.

at Pictou in 1820, and enjoyed the advantage of attending the High School there when it was under the management of Dr. McCulloch. From boyhood he had that love of collecting and classifying which he retained to the end of his life, and while at school he began to study the natural history of Nova Scotia. From Pictou College he entered the University of Edinburgh, without, however, completing the full course. After a winter in Scotland he returned to Nova Scotia, and took up field work in geology as a serious study. No doubt Sir Charles Lyell still further quickened his enthusiasm when, in 1842, they worked together at Acadian geology. Dawson's earliest papers on the carboniferous rocks of Nova Scotia date from the period which lies between this tour with Lyell and his return to Edinburgh in 1846. During his second trip abroad he devoted himself chiefly to practical chemistry and other subjects, which he constantly touched upon in geological research.

But Dawson had been fitted for his task at McGill by a wider training than could be derived from the study of a single branch of natural science. Indeed, it was not chiefly as a geologist that he first attracted the notice of Sir Edmund Head. Without dropping his favorite subject, he accepted a position under the Province of Nova Scotia, and from 1850-53, as Superintendent of Education, he both learned the workings of educational machinery and helped to reconstruct the system of provincial schools. He devoted much care to the preparation of his reports, and by means of these his influence soon extended itself beyond the province. For instance, he was offered, and accepted, a seat on the commission which examined the state of the University of New Brunswick. The governors of Mc-

Gill appointed Dawson on the recommendation of Sir Edmund Head, who in turn met him through Sir Charles Lyell in 1852. Head, the Governor of New Brunswick, nominated both Dawson and Ryerson to the University Commission which has just been mentioned, and there formed a high opinion of Dawson's capacity. The sequel of their association at St. John has already been told. 1855, which is marked in Dawson's scientific life by the publication of "Acadian Geology," saw him installed in the principalship of McGill.

The best that can be said regarding educational matters in Montreal at this time is that a good disposition prevailed among many of the progressive citizens, and that the existence of the McGill legacy furnished a nucleus. Nothing really systematic had hitherto been done. If the new principal could inspire confidence all might yet be well, but at best he had a trying and delicate task before him.

Perhaps the most important document, historically, which exists among the records of McGill is the Annual Lecture which Dawson himself delivered in the session of 1893-4. Failing health had just caused him to become Emeritus, and he delivered his valedictory in the form of a sketch, partly autobiographical and wholly reminiscent, which he called "Thirty-eight Years of McGill." One cannot criticize here that temperate and modest epitome of a great achievement, but a picturesque passage from it must be quoted to emphasize the lack of appliances which met the new comer on his arrival. "When I accepted the Principalship of McGill I had not been in Montreal, and knew the College and men connected with it only by reputation. I first saw it in October, 1855. Materially it was

represented by two blocks of unfinished and partly ruinous buildings, standing amid a wilderness of excavators' and masons' rubbish, overgrown with weeds and bushes. The grounds were unfenced and pastured at will by herds of cattle, which not only cropped the grass, but browsed on shrubs, leaving unhurt only one great elm, which still stands as the 'founder's tree,' and a few old oaks and butternuts, most of which have had to give place to our new buildings. The only access from the town was by a circuitous and ungraded cart track, almost impassable at night. The buildings had been abandoned by the new Board, and the classes of the Faculty of Arts were held in the upper storey of a brick building in the town, the lower part of which was occupied by the High School." The Principal's residence "had been very imperfectly finished, was destitute of nearly every requisite of civilized life, and in front of it was a bank of rubbish and loose stones, with a swamp below, while the interior was in an indescribable state of dust and disrepair."

These are not words of complaint, but the statement of a condition. "The residence was only a type of our difficulties and discouragements, and a not very favourable introduction to the work I had undertaken in Montreal." On the other hand, Dawson was greeted in a spirit of hearty kindness by those who had summoned him from Nova Scotia, and he found in Judge Day, Judge Dunkin, Hew Ramsay, David Davidson and James Ferrier a band of trustees whose counsel and confidence proved of notable assistance. To the original Faculties of Arts and Medicine a Law Faculty had recently been added, with two professors and two lecturers. The Medical Faculty had ten professors and a demonstrator; the Faculty of Arts

four professors and a lecturer. Only one of the five, however, gave his whole time to college duties. Dawson in coming had stipulated for the creation of a geological department, and his own presence on the Arts staff raised the number of teachers to six.

At present the head of any institution which calls itself a university is either released from lecturing altogether, or contents himself with meeting one or two advanced classes. Of course when Dawson began at McGill the cares of administration were far from being what they are now. But the surprising fact is that, while the College grew and its scope vastly expanded, the Principal's power of taking on fresh burdens equalled all demands. Without giving up his lectures in botany, zoology or geology, he managed to preside at the meetings of four Faculties (after Applied Science was added), and to keep the whole routine of administration within the range of his own care. For many years he also gave up a large part of his time to the McGill Normal School. One could make a long list, too, of the charitable and religious societies which he founded or fostered. And yet, in spite of all his official work and miscellaneous activities, he continued to give fourteen lectures a week until he reached the age of seventy. The numerous books which he published are further proofs of his energy and of a remarkably good constitution.

More than one feature of Dawson's efforts for the advancement of McGill has an element of pathos. No detail which affected its interests could seem too trivial, and what he did with his own hands for the adornment of the College grounds many of his students still remember. He planted the shrubs, he set out the trees of the avenue, he improved

the roads and lawns. From his own funds he frequently met the wants of poor scholars, and he visited those who were kept by illness from their classes, encouraging them when he saw their spirits affected by physical ailments. Whatever the nature of his intercourse with students, he maintained a dignity and courtesy which must often have made a lasting impression. By some blunder the *London Times* has said since his death that he was defective in public speaking. How even a stranger could have been so misinformed one finds it hard to understand. In class lectures he spoke with unsurpassed force and clearness. At Convocation and other large meetings he always spoke with fluency, grace of manner and eloquence.

The various stages of McGill's material progress are marked by a series of splendid gifts which need not be specified in detail for one reason, because a description of them can be found in the annual calendar. Since 1855 the principal benefactors have been William Molson, J. H. R. Molson, Peter Redpath, Lord Strathcona, and Sir William Macdonald. It may seem invidious to single out a few names where generosity has been so widespread, but each of those mentioned is connected with the stone and mortar of buildings which have been erected since Dawson came. During the early years of the period relatively small sums were given by a large number of persons. Latterly very large sums have been given by a small number of persons. But whether large or small their gifts, the men who have made higher education possible in the Province of Quebec entered upon their habit of giving while Dawson directed the academic policy of McGill. The confidence which they placed in

him is of itself an impressive tribute to his wisdom and sincerity.

No complete account of Dawson's life could omit a criticism of his books on geology, or a notice of the part which he took in the evolution controversy. But the only attempt of the present article is to give the perspective of what he did for education in a single one of its branches. He left his mark on the schools of Nova Scotia, the McGill Normal School, and the schools which are controlled by the Protestant Board of Public Instruction. After all, his masterpiece is the University which he created, to which he brought a thousand students, and which he left with an assured future. His scientific works are doubtless a monument, but few Canadians have by their efforts for a public institution wrought so much unquestioned good as he accomplished by the upbuilding of McGill.

A sketch of Sir William Dawson which deals only with the leading facts and results of his life must necessarily seem rather barren, for he had strong characteristics. Much might be written about his personal traits and the skill with which he transacted business. He had tact in combination with a firm grasp of affairs, and his courage in facing difficulties would have well befitted a statesman. He had the constructive instinct, and his brain teemed with projects for the promotion of the aims which he had at heart. Yet, where no principle seemed at stake, he would willingly go half-way in bridging over objections and differences. Perhaps his most striking quality was seriousness and depth of conviction. Religious thoughts and utterances formed part of his daily life, and his example has been quoted as an illustration for many a pulpit. No one ever retired from the absorbing occupations of

an active life with more dignity or more resignation. In his farewell words to McGill he said: "My connection with this University has been filled with anxieties and cares, and with continuous and almost unremitting labor." Still, nothing but failing health could have driven him from his post. Those who for years watched his strenuous and honorable career must have found satisfaction in the circumstances of its close. They could have wished for him no greater reward than the peace of mind and the happy surroundings which were his to the last.

ADDRESS DELIVERED

BY MR. MICHAEL E. SADLER, M.A.*

THE first part of the very honorable duty which the Technical Instruction Committee and the School Board of this City have called me to discharge to-night, is to offer our sincere congratulations to those to whom scholarships or exhibitions have been awarded or renewed. It is a great event in life to gain an intellectual distinction in such competitions as are some of these. Doubtless among the many students present this evening there are some who will be called hereafter to very high positions in the scientific or industrial world, but, whatever lies before them, the encouragement they have now earned in their early studies will remain in their memories as a cherished possession.

To them the scholarship they have now gained will be valuable, not simply as a pecuniary help, still less as a merely personal distinction (that feeling soon fades away), but as giving them permission to advance to a higher stage of the study in which they are engaged. That is the true value of an intellectual success. It opens the door to fresh efforts, and imposes new obligations. But shall we not agree that by far the happiest part of gaining any scholarship is, that it gives pleasure to one's parents and friends. I suspect there are many parents here who rejoice over their son's or daughter's success far more than the successful candidates themselves. They are to be congratulated on their children's industry, and self-denial and concentration of purpose, thus rewarded by the educational authorities of this great city.

But I confess that I would reserve my heartiest congratulations for those who, whether they have actually won scholarships or not, have in the course of their studies, previous to the competition, discovered the pleasure of hard intellectual work, and, what their hands have found to do, have done it with all their might. To have strengthened one's hold on that is worth many scholarships and much brilliant ability.

It is impossible to see this gathering without feeling, more deeply than before, the significance of national education at the present time. Those young people who are about to enter on practical life are not likely, so far as any one can forecast the future, to have a very easy time ahead. The strain will grow greater. Things are going to get much more difficult for every one of them. The struggle for every young

* At the Maachester Town Hill, September 27th, 1899.

man and woman is going to be keener than it was for their fathers and mothers. It is becoming more and more necessary for each individual among us to be alert, to have more knowledge ready at command, to have our aptitudes more highly trained, and all our powers, as a soldier might say, more easily mobilised than was once necessary. The old days of sitting quietly like an oyster have gone for ever in this country. As the Red Queen said to Alice, in "Through the Looking Glass, "Here it takes all the running you can do to keep in the same place. And if you want to get somewhere else, you must run twice as fast as that." It is a disagreeable prospect, As the Red Queen herself said, "It makes one hot and thirsty to think of it." But we can't help it, and must make the best of a bad job.

Alertness was one of the characteristics which Sir Michael Foster, in his recent address to the British Association, emphasized as being one of the essential qualities of the scientific worker. He said, "He must be alert in mind. Nature is ever making signs to us. She is ever whispering to us the beginning of her secrets. The scientific man must be ever on the watch; ever ready to lay hold of Nature's hints, however small; to listen to her whispers, however low."

But alertness is chiefly an intellectual merit, and Sir Michael pointed out that scientific inquiry has equal need of the moral quality of courage, the courage of steadfast endurance. And, he added, as a third attribute, that the seeker after the truths of nature must be "truthful with the truthfulness of nature, with that imperious and exacting truthfulness which is never satisfied with the 'almost,' or the 'nearly.'"

It is noteworthy that of these

three necessary attributes of the true man of science, two are moral attributes. It follows that the education which trains men for scientific pursuits must lay stress on the moral elements not less than on the intellectual. We cannot, in our educational aims, divorce intellect from character. Education is necessarily a moral and spiritual discipline, not only an intellectual. As Montaigne said (and I quote him as an unprejudiced witness), "Every other science is prejudicial to him that hath not the science of goodness."

I would guard myself against any appearance of falling into the fallacy of regarding education as a matter of schooling only. Education is not a commodity you must perforce buy at one particular kind of place. It is an aspect of life and a process of life. You don't get it only at school or college. To use a homely illustration, you may have jam at home without buying any at a shop. Some of the best education is home-made. Schooling is only part of the process by which we are made more sensitive to life's lessons, and more apt to profit by them. And in England, of all countries in the world, education is a free and pervading influence. It comes to each of us through talks at home, through intimate converse with our friends, through all the associations of church and chapel, through every kind of corporate effort, through what we hear from the Colonies and from foreign lands, through the priceless boon of the right to freely and openly discuss every principle that may arise in regard to national policy, through the brooding power of ancient tradition, through the consciousness that we are citizens of a great nation. It even comes to us through the newspaper placards. All this, and nothing short of this, is national education in its true sense. The school is no more

a complete substitute for national education, in this larger meaning of the term, than sucking at a cylinder of oxygen is a substitute for healthy exercise in pure air. Of course the last thing I want to do is to argue against schools. I admit, as someone says of women, that they are necessary evils. But in so far as the school or educational institution is a necessary factor in the process of national education, it must contain moral as well as intellectual elements in its discipline. The combination of these elements is essential.

And I venture to dwell on this as a fact of the first importance, because by far the gravest truth which all of us have to face, is that our lot is cast in a time of painfully difficult transition in the sphere of intellectual and moral, no less than in that of material and industrial things. Only once, or at most twice, during the last 2,000 years has civilized Europe passed through so dark and difficult a time of intellectual change. We cannot evade this fact even if we would. You can already trace its consequences in public and in private affairs. Like all spiritual changes, it has material results. It is beginning to affect men's ideals of the duty of state to state, of employer to employed, of one class of the community to another, of individual to individual. It has been accompanied by an immense increase in the attractive force of material wealth. It may portend grave mischief in the future. But, on its brighter side, it is driving us back in upon ourselves. And the more certain we are at heart that light will come to us at last, if we patiently work towards it, the more earnestly shall we plead for those kinds of education which prepare the rising generation to look the great problems of life bravely in the face, modestly, courageously, honestly, helped by faith and guided

by knowledge, without superstition and without conceit.

Education must be practical, in the sense that we do not want it to produce pedants and dilettantes. We do not want it to be thought the pink of culture to be too fastidious for common tasks. Education, whatever else it does for us, ought to fit us to bear a more useful part in the practical duties of life. It ought, that is, to produce some return, but we ought to take a long view about the return, and not forget that some of the very best investments are those of which the return is long deferred, or perhaps entirely indirect.

No great system of education has ever thriven on pecuniary self-interest alone. Nor can it ever so thrive. Education aims, it is true, at training aptitude and at giving knowledge, but far more ought it to aim at producing a reverent attitude of mind and heart, and at deepening and strengthening character. And character rests on self-discipline and on faith. These are the true springs of educational excellence. Let us beware of degrading it by working for lower aims. England is happily not the country which is most in danger of falling into this error. All over our history one lesson is writ large—that the English nature has a mystical as well as a practical side, and no system of education will be appropriate to us that starves the one or ignores the other. Our chief danger lies in our finding in the money-making aim the line of least resistance among the various conflicting ideals of education in its highest sense. But I would earnestly plead against any such shrinking from our difficult task. Think what would be the outcome of a national system of education the dominant aim of which was the pursuit of individual self-

interest. It would inflame every hidden kind of base desire. It would slacken all the obligations which link us to one another in family life, and in every other form of common service. The more efficient such education, the more poisonous. It would embitter the feelings of the weak towards the strong, of the poor towards the rich, of the lowly towards those highly placed. Between nation and nation it would engender distrust and treachery and brigandage. And in the end, I am persuaded, it would injure, perhaps fatally injure, even that material prosperity which it was designed to promote and increase. Nothing but mischief could ever come of it if we dedicated our education, with phrases however fair, and under pretexts however specious, to Mammon, "the least erected spirit that fell from heaven." Let us rather make it our purpose in technical, not less than in other branches of education, to deepen the sense of individual responsibility towards all those great institutions, public and private, in which the highest ideals of life are embodied for us. For is it not the plain truth that whatever of strength and will and leisure we surrender to them in willing and faithful sacrifice, they return to us in the happy sense of useful service. In the peace giving conviction that we, even we, are needed for a task larger than we can comprehend?

These, imperfectly as I have stated them, are the underlying causes which are producing the educational movement of our time. It is an instructive attempt to meet the pressing danger of a period of economic and intellectual transition. It is a modern movement, a movement largely caused by the problems of population and of modern life, and it takes its rise in large cities. This has been so in America. It is

so in England. Perhaps people hardly realize how great a part is being borne in it by two English cities — London and Manchester. Here, on the platform, we have many of its leaders. I dare not mention names, lest I should embark on a list like the Homeric catalogue of the ships, but wherever you have a great educational conference in the country, wit and wisdom from Manchester are found to the front. Think of the distinction and range of your educational institutions — Owens College, the Grammar School, the great Technical School, the Art School (one of the most beautiful things of its kind in Europe), the Higher Grade Board Schools, the great system of primary education, board and voluntary, with that great superstructure of evening schools, commercial and others, the Sunday schools, the whole network of literary institutions and scientific societies, the public libraries, the university extension lectures, the efforts in the direction of recreation in Ancoats, the university settlements, all those multifarious agencies which are gradually being fused into a sense of conscious unity, that true unity which embraces in one many-sided whole, various but co-operating forms of moral and intellectual effort, and which does not confound fruitful and necessary variety with administrative chaos. And it may perhaps be permitted to a stranger to say, what is already known to many here, that your educational interests are served with a personal devotion which it is the privilege of few communities to command.

How far the general public of Manchester realises the significance of their educational institutions you can tell better than I. I confess that I was a little disappointed on a recent visit to this city at falling into the hands of a cabman who

drifted helplessly up and down Princess Street in his vain search for the Technical School. That is the kind of experience one often has in England and in France. Never in Germany. But perhaps the cabman was an exceptional man. Surely the great public educational institutions of the city ought to be as familiar and as well known to the man in the street as the cricket ground at Old Trafford, or Belle Vue, or the Exchange. May I, in this connection, congratulate the Technical Instruction Committee and the School Board on the two handsome buildings which are being erected, side by side, in Whitworth Street. It is important that the outside as well as the inside of buildings dedicated to education should be striking and impressive, as well as suitable to their purpose.

In education, quality matters more than quantity, and quality depends on fitness for the purpose in view. About every school and college, and institution, we have to ask what exactly does this educational institution aim at doing. Education is not a commodity that you can lay on like water or gas. It is some thing that, like a delicate engine, should be exquisitely adapted to the

task which it is intended to do. I say like an engine—but let us not forget that the central part of this engine is not steel or iron, but the living personality of the teacher.

As, however, quality is the essential thing in education, and quality costs a great deal of money, it becomes more than ever necessary and desirable that various educational institutions should co operate, in order each to contribute to the education of the community that particular service which it can best render. But let us not forget that co operation of this sort has to be based, not on a mechanical division of duties, but on a moral agreement as to aims and influence. Wherever English education is studied, the names of Mr. Wyatt and of Mr. Reynolds are household words. But I doubt whether anything could have so much enhanced their already great reputations as the part they have borne in the concordat under the auspices of which we have assembled to night. What has already been accomplished in Manchester, what it is desired to accomplish, may well make the friends of English education take heart and be of good courage.

—*The Evening Student, Manchester.*

Payta, which is situated in Peru, about five degrees south of the equator, is said to be the driest place on earth—the average interval between two showers being seven years; the latest reported shower lasted from 10 p. m. till noon next day. Most of the flora are annuals, the seeds of which remain

dormant in the earth for seven years, until a shower comes to cause them to germinate. The natives maintain themselves by the cultivation of the long-rooted Peruvian cotton, which lives in the river beds for seven years without rain. The coast upon which Payta stands has risen 40 feet in historic times.

WHAT WILL THE BOY BECOME?

F. D. EVANS.

VICTOR Hugo in his *Les Travailleurs de la Mer* depicts a man hand to hand with destiny—alone on a wide, wide sea—"a dark coalition of forces," an "immense animosity" surrounding him. We witness the unequal warfare he wages with the "silent inclemency of phenomena going their own," and the great general law implacable and passive, and discover that "a conspiracy of the indifference of things" is against him.

We perceive that such is life, but very indefinitely comprehended.

The accident of nationality, the implacable law of heredity, the Chinese wall of environment, the meanness of opportunity, all conspire against the individual in the battle of life. What with the mysterious tendency toward degeneration, the *humanum est errare* that drags us down, it is a miracle that we

"Move upward working out the beast,
And let the ape and tiger die."

What is this conservative force? Mr. Herbert Spencer tells us that it is the silent working of the Law of Conformity to Type. "It is necessity that character must harmonize with the floating rationality which is in the air of the age."

Ask a citizen of this republic why American children are regarded as "beastly American brats," and he would probably say "it was the result of the American character." So it is; but not in the unaccountable, irresponsible way in which he would have you to apprehend. He takes the view that his "young hopeful" is a *lusus accidentium*; not the inevitable consequence of his antecedents in the past—an hereditary bondsman to his father's frail-

ties; not the victim of an environment that perhaps sentences to death all the finer impulses of his soul; not the innocent cast on the shore of existence in a state of entire, intellectual helplessness and inertia, dependent on parental energy and influence to unfold. Oh, no! his short views comprehend no biological truths as stupendous as these. To him the meaning is vague, and he does not comprehend that "national character is but a name for a collection of habits more or less universal." Ask the American mother, and she would reply with an air of *laissez-faire*, "Oh, it will come all right with education!"

Let us take a consensus of opinion on this subject, beginning with Mr. Spencer, who is "foremost in the files of men." He says: "The moralizing effect of intellectual culture, flatly contradicted by facts, is absurd *a priori*. What imaginable connection is there between the learning that certain clusters of marks on paper stand for certain words, and the getting of a higher sense of duty? What possible effect can acquirement of facility in making written signs of sounds have in strengthening the desire to do right? How does knowledge of the multiplication table so increase the sympathies as to restrain the tendency to trespass against fellow creatures? In what way can the attainment of accuracy in spelling and parsing make the sentiment of justice more powerful than it was? Or why from stories of geographical information perseveringly gained is there likely to come increased regard for truth?"

And George Eliot, "After all our psychological teaching, and in the

midst of our zeal for education, we are still at the stage of believing that mental powers and habits have somehow a kind of spiritual glaze against conditions which we are continually applying to them."

Buckle: "A kind of magical efficacy is ascribed to ideas gained through artificial appliances as compared with ideas otherwise gained. And this delusion, injurious in its effects even on intellectual culture, produces effects still more injurious on moral culture, by generating the assumption that this, too, can be got by reading and repeating of lessons."

This from Huxley: "Success in any kind of practical life is not dependent solely, or indeed chiefly, upon knowledge. Instruction carried so far as to help the student to turn his store of mother wit to account, to acquire a fair amount of sound, elementary knowledge, and to use his hands and eyes, while leaving him fresh, vigorous and with a sense of the dignity of his own calling, whatever it may be, if fairly and honestly pursued, cannot fail to be of invaluable service to all those who come under its influence. But on the other hand, if school instruction is carried so far as to encourage bookishness; if the ambition of the scholar is directed, not to the gaining of knowledge but to the being able to pass examinations successfully, especially if encouragement is given to the mischievous delusion that brainwork is in itself and, apart from its quality, a nobler or more respectable thing than handiwork, such education may be a deadly mischief to the workman and led to the rapid ruin of the industries it is intended to serve."

Mr. Howells says, in speaking on this subject: "A university education may give a man a great advantage; and that is the theory and expectation of most fathers who

send their sons to universities. But, undoubtedly, the effect is to render business life distasteful. The university nurtures all sorts of lofty ideals which business has no use for. Our women really have some use for the education of a gentleman, but our men have none."

Mr. Walter Bagehot sums up the situation thus: "Man made the school. God made the playground. He did not leave children dependent upon the dreams of parents or the pedantry of tutors. Before letters were invented, or books were, or governesses discovered, the neighbor's children, the out-door life, the fists and the wrestling sinews, the old games,—the oldest things in the world, the eternal nature around us—these were education. And now though Xenophon and sums be come, these are and remain. Horses and marbles, the knot of boys together, the hard blows given and the harder ones received—these educate mankind. The real plastic energy is not in tutors or in books 'got up,' but in the books that all read because all like; in what all talk of because all are interested; in the argumentative walks or disputatious lounge; in the impact of thought upon thought; in mirth and refutation; in ridicule and laughter—for these are the free play of the natural mind, and these cannot be got without contact with the world."

Rousseau, the Apostle of Humanity, speaks in no uncertain words when he says: "There is but one science to be taught children, and that is the science of human duty. We are less concerned with the instruction of the boy than with his guidance."

So we find that faith in lessons, books and readings is one of the superstitions of the age; that instruction is the last part of education.

The boy has not merely an intel-

lect to be formed and furnished, but also a sensibility to be affected and a will to be energized. The education which equips a child for his duties in life is largely that which he imbibes from the influence of home and the community.

It is possible for the school to enforce some mental discipline, but it was never known to cultivate serenity of disposition; it may improve the standard of taste, but it can never quicken into being the dormant sympathies, the innate sensibilities of the boy's soul. In the prosaic of the school days he will never hear the *vox Dei* and the *vox humani* seeking for expression in his life. If the cultivation of the emotions is ignored at the fireside altar the boy begins life bereft of guardian angels. He would grow to manhood "emptied of every sympathetic thrill."

Mr. Ruskin says with startling insistence: "The ennobling difference between one man and another is that one man feels more than another. The essence of all vulgarity lies in the want of sensation. It is in the blunt hand, in the dead heart, in the hardened conscience that men become vulgar. They are forever vulgar precisely in proportion as they are incapable of sympathy."

We all know the story of Faust, how, missing the guidance of the heart, he plays experiments with life, trying knowledge, pleasure, dissipation, one after another, and hating them all; and then hating life itself as a weary, flat, unprofitable mockery.

Lord Byron's life was a passionate, lawless existence because of a lack of parental discipline. In his poetry he said: "And thus untaught in youth my heart to tame, my springs of life were poisoned."

In the home life of large numbers of children there is no moral culture:

they are housed and fed, and occasionally groomed; otherwise they are considered only "a little dearer than the horse, a little nearer than the dog."

There is always in the minds of parents the remedial agency of the schools. It is like the idea of matrimony that Mr. Lecky derides. He says: "The notion prevails to a large extent that the marriage ceremony has a retrospective virtue, cancelling previous immorality." In neither case are the effects of the previous conditions eradicable,—the gravestones in our rear cast lengthened shadows over our future career.

"I looked behind to find my past,
And, lo! it had gone before."

Character is cumulative; as George Eliot expresses it, "We prepare ourselves for sudden deeds by the reiterated choice of good or evil which gradually determines character."

To warm into unfolding, to foster into growth all kindly sympathies towards men, all elevated thoughts respecting the duties and the destinies of life; to cultivate a supreme reverence for the Creator and for the sanctity and inviolability of human obligation and personality,—if this is the duty of the teacher, then how many develop the child committed to their care?

Some of the best mothers regard a child, not as a physiological expression of being, but as a special gift of God; and with this nebulous notion of Deity they expect God to bring it up to "full being," or else the unfortunate "offspring" is little better than an "elementary orphan."

Perhaps the doctrine of *laissez-faire* is an unconscious deduction from the scriptural "Cast thy burden upon the Lord." But it makes of one a sort of parasite of the Omnipresence. There are many things in Scripture which submit to many

readings, according to the discerning power of the intellect brought to bear. "Take no thought for the morrow" was not addressed to the world at large, but to the Apostles, who were to leave everything to become "Christ-minsters." Rather teach him that all power is in individualization, and don't tell him of vicarious agencies—that "the Devil tempts," and that "God forgives sins." It concedes so much innate weakness of character, and is apt to destroy the active heroism of the soul. It was a most natural conclusion the heathen came to when told that God would forgive sins because of repentance. "Oh!" he said, "I like that; you can sin as often as you want to."

Rather impress upon him that "the deed that is done not even the gods themselves can undo." That for every false word or unrighteous deed, for cruelty and oppression, for lust or vanity, the price has to be paid at last, if not always by the chief offender, then through some one by the sad means of vicarious atonement.

Mr. Froude has some sounding sentences on the naked law of duty in the soul. "Do not kill, steal, lie, swear, commit adultery, or break the Lord's day—these are the Commandments; very simple, and easy to be known! They are no more than the first and rudimentary conditions of goodness. Obedience to these is not more than a small part of what is required of us; it is no more than the foundation on which the superstructure of character is to be raised. To go through life, and plead at the end of it that we have not broken any of these Commandments is but what the unprofitable servant did who kept his talent carefully unspent, and yet was sent to outer darkness for his uselessness. Suppose these Commandments obeyed,

—what then? It is but a small portion of our time which is spent in resisting temptation to break them; how shall the rest be employed?"

First of all we must offer the child the example of labor, and never that of indolence. "The deepest spring of action is the sight of action in others." It has been the time-honored institute among the Jews to teach their boys some handicraft. The two most illustrious of all the Jewish tribes, Christ and Spinoza, worked with their hands at comparatively lowly trades. Hear the Christly command: "Whatsoever thy hand findeth to do, that do with all thy might!"

Spinoza, the most powerful intellectual worker Europe produced during centuries, waved aside the pensions and legacies offered him, and chose to maintain himself by grinding object glasses for microscopes and telescopes.

Our forefathers did not grope in darkness on this subject. They held religiously to the idea that industrial training should underlie the intellectual. The average boy will always have to labor for a living; and the education that fits him only for the career of gentleman will be but a delusion and a snare when "necessity confronts him with an invincible gesture"

It is of averages and not of exceptions we are concerned. Special qualifications do not exist to a degree worth considering. When we understand the "connective tissue of civilization," we shall find that the ordinary boy has no inborn faculty, organized in him by hereditary transmission. When we learn that biological fact, we shall discover that like produces like, and that we need not expect "a cabbage under any circumstances to develop into a rose."

How long before the world will come to see that work is a privilege, and that knowledge which one can use is the only knowledge which has life and growth in it, and which converts itself into practical power! The rest is simply a veneer, which wears out with the passing years.

We see this error glaringly manifest in the education of the negro in the South, and realize the folly of the attempt to teach the "classics" to those born to "tug at the oar" in the sweat of their brow. It is sowing discord and dissatisfaction, and by and by there will be "a harvest of barren regrets." The rising generation will find the "rice problem" complicated by this very fallacy of educating in the abstract, instead of along practical lines.

Manual training departments are being annexed to the schools in cities, but there is still an immense area to include before this splendid idea shall have gained the ground it needs to prove itself.

Philanthropists have discovered that labor or employment of the mind is essential to good morals. The transmutation of energy destructive into intellect constructive makes glad the waste places in the boy's life, and reduces to a minimum the disciplinary functions of the overwrought teacher.

The world's great educators are agreed on the subject of the importance of a handicraft. Says Rousseau: "Teach the boy a trade, an art purely mechanic, where the hands work more than the head. . . . Instead of resorting for a livelihood to those high knowledges which are acquired for nourishing the soul and not the body, if you resort in case of need to your hands, and the use you have learned to make of them, all difficulties disappear. You have resources always ready at the moment's need."

Robert Louis Stevenson thought every man ought to learn some manual means of support. All his literary work, he affirmed, failed to give him the keen sense of satisfaction that clearing forests and delving in the soil did. We are indebted to him, however, for the comforting lines: "Our business down here is not to succeed, but to continue to fail cheerfully."

In working machinery a boy begets a habit of self-reliance and precision, a taste or observation, and the idea of the value of definiteness. He is cheerfully engaged, and is beyond the temptation of vanity and folly. He becomes a sentinel that mounts on guard over himself and circumstances.

Nature has endowed the healthy boy with such an amount of energy that unless an outlet is found for it he becomes an unmitigated nuisance. Whenever the troublesome question of what he shall do presents itself, we think sympathetically of Carlyle, wishing that all boys could be turned under barrels, there to wait until they arrived at the years of discretion. "Sit still," as an injunction, is thrown away on the boy. He has a constitutional "wanderlust," as the Germans call an inordinate desire to explore the cosmic philosophy, which has to be eliminated by entertaining employment. For this either drawing or reading is advisable. Mr. Huxley says: "I should make it imperative that every child, for a shorter or longer period, learn to draw. I do not think its value can be exaggerated, because it gives the means of training the young in attention and accuracy. It becomes an implement of learning of extreme value. Nothing has struck me more in my life than the loss which persons who are pursuing scientific knowledge of any kind sustain from the difficulties

which arise because they never have been taught elementary drawing."

The schools are waking up to its importance as an essential, but the quite young boy could be instructed at home by means of the kindergarten methods. Another "love" that could be used as a means of entertainment is reading. With a little judicious flattery, the boy's father could be induced to cultivate the taste in him by reading to him. The youngster isn't human who wouldn't listen with all the ardor of his soul to tales of adventure and conquest; to stories of Indian warfare, with thrilling incidents of heroic rescue and deeds of daring; to Arctic explorations and African discoveries. And in that time there would be excited in him a love of reading for its own sake. But even here a guide is necessary, because it is so easy to overdo a good thing. "The fairyland of book lore is full of dangerous enchantments, and there are many who have lost in it the vigor which comes from breathing the keen air of everyday life." Especially if the boy is bright and is at school, he should be guarded from too much intellectual work.

We do not sufficiently realize that to be a good animal is the first duty in life. One of the sad errors an erstwhile asceticism entailed on the world was a disregard of the instincts, as proving animalism in man; whereas they are our "viewless angels," our faithful monitors. The nature of the emotions must be fully studied—their order of evolution, their functions, where use ends and abuse begins. A child is governed and swayed by emotion and imagination; reason is the co-ordination of all the faculties, hence is the latest developed. Those mothers who depend on "moral suasion" as a means of discipline would better substitute absolutism.

A great deal has been written on the terrors of imagination in some children, and no doubt the utmost consideration should be evinced toward those afflicted with an undue vivacity of that faculty, whether it expresses itself in "dreaming dreams no mortal ever dreamed before," whether in "seeing things" or in an immense power of mendacity. The "contents of a child's mind" could and should be carefully studied in this connection.

Mr Herbert Spencer gravely asserts that no one would have the temerity or the stupidity to attempt to raise *pigs* without some knowledge of the constitutional liabilities and the hereditary proclivities of that zoological specimen. But when it comes to the rearing of children—anybody can take that in hand! "No one sees any folly in undertaking to shape human nature in this way or that way without a preliminary study of man, and of life in general as explaining man's life. For simple functions we insist on elaborate special preparations, extending through years; while for the most complex function, to be adequately discharged not even by the wisest, we require no preparation!"

The development of children in mind and body rigorously obeys certain laws; and yet in dire ignorance of the simplest physiological laws, lives are sacrificed, health is undermined, hearts are broken and remaining lives go maimed from such tragedies. It is worth while then to know that the study of ethnology would have been worth pursuing, even at the cost of knowing little or nothing of the "classics."

There is something stupefying in the recurrence of daily duties,— "each day brings its petty dust, our soon-choked souls to fill"—and women are apt to regard as recurring trivialities the two potential functions

in human life—human nature's daily food and the daily vigil over "one of God's little ones."

"The little more, and how much it is," that produces the imperceptible evolution of character is not appreciated by the average mother. She thinks that "some sweet day" the boy is to be "set upon" and made an ideal institution of, off hand. Besides it being unconstitutional, the world isn't ready for him; he would be lonely in the midst of men. Evolutionists tells us that the child's mind must pass through a progress like that which the mind of humanity at large has gone through; that he must recapitulate the psychic phases of the successive stages of mental development. He will be but little better than an anthropoid ape in those early days; afterwards a savage, then a semi-civilized entity, and finally, after years of infinite pains and training, a man.

This task were not such a formidable undertaking were the boy's father an "Olympian god"; but, alas! he is too often a denizen of the earth, owning kinship with all frailties, and lowering the value of every inspiring fact and tradition by an unworthy example. Since it is inevitable that the boy will conform to the type his father presents, unless

some winning instance attracts him, we must have recourse to biography, and place before him some of the simple great souls who have been the architects of their own fortunes: Luther, because "he wrought with human hands the creed of creeds;" Linnæus, the patient and persevering, who was content to live for a time on berries he gathered while pursuing his beloved nature studies, till his worth was recognized; Lincoln, who was true to the best within him,

"By a fine sense of right,
And Truth's directness, meeting each occasion:
Straight as a line of light."

History has been called "the essence of innumerable biographies"; and therein are to be found the lives of men who "wove the life garment of Deity" so nobly well as to become types for all time.

But let it never be forgotten how forceful is example; how almost omnipotent is environment; that home training is the mightiest factor on earth to make or mar!

"Those first affections,
Those shadowy recollections,
Which, be they what they may,
Are yet the fountain light of all our day,—
Are yet the master light of all our seeing,—
Uphold us, cherish, and have power to make
Our noisy years seem moments in the being
Of the Eternal Silence."

—Education, Boston.

OBJECTIONS TO THE HEURISTIC TEACHING OF GEOMETRY

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When we come to examine carefully the heuristic method of teaching geometry, we have two sides of the question to consider, the theoretical and the practical side. There is little doubt but that whatever a student finds out for himself will become his mental property much sooner than anything that has simply been told him. From this point of view, then, it would seem as if the heuristic method in geometry would be the panacea for all mathematical ills, for the method can be extended to any branch of mathematics. But a careful examination of the actual conditions that confront us will cause us to modify the above statement materially. In view of these conditions, I believe that, at least for the present, the use of a text-book, containing clear-cut proofs, will prove of greater advantage in teaching geometry and be more productive of results than the heuristic method, though I do not say that the present method is an ideal one. The conditions that confront us in the schools are not of such a nature that any sweeping change in methods will bring about better results in mathematical teaching. On the contrary, we can hope for these better results only as a consequence of changing conditions. I shall, therefore, point out the practical difficulties which oppose the general introduction of the heuristic method of teaching geometry, though I shall also indicate that the method has a place in the teaching of geometry, as well as of mathematics in general.

Referring to the well-known example from Plato's "Meno," we see

one danger that lurks in the employment of the heuristic method. In this example Socrates frames his questions in such a way that the answer is put into the mouth of the slave. The reasoning throughout is that of Socrates and not of the slave, and we can feel certain that the slave did not learn much geometry. I am very certain that a general introduction of the method would lead exactly to such results, the teacher would give the reasoning in an indirect way, and the student would himself do comparatively little work. I have in mind a little work on the method in question, in which 65 pages are devoted to illustrations from actual class-work, and in this the questions put into the mouth of the teacher in many cases imply the answers directly. Many teachers undoubtedly are able to avoid this pitfall, but a much larger number would just as certainly fall into it.

This brings me to one of the most important objections to any general introduction of the method. It is to be found in the answer to the question: "Are our teachers of mathematics equipped to use the method?" In order to teach geometry as it should be taught, more is necessary than the knowledge of the formal proofs of a certain set of theorems. The spirit of the subject should be mastered and its relations to other subjects should be known. The teacher should have a very clear insight into the four or five principles upon which the proofs of probably nine-tenths of the theorems of geometry rest. He should be able to resolve the proof into its

final elements, so that he can tell that this proof depends ultimately upon proving the equality of certain lines or angles, and that one upon the similarity of certain figures, etc. This power of analysis is an absolute essential to the teacher of mathematics, and it should be his aim to teach underlying principles rather than a mass of proofs and theorems. In order to do this he must have a broad view of his subject; he should be familiar with the more modern subjects, as, for example, the properties of the complete square and a harmonic ratio, and so on. To accomplish this, his preparation should have embraced, as an absolute essential, a good course on analytic geometry, while some knowledge of the Calculus and the history of mathematics would be a desideratum.

Undoubtedly many of our teachers in the larger and better schools have had such training, but in our smaller schools this is seldom the case. While due attention is paid to a candidate's knowledge of English, the sciences, etc., the authorities are too prone to believe that anyone who has studied geometry or algebra at all can teach these branches. And so it happens that the various branches of mathematics are divided up among the teachers of other subjects, or, if there is a special teacher of mathematics, it is someone who can be obtained at a small salary. Such teachers can have but little insight into the subject, but they can teach a book after a fashion, and instill into the students a certain routine knowledge of the subject. Should they, however, attempt to use the heuristic method, they would make a dismal failure.

A second question to consider is that of time. In order that the method should prove a success, the pupil must not only study out his

proofs but he must actually work them out in writing. This is necessary for several reasons. In the first place, we must remember that he either has no text book at all, or, if he has one, it is to contain no proofs. In order, then, to fix the subject matter he must elaborate his own text. This will involve a very large amount of writing. For, after the proof has thus been worked out, it must be corrected and, probably, rewritten. This is necessary if we are not to court the danger that the students fall into careless habits of expression. It would thus seem as if the student would be obliged, under these conditions, to give more than its due share of time to the subject of geometry. On the other hand, all this written work will have to be corrected by the teacher, and, where there are large classes, this is a physical impossibility. It is, therefore, out of the question to use the method in large classes, or in case the teacher has several classes in geometry. Only small classes can be thus handled, and then there is danger of overcrowding the students with work.

There is also danger that students who are not conscientious go to other books for the proofs. In this case they would not only receive little benefit, but positive harm would be done them.

One very strong objection to the method is that, under the present conditions, it cannot do what its advocates claim for it. To be sure, it might eliminate memorizing in one sense of the word, but the bane of mathematical teaching is not to be found so much in memorizing as in the routine character of the work done. This is true for all subjects from arithmetic up. Give a student something he can do by some cut-and-dried method or by some formula, and he is happy. But ask

him to get behind the formula at the living truth it embodies, and to show how the problem in question is related to that truth, and he is dumbfounded. This kind of work is found very frequently in the work in trigonometry and analytical geometry in our colleges and technical schools, and is characteristic of the work done in algebra in the secondary schools. But it affects the geometry just as much. Take the various text-books on the subject, and we will find that those written along heuristic lines sin in this respect just as much as others. Some are merely a collection of theorems, without any hints or suggestions, and these are harmless and also valueless. Others contain suggestions and hints, but in nearly every case these suggestions are strictly perfunctory and routine in character, and would lead to a routine knowledge of geometry.

It seems, therefore, that under present conditions, the method is not capable of general practical application. An ideal teacher, having a small class in geometry, would probably make a success of it; but this

is a combination not often met. Every teacher of mathematics, however, should be ready to use the method as occasion demands. When and where to do so is a question which cannot be laid down by rule. A teacher must know this intuitively and so one will use it to a less extent and another to a greater, according to the individuality of each and the exigencies of the case. As an example, a large number of the concepts and theorems of plane geometry can be generalized to space, and whenever this is done it should be by the heuristic method. Such an application might hasten the day when we no longer are expected to teach so much plane geometry, and so much solid geometry, but when we shall teach our boys and girls some true geometry. The intuitional geometry, or form study, of the grades should of course be taught by the heuristic method. Here we are, namely, not dealing with formal geometry, but aim to develop in the children the geometrical intuition or imagination by means of the concrete object.

— *University Review and Record.*

REFORMING THAT REFORMS.

By M. W. VANDENBERG, M. D., Mount Vernon, N. Y.

EDUCATING that educates would be a better title of these suggestions, which, by the way, are not new, but, like many old things, have never been considered by many.

The principal of a High school who said years ago, "The great thing I have done is to induce the boys to do as well or better when I am out of the room than when I am present" might well have said, "The greatest thing I ever did was to teach boys to do even better

when I was absent than when I was present."

"The man who does his work as well when the boss is away as when he is at home" is the man to trust with your honor, with your money, with your confidence. He is the man to trust in public office. He is the man to trust in the bank and in the business corporation. He is the man to run the locomotive, to command the steamship. He is the man to sit on the judge's bench and in the legislative halls. This is the

kind of men that is wanted every where. The world is waiting for this class of men.

We have enough shrewd men ; we have a surfeit of quick men ; there is no lack of intelligent men ; but there is a dearth of men who can be trusted to do their work as well or even better when the watching power to whom they are responsible is removed.

That man or woman who can induce boys or girls to do as well or even better when she or he is out of the room is the highest type of a moral reformer, the greatest ethical teacher, the most useful citizen of the commonwealth. Such men and women are worthy of public statues in every community.

To day nothing more hampers the advancement of the race, nothing so puts off the great day when the booming social and economic problems that now threaten to disrupt society shall be settled on a solid and righteous basis as the dearth of men who do as well or even better "when the boss is away." Did we but work along the highest possible lines of education this great fact would be always foremost. It would

solve the question of how much and how well the common people should be educated. It would solve the problem of the distribution of wealth. It would settle the question of the centralization and of the distribution of power. It would make the question of standing armies and great navies easy to decide.

And this reform must come from the bottom. We cannot hope to reform from the top downward ; it can only be from the bottom upward. When the people demand a thing, that thing will be forthcoming whether it be good or bad.

The teacher, however humble his or her office may be, who has taught boys and girls this trait of character, no matter if there has been a failure in every other branch of teaching, has nevertheless done more for the betterment of the community and of the individual than the whole galaxy of tricksters, who, teaching the intellect to be shrewd and strong, and quick, and bold, have left a substratum of character eaten to the core with the dry rot of disbelief in the superlative value of honesty.

—*The School Journal.*

THE CHILD'S RIGHT TO RELIGIOUS INSTRUCTION.*

T. R. SLICER.

THE child is taken out of the body of its parents to be dropped back into their minds. That is the story of their responsibility. They have assumed the part of creation. They can not escape the responsibility of instruction. There is in the mind of the parent a sense of responsibility for the health and education of the child. If the right of the child to

care and instruction be undisputed, that it may not be sick and stupid when it comes in contact with those associated with it, it has the right that a Christian child born out of Christian parents shall not be a pagan when it comes to the larger contacts of life. It has a right to demand that it shall be taught all that is in the parents' experience, all that the teachers can learn con-

**Christian Register*, Boston, condensed for *Public Opinion*.

cerning the divine; it has a right to religious instruction.

It is one of the unexplained contradictions that the principles which apply everywhere else are omitted in this particular. It is said that the child shall not "be forced to take on habits of religion." It must be "allowed to grow up until it can choose what form of faith it will have." How can it choose? What gives it the opportunity of choice? What fits it to make such a choice? What experience has it out of the loins of the past in its little brain, that should make it the arbiter of its highest destiny? I believe in the naturalness of religion, that it is a function of the human soul. But I believe that it should be taught, just as cooking is taught. Your children, though, are not usually taught cooking, as, happily the children of the poor are. In our social settlement there are cooking-classes; but there is also a religious service. That is a distinction in our settlement, of which I am glad; we have not only cooking-classes, but there is a religious service on Sunday night. The church is never named, a minister rarely leads them, there is nothing of doctrine inculcated. The leader teaches the life of the soul, just as we teach cooking. One is not more real than the other. As they must eat, they learn to cook. They have got to

live, and so they are taught the principles of religion

You say the child must be provided with everything in the way of instruction, even to the detail of personal habits; but it shall not be taught religion, because that is something for grown-up folk. All the best psychology of the world is against you. You may be on that side, but the best psychology and the most learned scholarship are on the other side. The child is born an egotist, and ought to be, because it is in the animal stage of development; but between the age of twelve and fourteen it passes through certain changes of body and of brain that are as real in the brain as in the body. These are changes by which he passes from egotism to altruism, from the love of itself to the love of the other. The sex instincts that are aroused are only the superficial side of the chief aspect of the mind. The love of the other with whom the home shall be built is the love through which may be constituted the relation with God. You say you dare not touch this critical period. Shall we send missionaries to polytheistic nations, that they may learn a knowledge of the true God, and yet not teach the little mythologist in our home the essential presence of the heavenly father in its life?

THE QUEEN.

MUCH praise has been written of the Queen, some of it a little too Oriental for our taste, and much of it based upon a confusion between her action and that of her people—the Queen, for instance, is really not responsible for the introduction of railways,—but most of those who have written have passed over a quality which is Her Majesty's own, but which has been of infinite service to the commonwealth. With the possible exception of Isabella of Castile—Louisa of Prussia, remember, only reigned indirectly—no woman on a throne has ever exhibited in such perfection what royal tact should be, a mingling of kindness and dignity, with a keen perception of the situation around her. It has been Queen Victoria's habit throughout her long reign to break occasionally the silence which is imposed on constitutional sovereigns, and which must be sometimes one of the heaviest of their burdens—imagine being a king when all is going wrong, and you see what would be right, and yet must remain motionless as any other figurehead—with utterances that are clearly her own, yet no one can recall one of them which offended her people, or produced any impression except one of gratitude to Providence that at last the right person occupied the throne. To how many sovereigns has that gift been given, or in which of them does it reside now, even though one amongst them at least is an orator of no mean force? And still, when the Queen approaches so closely to the verge of usual human life that few among us remember clearly any other sovereign, amidst much bodily weakness, and a strong sense of age, the faculty remains intact. Always the few brief sentences deepen the double impression of a womanliness which yet is consistent with the recollection that she is Queen, and that her notice honors those on whom it falls. There can be little doubt that the Queen feels keenly the pressure of the necessity which has destroyed the hope that the closing years of her wonderful reign might be years of unbroken tranquillity and progress. She at least wanted no war, if only because she must be satiated with triumph, content with her Empire, incapable of even wishing for the defeat of more enemies, or the acquisition of fresh dominion. Yet the sad necessity once perceived, Her Majesty utters nothing that is not either an encouragement to her soldiers or a solace to those left behind by the victims of the war. There is no word of regret for herself, nothing but sympathy for her people, couched in words which in some strangely effective way, effective because it is instinctive, recall the fact that it is a great Queen who is speaking. Take the words of farewell to the Household Cavalry uttered at Windsor on Saturday last: "I have asked you, who have always served near me, to come here, that I may take leave of you before you start on your long voyage to a distant part of my Empire, in whose defence your comrades are now so nobly fighting. I know that you will always do your duty to your Sovereign and your country, wherever that duty may lead you, and I pray God to protect you and bring you back safely home." "You"—the idea might be put in other and less well-chosen words—"are my personal guards, and honored in so being, and to you I now express my friendship and my hopes for your safety, as well as your success." It seems a slight thing to

say, a conventionalism many will describe it, but think what under those circumstances most other monarchs would have said, in what lengthy sentences they would have expressed their own sense of being the pivot of all military preparation, and their affection for men about to fight for their honor and their cause. The Queen arrives at their result, or a better result, without affording even an opportunity for criticism. Her few natural words carry more meaning to the hearts of those who hear them than the most eloquent outburst of oratory could do. She has in truth, not from any culture or experience, but from the grace of God, a talent for silence which is not cold, for reticence in which there is no guile, and there is no form of capacity in a constitutional sovereign more profitable to the people. Just reflect for a moment on the scenes that would have occurred had the Queen, remaining as good as she is, as qualified as she is, as constitutional as she is, been an indiscreet talker, given, let us say, to the epigrams in which so many women have avenged their powerlessness, or crushed the reputation of their otherwise unreachably foes. Party government would have been almost impossible, even if we had not seen at last that long-forgotten danger of the constitution as it is, a sovereign's party, holding the balance of power. Walter Bagehot said the constitution would be near a breakdown whenever a man of genius mounted the throne. We can imagine a sovereign without genius behind whom whole classes would rank themselves instead of the whole nation. To-day the people are only standing silent but determined around their standard, and one at least, of the reasons is that for sixty years their Queen, who not only

bears but is that standard, has had no impulse to speak a word which her people felt had better have been left unspoken. The standard has not only never been lowered, it has never in the hottest tumult of battle swayed to one side or the other. Always when the battle was over the standard was there, a centre for the nation to rally round as if it had never been divided.

There will of course come a time, probably after the next King's death, when the secret history of the Victorian period will be more accurately known—when memoirs have appeared in shoals and reminiscences in clouds, when private letters in scores have leaped to light, and the secretly hostile as well as the courtly have all said their say—and then no doubt the personality of the Queen will be more fully understood, and everyone will settle whether she most resembled Queen Elizabeth or Queen Anne, or herself as her subjects during her reign had pictured her. But even then the world, which will know all that happened, will never know what might have happened had not her Majesty been so strangely suited to the post which Providence called on her to fill. The monarchy was rocking when William IV. expired. Years later the coolest observers imagined that a great Republican party would be formed, and speculated whether the great change could be achieved in a constitutional way. The Monarchy transmitted by the steady attitude of the Queen is probably stronger than it has ever been, certainly better rooted in the temperate yet devoted liking of its subjects. The feeling for Republicanism, unexasperated by Royal blunders, has quietly died away into a philosophic doubt entertained by a few thinking men whether on the whole a people

can be quite fitted for self-government without visibly and openly governing itself. The idea of a rival dynasty is as dead as if it had never been the predominant thought of English politicians, dead so long that our mention of it will seem to most of our readers an absurd anachronism. Two great colonies—Canada and Australia—have grown into subordinate States capable of sending out armies, and mainly because there is a standard that is revered, a Queen who affronts no one, and neglects no one, and preaches to no one obedience as a gospel; they are actually fighting that the Empire which protects and controls them may endure. Even South Africa teaches the same lesson; for, though civil war is raging there, every Englishman on that continent stands steadily by the flag, and professes as his political faith that he is "for the Queen." Would he have been for the British Republic? And one reason, at least, why we have not tried that dangerous experiment is that the Queen has never, either by action or opinion, aroused the faintest degree of hostility, a fact the more noteworthy because one-half, at least, of the common folk are still persuaded that

laws are made by the Queen, and that Her Majesty raises and spends at her own discretion all that is known as "the Queen's Taxes." It is usual to say that this success is mainly due to the sex of the Queen, or to her virtues, but, while we are not sure whether but for the career of the Queen herself feminine sovereignty would be considered so desirable, we are sure that blundering is at least as fatal to dynasties as evil conduct. Charles I. and Louis XVI were not beheaded for their vices. All honor to the virtues of the Queen, but beside them there must have been a power of avoiding blunders, of saying and doing the right thing at the right moment, a body of clear sense, in short, which has never been sufficiently recognized by the people, and to which the people owe much of that permission to grow in liberty and order, of which they have so largely availed themselves. The expansion of England is their work, but it is work which could hardly have been done but for the personality which for more than sixty years has provided them with a pivot round which, if necessity arose, they were prepared to die.—*Extract from the London Spectator of Nov. 18, 1899.*

INDIAN SUMMER.

GEO. S. HODGINS.

THE beautiful, warm, balmy, hazy days that often succeed the first sharp frosts of early autumn have been called by the poetic name of Indian summer. The duration of this, the most delightful period of the year, varies indefinitely from year to year. Its advent is as irregular as the early frosts. The only constant factor in the problem of its production seems to be that

it invariably follows the first and almost unexpected frost in the early days of the fall. The cause of the heat developed during this period, giving to the air its soft balmy warmth and the delicate haze that hangs in the tranquil atmosphere, has been the subject of much speculation.

It has been held by some that the great forest fires, which are gener-

ally more numerous at the end of a hot dry summer, culminate in this short but beautiful season. The smoky air consequent upon the burning of so many myriads of trees and such large quantities of underbrush is thought to account for the bluish haze noticed at this time. The true haze of Indian summer is not smoke at all, however mild and diffused it may appear to be. If this theory of the production of these warm days is correct, we would expect them to have no connection with the first sharp frost of the fall. If due to combustion in any form, the smoky atmospheric haze would not disappear with the advent of the subsequent and more severe frosts of the late fall. If due to forest fires, the smoky air would last until the fires had been actually quenched by the winter snows. We would, upon this hypothesis, have Indian summer only in years prolific in forest fires, and we would also have more pronouncedly warm days, and more of them, too, in the autumn of those years in which the fires had raged most fiercely. The fact, however, is that Indian summer often comes upon us in years when there have been almost no forest fires. The phenomena are immediately preceded, and, indeed, produced, by the first frosts of fall, and are entirely destroyed by the subsequent sharp frosts. The forest fire theory does not seem to satisfactorily explain all the facts.

It has been argued by others that the freezing of the great bodies of water in northern latitudes is a cause competent to produce what we call Indian summer. The freezing of water certainly does liberate heat in very great quantities. Paradoxical as it may seem, the advent of cold weather does actually call forth, as it were, a protest from Nature in the shape of an immense

volume of heat given out as if to fight the power of the Frost King.

Water at ordinary temperatures contains a large amount of heat. The unit of heat, as known to science, is the quantity required to raise one pound of pure water through one degree of temperature, measured on the Fahrenheit thermometer. This amount of heat is called a British thermal unit. It is not temperature at all, but a definite quantity of heat. In order to clearly understand the quantity of heat contained in water, it is only necessary to consider for a moment a very simple experiment. At the border temperature between melting and freezing, viz., 32° F., a block of ice weighing one pound will require one pound of water, at a temperature of 176° F., to melt it. After the hot water has been poured upon the ice there will be two pounds of water, the whole mass standing at 32° F. A thermometer dipped into the two pounds of water will show the same temperature that the ice registered, that is, 32° F. The heat contained in the hot water has disappeared—it has become latent, as it is termed. Its energy has been employed in breaking up the crystals of the ice. It has done internal work by forcing the molecules of the ice apart, and compelling them to assume the liquid state. This heat of liquefaction, though stored up in the water, is not sensible to the thermometer.

Water will retain this quantity of heat so long as it remains water. It may become warmer, and when it does it may be made to show its heat, but it can never part with this stored up, or latent, heat without at once becoming ice. When a pound of water freezes it gives up 144 British thermal units.

This heat of liquefaction, suddenly liberated from the millions of freezing pounds of water in our great

lakes, is poured upon the air in enormous quantities. The freezing of water, however, even in large volume, does not produce the haze in the atmosphere that is one of the concomitants of Indian summer. This theory of the freezing of great bodies of water is, therefore, when weighed in the balance of scientific inquiry, found to be wanting in its endeavor to fully account for the erratic recurrence of this season. It fails to show any cause for one of the physical conditions here so apparent. If Indian summer depended on the freezing of water, then countries having large bodies of fresh water would experience that season of warmth and haze with perfect regularity. Perfect regularity in the appearance of Indian summer we have not; and the freezing of water will in no way account for the hazy atmosphere. If this theory were tenable, the absence of large forest areas would not prevent Indian summer from visiting those lands. It is, however, to the "forest primeval" that we must look for the cause of our hazy and warm season.

A theory brought out by Mr. G. W. Johnson, of Toronto, Canada, accounts for both the warmth of the weather and the soft haze in the atmosphere. He explains that Indian summer is the result of the action of the first frost that nips the thick, fleshy, juicy leaves of our forest trees, and strews them upon the ground before they have dried and withered on the branches.

An idea of the enormous aggregate tonnage of these moist and sappy leaves that fall in the autumn may be gained by quoting here the words of Mr. F. Schuyler Mathews, given in *Popular Science Monthly*, for October, 1896. He says: "I have estimated that a certain sugar maple of large proportions, which grows near my cottage, puts forth in one

season about four hundred and thirty-two thousand leaves; these leaves combined present a surface to sunlight of about twenty-one thousand six hundred square feet, or an area equal to pretty nearly half an acre."

A rough calculation made by the writer would suggest that this tree may be supposed to have cast upon the ground about one thousand three hundred pounds of leaves, or at least over half a ton. It will easily be seen that the billions of leaves dropped from the myriads of trees in the huge forest areas of this continent must pile up many thousand tons of vegetable matter, deposited on the ground while in full vigor and filled with the juices and sap of life. This mass of matter, severed from the parent trees, begins immediately to decay. Mr. Johnson's theory asserts that a process of fermentation is at once set up that gives off heat in large quantities, and at the same time liberates carbonic acid and watery vapor. The heat given off by the simultaneous decay of so many tons of forest foliage will account for the warmth experienced at this season. The exhalation that arises from the leaves as they decay is sufficient to explain the appearance of the delicate haze that hangs in the air.

From this it will be seen why it is that in some years there is little or no Indian summer. If the leaves remain on the trees until dry and withered, unattacked by an early frost, they fall with no more power to ferment than so many sheets of dry paper. If, on the other hand, the frosts of autumn should be so frequent and so severe as to arrest the process of fermentation before it has well begun, no Indian summer will be noticed. A strong cold wind or sharp frosts will destroy fermentation after it has gone on for

some time, and so put an end to the warm hazy days. Mr. Johnston's theory, though not stated verbatim here, accounts for the phenomena in a satisfactory way.

As forest fires destroy our trees, and as the clearing of farm lands and the rapacious maw of the saw-mill eat away our forest areas, there will be shorter and less clearly marked periods of Indian summer. Countries in which there are pine, spruce and other trees that do not produce large, fleshy leaves have no such pleasant season. Some years give us no Indian summer; some produce but a few such days; while

others, more propitious, favor a duration of from two to three weeks, or even longer. The name Indian summer is peculiarly appropriate, as the season is the direct product of the forest—the original home of the Indian; and as that race gives way slowly and silently before the advance of the white man, so in time will the forest disappear before our advancing civilization, and the warm, beautiful Indian summer—that exquisite twilight of the seasons—will as silently vanish as the race with which its name is so poetically associated.—*Science and Industry, January, 1900.*

JAMES L. HUGHES.

WITH pleasure we insert the following which a friend was kind enough to send to us. Long may Mr. Hughes be at his post, in Toronto, is the earnest wish of the Editor of the C. E. M.:

The teachers of the Toronto Public Schools June 19, 1899, assembled an audience of fifteen hundred friends and co-workers to do honor to Mr. Hughes on the twenty fifth anniversary of his appointment to the inspectorship of the city schools. Letters and telegrams of congratulation were also received from New York, Chicago, St. Louis, Philadelphia, Hartford and other leading cities. Superintendent Griffith, of Utica, wrote as follows to Chairman Parkinson of the testimonial committee of the teachers:

"Acknowledging the invitation to be present at the twenty fifth anniversary of the appointment of Mr. James L. Hughes to his present position, I regret exceedingly that my duties here will make it impossible for me to attend. I should

be most happy to be with you to help celebrate this silver anniversary of one of the ablest and most 'whole-souled' school superintendents in America. Ever since I began to hear Superintendent Hughes in convention, as well as since I have come to know him personally, he has been an inspiration, and, to a great extent, a guide to me in my work. I believe there is no more clear-headed, enthusiastic lover of children among the ranks of superintendents than Inspector Hughes. He must have been an inspiring leader of his teachers during these twenty-five years. Since I have known him he seems to have been growing younger each year. May this continue many, many years more, for in this tendency of our teachers and superintendents lies the hope of better schools for our boys and girls. Kindergartners and all of us whose hearts are with this great movement must feel a peculiar joy in this honor to Inspector Hughes, for they have had no abler exponent of their theories nor more

valiant champion of their rights than Mr. Hughes."

The first speaker was Professor Clark, of Trinity University, who paid a sincere and forceful tribute to Inspector Hughes and his two cardinal qualities of popularity and perseverance, qualities essential in the educationist. He alluded especially to the fact that Mr. Hughes is the author of several very valuable works on education. Mr. Clark said that if he were addressing any audience on an educational topic he would feel that he was doing it an injustice unless he referred to these very excellent works of Mr. Hughes.

Dr. Parkin, of Upper Canada College, was the second speaker, combining eulogy with remonstrance in substance as follows, winning loud applause: There was one thing about this celebration which displeased him. The testimonial should come, not from the teachers alone, but from the mayor and corporation, and from the citizens, the interests of whose children he had been watching over for twenty-five years. He bade his hearers consider the energy, ability and courage which Inspector Hughes had put into his labors, and compare the rewards it entailed with those that went to the successful men in almost every other profession. They must realize that there was need of a great educational awakening in this city. In the legal profession these abilities would in twenty-five years have won him far greater financial rewards than he at present obtained. Such was the state of affairs in this country that the head baker in a well known biscuit factory receives a higher salary than the presidents of our universities. Instead of presenting a portrait the citizens of Toronto should be presenting Inspector Hughes with something more substantial, and

should be providing him with a retiring allowance of \$5,000 a year, when that becomes necessary.

Dr. Parkin said that he had fourteen able young men teachers under him in Upper Canada College, and he could not honestly advise any one of them to remain longer in his profession. They would never have a great educational system until matters are placed on a different basis. It has been many times remarked that England is the only country that produces great head masters. The reason is not far to seek; in England they pay for them. The headmastership of Harrow is worth \$30,000, with an establishment; those of Eton \$30,000, and Rugby \$25,000, with usually a bishopric in the future. If there were five or six great prizes in Canada that men could strive for, education would be benefited. The salaries of men like Inspector Hughes should be doubled; they are at least entitled to the same remuneration as judges. He hoped that that gentleman would forgive him for making this occasion an opportunity for speaking his mind on this subject.

One of the happy speeches of the evening was that of Mr. Walter S. Lee, who has been a member of the Toronto School Board since before the appointment of Mr. Hughes, and who gave some reminiscences. Mr. Lee amusingly told of the difficulties they had to encounter with the older principals, who resented the advent of the "stripling," as they called him, and praised the manner in which Mr. Hughes had forged ahead and made the Public Schools what they are to-day. He thought the present salary of \$3,000 the merest pittance for a man of his abilities. He had often thought of a new position for Mr. Hughes. He would like to see him the chief ex-

cutive officer of the entire teaching system, in charge not only of inspection, but of the financial management, with a large staff of inspectors under him. This last suggestion was heartily applauded.

The presentation of a fine portrait of Mr. Hughes, painted by Mr. J. W. L. Forster, then took place. Mr. A. F. Macdonald made the address. We reprint here a few paragraphs which show the model relations which may exist between head master and associates :

"For a quarter of a century, the closing quarter of the world's grandest century, it has been your privilege to mould and direct the school system of this city, the educational capital of Canada. By zeal and enthusiasm, by devotion to your vocation, by great executive ability, you have developed a system of schools at once unique and admirable, the pride of our citizens and the praise of our visitors. Your ardent study of the child, your marvellous intuition, your remarkable prescience, led to the introduction of the kindergarten into Toronto. In the kindergarten schools, which are now an organic part of the system of elementary education of this province, you have a monument more enduring than granite or bronze. Your published contributions to the theory and practice of education are a treasured inheritance of all true educators. The hallowed memory of these twenty five years of noble endeavor and of divine evolution must ever remain your chief reward and abiding satisfaction. In the performance of arduous duties you have extended to us courtesy and affability, sympathy and friendship. By your happy genius of seeing the best in each you have been an inspiration to all. You are enshrined in our hearts."

Mr. Hughes' response was direct, virile, full of suggestive humor and earnestness mingled with the strong feeling which the occasion prompted. He said he never could have hoped to succeed in his position without the hearty and earnest co-operation of the teachers. Twenty-five years ago headmasters received \$700 per annum, now \$1,500; in another quarter of a century he hoped to see them receive double the latter figure. He knew he should get more for his labors; he had, indeed, received better offers, but he had never asked the Board for an increase, and it was a genuine pleasure for him to work with an honest, earnest, able body of men and women, like the teachers of these public schools. No man does his duty who leaves things as he finds them, and seeks not to better present conditions. One of the great principles of his life is never to be in harmony with the present; God meant us to try to be in harmony with the future. The greatest of words is "Evolution." There are three classes of men, and three classes of teachers; those who live in the past, those satisfied with the present, and those who want to live in the future. He expects to die wanting to make things better. It would be a disappointment to him if in his old age he should ever grow distrustful of youth; he wants to be in sympathy with the young men always. He thanked God that he had never been blighted with the idea that the Ontario school system is the best in the world. It is better in some things than that of other countries, but not in all. He has known educators to come from abroad and spend hours dilating on the failures of other countries. He has always looked for the things in which they surpass us. England is ages in advance of us in some matters of

education; so is France; so is Germany. Even Russia is in advance of us in some things, and so is the United States. Another principle with him has been continuously to cultivate an absolute faith in himself. Years ago Fowler, the phren-

ologist, told him that his life was certain to be a failure because he was lacking in self-esteem. It has been his endeavor to conquer that defect, and to work out his own ends courageously.

MISSION WORK IN CANADA

BY REV. ROBERT JOHNSTON, D.D., LONDON.

IN speaking of the Home Mission work of our Canadian Church, it would seem to be still necessary to define the field of our operations, and the character of the work accomplished. The necessity of such definition was impressed upon me but recently while attending a great convention at one of the religious centres of this continent. Upon a wall of the partition there hung from day to day a map, indicating by a variety of colors the need of the world for the Gospel; imagine my astonishment to find it declaring in unblushing whiteness that the whole of Canada, with the exception of a narrow strip of territory bordering on the great lakes and the St. Lawrence, was—inhabited territory! I could have forgiven the ignorance of the designer had he colored our rich and populous provinces in an inky blackness, and called us "heathen," or even declared us "unexplored," but "uninhabited territory" created an amazement that lingered long on the borderland between imagination and amusement. Sparse our population may be, sir, in many parts, and for years must continue so; but in this good land which the Canadian Church is called upon to go up and possess for Christ, stretching as it does from sunny, sea-girt Prince Edward Island and from Newfound-

land's misty coasts across four thousand miles to where Pacific's waves leave Vancouver's shores, and Klondyke's ridges hold in frosty grip the precious ore, peopled already with nigh six million souls, there is, from one extreme to the other, scarce a considerable stretch of territory in which from far-off fishing station or from quiet agricultural settlement, from thriving hamlet or from busy mining camp there does not come a call—a call to which no Church can afford to turn an unheeding ear, a call for the Word of Life and for the Means of Grace. The work in this new land is far different in detail and method from that with which many in this Alliance are familiar, under the name of Home Missions. Here the work is not the recovery of the masses, the rescuing of the lapsed, or the establishment of missions in the centres of congested populations; it is, if I may so call it, the more inspiring and vastly more hopeful work of laying the foundations of future life that shall exclude such conditions; it is the pre-empting, in the name of our Lord, lands but newly opened, the occupying by pioneer work of soil just now ready for tillage.

The importance of this work, I desire in the moments at my disposal, to emphasize in the light of three considerations.

Address before the Seventh General Council of the Reformed Churches, meeting at Washington, D.C., October, 1899.

First.—*The boundless possibilities of the field, and its evident destiny in the future.*

Transcontinental railways and luxury in travel have rendered it less necessary than formerly to expatiate on the extent and resources of the west, but even yet there is room, especially in the Church, for larger appreciation of what these resources mean. That such should be necessary on the part of others I cannot wonder at, when I remember that it is but as yesterday that Canadians themselves awoke to some appreciation of the place among the nations of the world, to which Providence has evidently destined our land, and in that appreciation the Church, I rejoice to believe, is a sharer. Realize for a moment, if you can, the extent of this land, soon to be peopled with millions of every race. Our land of the Lakes and the North Star possesses areas almost as great as those of entire Europe, forty times as great as those of the British Isles, and twelve times that of the Republic of France. An American writer, speaking of his own land, says: "Take five of the first-class powers of Europe, Great Britain and Ireland, France, Germany, Austria and Italy, then add Spain, Portugal, Switzerland, Denmark and Greece. Let some greater than Napoleon weld them into one mighty empire and you could lay it all down in the United States west of the Hudson River, once and again and again—three times." But what say you to a land in which the great Republic itself might be set down, and from the half-million square miles of territory remaining over, kingdoms might still be carved? I confess when I speak of our broad Dominion, clasping three oceans in her embrace, I feel like the little lad in one of the schools in Chicago, who,

when asked by his teacher the other day to give the boundaries of the United States, called upon his loyalty to cover his lack of exact knowledge and said, "Why, ma'am, since the war, there ain't no East, West, North, nor South to this glorious Republic."

The resources of our land are an even more important factor in determining its destiny, and these are on a corresponding scale of magnificence with its extent. The climate is so varied that it includes that of central and southern Italy and that also of sterile Siberia and rugged Norway; here the Sicilian may cultivate his fruit trees and trim his vineyards, and here the hardy Finlander may follow the chase over snow-clad plain and grow the hardier grains under summer suns. Between these extremes lie the vast agricultural resources of the greater part of our land. The Prairie Province of Manitoba is one vast wheat field, producing this staple product for the world's supply in a quality and with a generosity declared by official investigation to be unrivalled elsewhere. Our mines, alike in the Maritime Provinces, and more especially in British Columbia and in the Yukon, are attracting the gold-hungry from every corner of the earth, the gold mines alone promising large returns for one hundred years to come, and the more valuable deposits of the commoner minerals being simply exhaustless. An American authority declares that "no country in the world possesses so much iron, and nowhere is it quite so accessible to manufacturers." History, it is said, has proved that "no nation has become great that has failed, for natural or other causes, to develop an iron industry; if this is so, the importance of Canada's iron deposits is evident. Her coal deposits are as valuable and as

extensive, and in the great central provinces they exist in forms so easily accessible that the furnace room may have its supply of coal at its very door. Measurements and statistics are useless here; in all those natural resources that have formed the foundation for material prosperity Canada stands in the front of the nations. Here are fields waiting but the tickle of the agriculturist's machinery to blossom into harvests sufficient to fill the granaries of the world; here are forests waving their invitations to woodmen, to find in them ready material for easy settlement and thereafter the source of a world wide commerce; here are mines ready to satisfy the hungry maw of the furnaces of the Empire, to supply material for the world's fleets, and to fill with their glittering contents the vaults of many mints and banking houses; while in the rapids and rioting waterfalls which the country's rugged formation has brought into existence, on a thousand streams, is unlimited power waiting but to be harnessed to drive ten thousand factories and light the streets of our towns from Halifax to Dawson City. Do you say these are but evidences of material wealth but they mean nothing to the Church? I protest they mean much. Not with the pride alone of a Canadian do I speak, but with the ardor of a Christian, believing in the purpose of God for our land as truly indicated in nature as in grace. A population of six millions scattered over this vast territory seems insignificant, but you ask me to lay aside my belief in the eternal Intelligence that is behind creation, when you asked me to dream that God watered the ridges of our land so richly, simply to leave them untenanted, save by the red-man, the grizzly and the buffalo. As truly as Henry Clay,

from a jutting crag of the Alleghenies, looking across the valley of the Ohio to where the prairies stretched as yet all desolate, heard "the thunder tread of the coming millions who are marching over mountains to possess these prairie lands, away and away to the setting sun," so for Canada do I hear

"the tread of pioneers
Of nations yet to be,
The first low wash of waves, where soon
Shall roll a human sea."

And when I realize that already the outposts are occupied and the strategic points secured, that villages already stand where cities are to be, that thousands are scattered where millions are to congregate, I realize that for the Church in her work for Canada "*now is the nick of time.*" If it is true that as the foundation is laid the superstructure is to stand, that as the child is the man will be, then is it true that Canadian life and character are receiving now the stamp and impress they are to bear for generations to come, and in this aspect of Home Mission Work its importance is beyond the power of words to describe. I know that other work clamors at your doors and ours, work pressing and important, but none more important than this. Canada is to have a place among the dominant nations of the world, a large place some of us are bold enough to think, and with that in view there is room for a spiritual strategy in the toil and effort for the furtherance of the Kingdom of Christ. It is better to save the nation that is to be dominant than the nation that is dying; happy the Church that has the strength to do both, happy the Church that if either must be neglected has the wisdom to choose the more important and pressing.

Canadian Home Mission Work is

of supreme importance in view of the perils incident to a heterogeneous population coming from every part of the earth

The tide of emigration from Europe and the East to the New World has already been great, it is rapidly becoming greater, and while it is true that the Republic to the south of us must continue, for some time to come, to attract the greater number of those seeking a home in the west, yet those who have watched emigration statistics have noted that the tide has already set strongly toward Canadian soil.

Emigration fluctuates with the financial prosperity or depression of the country, and the commercial revival which has marked the world in the last years, a revival in which Canada has enjoyed an exceptional share, has encouraged settlers from other lands to knock in tens of thousands at our doors, and, with a generosity learned from the land which, with splendid faith in her own powers of assimilation, for a century has extended open arms to the world saying, "Come in, Uncle Sam is rich enough to give you all a farm," we have welcomed them, and they are beckoning to tens of thousands multiplied to follow them.

And who are these who are to become with us the builders of this middle link of the Empire? They are men and women from the four corners of the earth; they come from the British Isles, from the lands we love to call the mother lands, from crowded city and from rural glen, and we welcome them, one with ourselves in religion, in life and in lofty purpose; some, too, cross the border from the South land and bring the

brightness and the vigor of American life. But these are not all who come; from sub-Arctic Iceland to the sunny Isles of the Hellespont, from the Pillars of Hercules to the fastnesses of the Caucasus there is scarce a state that has not sent its contingents to our shores. They come to us degraded by poverty and ignorance, sullen under oppression, and often with habits odious and corrupt, they carry with them, too, the seeds of Nihilism and anarchy, and a spirit antagonistic to Western progress and to Christian institutions; they bring with them for our solution the problems that have staggered European governments and baffled their statesmen. At our Western doors the non-assimilative Chinese clamor for an entrance, forgetting, alas, to leave their heathenism behind them or their immorality that puts even Western vice to the blush.

The Mormons are with us too, and the problems presented in their unchristian and God-dishonoring system faces us as it faces the Church of the United States. A vigorous and growing colony, fostered by zealous teachers and missionaries from Utah, exists in a fertile corner of Alberta and is rapidly becoming aggressive and missionary in its methods. This caricature of the Christian religion, this system of mediæval ecclesiastical despotism, alike subversive of religion and of law, is a menace both to British settlers and to foreigners, for no church is more aggressive in missionary effort, none is more determined and restless in its endeavors to proselytise.

—*Presbyterian Journal, Montreal.*

EDITORIAL NOTES.

Deliver not the tasks of might
To weakness, neither hide the ray
From those, not blind, who wait for day,
Though sitting girt with doubtful light.

“That from Discussion’s lips may fall
With Life, that working strongly, binds—
Set in all lights by many minds,
So close the interests of all.”

ONE of the greatest of Canadians has passed away since last month, Sir William Dawson, scientist and educationist—one ripe in years and full of honors. Two obituary eulogiums have been pronounced over his grave, and the life work of the man remains with us. One of the most eloquent and affecting of these eulogiums was that pronounced by Dr. William Peterson, Sir William’s successor as Principal of McGill University, and another in the beautiful references made by the Rev. Dr. Shaw, Principal of the Wesleyan College, at the moment of his own retirement from the responsible position of his principalship.

It is pleasant to learn that Dr. Shaw does not retire from active work altogether. He will continue as a professor in the institution, being only relieved from the pressing cares of the principalship. His work in connection with the general educational affairs are not to be interrupted, and the friends of education cannot but be glad to learn the news from Dr. Shaw himself in his explanations to the public.

Sir William Macdonald, the millionaire philanthropist, of Montreal, does not weary in his well-doing. His munificent offer in favor of establishing and supporting technical schools in the various Canadian provinces has been announced all over the country; and just as we are going to press there comes the

tidings that he has founded another chair in McGill, to be known as the Dawson chair, with the proviso that the interest from the endowment shall be paid to Lady Dawson during her life. Such men as Sir William Macdonald cannot but make Canada’s heart throb at the princely gifts he continues to dispense in behalf of education and the furthering of philanthropic designs.

The Province of Quebec has got the best of the arbitration proceedings in regard to the common school fund, which have been pending for the last eight years. The arbitrators, Chancellor Boyd, Justice Burbridge and Sir Louis N. Casault, have awarded the Province of Quebec what the latter asked for. Before Confederation the old Province of Canada set aside for a common school fund certain property in the Province of Ontario and the Counties of Bruce and Grey, amounting to a million acres, which were to be sold for the benefit of the fund at two dollars an acre. Under the award of 1870, which was given under the British North America Act, and when the fund amounted, or was supposed to amount to several million dollars, it was decided that this money should be divided according to the population of the Provinces of Ontario and Quebec, as shown by the census. Ontario was charged with the administration of the money and the collection of unpaid balances on the land, after deduction of certain fees for collection and the Ontario improvement fund. When it came to an

accounting, however, the Province of Quebec found that there was a shortage of several hundred thousand dollars in the amount which they expected the collection of arrears would have netted, and Quebec insisted that it be made up. The case was finally put in the hands of arbitrators. The only excuse which Ontario offered really, was to the effect that she had remitted several of the arrears in payment because the land was not worth what had been asked for it, and because of hard times. The arbitrators, however, held that the province was responsible for the shortage.

For over twenty years Mr. G. L. Masten has been principal of Coaticook, and for as many years a teacher in the province of Quebec. His success as a teacher has been very marked, no school in which he has labored failing to be raised in rank—Coaticook for instance from a very low state to be one of the leading academies of the province. Mr. Masten has just announced his withdrawal from active service to enjoy the ease that comes from a long and well-spent service in the interests of the public. Mr. Masten has for years been a member of the Protestant Committee of the Council of Public Instruction for Quebec.

It is to be regretted that the National Educational Association of the United States is not to hold its meetings in Montreal next year. The Committee appointed a year ago by the Quebec Association of Teachers did all in their power to mature the design of having such an influential gathering held in the metropolis of Canada, but the corporation of that city has not seen its way to extend the invitation, chiefly, it seems, on the plea of ex-

pense. The committee consisted of Dr. Robins, and Messrs. Rexford and Astley, all of Montreal.

Professor Robertson, Dominion Agricultural Commissioner, who takes a keen personal interest in the subject of technical education, recently announced to the Ottawa School Board that Sir W. C. McDonald had offered to bear the cost for three years of a manual training class in one centre in each of the provinces in the Dominion. Sir William has already placed the funds for the experiment under Professor Robertson's control, and the latter has engaged competent men to superintend the experiment, the chief being a Scotchman who has been prominent in the establishing of technical schools in Britain, and who for their purpose made a study of the manual training schools of Sweden and Germany. The plan is to utilize the public schools by taking one city or town in each province in which to establish regular classes on one or two days a week in which scholars between nine and thirteen years of age shall spend a portion of the day in actual work with tools. This will be supplemented wherever desired by more advanced special evening classes in manual training and technical instruction.

The Hon. H. T. Duffy, Commissioner of Public Works for the Province of Quebec, in his address before the teachers of that province, is reported to have said :

“A question had often been raised about how far the state should intervene in education, but it was his conviction that schools and colleges generally grew as well if they were left to work out their own destiny. It was hard to carry on education in this province, where one small

municipality had often two schools, one for Protestants and the other for Roman Catholics, and it would be best to have more good, central schools. Indeed, a change had been introduced in the Educational Act for the centralizing of educational institutions, and for the conveyance thither of the pupils. Therefore, to successfully carry on education, abundant money, the very best teachers, and the best curriculum possible were necessary. The field of knowledge was vast, and only what was useful and necessary should be taught, for to-day was a day of business. He was not necessarily a utilitarian, but wanted to

see the education suitable for all, and at least it should be of a moral tone. Good public works were splendid things to hand down to future generations, but an educated pupil was the greatest gift possible."

The sad news comes to us from Montreal of the death of Miss Susan Rogers, B A., the assistant supervisor of the Girls' High School of that city. The position thus rendered vacant is one which the Commissioners will find it very difficult to fill, Miss Rogers having been for many years one of the most efficient of their staff.

CURRENT EVENTS AND COMMENTS.

AIMS OF SCHOOL ART LEAGUES.

TO improve the architecture of schools by having the buildings correctly designed in harmony with the fundamental laws of true architecture

2. To have the interiors of school-rooms made artistic in proportion, in construction, and in the coloring of walls and ceilings.

3. To provide good reproductions of the best art, the great masterpieces of the various schools of painting, architecture, and artistic design, to hang on the walls of the schoolrooms.

4. To purchase a few small copies of the most beautiful statues, the finest vases, and other forms of beauty, that the pupils may see them regularly day after day, and study them, and draw from them when old enough to do so

5 To procure as large a supply as possible of pictures for cabinets to be used in connection with the teaching of Geography and History.

6. To stimulate as far as possible

an interest in good art in the construction, the interior decoration, and the furnishing of all homes.

7. To encourage the organization of Art Leagues among senior pupils for the study of Art as a means of culture and enjoyment.

8. To take any steps that local conditions may render desirable to improve the artistic environment of children and awaken a wider interest in art.

It is impossible to over-estimate the influence of the conditions of a child's environment during the first few years of its life. It is therefore of the highest importance that his environment should be of the best possible character, so that his life may be filled with the centres of truest intellectual and spiritual growth at maturity.

All the great thought and deep emotion that have been revealed to the most advanced men and women of the past have been recorded for the study and development of the race in the form of Literature, or Music, or Art. It is therefore one of

the clearest duties of the schools to qualify all children for the correct interpretation of Literature, Music and Art, that they may be able to enrich and ennoble their lives from these stores of culture and power.

The artistic development of the race has a most important influence on the practical life of the people, and the material development of nations. A workman with artistic taste is able to earn one-third more wages in any department of artistic manufacture because he can give to the constructed articles a higher value. The man who adds most increase in value to raw material of any kind, adds most to the wealth of his country.

The organization of Art Leagues will promote the co-ordination of the home and the school, and lead to united efforts by parents and teachers for the physical, intellectual and spiritual development of the children.

A petition has been presented to the London University Statutory Commission suggesting that a Faculty in Pedagogy should be established in connection with the University, and the Technical Instruction Board of the London County Council has been approached with a view to their providing the means of meeting the cost of such a faculty. It is proposed that a chair and four or five lectureships in pedagogy should be established at a total estimated cost of about 2,000*l.* per annum, subsidiary expenses being met by the fees of students and any Government grant. The scope of the faculty would be the formal study of the art or profession of teaching as distinct from the subject matter to be taught. The curriculum would lead to a distinct degree bearing a distinctive name, such as Bachelor of Education or else Bachelor of Arts in the Faculty of Education which,

like the medical degree, should guarantee both technical skill and knowledge. In order to obtain Government grants, it is further proposed that application should be made to the Education Department for recognition of the new faculty as a "Day Training College," as the Universities of Oxford, Cambridge, Edinburgh, etc. If existing Elementary Training Colleges are recognised (on the analogy of the hospitals for Medical Schools) by the university, they should, it is suggested, be wholly dissociated from merely sectional qualifications (elementary, secondary, etc.), or should give a guarantee that the course of instruction will be that of a University College rather than that of a seminary for a single class of students.

The step thus taken indicates a growing recognition of the need of training and of the study of the science and art of education for all classes of teachers. Whether that study is sufficiently wide and liberal to justify the creation of a special faculty and the granting of a special degree may be a matter of dispute. It would embrace the physiology of body and mind, the laws of thought, formal logic, the history of education, and practical acquaintance with the best methods of school organization, teaching, discipline, etc. We should strongly deprecate the creation of a degree in education that would take the place of a degree in art or science, but we should heartily welcome it as a post-graduate degree. Nothing can take the place of the curriculum of an ordinary liberal education. Teachers must possess the knowledge that they will have to impart, and if they are themselves properly taught, they will, in the most natural and easy way, be put on the track of the best methods for communicating their knowledge to others. But it is a

great mistake to assume that, by merely sitting at the feet of a great teacher, pupils will be fully qualified to become teachers in their turn. There is a science of education separate and distinct from other departments of knowledge, although

it draws largely on many other sciences, and this science is of sufficient practical value to justify its receiving special recognition both by the creation of a faculty and the bestowal of a degree.—*School Guardian*.

BOOKS AND MAGAZINES.

The December *Atlantic Monthly* opens with an article on Briton and Boer in South Africa, by Alleyne Ireland. The writer concludes by saying that England has sought nothing but fair treatment for the majority of the inhabitants of the Transvaal. One of the best things in Mr. Rus's article on Reform, by Humane Touch is the saying that a professional humorist ought to be attached to every reform movement. It is impossible in a limited space to mention all the good things in this number. One of the most charming is a Dunnet Shepherdess, by Sarah Orne Jewett.

The serial at present appearing in *The Living Age* is René Bazin's, the Perishing Land which is being translated for the *The Living Age* from the *Revue Des Deux Mondes*.

The Christmas *Century* is a beautiful number. A Provencal Postscript, by Thomas A. Janvier, is a continuation of his interesting studies in old Christmas customs still surviving in the land of his fathers. The short stories published are: The Kid Hangs up his Stocking, by Jacob Rus; Out of the Fog, by Edward Marshall; The Matrimonial Opportunities of Maria Pratt, by Virginia Woodward Cloud McCribben; Sues the City, by Harry Stillwell Edwards, and Glass Houses, by Gelett Burgess. When one considers that John Morley, S. Weir Mitchell and Ernest Seton Thompson are represented by continued contributions the import-

ance of the issue may be estimated fairly.

"The Whistling Maid," a stirring, Welsh romance, by Ernest Rhys is the complete novel in the Christmas *Lippincott*. "The Magic of a Voice" is a love story that ends satisfactorily, by William Dean Howells. "The Perfume of the Rose," by Flora Annie Steel, and "Alphonse Daudet and his Intimates," by Jean Francois Raffaelli are other important contributions. The Christmas part of the magazine is represented by "The Real Star of Bethlehem," and "At Nazareth."

"Suspense," by Henry Seton Merriman, Toronto: The Copp, Clark, Company. This novel was probably written at about the same period as the *Gray Lady*. It has not the restraint and additional sureness of Mr. Merriman's later work, but it is an interesting story, covering the life and adventures of a war correspondent, Theo Trist who was with Osman Pasha at Plevna.

The following books have been received:

Ginn & Company, Boston:

Twelve English Poets, by Blanche W. Bellamy. Heidi, by Johanna Spyre, translated by Helen B. Dole.

A book of Seventeenth Century lyrics, selected by Felix E. Shell-ing.

Little Wanderers, by Margaret Warner Morley. Ways of Wood Folk, by William J. Long. Illustrations of Logic, by Paul I. La Fleur, lecturer in McGill University.