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THE CANADA
EDUCATIONAL MONTHLY
AND SCHOOL MAGAZINE.

NOVEMBER, 1887.

ANNUAL CONVOCATION UNIVERSITY COLLEGE, TORONTO.

PRESIDENT WILSON'S ADDRESS.

[Revised specially for THE MONTHLY.]

WE meet to-day as a college under peculiar circumstances, with our organization already modified by recent legislation; which nevertheless still awaits the proclamation of the Lieutenant-Governor before it can come into full effect. The primary object of the University Federation Act, in which we heartily sympathize, is the union of denominational universities and colleges with the national university for the furtherance of their common aims. Happily, however, the occasion has been turned to account for a revision of the university scheme in other aspects, and we welcome it as removing restrictions which had long hampered us.

This is all the more creditable to the Minister under whose special directions the measure has been framed when it is seen that the tendency of recent legislation has been largely to undo the work of older reformers and restore to the University the rights and privileges conferred on it by its Royal Charter sixty years

before. By that charter of 1827, a college was established at Toronto—or York, as our city was then called—“with the style and privileges of a university;” and it was soon after endowed by patent with a portion of the lands which the wise foresight of the pilgrim fathers of Upper Canada had set apart for higher education. The University of King's College, as it was styled, had its professors in arts, medicine and law. It had also its faculty of divinity, accompanied in the terms of the original charter with restrictions which, though modified by subsequent legislation, were a source of strife and controversy till their removal. But the changes effected in 1853 went far beyond that. Not only were the faculties of law and medicine abolished, but the university was reduced to a mere board with the control of examinations and the conferring of degrees. As to the faculty of arts, it was remodelled, with important additions, as a distinct corporation, under the

name of University College. With the functions thus severally assigned to university and college the work of higher education was resumed; and, in spite of many obstacles, has been prosecuted successfully for thirty-four years. When I entered on my duties as a professor in that same year in which the new University Bill was enacted, fresh from Edinburgh with its famed school of medicine; and with its whole instruction in pure and applied science bearing the closest relations thereto, I regarded the abolition of the medical faculty with unbounded astonishment. Its suppression would under any circumstances have surprised me; but the exclusion of all instruction in medicine seemed peculiarly inopportune at the very time when important additions were being made to departments of science, the immediate value of which would have been largely augmented but for that unfortunate step. Happily the conflict of opinions on political and ecclesiastical questions which then impeded the efforts at educational reorganization is now a thing of the past. In the recent legislation on university federation we have had the satisfaction of witnessing the harmonious co-operation of the Legislature in the effort to place higher education in Ontario on a more comprehensive basis; and the promptness with which the representatives of medicine have responded to our invitation, and united in the inauguration of the restored medical faculty, is the best evidence of the wisdom of the step. In conjunction with our enlarged department of science, with its professorships and lectureships in biology, physiology and histology, chemistry and physics, in addition to a promised lectureship in botany, the revived medical faculty enters on a new career with abundant promise of success. Other changes are not less noteworthy. In the faculty of arts the classical

department is to be placed on a more efficient basis by the appointment of separate professors and lecturers for the Greek and Latin languages and for ancient history. The requirements of modern languages have received like recognition. Special instructors are now provided in German, French, Italian and Spanish; and a chair of the English language is to be equipped, in addition to the lectureship in that important branch. Physics and mathematics are now for the first time to have their respective professors and lecturers, with the promised addition of a chair of astronomy. Provision is also made for the restoration of the faculty of law. If the bar of Canada is to maintain its true place among the learned professions, and our provincial courts are to train for the supreme tribunal of the Dominion men worthy to rank with the distinguished jurists of Great Britain and the United States, it is indispensable that adequate instruction shall be provided. The new Act authorizes instruction in constitutional law, jurisprudence and political science. In addition to those important chairs we have the further promise of professorships in the history of philosophy, in comparative philology, in moral philosophy and in the science of education. But underlying all this is the ever-recurring element which controls alike the educationist, the statesman and the trader. The educational problem has become a financial one; and till that aspect of it has been satisfactorily dealt with, its promised results will remain unrealized. Meanwhile, however, means have been found for some desirable improvements, and as a first step the promotion of Mr. Alfred Baker to the new chair of mathematics will, I feel assured, be welcomed by every graduate and friend of the university as a just recognition of the merits of one whose mastery of the subject and whose efficiency as a teacher alike

establish his claim to the appointment. The selection of Mr. Dale for the new lectureship in Latin will in like manner commend itself to all. But while we welcome those and other appointments, they for the most part only perpetuate under new designations the services of old teachers; while any increase either in their numbers or emoluments has been thus far obtained at the costly sacrifice of scholarships and prizes hitherto awarded in the faculties of arts, medicine and law. There has been a further proposal to obtain additional lecture rooms by the sacrifice of the college residence; but the unanimity of the protest against a proceeding so inimical to the best interests of the college is sufficient, I trust, to prevent so mischievous and short-sighted a policy. As to the scholarships and prizes, I am encouraged by liberal responses already made to my appeal to anticipate their replacement from other sources.

By another Act university extension is made to depend on the realization of a surplus accruing from property hitherto held by Upper Canada College. In reference to this it is only just to ourselves to say that, while we view with regret the application of any portion of the resources of Upper Canada College to supply the needs of the university, we feel relieved from the necessity of protesting against the diversion of its funds to our use, by the fact that the report of commissioners appointed to enquire into the affairs of the University and Upper Canada College shows that the Council of King's College had, up to 1839, expended £34,409 15s. 6d., or nearly \$138,000, of the university funds for behoof of Upper Canada College; a debt, as the commissioners remark, apart from any question of accumulated interest, "then considered very doubtful, subsequently much increased," and ultimately cancelled

as hopeless. It must therefore be considered satisfactory to all parties if it shall prove that, owing to the greatly augmented value of the present site of Upper Canada College, it has become possible to repay some portion of this old debt without impairing the efficiency of an institution in whose welfare we all feel the deepest interest. But the recovery of any portion of this debt is even now contingent on so many arrangements involving inevitable delay, that I am encouraged by the unanimity of the Legislature in the provisions of the recent enactment to appeal to them to follow up the measures of last session by the practical recognition of other and equally well-founded claims of the University, so as to secure for the present generation the realization of their provisions for higher education.

This is no question of class interest. If the National University fulfil its requirements as such, the entire community are interested in its liberal maintenance, and none so much so as the masses. We are proud of the fact that the record of those who have won its honours includes the names of men of rare gifts, who, but for the educational advantages thus placed within reach of the very humblest, might have vainly struggled against social impediments. I cannot doubt that the liberal maintenance of higher education will be welcomed by the people of Ontario, whose fathers made such generous provision for its inception. The augmentations proposed in the departments of mathematics and physics, and in the natural sciences, in jurisprudence and political economy, will all be of value as branches of general education. Of those the last named has assumed an importance in general estimation which justifies the action of the Legislature. But it is a subject which, more than most others, will largely

depend for its value on the wise selection of its teacher. It is, moreover, indispensable that the chair of political science shall be placed financially on such a basis as to command the entire services of the professor; and so effectually protect him from any compromising relations either with temporary political or professional interests. Since the days of Adam Smith, the father of English political economy, Ricardo, Malthus, John Stuart Mill, Senior and other acute reasoners have enlarged the scope of civil polity until it has become a distinct ethical science, resting on higher grounds than mere supply and demand, or other accepted axioms of selfish economics. Its teachings must harmonize with those of the professor of history, in so far as you look to both to adduce from the experience of the past lessons to guide in the determination of great constitutional principles, in dealing with urgent social questions, and solving financial problems on which the wealth of nations so largely depends. Manifestly the professor to whom this important branch of education is entrusted must be selected like any other teacher of science, as a well-trained searcher after truth; not as the advocate of any current political cry.

But the responsibility which university patronage involves is by no means limited to this chair. The history of both ancient and modern universities shows how largely their reputation has often been due to one or two men of mark, who have given an impetus to the whole culture of the schools and left their impress on their age. The university is a mere abstraction apart from its teachers; and it rests now mainly with the Minister of Education whether the new chairs shall be filled with mere tutorial drudges, or with men of high gifts and attainments who will make their influence felt on the rising generation,

and permanently elevate the intellectual standard of the whole Dominion.

But with the inevitable delays before any surplus can accrue from the Upper Canada College appropriation, the relative importance of the new chairs must be kept in view. Foremost in value for our immediate requirements are the professorships in English and Latin, and the new chairs in constitutional law and jurisprudence. In the natural sciences, the lectureship in botany, and also a promised lecturer in mathematics will be welcome additions. The value of a professoriate embracing astronomy, moral philosophy, comparative philology, the history of philosophy, and other subjects specified in the recent statute cannot be slighted in any scheme for a thoroughly equipped university faculty. But some of them are luxuries which must be held in reserve till our pressing needs are supplied. As to the proposed chair of education, or pedagogics, as the Germans call it, whatever may be its practical value, it lies outside the requirements of the general body of students, as well as of our urgent needs as a university. Under any circumstances its utility must depend on the choice of an educationist of the highest class for the chair. But, in view of the special character of this professorship, designed, like those in medicine, for professional, as distinct from purely educational training, it is only reasonable that the Education Department should provide the salary.

It is from no sectional prejudice that I thus estimate the relative utility of proposed chairs. But looking to the demands on our inadequate resources which the recent statute involves, the action of the Legislature becomes a mockery, "to keep the word of promise to the ear, and break it to our hope," unless supplemented by funds adequate to secure the real-

ization of their ideal. But I am not without hope that, when our claims are fully understood, their reasonableness will be acknowledged. In the recent arrangements for providing accommodation for the Legislature, a site has been appropriated on the University grounds which, with their confirmation, was in 1858 leased to the city on the express covenant that no building should ever be erected thereon. But an older Act of the Canadian Parliament, provides for the erection of a "Parliament House, and buildings for the accommodation of the several public departments on such portion of the ground forming part of the University endowment as may be found requisite, and such"—it was enacted—"shall be vested in the Crown for the public uses of the Province." The Act further declares that the land thus appropriated "shall be valued and the interest of the value thereof so ascertained, at six per cent. per annum, shall be paid yearly out of the Consolidated Revenue Fund to the credit of the University Income Fund, and shall forever form part thereof." This Act, so far as I can ascertain, has never been repealed. The rights then acquired are now being exercised; and the moral obligation to fulfil the terms on which they were obtained cannot be ignored.

As to the power of the Legislature to appropriate for its own use the site originally destined for the University building, it would be vain for the University Council or Senate to dispute it. Its advantages have only been too obvious. It is declared in their Act of 1880 to be "the most eligible for the purpose." But, if so, it is right that I should recall the fact that the Act of 1853 provided that all property vested in the corporation of the chancellor, masters and scholars of the University of Toronto, shall from and after the coming into force of this Act be vested in the Crown.

Moreover, by the University Act of the same year the Senate and the College Council ceased to have any authority in the administration of University property or any power to dispose of it; and the Bursar became an officer of the Crown. The Government have therefore been from that date, and are now, the trustees of the property. Any formal concurrence by the Senate of the University, either as to the leasing of lands to the city, or their appropriation by the Legislature, could have no force in relieving the Provincial Executive from their responsibility. It seems only necessary to draw the attention of the Legislature to the terms on which the site of their new building was originally appropriated for their use to secure the fulfilment of the conditions. The Province is led to anticipate a large return from the sale of the former site. Some portion at least of that is manifestly due to the University for the more eligible one, where, on the 23rd of April, 1842, the Governor-General, Sir Charles Bagot, as Chancellor of the University, with impressive ceremonial laid the foundation stone which during the past year has been so unceremoniously displaced. In view of past proceedings thus called to notice, and the actual saving to the whole Province arising from the appropriation of the old University site, it cannot be deemed an unreasonable proposal that the Legislature shall give practical effect to their late statute by endowing at least two of the new chairs therein declared indispensable for the efficient organization of the University.

The plea is urged not only on grounds of equity, but in the interest of higher education for the whole Province. The principle which underlies the idea of University Federation will yet, I trust, assert itself in all the amplitude of a generous sympathy with whatever tends to promote true

learning in any intellectual centre. It is a narrow spirit of rivalry that induces some friends of denominational colleges to resent the provision of adequate equipment for the Provincial University. No one can impartially review the successive steps by which it has systematically revised its course, and once and again elevated its whole standard, so as to avail itself of every improvement in the high schools of the Province—due in no inconsiderable degree to the men trained by itself to fill their master-ships,—and at the same time note the extent to which its example has influenced other institutions of learning far beyond the limits of Ontario, without recognizing that the interests of higher education in Canada are largely identified with its prosperity. It cannot be too strongly insisted on that the success of national education is the measure and standard of a people's healthful progress. The nations of the world take rank according to their fidelity to it; and their greatness, alike in ancient and modern times, has been in proportion to the zeal with which they have fostered intellectual culture and made truth their highest aim.

Looking to this question as it is affected by University Federation, I entertain sanguine hopes of its results. It is only by united action in some form that denominational influence can exercise any legitimate effect on national education. If the co-operation of colléges under the control of various Christian churches, with one maintained by the State in the interests of all, lends effectual aid in sustaining a high moral and religious tone among the undergraduates, one all-important aim will be accomplished. On the other hand, I look to the conflict of opinion and diversities in teaching, resulting from the healthful rivalry of colleges acting in concert as affiliated members of one univer-

sity, for protection from the stereotyped rigidity which has been charged as the danger of all national systems. This is indeed already guarded against in no inconsiderable degree by the departments of the University scheme, which not only encourage different lines of study, but give fair scope to the intellectual specialist, and leave to all students some choice in the determination of their undergraduate course. But there is another evil, the product to a large extent of modern appeal to examinations as the supreme test of all qualifications for office or appointment. It has been questioned if Walpole—one of England's greatest financial ministers—could have satisfied a modern civil service examiner; as to Wellington, he would certainly have been plucked by the martinets of the Woolwich board. Examinations have their proper place in every collegiate system. I know of no better substitute as a test of actual work done in the lecture room and laboratory; especially when conducted by an experienced teacher. But the extremists have not only effected a divorce between examiner and teacher, but would fain substitute examination for the teacher's work. With such the ideal university of the future is a board of examiners and a file of text books. Under this influence rival programmes outvie each other in the multiplicity of prescribed book-work; nor can I claim for our own curriculum an absolute exemption from the taint. Every system, whether for school or college, is objectionable which relies mainly on the perfecting of educational machinery, and fails to leave scope for the personal influence of the teacher. Some prescribed course of work is indispensable; but if the instructor is worthy of his trust, what he communicates *con amore*, as having a special interest for himself, will be the most likely to kindle enthusiasm in the student. Routine

work is ever apt to lapse into drudgery, unless animated by the enkindling flash of impromptu illustration. Sir John Lubbock justly remarks :— "Our great mistake in education is, as it seems to me, the worship of book learning—the confusion of instruction and education. We strain the memory instead of cultivating the mind." The schoolboy is doubtless as clay in the hands of the potter, but that is no justification of the tendency of modern educational systems to fashion a single departmental mould in which all shall be shaped according to the one regulation pattern.

This evil is to be deprecated at every stage, but in the work of the university most of all. There is a growing tendency to overload every department with an amount of book-work which must reduce the teacher to a mere monitorial drudge, and help to give countenance to the popular idea that any man whose name has figured in the honour lists is amply qualified for a professor's chair. At this critical stage in the history of the University, when not only important additions are about to be made to the Faculty of Arts, but the restored Faculties of Law and Medicine have to be reorganized, its future for another generation depends on the choice of the men who are to constitute the new professoriate. We must have teachers with higher claims than the tests of the examination hall supply if we would escape the risk of stamping a whole generation with the same mediocrity. We want, if possible, for every university chair, men of original power and genius in their own special branches. No one is deserving of so responsible a trust, in which he is to mould and fashion the minds of the most gifted among those who are before long to take the place of our present leaders, who does not himself possess gifts such as no university pretends either to confer or to

accredit by its honour lists. Whatever be the university requirements, no man is worthy of one of its chairs who has not much of his own to communicate beyond any prescribed curriculum. The most valuable influence of a teacher is to be looked for in the sympathetic enthusiasm which he enkindles in the minds of his students, broadening and elevating their aspirations, quickening the dry bones of academic routine, and vitalizing them with living fire.

Once more we welcome in increasing numbers the candidates entering on their undergraduate course, as well as those who now resume the work of later years. Nevertheless it is under such circumstances of assured progress that we to-day hold our last convocation as a college. In the graceful narrative of the University from the pen of Dr. Scadding, he refers to University College as "the concrete presentment of the somewhat abstract entity" to which the University of Toronto was reduced by the Act of 1853. But that state of things has now come to an end. The University is entering anew on its legitimate functions with ampler powers; and practically absorbs the college as a complementary part of its system. The duration of the latter has been brief, if measured by the lifetime of ancient seats of learning. Nevertheless for upwards of a third of a century we have successfully prosecuted the work entrusted to us. The sons of earlier graduates have followed in their fathers' steps; our numbers have progressively advanced till our halls are crowded with students; and the demand is now for ampler room. We have trained two generations from their entrance on an undergraduate course till they proceeded to their degree; and have watched with interest the success achieved by many of them in various spheres of life. Now, as a third gen-

eration prepares to follow in their steps, one important cycle in the history of this institution is completed. It is with no sense of failure that we see University College merge anew into the institution from whence it sprung, and become a satellite in the university system of which for thirty-four years it has constituted the most essential member. It has numbered among its professors men whose memories are cherished with a just sense of their worth; and foremost among them the distinguished scholar—my predecessor in this chair—who has passed away in the fulness of his years since our last College Convocation; but whose influence survives in the enduring fruits of his aptitude as a teacher, and in the high standard which he determined for classical scholarship in Canada. So long as this college has been efficiently equipped it has fulfilled the duties entrusted to it. But its record is now closed as a faculty of arts. The Chancellor justly remarked in his last address to the University, while the details of the legislative measure which has since become law could only be surmised, that “the success of University College will depend on the strength of its staff.” This test of all academic possibilities—strength in numbers; still more, strength in intellectual capacity and teaching power—is indisputable, and tried by its standard, the thing now called University College, if standing alone, would fail. But for the actual work assigned to it ample power is assured, and when it receives the promised additions, including professors and lecturers in English and Latin, in Oriental languages and ancient history, it will take its place in the re-organized University; while with renewed hope we look down the long vista to be trodden by the footprints of younger generations, and anticipate for Ontario, and for Canada, the rich dawn of an ampler day.

The University of Toronto is identified in its inception with historical events of memorable significance. The loyal pioneers of Upper Canada who hero reared for themselves homes under the shelter of the British flag, had scarcely effected their first settlement on the northern shores of the great lakes when they gave evidence of their intellectual sympathies and wise foresight by efforts to secure some adequate provision for the education of their sons. No more creditable incident can be recalled in the early history of any country. It illustrates the character of the founders of Upper Canada as men of no ordinary type; differing indeed widely from the Puritan pilgrims of New England, but not unworthy to rank alongside of them as planters of another vigorous offshoot of the British oak. So long as their descendants worthily maintain the inheritance thus bequeathed to them, they will recall with pride the incident which presents its hardy pioneers while literally hewing out their first clearings in the forest, and displacing the Indian wigwam with the log hut of the farmer, thus anticipating the wants of later generations, and dedicating 500,000 acres of the uncleared wilderness to provide for the educational requirements of the infant State. To them, and not to the royal donor of its charter, this University owes the gratitude due to its founders. Nor have they missed their reward. The roll of its distinguished graduates already includes the names of men who have borne an honourable part as statesmen in critical times, who have taken the highest rank on the Bench and at the Bar; and have creditably filled responsible posts in academic, civic and commercial life. But we are even now in the gristle, and must be allowed to progress to a well-developed maturity. The acorn that some autumn gale of that elder century dropped in the solitude of the Canadian forest now

spreads forth its branches to the winds, a vigorous young oak, and if left untouched by rude hands, may flourish a thousand years hence a memorial of our historic dawn; like the Conqueror's oak in the Royal chase, associated with the deeds of William of Normandy, or Herne's Oak, the memorial of the later age of England's Maiden Queen and Shakespeare's "Merry Wives of Windsor." But neither oak nor seat of learning can flourish if subjected to constant transplanting or endless unrest. Time is needed ere the healthy sapling realize the motto: "Velut arbor ævo," that voices our University's symbolic crest of the maple tree. We have, indeed, seen in the history of the Cornell and Johns Hopkins Universities what can be accomplished by such institutions when started on their career with an adequate endowment. Nor, with its narrower resources, has this University failed to make a name for itself,

or to train more than one generation to do it honour. But much has yet to be accomplished before even Harvard or Yale can claim equality with the venerable centres of Europe's academic life, with their alumni, the world's true nobility, by whom the thoughts of generations have been widened, and science mastered for the service of mankind. They were the strongholds of intellectual life in ages of darkness and ignorance. We recognize in them the source of Europe's re-awakening, and hail the promise of a still brighter renaissance for ourselves. Let it not be our shame that "knowledge grows, but wisdom lingers." The sources of all true progress are at our disposal. It rests with those to whom the equipment of this University is entrusted to determine whether we shall bear our part in the seed-time of future centuries; or with niggard parsimony, leave our sons to reap where they have not sown.

ENGLISH IN OUR SCHOOLS.

BY PROFESSOR FERGUSON, QUEEN'S UNIVERSITY, KINGSTON.

MR. HAULTAIN in his admirable letter which appeared in *The Week* of the 8th of September, and which has been copied into *THE EDUCATIONAL MONTHLY*, has called public attention to a very important matter, which has not hitherto received the attention it deserves. There can be no doubt that the study of English is of special importance, for all other knowledge is valueless unless we are able to express our ideas in a clear and forcible manner. Yet in nothing have our schools failed so completely as in imparting a sound English education, and at the examinations for matriculation into our universities a larger number of candidates have failed in English than in

any other department of study. Of the candidates who in July last presented themselves for matriculation into Trinity, Victoria and Queen's Universities more than twenty per cent. were rejected, and the percentage of failures was still larger among those who presented themselves at the supplemental examinations at Queen's in the last week of September. The number of ungrammatical expressions and mistakes in spelling, quite apart from the absence of purity of diction, which the papers of candidates show, is simply amazing and positively painful to the examiner. It is hard to say where the blame lies, but it is partially due to the fact that English is virtually crowded out of

our schools by the multiplicity of other subjects. In the case of classics or of the modern foreign languages, the pupil is required to write frequent exercises, and this is recognized as the only efficient mode of acquiring an accurate knowledge of these languages. English, however, is treated very differently, and it seems to be imagined that a knowledge of the mother tongue comes by intuition; the least time possible is given to the study of it, and from year's end to year's end the pupil is not required to write an English essay, very rarely a simple English exercise. I am speaking of schools with the work of which I am acquainted, and from the results of the examinations I judge that the same state of things exists in other schools also. Unfortunately, to many of the pupils, English—English pure and undefiled—is really a foreign language. Beyond a certain circle, which we are sorry to think is very limited, the English of Canadian social life is very corrupt, and it falls to the teachers in both our common and high schools to deal with the difficulty. English must be treated by the teacher as virtually a foreign language, and it is only by constant writing, by continued exercises in grammar, and by reading none but the works of our purest English authors that a knowledge of English can be acquired. But this course is not followed, and the evil is increasing rather than diminishing. In very many instances the teachers are not sufficiently guarded in the language which they themselves use. Lately, when visiting a country town, I entered one of our high schools and heard the headmaster explaining the laws of equilibrium; his explanation was clear and interesting, but within ten minutes he perpetrated nine blunders in English of which a boy in the third form of an English school would have had good cause to

be ashamed. I do not suppose that I was specially honoured with these choice specimens of English, or that the gentleman is more guarded when the Inspector is present. At any rate the influence of such ignorance or carelessness is very decidedly evil, and under such circumstances we cannot expect pure English from the pupils. I am aware of another school where a master is in the habit of telling his class that such a proposition must be "drewed;" or, again, "boys, you are here to learn, and I am here to learn you."

The subjects taken up at the matriculation examinations were the same in all the Universities and were prescribed two years previously. They were the "Autumn" and "Winter" of Thomson's "Seasons," and the last three chapters of Southey's "Life of Nelson," from which an essay was to be chosen. The portion from Thomson's "Seasons" is certainly not difficult, and there was ample time to master it thoroughly; ample time to commit the whole to memory, if that had been required; ample time, certainly, to have analyzed repeatedly every sentence, and to have become familiar with every allusion. The portion set for analysis for the candidates for matriculation into Trinity, Victoria and Queen's Universities may have been a little long, but three sentences alone presented any difficulty; yet only 30 per cent. of the candidates analyzed the passage correctly. In the passage occur the expressions, "Frigid Tempe," "Hænus cool," "Hæcla flaming." To the question "Why frigid Tempe?" etc., the following answers were given: "Tempe was a place in the extreme north, and was therefore very frigid;" "Frigid Tempe, because the temple or castle of Sir Richard Temple was nice and cool and breezy;" "Frigid Tempe, because Thomson is thinking of the

season of winter, and winter is usually cold, even in England; "Tempe is from *tempus*, hence temperature, French *Tempe*;" "Hæmus cool, because the Hymalayas are cool compared with the rest of India;" "Hæmus is a name for the north-east wind, which is always cool;" "Hæmus cool, refers to the high snow-covered peaks of the Ural mountains;" "Hæmus, a river in Greece whose waters are always cool;" "Hæmus is from *hiems* winter, and so cool;" "Hæmus cool, because he always kept his head about him, and never allowed his temper to rise." In like manner we are told that the "Niemi Mountains are the same as the Cheviot Hills;" "Hecla is a volcano in the extreme south, within the Antarctic circle;" and "Tenglio is another name for the river Tweed." A very large number of similar examples might be quoted, and each of these here given is from a different paper. As specimens of the essays we may take the following: "England was at that time as now, the leading naval power. The French knew if they could only defeat her navy that it would not take long to put her in the same possession as the rest of the countries of Europe. Sweden and Denmark were ready to *do most anything* she ordered, and Russia would do anything to harm her." "Denmark was ruled by France, and in fact *they* were ruled to a certain extent by the commands of that country." "They set sail in March from Yarmouth bound for Denmark, *who* were their friends instead of their enemies." "The first thing that England did was to attack and make Denmark surrender and take possession of Copenhagen; Nelson was not the commander, although in the middle of the fight he was left the commander." "Great patriotism had been shown on the part of the

Danes. All ranks enlisted themselves for the defence of their fatherland. A corps of soldiers were *risen* in the Universities, and they had improved every spare moment awarded them in fortifying themselves." "Nelson was angry and declared he did not care which they took; at length they started by the Belt, and would probably *have went* that way but for the *timley* interference of Capt. Dowett."

I give in full the paper on English Grammar and Composition. A teacher has stated that he regards this paper as too easy for a matriculation examination. I quite agree with him, but I am sorry to say that, however easy the paper may be, not more than 20 per cent. of the candidates approached correctness in their answers.

Point out and explain any peculiarities in the following sentences, and correct any errors:

1. This convention was really the two Houses of Parliament. *Blackstone.*
2. His pavilion round about him were dark waters and thick clouds of the skies. *Psalm xviii. 11.*
3. Every limb and feature *appears* with its appropriate grace.
4. Now *abideth* faith, hope, charity; these three. *I Cor. xiii. 13.*
5. Thine *is* the kingdom, and the power, and the glory. *Matt. iv. 13.*
6. Blessed *is* the people that know the joyful sound; *they* shall walk, O Lord, in the light of thy countenance. *Ps. lxxxiv. 15.*
7. While the *extremest* parts of the earth were meditating a submission. *Atterbury's Sermons, i. 4.*
8. In such a time as this it is not meet That every nice offence should bear his comment. — *Julius Cæsar iv. 2.*
9. Which none may hear but she and thou. — *Coleridge.*
10. To-day I lay the book upon the table while I lay down upon the

sofa, but yesterday while I lay down upon the sofa, I laid the book upon the shelf.

11. I called on him and wished to have submitted my manuscript to him. *Goldsmith.*

12. I had not the pleasure of hearing his sentiments when I wrote the letter. *Lowth.*

13. Ye will not come unto me that ye might have life.

14. Some, who the depths of eloquence have found,
In that unnavigable stream were drowned.

Dryden, Juvenal, Sat. x.

15. And passing rich with forty pounds a year. *Goldsmith, Des. Village.*¹

Each of these sentences seemed to afford more or less difficulty, but most of the candidates failed with one or other of the 2nd, 3rd, 4th, 5th, 8th and 10th questions, and we have such answers as these: "Every limb and feature appear with their appropriate grace, should be *appear*, because it has a compound subject connected by and;" "Appears is in the singular, although the subjects limb and feature would usually take a plural verb, but here they are of *kindred meaning*, and as such take a singular verb;" "Correct, the noun is singular, therefore separate therefore the verb is singular;" "Ye will not come to me that ye might have life;" Will is used more in interrogative sense. Therefore it should be, "Ye shall not come to me that ye may have life." "Thine *art* the kingdom, the power and the

glory. Thine is an old form, therefore an old form of the verb should be used." To the 6th question, "People here is a collective noun. Yet it would not make very good English to say knows, and as we cannot tell the gender of this class, and even if we could one step would have to do for the whole mass, and it is hardly likely that they did that, therefore we *yoose* a plural noun." To the 8th question, "Nice don't sound very good, as an offence is not often nice." And 10th question, "It is very harsh to use lie and lay so often;" "To-day I laid the book upon the shelf while I laid down upon the sofa, but yesterday while I laid down upon the sofa I laid the book upon the shelf." "Note lie should be lay and lay should be laid." "Yesterday while I laid down upon the sofa I layed the book on the shelf." "The first lay should be laid, it denotes past time. The second lay should be laid, it denotes past time. Lie should be laid, it denotes past time." "It should be, I was laying on the sofa."

I have made these numerous quotations at the risk of being somewhat tedious, but I feel assured that the Department of Education, certainly the public generally, has no idea of the low standard of the English taught in both the Common and High Schools of our Province. I am not prepared to say where the blame lies. The fact is undeniable, and it is the duty of every one who takes any interest in the education of our youth to assist in the rectifying of the evil.

SCHIEGEL, the German philosopher, classifies the educational forces of society as follows:—The family, the school, the guild, the church, the State, and remarks that the school neglects as few of its duties as any one of the other four. There is not so much scolding in the school as in the average

family; not so much jealousy and strife as in the guild; not so much pretense and sham as in the church; no such corrupting influences as in the political school of the State. Of all the national institutions in our land, the common school is the purest, and comes the nearest to filling its legitimate mission.

EDUCATION AND CO-EDUCATION.

THE levelling and equalizing tendency of American politics and social forms begets in us a rage for assimilating the condition of men and women. One meets in Europe constant reminders that the woman of America is there thought to hold the most enviable position, not merely because of the honour in which she is held, but because of the freedom allowed her to follow her bent, and indeed her whim. Yet it is in America that the air is most charged with the portentous sound of Woman's Rights and Woman's Wrongs; as if liberty were an appetite that comes with eating—as if such a function as depositing one's ballot for President contained a mystic virtue, deprived of which the feminine half of humanity languishes in a servile state. Here, too, we have the phenomenon of the sexes educated together long after they had reached the age when for prudential or for sentimental reasons they are separated in other communities. At a college like Cornell, the women are in a minority; but they are numerous enough to afford one some idea of the feasibility of co-education. At Aurora, not far off, is Wells College—an establishment for women alone; and at Poughkeepsie there is Vassar College, still better known. At Harvard we have the experiment of a woman's department, related to the university so far as examinations are concerned, but not co-educational in the sense of the system at Cornell. There are other mixed and purely feminine establishments, too many to mention; they spring from the desire of parents to give their daughters every advantage possible in the way of education, but exist more especially because of the ambitious nature of American

girls encouraged by all the incentives to self-reliance which surround American youth. Certain questions are natural, and lie on the surface. Do women evince an inclination to make more general use of these appliances for higher education? Are they good in results, moral, mental and physical? Do they prepare women for life? And if desirable for one reason or another, is the separate or mixed college the better?

Among men the higher education can be pursued only by sacrifices of time on the part of the student, of money on the part of relatives; and when the time for action comes, the rewards are, comparatively speaking, small and precarious. A brilliant man who has his own way to make is seldom advised to marry unless his choice has wealth at her command, and is often earnestly dissuaded whatever his choice is, owing to the interference of domestic concerns with a proper absorption in his life-work. Among women the higher education must be pursued with the same sacrifices on the part of relatives, and infinitely less chance of obtaining rewards in after life in any way commensurate with the efforts of preparation. Marriage is also to women a far greater interference with labour. Housekeeping and the crises and daily routine of maternity absorb the sum of energy in most women, and leave but a small margin to those who are exceptional in strength. This is why artists, for example, though naturally more attracted to pupils of the opposite sex, learn to place their hopes rather on their male pupils: they have been disappointed again and again by the disappearance of most promising workwomen in the rival career of matrimony. And yet it is

probable that women find the fine arts rather easy to reconcile with family duties, compared with literary, scientific or professional pursuits, owing to the large element of mechanical dexterity which enters into them. Save in exceptional cases human life is too complicated, the bringing-forth and bringing-up of human beings too absorptive of time and energy, to permit women to do anything else if they understand their own responsibility. This is true everywhere, but least apparent in crude communities where life is reduced to simple elements. It is part of the crudeness which still persists for good and evil in the United States that thoughtful men and women in large numbers will not accept the limitations here indicated, and persist in the endeavour to place women in politics and education on an exact equality with man. In Europe things are more complicated; the struggle for existence is keener; every waste of energy is guarded with jealousy; and women are kept to their side of the great male-female bargain without half the chance of entering man's domain that is afforded their American sisters. This, however, does not prevent female genius from expressing itself when it occurs in sufficient strength to make itself a place in the world.

Undoubtedly one result of the higher education in its effect on women is to make women more content with celibate life, more exacting in the choice of a partner, and more fixed in refusing maternity if the goal toward which their ambition points runs any risk of being missed by that road. On the other hand it widens their horizon, gives them better conversational powers, and quickens their brains, in whatever sphere they are to move. With proper attention to exercise and rest, there is nothing in the studies at Vassar, Wellesley, Smith, Bryn Mawr, or Wells College,

at Cornell, or any other institution for girls, to harm the pupil. False and antiquated ideas of instruction, if these occur, do not hurt the sister more than the brother. But unquestionably these institutions do not take into account marriage, maternity and housekeeping. The latter are either ignored, or, as grammarians say, "understood"—which in this case generally means that the girl does not understand them at all. They cannot be taught in a college; the previous family life is supposed to have inculcated them. The girl graduate is therefore turned out with a mind brightened by quite another order of things, and finds herself confronted with details which are not easy to reconcile with her studies. If she has shown ability, she will turn to solitary study rather than the frivolities of life; and if the idea of making a name seizes her, she is likely to perceive that only by preserving herself free of the responsibilities of a family can she hope to make her work "tell" in the great arena. College education for girls has thus the two inevitable sides—good or bad, as one chooses to consider them.

In the long run the wife and mother who has been to college will not regret it, though it made her existence bitter while she was adapting herself to the common lot. The studious and introverted girl is made less happy on the social side, but gains constant friends in her books. The woman who has genius or talent finds it easier to reject matrimony, after a college course. So we may at least say that there is more to be said in favour of the higher education of women than against it, notwithstanding many grave charges which have been made with reason by able disputants heretofore.

To co-education such as is found at Cornell, there are many objections. Boys instinctively dislike it, and their

instinct should be respected. It is liable to tint the manners and talk of the girls with a freedom and slanginess caught from the boys, rather than to teach the latter good behaviour. All the good that can be learned by boys in that regard may be gained through occasional meetings in public. Between the sexes the familiarity of class-room and college community has nothing to recommend it; and there is a multitude of objections to it which need be enlarged upon. A result of a somewhat crude civilization, such as we see in its elements at the country school, it is not calculated for the variety and pressure of life as life is to-day, nor for men and women past the callow period. The woman's college is far better. Graduates of this can pursue their studies in a native or foreign university, and at some places take degrees which are useful as warrants that they have read and studied for honours, and are by so much prepared to hold

responsible positions. There will always be a large and perhaps an increasing fraction of marriageable women who can not or will not marry, yet need employment for their minds. For them the higher education has great attractions. It gives direction to their energies and enables them to escape many of the sarcasms of the ill-natured and the advice of the foolish; it may in some instances put them in the way of becoming useful and distinguished members of society. If this seems damning with faint praise, it must be remembered that on the one hand the education of men at college and university has grave defects, and cannot in all senses be commended; but on the other that women are so strongly differentiated from men in body and mind, that even in the case of girls who are exceptionally similar to men in the quality of their brainwork, it remains a question whether they should be subjected to the same mental regimen.—*The Critic*, (N. Y.)

THE SCIENCE OF DISCIPLINE.

THERE can be no success in teaching without good discipline. A combination of all other virtues is of no avail to the teacher who cannot govern the school. The children will not learn without they are well governed.

Must this gift be born to the teacher? There are some teachers who were born to discipline any school without apparent effort. There are some men and women who would like to teach who are born to fail in the easiest class in the world. There are, however, few who do not have to learn to govern effectively, and there are fewer who may not learn to do it if they will. Some qualities must be born to the teacher; these are given

to almost every person who would aspire to teach.

There are in every school three classes of pupils: A few thoroughly vicious children, who bear about the same relation to youth in number and characteristics that the confirmed criminal bears to manhood; a generous number of uniformly good pupils, who have neither the habits, association, or disposition that tends to mischief, and a larger number, the great middle class, whose disciplinary vice or virtue depend upon circumstances, companionships, treatment, and personal conditions. In order for one to study how to discipline it is important to know and appreciate the obstacles. Home influences will

easily demoralize a pupil when parents or older children tell of the mischievous tricks of their school days, criticise existing methods, or underestimate the teacher. The teacher should learn of the home influence about any pupil tending to disobedience, and so counteract the evil associations through a visit to the home, or by other means, as to make the home a help rather than a hindrance. Public sentiment sometimes sets against a teacher by prejudices that are indefinable, making it publicly popular for children to be mischievous; and when such a condition of things exists, the teacher must be very careful not to be over severe upon the disobedient children, but rather, by great effort, and some sacrifice, if need be, win them to himself as against public prejudice, counteracting the antagonistic public sentiment, if possible. The child's disposition not infrequently makes it practically impossible for him not to be mischievous. He may be impulsive by nature, with irresistible impetuosity, which, if any thing unexpected thwarts him, leads him to say or do that which puts him in a rebellious attitude. Pride is frequently an obstacle to obedience. Sentiment may lead one to do what he would never do but for some sentimental fancy about such things. Sympathy for children under suspicion, censure, or punishment frequently prompts very good boys and girls to go wrong. Temporary ill health, misunderstandings on the playground, ridicule of playmates, the weather, poor ventilation, being late to bed, a poor breakfast, or even some ungracious word on the part of the teacher himself may cause disobedience by boys and girls who require nursing rather than sarcasm or the rod. The true disciplinarian appreciates all these conditions and obstacles, and never punishes or scolds when he should cheer,

never punishes the wrong child, never mistakes a circumstantially mischievous child for a constitutionally vicious one. The teacher frequently assumes an attitude before the school and the public which says, in substance, "I can make no mistake," while the child and the public know that he is at fault himself. Ill health, personal annoyances in society, home friction, a poor breakfast, social disappointment, financial losses, or other similar cause, may put him in a frame of mind that will make his very tone, manner, or facial expression provoke the average child to mischief, disobedience, or even open rebellion.

Obedience is the first object in discipline, self-control its ultimate aim. Obedience is merely a means to self-control as an end. The attitude of the teacher is very different while seeking to cultivate self-control in the pupil through obedience from what it is when he seeks obedience for its own sake. There are times in our experience, however, when the end sought is immediate submission. The very sentiment, in its height and beauty, which seeks the utmost serenity and power for each child, sometimes leads the pupils, as a whole, to take advantage of it, and brings about a state of things that needs the most prompt and vigorous treatment. In seeking power of self-control the methods are altogether different from those employed in an immediate conquest. The public, with all its prejudice against the rod, expects and demands the suppression of every rebellion regardless of cost, but it will not tolerate the same spirit or methods in the regular work. The teacher must study how to affect the disposition, what motives to appeal to and cultivate, what influences to bring to bear to check hasty, impulsive, violent thoughts, words, or acts. How to overcome dispositional inertia; how to direct erratic tendencies; how to

make pride and sentiment motives for loyalty rather than disloyalty; how to utilize the sympathies of the school.

The mental growth and development of the child require radically different methods and motives in disciplining children under eight from those between eight and fourteen, while these vary greatly from those above fourteen. We have not the space to enlarge upon these differences, which would require a chapter

by themselves. In a word, to succeed in discipline the teacher needs to study the general characteristics of the child mind, the peculiar circumstances of the specially disobedient, and apply remedies heroic in desperate cases, but as mild and developing as circumstances will allow. One must succeed at all hazards, but never by the use of a word or deed that can echo unnecessary harshness. — *Am. Teacher.*

NOTES FOR TEACHERS.

STELLAR STATISTICS.—The number of stars visible to the unassisted vision on a clear night is about 3,000. The opposite hemisphere, containing as many more, makes the number that can be seen without a glass about 6,000. These are divided according to their apparent brightness into six classes, called, respectively, first, second, third, fourth, fifth and sixth magnitude. Stars so remote as to be invisible to the naked eye are called telescopic stars. These are classified as high as the fourteenth, or higher, magnitude. An arbitrary division has been agreed upon for the convenience of astronomers. Twenty are classed as first magnitude stars, 65 as second magnitude, 200 as third, 450 as fourth, 1,100 as fifth and about 4,000 as sixth. The number of telescopic stars is much larger, being reckoned by some authorities as high as 20,000,000.

PERMANENCE OF THE OCEAN BEDS.
—Although geologists are accustomed to deal with considerable alterations of level as one of the causes operating to bring about profound changes in the topography of many regions, it has always seemed difficult to conceive that the vast depressions in the face of the earth now occupied by the

oceans could ever have been subject to such tremendous changes as would be necessary to convert them into land. Many geologists, appreciating this difficulty, are inclined to believe in the general permanence during all time of the great oceanic beds, and of the continental areas. To account for the origin of the oceanic basins, Mr. Fisher, in the *Geological Magazine*, proceeding from the theory of Prof. Darwin, that the moon broke away from the earth more than fifty million years ago, he thinks the ocean basins may be the scar left by the breaking off of the moon's mass, and that the basement rocks of the continents are fragments of the crust which had already solidified, and which were left behind.

THE instruction in the great English schools was nearly all Latin until 1530, when Greek was introduced, and until 1785 the only further change was the addition of a little more Greek. It was not until 1829 that modern and ancient history, geometry, and arithmetic were introduced into the highest classes. In 1851 modern languages were introduced into the Harrow school curriculum. In 1822 it is said that in this school it was "absolute heresy for a master to

attempt to teach anything but Latin and Greek." Dr. Arnold at Rugby was among the first to advocate the study of something besides the classics. On this mental food hundreds of Englishmen have become intellectual giants. Their minds had time to expand. They were not expected to know a little of everything, but a great deal of something. This is as unlike our system of universal cramming as it possibly can be, and indicates that when the time of returning sense overtakes the educational world that the quantity obliged to be learned will be reduced to a minimum. Mental culture does not depend upon the amount memorized, but upon the mental discipline gained and its relation to the work of life.

WILL the reader please cast his eye upon the following questions: 1. How can it be proved that nicotine is a poison? 2. Why are cigarettes especially harmful? 3. Is alcohol a food? 4. What is the effect of disuse upon a muscle? 5. Under what names is opium sold? 6. Under what names is alcohol drunk? 7. What is the difference between a food and a poison? 8. Is anything gained by changing from one narcotic to another? 9. What is the effect of beer as a drink? 10. How does cheerfulness help the muscle? These are the questions given as a test in physiology in the public schools of a prominent Eastern city. They are not addressed to young men about to leave school. No, they are asked of little boys and girls of from eight to ten years of age. This is the examination-paper at the end of the first year's elementary instruction in physiology. Of ten questions, eight relate to drinking and smoking: the physiology is a mere side issue. These children, who ought to have about as much knowledge of such matters as they should of the methods in vogue

at the stock exchange, are actually forced to learn by rote the details of human vice; and that, too, under the name of "physiology," the only science which they learn. Unconsciousness, *naïveté*, is the symbol of childhood. The fact that physiology, even if well taught, tends to destroy this trait, is the chief objection to its early study. Instruction such as the above implies crushes the most valuable trait in the child, directs its curiosity to what is morbid, and forces into precocious development all its dangerous elements. Not enough that the newspaper and the dime novel proclaim in glaring colours the story of crime and sin: some notion of the perversity of human nature must be mixed with the food of babes. That the result of this teaching is to excite in the children a morbid curiosity to experiment for themselves in such matters; or (with the boys) to regard the whole thing as a lesson in "goody-goodyness," to which they forthwith decide to show themselves superior; or to regard their father, who takes his glass of wine at dinner, as an incipient criminal,—this could easily have been foreseen, and goes without saying. If there is one method better than all others to produce a race of drunkards this has good claims to that distinction. If there is a degree of wrong in such superlatively perverse methods, then it is still worse that the fair name of science should be outraged in this cause. Not only that this kind of teaching necessarily depends upon catechism methods (that the answer to the second question, for example, is to read that the especial perniciousness of cigarettes is due to the fact that they are usually made of decayed cigar-stumps), but that the entire idea of science thus implanted is as wrong as it well can be. Better far revert to the old days when there was no science on the curriculum than have science thus taught. The

crowning educational virtue of science is that it leads to the use of scientific methods of teaching: this usurper chokes up all possibility of an interest in the scientific. The "temperance" question is doubtless one of the most important with which our age has to deal; sufficiently important, perhaps, to make some consideration of it in the public schools a legitimate proceeding, but it must be done at the right time and in the proper way. Nothing can excuse the conversion of a text-book on physiology into a "temperance" tract: nothing can excuse the sacrilege of presenting this story of disgusting vice under the name of "science."—*Science*.

CONQUERING BY POLITENESS.—The Bible says, "a soft answer turneth away wrath." The *Irish Times* tells of a case in which a gentle action served the same purpose:

"A brave, active, intelligent terrier, belonging to a lady friend, one day discovered a monkey, belonging to an itinerant organ-grinder, seated upon a bank within the grounds, and at once made a dash for him. The monkey, who was attired in jacket and hat, awaited the onset in such undisturbed tranquillity that the dog halted within a few feet of him to reconnoitre. Both animals took a long, steady stare at each other, but the dog evidently was recovering from his surprise, and about to make a spring for the intruder. At this critical juncture, the monkey, who had remained perfectly quiet hitherto, raised his paw and gracefully saluted by lifting his hat. The effect was magical. The dog's head and tail dropped, and he sneaked off to the house, refusing to leave it until his polite but mysterious guest had departed."

There are times when some animals act more sensibly than some people, and this poor organ-grinder's monkey

preached an excellent sermon to all who are too ready with fists or angry words. It takes two to quarrel always, and if one *won't* the other *can't*.

WITH all possible preparation and the wisest management, *the teacher is to be careful to guard against impatience of results*. He must "learn to labour and to wait."

The teacher is not working for a day. He is sowing seed that produces fruit in after life. He is assisting to load and launch a ship that will hereafter carry much freight of blessing or of curse across the sea of life. He is planting trees, and he must dig about them and tend them carefully, but he cannot expect to see them grow at once into giant oaks or goodly cedars. All this will come in time. Anxiety for immediate results is one of the greatest hindrances in our work to-day. Teachers, superintendents, and parents forget that mental and moral strength is what we want, and that it must come only by steady and very slow increment of growth. Children are puffed up with facts till they are as large as men. But it is mere fat, and this must be assimilated until bone and muscle are proportionately developed, before they can do the work of a man. We should be content to let the children grow in intellect and morals as they must do in body, and not worry ourselves because they cannot, like Jonah's gourd, grow up in a night. The fact is, quick results are almost always to be suspected. Let the teacher do his work earnestly, lovingly, patiently, and wait till the appointed time for the harvest.

"The germs and fruits of life must be
Forever hid in mystery.
Yet none can toil, in vain for me.
A mightier hand, more skilled than thine,
Must hang the clusters on the vine,
And make the fields with harvest shine.
Man can but work; God can create;
But they who work and watch and wait
Have their reward, though it come late."

METHOD—WHAT IS IT?

BY PROF. S. S. PARR, DE PAUW UNIVERSITY, INDIANA.

THE literature of Method, if not luminous, is at least voluminous. About the only fixed principle evolved so far is a uniform want of fixity. Hardly any two authorities are agreed as to what method is. We have "method" and "methods"; "methods of teaching" and "methods of learning," when, clearly, the same thing is meant. The personal twist that some one gives his teaching is dignified into Brown's, Smith's, or Jones' "methods." The applications of general psychology to the unfolding of the growing mind are, by some, called method. Mere devices, as for instance the use of shoe-pegs, dissected maps, or coloured beans, are designated by the same name. A few years ago the schools had a transient rash consisting of a certain attitude of mind, on the part of pupils, teachers, and superintendent, plus various devices very good, very bad, or very indifferent, designated "Quincy Methods." And, farther in the past, the country had object-methods, illustrative methods, Oswego methods, etc. If we examine the so-called word-method, alphabet-method, and other methods, as they are called, of teaching primary reading, they will prove not to be methods at all, but merely names to mark the initial points at which the work of teaching begins. They do not even contain a hint of the real idea of method.

In general, Method is one of the branches or divisions of educational science. The coördinate parts are knowledge of the subjects of instruction from the teaching point of view, educational psychology, the philosophy of education, and the history of

education. These subjects and methods comprise educational science as a whole. They are distinct in their treatment of the subject-matter they deal with; viz., how to develop mind by means of affecting it by ideas. Method depends on the several subjects mentioned. It grows out of them. The teacher must be able to reorganize his academic knowledge from the teaching point of view, before he can devise method intelligently. Indeed, our so-called "subjects" are portions of a given field of knowledge organized into a whole for a specific aim in school training. Thus, a mere fraction or part of the whole subject of arithmetic is taken for use in our school-work. When we have decided upon any given subject-matter as suitable for our purposes in school, it needs still another reorganization. The relatively mature mind requires one arrangement of subject-matter, and the immature another. It is only when the teacher is capable of making these various reorganizations that he is able to be something more than a mere imitator or a follower of caprice. Educational psychology furnishes an equally necessary condition for intelligent method. Every result attained in training presupposes a series of antecedent mental conditions. These are more or less fixed, and success is achieved in proportion as the teacher observes the necessary sequence of activity. To learn any subject in its completed form, the mind must go through the processes of exact observation, fixing definite names, defining precisely, classifying systematically, and explaining rationally. These and all similar procedures are gene-

ral, but good teaching also requires the ability to trace the processes of mental action for each particular subject and part of a subject. The history of education gives account of the trial of various devices and their probable success or failure. It is, therefore, a necessary adjunct of method. Without the history of education, the deviser of method will be guilty of digging up and using the stone-axes, bone-spears, and brick-kettles of the barbarous past.

The philosophy of education is required to fix the true aim for method. It also discriminates the real relative value of the different means to be employed.

One thing else is required, which is not a part of the science of education; viz., experience. This properly belongs to the art, but is all essential as a condition.

The foregoing are the necessary general pre-suppositions of method. It has, also, its specific pre-suppositions in each subject or part of a subject. These are as follows:—

1. The particular nature of the subject.

2. The particular nature of the mental activity necessary to the desired result.

3. The particular aim, both as knowledge-aim and power-aim.

4. The particular means or devices to be employed in realizing the aim.

5. The mode or manner of applying the means to the desired end.

The determination and use of each one of these elements is a part of method. More exactly speaking, the last—viz., the adjustment of the means to the end sought—is method. But this is too narrow a view, as it is possible only when closely connected with the other elements.

This broader view of method, if generally held, would do much to free teaching from one of its worst enemies; namely, the rule of thumb. It would, also, render the use of our ever-increasing army of devices intelligent, and thus more effective. Mere unintelligent imitation would give way to an understanding use of means consciously applied to realize rational ends set up by the teachers' professional intelligence.—*Journal of Education* (N. Y.).

THE TEACHER'S OWN CULTURE.

“SOCIETY expects to find excellence in the schoolmaster, notwithstanding his own peculiar difficulties.” This excellence may be shown either in his learning or in his moral character. The special functions of the teacher are to cultivate and discipline others, and, if he attempts this, he must necessarily educate and discipline his own mind, and it is to this point that I wish more particularly to draw attention. We are constantly being told that we are behind countries on the continent

in our system of education, and that “technical and higher grade schools,” with the special education they give, will have to become more numerous if the engineers, mechanics, etc., of England are to compete, in the workshop, with our foreign neighbours. The teachers of our country must see to it that they are fitted to fill the post of honour that will be assigned to them in the future. A man's superiority is soon recognized beyond the walls of his school-room, and he will form the minds of those who, in

after-life, will often appeal to his taste and judgment. A good sound judgment, and the habit of mentally taking an all round view of things may, to a certain extent, be cultivated. We use judgment when we mentally place things side by side for the purpose of finding out their similarity or contrasts with an intent to decide as to which is the right course to pursue regarding them. Thus judgment involves the power to eliminate the opposites or likes of any line of action. There are continually opportunities occurring, in school life particularly, of verifying and correcting our opinions. This faculty is many times called "common-sense," but is not "common" as is often assumed.

When we endeavour daily to arrive at just conclusions, the power to decide rapidly increases, and the faculty itself grows more valuable. This will become more extended as experience increases. On the other hand, care should be taken that judgment should not be allowed to deteriorate into mere prejudice.

A quick and accurate observation is an essential qualification for all who wish to become skilled in the profession of teaching. Children's faces, as a rule, are a good index to the mind, and the habit of watching them closely to observe signs of fatigue, restlessness and intelligence, will develop an insight into human nature not to be despised. A constant watchfulness will soon enable the teacher to discern to a certain extent between truth and falsehood, guilt and innocence, and to recognize other signs of the moral as well as the intellectual nature of children.

Complete self-control is a most important factor in one who attempts to govern others. "He that ruleth his own spirit is better than he that taketh a city," and he that commandeth his own feelings has one instrument

by which he can command others. If the habit of mounting guard over one's own feelings and emotions be carefully cultivated, it will stand in good stead in times of excitement, for a calm, quiet demeanour has great influence over turbulent noisy children.

As every school should serve as a training ground for the orderly performance of work through life, it should set up a high standard of method and punctuality. Method reduces the maximum of work to the minimum of labour, and enables all the school machinery to move easily and smoothly. Again, every teacher should have some object or pursuit to which to devote his thoughts out of school hours. Any suitable hobby will serve to enlarge his ideas, expand his mind, and keep the follower in sympathy with learners, for he will then be a learner himself. Bacon says, "Reading makes a full man," and of all people, teachers need to take this means of increasing their store of information, and the study of several good books on one particular subject will be found very useful.

In conclusion, let me use the words of Professor Pillans, who remarks: "The moral training received in a well-conducted school from observing the example of strict and impartial justice in the conduct of the master, his kindness to all, his paternal regard for their improvement, his patience with the slow, his encouragement of the quick, his unruffled serenity of temper, and his reluctance to punish, are far more important to the pupil's well-being in the world and his character as a member of society, than any given amount of literary acquirement. The good or evil lessons which a boy draws for himself, almost unconsciously, from the master's demeanour in school, are more influential and impressive than any direct instruction."—*The Teachers' Aid*.

EDUCATIONAL DEMANDS OF 'TO-DAY.

BY N. A. CALKINS, ASSISTANT SUPERINTENDENT OF SCHOOLS, NEW YORK CITY.

ARE OUR SCHOOLS MEETING THE DEMANDS OF THE TIMES?

DO the usual courses of study in Public Schools provide for such training and development of all the pupils' powers, as the future welfare of the children demand, and such as the prosperity of the community and the protection of the State require?

Is it true that our teaching deals too exclusively with *seeing* and *hearing*, and almost neglects the other senses, especially those of *touch*, and of the muscular sense, both of which require manual training for their proper development?

Is it true that too many things are inserted into courses of study from custom, and not enough from an intelligent consideration of that which is best for the pupil?

Is there a lack of harmony between school instruction and the busy world outside?

Such inquiries indicate some of the strictures upon matters pertaining to the Public Schools. While it is true that many criticisms have their origin in ignorance of that which is criticised, it often happens that attempts to discover the evil that provoked the unfavourable words bring to light treasures in the schools that were seldom noticed before.

Frequent complaints are heard, not only in our own country, but in England, as to the superficial, unpractical, one-sided character of the education given—not alone in the Public Schools, but the complaints are made in turn against all grades of schools, from the lowest to the highest. Most of those who criticise do so, not from intelligent convictions as to just where

the evil lies, or as to that in which it consists, but rather from dissatisfaction with present conditions and results.

From, and in consequence of these complaints and strictures, whether they be just or unfounded, there arise many demands in relation to education, some of which have but little educational value. Some of those of little value at times gain popular favour, and, under the claim of reforms, are elevated to positions far above their real importance. Experience usually proves their unworthiness, and they are laid aside to make room for new claimants, which in turn give way to still other demands, in attempts to reach some indefinite ideal that is desired.

Thus, numerous suggestions and plans for removing the real and the imaginary evils have been freely offered for the certain banishment from the schools of all the causes for criticism. Some propose that *less* attention be given to the languages, and *more* attention to science. Some would give *less* attention to *grammar* as the science of language, and *more* attention to the *use of language*, in some way. Some in a general, indefinite manner demand that education shall be more practical—shall fit for the duties of life—but offer no specific plan for the accomplishment of these desired ends.

Some would remove all the poor teaching arising from a wrong use of text books by banishing the books from school, forgetful that the faculty teaching might be only transferred from good books to poor ones in manuscript, the joint product of the teacher and pupils; also forgetting that the pupils would thereby lose the

much-needed training in the use of books as a means of supplementing classroom information. Streams of knowledge, like streams of water, cannot rise above their sources.

Some complain that the schools do not develop character—that the intellectual education is going on, out of proportion to moral training—that the chief ambitions of the schools are intellectual; and that the tests of attainment are mainly intellectual.

The public school reflects, to some extent, the spirit of the community. If public opinion, through whatever source expressed, makes the culture of the intellect the main business of school, and the cultivation of character incidental, teachers will devote corresponding attention to the one, and neglect the other. Sad though it be, the truth must be admitted. But happily there are many exceptions to these general conditions. As a class, teachers do train their pupils in habits of obedience, punctuality, respect for the rights of others, kindness, truthfulness, good manners, and other virtues that lead to noble manhood and womanhood, and to

the welfare of the community and of the State. Hundreds of teachers thoughtfully consider the conditions of those whom they teach, in relation to character development, and throughout their intercourse with the pupils, there go out both unconscious and positive influences of culture that build up character upon solid foundations. All honour to these practical Christian men and women—they will receive their reward.

The greatest educational demand of our day is an intelligent training that shall develop activity in all the powers of mind and hand, and combine intelligence with all the work of life. We need mind training, and more character training. We need more mind training through the will, through the reason and judgment, and through the sentiments, as well as through the senses and the hands, to secure a complete development of the pupil, and thorough fitness for life's duties. We must mix brains with all our work, and especially with the work of teaching. [From an address before the Industrial Association of New York.]

HOW CAN A SUPERINTENDENT MAKE HIS VISIT TO A SCHOOL MOST EFFECTIVE?

THE work of a superintendent must vary somewhat, according to the character of the community, and the condition of the schools, but there are some general principles which are equally applicable to all situations. He should be in full sympathy with his teachers, that they may regard his visits as those of a generous friend desirous of giving them any aid in his power, and not the mere round of an official to inspect and criticise.

It is assumed that the superintendent should visit the schools under his

care—that he should spend much of his time in the school-room with the teachers and pupils. Without this familiarity with their daily work, most of the meditations and devices of the office are likely to be of little worth. His thought may be clear and logical, but his aim, in many cases, will be wide of the mark.

His entrance to a school-room should be quiet and familiar, causing hardly a ripple of excitement to pass over the room, or the mind of the teacher. Nor should he often interrupt the regular work, of whose char-

acter he wishes to learn ; and in no way should he say or do anything to disconcert the teacher, lessen her authority, or disparage her scholarship or character in the estimation of her pupils, but rather should his presence be helpful, and an inspiration to teacher and pupil alike.

He will often see and hear methods of which he does not approve, but is he to censure and condemn, bringing an uncomfortable feeling over all parties, with little probability of any improvement? No earnest work is all bad, and among much that is faulty some good will crop out. This he can commend, and suggest how it might profitably be carried still farther. With the direct or implied consent of the teacher, never to be forgotten, he may ask some question—suggestion of a better method—something to awaken their curiosity, and quicken their intelligence. With her consent, too, he may ask if they have ever done their work in this way, or that, getting their opinion as to which they think the better. He may find a class in history, for instance, repeating the words of the book, and ask who, forgetting the text, can tell the story in his own way, as he would describe what he had seen to a companion. In geography he may ask a pupil to step to the board and sketch the boundaries of Illinois, for example, with one or two towns and rivers, and tell them that when he comes again he hopes to give them another trial. Most teachers are discerning enough to follow the lead thus given.

He finds a room in infinite con-

fusion, the floor lined with papers, the ceiling covered with spitballs, some pushing and shoving, much talking and no work. One of our experienced principals, some time since, wisely, I think, remarked to one of his assistants, that he "never should allow himself in the presence of disorder." What is the superintendent to do? Let him, perhaps, with a pleasant, encouraging word to the pupils, walk down through the aisle and back, and with many a smiling look from little boy and girl, he will find the floor cleared before the completion of his round. They will appreciate the improved appearance, be ready to assure him that he will not find it so again, and the teacher, with some quiet suggestions and cheering commendations of what is good, will go on with her work stronger and happier.

This work of visiting, to be truly valuable, must be supplemented, or precluded, by meetings of the teachers, at which directions and suggestions can be given, errors pointed out, methods indicated, and illustrations given.

The superintendent should never discourage any method without suggesting something better to take its place. This fault-finding, this pulling down, is so easy, but leaves such a void, such dissatisfaction, and often helpless despair, as its only results. The visits of the superintendent should always be an encouragement and an enjoyment, and be looked forward to with pleasure and hopeful anticipation.—*Illinois School Journal.*

PRINCIPLES AND METHODS.

ANOTHER thing which the teacher should always regard is the amount of *intellectual patience* which it is reasonable to expect in his pupils. The attention of young children to

one thing can be secured for only a short time, and there should be a very careful gradation in this regard, from the primary school to the college. In the primary school the ex-

ercise should be very short; and even in our grammar and high schools there is great danger of trying to hold the attention too long on one subject. A fixed, earnest attention, even for a short time, is productive of better mental habits than a languid attention—if it may be called attention—for a much longer period. The chronic indifference of pupils, of which teachers complain so much, I have no doubt is due quite as much to the length of the exercises as to lack of interest in the subjects. I recollect reading several plays of Shakespeare, with a freshman class in college, and feeling all the time that the students were impatient of delay when I ventured any critical remarks or explanation of the text; but the same class, when, as seniors we read the same plays, so beset me with questions that we were able to read not more than one-fourth as much in the hour allotted to the lessons, as formerly.

This, I regarded as evidence that, whatever criticism might be made on our college curriculum, the students had acquired something of that "intellectual patience" to which Newton ascribed his chief success.

Still another important principle, closely related to that of which I have been speaking, is that children can

only be educated by their own mental activity under the guidance of the teachers. Montaigne complained of the teaching of his time, that it gave only the thought of others, without requiring the pupil to think for himself. He says "he has no taste for this relative, mendicant, and precarious understanding." "Like birds," he says, "who fly abroad to forage for grain, bring it home in their beak without tasting it themselves, to feed their young, so our pedants go picking knowledge here and there, out of different authors, and hold it at their tongues' end only to split it out and distribute it amongst their pupils."

The dancing master might as well teach us to move gracefully through the mazes of the dance, without requiring us to leave our seats, as the teacher to inform our understandings without setting them to work. "Yet 'tis the custom of schoolmasters," says the same author, "to be eternally thundering in their pupils' ears, as if they were pouring into a funnel, whilst the pupils' business is only to repeat what others have said before." This, however, was the complaint against the teaching of the sixteenth century. Is it possible that the same complaint might be made against the teaching of the nineteenth century? Judge ye.—*American Teacher.*

GEOGRAPHICAL NOTES.

ANCIENT EMBANKMENT OF THE THAMES.—When a modern Londoner looks with pride on the magnificent embankment of the Thames above Blackfriars Bridge he too often forgets that a far more gigantic as well as useful work was executed in ancient times. Few of the multitudes who enter the river think that the great stream is, in fact, an artificial canal, in many places raised above the

adjacent country, which would be inundated but for the banks made by human hands. Of the execution of this grand work, stretching from the Nore to Richmond, no record exists, and it was only conjectured that it was done, or at least directed, by the Romans when Londinium first became the capital of the province. In 1707 a huge breach in the embankment was made by a violent tide at Dagen-

ham, in Essex. A thousand acres of rich land were destroyed, and about a hundred and twenty acres washed into the bed of the river. It was only after enormous labour, directed by Captain Perry, who had conducted similar operations in Russia, that the bank was restored. But for this embanking of the river many districts, including Thorney Island and Westminster, would never have been habitable.—*Ex.*

THE RED SEA PEARL FISHERY.—The Ceylon pearl fishery promises to be unusually successful this season. So does also the mother-of-pearl harvest in the Red Sea. These latter fisheries extend the whole length of the Red Sea, but are most productive near Suakim and Massowah. Some 300 boats are employed, mainly belonging to Zobeid Bedouins, with black slave crews, and the men live on board nearly the whole year, rarely being at home more than a month. They fish off reefs in the calm weather, and can see the shells at a depth of from seven to fifteen fathoms, using a primitive telescope formed from an empty petroleum tin, with the bottom knocked out and glass let in. Fatal accidents are unknown. The shells are sold by auction at Jeddah, Suakim and Massowah, and the bulk go to Trieste, a few coming to Havre and London. The finest specimens are sent to Bethlehem, where they are engraved and sold to the pilgrims.—*Ex.*

NEW FACTS ABOUT THE CONGO.—At its mouth the Congo River is of enormous depth, but only one hundred miles or so above Stanley Pool, Captain Braconnier said a year or two ago that "steam launches drawing

barely two and three feet of water have to be dragged along by our men." H. H. Johnson mentions the same facts in his description of the Congo. "Our boat is constantly running aground on sandbanks," he wrote. "It has an extraordinary effect to see men walking half-way over a great branch of a river, with water only up to their ankles, tracing the course of some sand-bank." Stanley, Johnson, and others attributed the remarkable shallowness of the river to great breadth in this part of its course; but none of them knew how wide the river really was above the Kassai River. We now have some new light on this question, which is a very interesting one, because the Congo is next to the greatest river in the world, and new discoveries in regard to the river are apt to be on a large scale. Captain Rouvier has been surveying this part of the river, and he finds that for a distance of about fifty miles the river is much wider than was supposed. Its width, in fact, is from fifteen to twenty miles, a circumstance which has not been discovered before on account of the many long islands, some of which have always been taken for the shore of the river. It follows, therefore, that there is an expanse in the Upper Congo similar to and very much larger than Stanley Pool. Steamboats have passed each other in this enlargement of the river without knowing of each other's proximity. It is easy to understand, therefore, how it happens that the Congo is in this place very shallow, while in narrow portions of the lower river no plummet line has ever yet touched bottom. Navigation in this part of the Congo would be almost impossible were it not that here and there soundings are revealing channels deep and wide enough for all the requirements of steamboat traffic.—*New York Sun.*

IS TEACHING A PROFESSION?

SO far as the leaders are concerned teaching is a profession. There are no men in this country more thoroughly professional than the presidents and professors of the leading American colleges. Principals of large academies, masters of city high schools, are universally conceded to be professional men. Superintendents who have come into position after years of faithful service in the schoolroom, who are promoted because of their distinguished service, are professionally recognized. The same is true of many grammar school principals in large cities, men of scholarly attainments who devote themselves to the study and practice of the art of teaching. There is no question about the professional standing of such men, and, if they only were considered, teaching would rank to-day in dignity, influence, compactness, and promise, with law, medicine, literature, or the ministry. There are as large a proportion of the legal profession who are not professional men as of the leading teachers.

But, unfortunately, the teachers classified above are a small part of the fraternity. The difficulty is to make a profession out of a calling which has so many members. There are difficulties in the way of professionalizing teaching, and it is useless to quarrel with circumstances. There is, however, one phase of the question to which we would give a passing word. There is an opinion that we sometimes hear given heedlessly that the obstacle is in the fact that so large a percentage of the teachers are ladies, teachers of small children. We confess that there is a share of reason in this, but it is as vicious as it is false. The time was when conservatism, with its antique inertia, so fettered society that the presence of a

majority of ladies in a profession would have prejudiced the public mind, especially the leaders of public sentiment. That day is fast passing away. Another age of the world's history is dawning, and the uniform brilliancy of Prest. Alice E. Freeman is conspicuous beside the uniform stupidity of some masculine dignitaries who might be mentioned. Women have at least looked across the threshold of every profession, inspiring men do their best. Teaching small children is no more unprofessional than practising medicine with young children. There are two insurmountable obstacles to the making of teaching in its entirety a profession. The lower places, the poorly paid positions for men, are used merely as stepping stones. It is a rare thing for a man to leave any of the better positions for any other calling. A man is as apt to leave law for politics, or medicine for literature, the ministry for school work, as a leading teacher for any other profession. But nearly every lawyer, doctor, and minister tells about having been a teacher. The effect of this upon themselves and the public is to give the impression that they look upon law, medicine, and theology as more professional than teaching. These men, however, left the lower ranks; they never tasted the successes of teaching, never enjoyed the professional atmosphere. So long as the non-professional positions are used as stepping-stones for other professions, that grade of work will never rank as professional. Ladies, also, are looked upon as awaiting matrimonial privileges. It is in vain that we point to teachers of our acquaintance whose utter indifference to the sentimental side of life leads them to be professionally anchored, the pub-

lic point with peculiar emphasis of gesture to the lady who reached the height of professional honour, and after securing phenomenal luxuries by way of a Sabbatical year of rest, and promise of an eventual life pension, deliberately avowed her preference for the profession masculine.

It is not for us to fight facts, but

rather accept the fact that teachers who are at the top are as distinctively professional men and women as the same persons would be in any profession and labour to bring within that circle the greatest possible percentage of the teachers of the country.—*New England Journal of Education.*

SCRIPTURE LESSONS FOR SCHOOL AND HOME.

NOTES ON ST. MATTHEW'S GOSPEL.

NO. 5. THE TEMPTATION. PART I.

To read—*St. Matthew iv. 1, 2, and various.*

I. THE TIME. Immediately after Baptism—just declared to be God's Son. Spirit had descended upon Him. Now His Sonship must be *tempted, i.e.,* tested—put to the proof, as precious metals are. God's temptations, such as that to Abraham (Gen. xxii. 1) make proof to give strength when needed—the devil tempts that he may harm and ruin souls.

Temptations came at end of forty days' fast (ver. 2), spent in prayer and meditation—thus prepared for the trial. Other instances of forty days' fast: Moses in the Mount with God (Deut. ix. 9), Elijah before hearing God's voice at Sinai (1 Kings xix. 8).

II. THE PLACE. Wilderness of Judæa, *i.e.,* the uncultivated tract between east of Judæa and west of the Dead Sea—wild and desolate—frequented by wild beasts. (See St. Mark i. 13.)

Contrast Christ's temptation and Adam and Eve's—

- Christ alone.
- Adam and Eve together.
- Christ in wilderness,
- Adam and Eve in garden.
- Christ fasting.
- Adam and Eve abundance of food.

Christ resisted.

Adam and Eve listened and fell.

III. THE TEMPTER. (a) *His names.* Called here *the devil*—most usual name—meaning "deceiver;" thus he deceived Eve. (Gen. iii. 5.) Also means "accuser," "slanderer." Other names for the devil—*Satan* or adversary. (Job i. 6.) *Beelzebub*, God of flies. (St. Matt. xii. 24.) *Apolion*, destroyer. (Rev. ix. 11.) *Draim* or serpent. (Rev. xii. 9.) *Prince of this world.* (St. John xiv. 30.)

(1) *His person and work.* Was once an angel in heaven. (2 St. Pet. ii. 4.) But rebelled against God—was overcome by Michael the archangel—cast down to earth. (Rev. xii. 9.) Appeared to Eve as a serpent—came as a man with the sons of God before the Lord (Job ii. 1)—to Christ in some form not told us. Comes to man now as evil spirit suggesting wicked thoughts and designs—always thus occupied (1 St. Pet. v. 8)—*e.g.* tempted David to murder, Judas to betray Christ. (John xiii. 2.) So tempts still.

To meet him Christ was led by the Spirit—and the tempter came to Him. How different to many who place themselves in way of temptation!

IV. THE CAUSE. Why was Christ tempted?

1. To go through all the experiences of man.

2. To be made perfect through suffering.

3. To show how to overcome temptation.

4. To help those who are tempted. (Heb. ii. 18.)

NO. 6. THE TEMPTATION. PART II.

To read—*St. Matthew iv. 1-11.*

I. FIRST TEMPTATION. *To doubt.* Christ just declared God's Son at His baptism. Was asked to work a miracle for Himself—turn stones into bread. Christ was hungry, faint, worn—why might He not do it? It would be—(a) Doubting God's care. Surely you cannot be left to starve? (b) Doubting God's Fatherhood. Can a loving father treat a son thus? (c) Supplying food in a wrong way and at a wrong time. This was a time to fast—its duration must not be curtailed.

The Answer. Taken from Deut. viii. 3. Israelites suffered hunger in wilderness to prove them. Food was supplied in unusual way by manna daily. God can keep alive in other ways than by ordinary bread. Therefore Christ need not doubt God's love.

LESSONS. (1) Trials are God's way of proving us. (Heb. xii. 6.) (2) The benefit of studying God's Word. (3) Food sufficient will be given to those who fear God. (Ps. xxxvii. 25)

II. SECOND TEMPTATION. *To presumption.* Show map of Jerusalem and Temple. Christ placed on pinnacle overlooking deep valley of Hinnom—an immense height. To alight unhurt would be miraculous. Temptation backed by verse of Psalm xci.,

but Satan left out important words "in all thy ways" (Ps. xci. 11, 12). Prophesied that Christ should suddenly come to His Temple (St. Matt. iii. 1). This might now be fulfilled—the Jews would believe in Him. Why might He not do it? It would be—

(a) Presuming on God's care of Him by going out of His ways.

(b) Taking His own time to effect God's plans.

(c) Seeking His own glory, not God's. (See St. John xii. 28.)

The answer. Comes from Deut. vi. 16. Refers to Israelites tempting, *i.e.*, provoking, God in Massah when in want of water (Num. xx. 7.) Means must not "tempt," *i.e.*, "try" or provoke, God by going out of our way to bring about His promises.

LESSONS. (1) Quote Scripture correctly.

(2) Keep in right way if wish for God's protection.

III. THIRD TEMPTATION. *To unbelief.* Name of high mountain, nature of the sight unknown. The "prince of this world" might easily put together some brilliant picture. Satan offers earthly power and glory to Christ (see St. Luke iv. 6) if only He will acknowledge him as superior. Again, why might He not do it? It would be—

(a) Denying God—King of kings.

(b) Falsifying His own work to destroy works of devil. (1 St. John iii. 8.)

The answer. No argument possible—Satan put to flight.

LESSONS. (1) Resist the devil, and he will flee.

(2) Thou shalt love the Lord with all thy heart.—*Quiver.*

TALK is very necessary to life, and so it is cheap. The man who was talked to death never lived. It takes a certain amount of it to keep the world moving. It is like steam in the boiler of a locomotive, but as

steam must be compressed, in order to move machinery, so must speech. Free steam exerts no force, neither does free talk. When it is thoroughly compacted, it makes something move.

EDITORIAL NOTES.

ANOTHER member of the late Council of Public Instruction has gone to his long home. The Rev. John Barclay, D.D., began his school work in the parish school of his native town, and in due time entered the University of Glasgow, where he finished a distinguished career both in arts and divinity. Dr. Barclay came to Toronto in 1842; he was for years a member of the Senate of the University of Toronto and also of the Council of Public Instruction. At the Council Board he had for colleagues the Rev. Dr. Ryerson, Dr. Jennings, Dean Grasett and the Rev. Dr. McCaul.

Dr. Barclay, as trustee of the Toronto Grammar School, now the Collegiate Institute, gave valuable services, and services which were highly appreciated by his brother trustees. These were the days when the "Friends in Council" looked after the education of Ontario; gentlemen of ability, learning and integrity. Exceptions prove rules, it is said, therefore we take courage to say that the former days were better than these days, and at the same time that we are not open to the rebuke of not having enquired wisely in this case. *Requiescat in pace.*

THE LATE CHANCELLOR NELLES.

IN the death of Dr. Nelles the teaching profession in Canada loses one of its most distinguished members. Few men in the country were so long connected with that profession, or took in it such an honest pride. He had in his youth excellent educational advantages, and he made of them the best possible use. He was a student successively at Lewiston Academy, Lima Seminary, Vic-

toria College, and Wesleyan University, Middleton, Conn., where he graduated in 1846. He afterwards taught at Newburgh Academy for a year, and entering the Methodist ministry was successively stationed at Port Hope, Toronto and London. At the age of twenty-seven he was called to the Presidency of Victoria College, a position which he held with distinguished ability to the end of his life—a period of thirty-seven years. He found the college struggling with financial difficulties. He addressed himself bravely to the task of developing its resources and raising its educational standard, and in both respects he succeeded to a remarkable degree. The number of students and the income of the institution continued steadily to increase, and the faculty of instruction was strengthened by the addition of able professors.

To the very close of his life Dr. Nelles "kept touch" with the progress of educational science. He was a man of wide sympathies, and was most cordial in his relations with his fellow educationists. For two years he held the position of President of the Teachers' Association of Toronto, and the grace and ever-ready wit with which he presided at its meetings are remembered with pleasure. He took an active interest in the subject of University Federation, and in the early stages of the movement was one of its ablest advocates and exponents. The failure of other Canadian colleges to come into the scheme caused a change in his views; but in all the discussions upon the subject he never exhibited other than the courtesy and the candour of the Christian gentlemen. His loss is most regretted by those who knew him best, especially by the many hundreds of students

throughout the country who have enjoyed his personal friendship and instruction.

Dr. Nelles was a man of broad and liberal culture, and his reading, especially in the department of ethical

and metaphysical philosophy, was at once wide and deep. His public addresses, while not marked with rhetorical grace, were fresh and vigorous in thought, chaste and elegant in expression, and lofty in moral purpose.

SCHOOL WORK.

[We are obliged to hold over the Mathematics this month for want of space.]

MODERN LANGUAGES.

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EXERCISES IN ENGLISH.

1. Substitute phrases for the italicized words :

- (a) The water *gradually* deepened.
- (b) He made three *successive* attempts.
- (c) *Finally* they decided to return.
- (d) He bore it *heroically*.
- (e) The words of a *contemporary* historian.
- (f) He offered them an *equivalent* amount.
- (g) They were nearly *unanimous*.

2. Contract to simple sentences :

- (a) He got rid of them as speedily as possible.
- (b) He complained that they did not pay attention.
- (c) He hesitated a while before he consented to go.
- (d) This does not include the sums which have already been paid.
- (e) He made a great mistake when he wrote such a letter.
- (f) It showed how ingenious they were.
- (g) I am quite aware how important it is that I should secure his aid.
- (h) We have no means by which we can test whether it is pure.

3. Change the voice of the verbs :

- (a) No one will ever know who did it.
- (b) They had been carried on the shoulders of the natives.
- (c) It would never have been thought of if he had not mentioned it.

(d) An earthquake which shook the building alarmed the natives.

(e) The walls were afterwards pulled down by the settlers, who used the stones for their own houses.

4. Express the same fact in as different words as possible :

(a) He was attended by a numerous retinue.

(b) The fort defied all their attempts to capture it.

(c) They met with a kind reception from the natives.

5. Arrange in as many different ways as possible without destroying the sense :

(a) This night about our cheerful hearth we gathered once again.

(b) Now Nature hangs her mantle green on every blooming tree.

6. Change from compound to complex sentences or *vice versa* :

(a) They had been a week in the city but they had not seen the whole of it.

(b) He cannot have been in his right mind or he would not have done such a thing.

(c) His youngest brother, who had witnessed the fight, came to tell us about it.

(d) As the crew refused to proceed any further he was forced to return.

(e) He sent three messengers but none of them returned.

7. Analyze the following simple sentences :

(a) On his decision on that eventful morning hung the fortunes of each of his followers.

(b) The herbage of your grave
No impious footsteps here shall tread.

(c) No more on life's parade shall meet
That brave and fallen few.

8. For what do the following contractions stand?

Jr., inst., i.e., pro tem, Bros., N.B., do,
C.O.D., I.T. Col., C.P.R., Thos., Q.C.,
Ald., Y.M.C.A.

9. Give the proper contractions for the
Provinces of the Dominion, and for the fol-
lowing States, Maine, Vermont, New York,
Michigan, Illinois, Kentucky, Missouri.

10. Substitute words or phrases of the
same meaning for those italicized :

(a) The amount appropriated for the pur-
pose is not excessive.

(b) Consider the magnitude of the interests
involved.

(c) There are no more obstacles to their
resuming operations.

(d) He did not betray the slightest emotion.

(e) I can hardly credit his assertion.

(f) The disparity of the forces rendered it
perilous.

(g) He deemed it prudent to tender his
resignation.

(h) It was less than the stipulated amount.

(i) He reluctantly acquiesced in the com-
mand.

(j) At their urgent solicitation he consented
to postpone the commencement of the enter-
prise.

11. Divide into clauses, and state the
grammatical value and relation of each.

(a) So I crept up behind him so softly to-
day

That he heard not a step or a sound,
Nor knew that his basket was stolen
away

From the place where it stood on
the ground.

(b) Then I held my breath with fear and
dread,

For into the square with a brazen tread,
There rode a figure whose stately head
O'erlooked the review that morning.

12. Break up each of the following into a
series of simple sentences :

(a) The people were so exasperated by
the insolent way in which the messenger
acted that they would have laid violent
hands on him but for their reverence for the
Inca, in whose name he had come.

(b) But the Spaniards, whose imaginations
had been kindled by the romantic adventures
in which they had been engaged, indulged

in visions which all the wealth of Peru could
scarcely have realized.

(c) That poor little boy whom he had
pitied and almost scorned for his weakness
had done a thing which he, Tom Brown,
braggart as he was, dared not do.

13. Select and classify the phrases in the
following, and tell their grammatical relation :

(a) In the hope of effecting his object by
appealing to the avarice of his keepers, he
one day offered Pizarro, in return for his
liberty, to cover the floor of the apartment
in which they stood with gold.

(b) At all events it was safe to accept the
Inca's offer, since by so doing he could col-
lect at once all the gold at his disposal.

14. Combine the following groups into
single sentences :

(a) He had formerly been jealous of Al-
magro. This jealousy still rankled in his
bosom. He had beheld his arrival with dis-
gust. He did not care to conceal this dis-
gust.

(b) The walls were of stone. The roof
was composed merely of a light thatch.
This is usual in these countries. Rain sel-
dom falls in them. Protection is wanted
chiefly against the sun's rays.

(c) The bridges were very frail-looking.
The Spaniards hesitated to venture on them
with their horses. They were quite capable
of bearing a heavier weight. Experience
soon showed this.

15. (a) Among the beautiful pictures
That hang on Memory's wall
Is one of a dear old forest
That seemeth the best of all.

(b) And the waiting children love it too,
For they know the stocking song
Brings many a tale to grandma's mind,
Which they shall hear ere long.

(1) Classify the italicized words according
to their function.

(2) Select all the words that show inflec-
tion, and tell the purpose and force of the
inflection in each case.

(3) What other words in (a) are capable
of inflection? Give all the possible inflec-
tions of each.

(4) What words in (b) may have a differ-

ent grammatical value from that which they have here? Give examples of these values.

(5) Why is *Memory's* spelled with a capital?

(6) Contract (*a*) to a simple sentence in prose if you can.

(7) Divide (*b*) into clauses and state the kind and relation of each.

(8) Show that *which* in (*b*) has a double nature, by substituting for it a conjunction and another pronoun.

CLASSICS.

G. H. ROBINSON, M.A., TORONTO, EDITOR.

BRADLEY'S ARNOLD.

BY M. A.

Exercise 28.

1. Qui nescio an, quod majores sui sapissime peccaverunt, idem ipse sit peccaturus. 2. Multa conqueritur, lamentatur multa; hoc unum gaudet, te cum in amicorum numero habere velle. 3. Equidem vereor ne de salute sua totum exercitum sollicitum habeat; tam incante se et imprudenter gerit. 4. Mare jamdiu classibus suis infestum habebant Angli; jam demum fretum transportare milites et in continente exponere ausi sunt. 5. Sociorum reliquos Romani missos fecere; Hieroni uni omnium fidelissimo, consulere nunquam destiterunt. 6. Utrum sapientem se an stultum insipientemque præbuerit nescio; sed id ætatis puero militi fieri non licebit; hoc saltem pro certo habeo. 7. Hanc vitam vixi iudices; vos potest fieri ut ejusmodi vitæ misereat; Hoc ego gloriari ausim me neque pudere ejus, neque tædere, neque pœnitere. In hoc difficillimo tempore tam bene se gessit ut vix sciam utrum constantiam ejus plus admirer an prudentiam.

Exercise 53.

1. Tum salutato hostium duce ad suos conversus, subditis equo calcaribus, Germanorum ordines prætervectus est, neque expectatis legatis, nec respondente ullo. 2. Me auctore ne vox te viresque dificerent, in-

ceptam orationem paulisper intermisisti. 3. Equidem quum timerem ne gloria ac laudis studium parum apud te valeret, ommissis istis, alia ratione animum tuum flectere conatus sum. 4. Hæc omnia suadente fratre tuo fecit, nullo neque accepto neque sperato præmio. 5. Peropportune mihi accidit te invito ac dissuadente, ne adversante dicam ac repugnante, committenti prælium ut ne unoquidem amisso milite, perpauca vulneratis victoriam consecutus sim. 6. Quum castra nostra aliquot horas oppugnassent barbari, adeo æstu ac siti et lassitudine fatigati sunt ut, amissis plus mille ducentis, incepto desisterent ut re infecta domum redierint. 7. Te auctore, me non solum invito sed adversante, sed repugnante, sed fidem deorum hominumque implorante, civibustuis persuasum est ut universum populum indicta causa condemnarent. 8. Hoc mihi persuasum habeo, te hanc legem salva republica perferre non posse. 9. Me hæc dicente, nuntiatius hostium adventus et allatae a rege literæ audientium animis et iram incussere et pavorem; erant autem qui properato opus esse rati, arreptis armis hosti obviam descendere contenderent. 10. Te superstite et incolu mi liberos meos nunquam orbos fore pro certo habeo. 11. Te duce arma sumpturus fui, sed comperito te ægrotare, domi remanere nec certamini me immiscere decrevi.

SCIENCE.

SCIENCE TEACHING.

I OWE an apology to the readers of THE MONTHLY for my carelessly-written article in the last issue. It was dashed off in an hour one evening; it was never read over, and I never saw a proof of it, although I am quite sure the printer followed his copy only too closely. I am not quite certain that the present article will be much of an improvement on the preceding one, but I am willing to promise that the third one will be an improvement on both.

My first contribution was intended as an answer to the objection that science teaching engenders in our pupils a habit of making

hasty "guesses," in place of a habit of drawing legitimate conclusions. I pointed out that men of all classes, learned and unlearned, are in the habit of "jumping" at conclusions, and why not children? Mr. Haultain's letter in *The Week* is a curious instance of how a scholarly man may "waltz" to a conclusion to the accompaniment of Shakespearian music. After reading "more than a thousand" of the answer papers of candidates at the recent University and Departmental Examinations, Mr. Haultain reaches the astonishing "conclusion" that such candidates "were taught by men and women who could not themselves talk or write correctly." It would be difficult for the smallest boy in a beginner's science class to equal this big jump of Mr. Haultain's. Apparently he does not see that his conclusion is quite irreconcilable with the fact that three-fourths of the teachers whom he condemns so unceremoniously are graduates or under-graduates of Toronto University, some of them his peers in any department of learning, others his superiors. Unless he wishes his conclusions and generalizations to become the laughing stock of the public, he must take care that they are based upon sound reasoning and admitted facts.

HOW NOT TO DO IT.

There is one method of teaching science that should not be tolerated in our High Schools even for a day. I refer to the lecture method. Young teachers particularly need to be cautioned against it, because it is one which is extensively followed in our Universities, and which young teachers will naturally adopt if left to themselves. There is probably no better way of communicating knowledge to adult students than by the lecture system. It has stood the test of ages in all departments of collegiate work, and is not likely in our time to be superseded by a better. But while admitting that this is true as regards college or university work, I cannot impress too strongly on young teachers, full of enthusiasm and fresh from college methods, that the lecture system when applied to ordinary high school work is a huge

mistake. The aim of the university lecturer and of the high school teacher is entirely different. Their methods therefore must be different. Can we learn anything from the history of school methods? Surely. Twenty or thirty years ago the lecture system was thoroughly tested in some of the best American schools and it proved an utter failure. Why perpetuate in Ontario a method which has been tried and abandoned elsewhere? To begin with, taking notes of lectures spoils a pupil's penmanship. The average high school pupil gets wrong ideas from lectures, and he expresses these ideas, in his note book, in very bad English. His note book, some way or other, is hard to find when most wanted. The ordinary pupil will do little thinking for himself, and lecturing to him till doomsday on any subject will never make him think. Of course if a boy is not made to think he is not being educated. As well lecture to the wind. The lecture system disappoints and disgusts the true teacher; it wastes the pupil's time; it imparts no substantial information; it stimulates little thought; it gives no education.

Nor do these remarks apply exclusively to science teaching. For three years I watched an honor graduate and gold medallist teaching his favourite subjects. He lectured so lustily that he was often heard three blocks away from the school. His pupils had wonderful confidence in his scholarship and ability to teach, and yet, at the end of three years the standing of the school in classics was lower than when the teaching was done by a mere pass man. The head master then interfered, and insisted that his classical assistant should do less of the work himself—in short, should cease lecturing—and make his pupils do more. The result was that at the end of the next year the university examiner congratulated the classical master upon the vastly improved character of his work. I speak from fourteen years' experience, and I have no hesitation in saying that the lecture system as applied to ordinary high school or public school work is pure and unadulterated fraud in every department. Even in the universities it is not a complete

success. The best college lecturer on philosophy whom I ever knew told me, not a month ago, that he had ceased completely to depend upon the lecture system for the best results. He continues to lecture of course, but never to his best students. These read books or portions of books, and subsequently discuss them with the professor. Essay writing is continuous, and he gets fine results. During the past three years I have had an opportunity of examining some of his honor students in competition with others from every university in Ontario, and even the most casual observer could scarcely have failed to see the superiority of the one system of training over the other. In every examination the man who had been *compelled* to think—the close reader and essay writer—stood head and shoulders above his fellows in intellectual grasp, and in ability to express his thoughts clearly, forcibly, not to say elegantly. On the other hand, the knowledge of the pass man—the mere listener to college lectures—was hazy, misty, cloudlike, and intangible in the extreme. If the lecture system, therefore, does not yield the best results in the university, how can it possibly do so in our high schools?

I have dwelt thus fully on the lecture system so as to pave the way for discussing in future papers what I consider to be the proper methods of teaching science in our secondary schools. Of these methods more anon.

CLASS-ROOM.

ENTRANCE EXAMINATION LITERATURE.

TO A SKYLARK.

Tracing the connection of the sentences is the chief difficulty in this poem; the three stanzas are accordingly dealt with from this standpoint.

1. This stanza deals chiefly with the causes that influence the lark to prefer the sky to the earth. The first is implied in "where

cares abound." The second, in the fact that, "while wings aspire" "heart and eye" are with the "nest upon the dewy ground." The third is, that the lark by composing "those quivering wings" and stilling "that music" can drop at will into its nest, or in other words, that the sky is a very convenient place from which to descend into the nest.

2. Daring warbler, mount to the last point of vision and (if necessary) beyond it! That love-prompted strain, which is a never-failing bond between thee and thine, thrills the bosom of the plain none the less on account of thy height above it. Moreover thou seemest to possess the proud privilege of singing as well in other seasons as thou dost in the spring.

3. Leave the shady wood to the nightingale: thy seclusion is glorious light, from which, thou, with a more divine instinct than she, pourest a flood of harmony upon the world. Thou and wise men resemble each other in soaring but never roaming, and in talking Heaven and home as the points by which you shape your course.

NOTES AND QUESTIONS.

1. *Ethereal minstrel! pilgrim of the sky!* suggests the time of the crusades. The lark as a *minstrel* is seeking the abode of her Lord to entertain Him with her music; as a *pilgrim* she seeks His shrine for devotional purposes.

What is the connection between lines five and six and the preceding part of the first stanza?

Explain.—*Those . . . composed*, and that . . . *still*.

2. Who or what are signified by *warbler*, *bond* and *proud privilege*?

What is meant by *the bosom of the plain*?

3. State in your own words the contrast between the lark and the nightingale.

Why is the choice of the lark preferable?

Wherein do the lark and "the wise" resemble each other?

What do *soar*, *roam*, *Heaven* and *home* signify with reference to the *lark* and the *wise* respectively?

GRAMMAR.

1. Explain the meaning of the grammatical terms: Concord, government, apposition; and explain your answer fully by means of one sentence.

2. (a) How is the prevalence of the plural form in "s" and "es" to be accounted for?

(b) Write the plural of the following, giving the rule for the formation of each: Governor-General, Dutchman, child, medium, axis, chief, trio, wharf, cupful, salmon.

3. (a) On what principles do we attribute gender to inanimate objects?

(b) Give the feminine forms of: Bachelor, youth, colt, lad, merman, miller, fox, wizard, rake, Sultan.

(c) Explain any peculiarities of the following in reference to gender: Gander, virgin, girl, songstress, maltster.

4. (a) State the rules for the formation of comparatives and superlatives in English.

(b) Instance any five exceptions.

(c) What is the difference between: (1) few and a few; (2) much and many; (3) further and farther; (4) later and latter; and write sentences illustrating the correct use of each.

5. (a) Clearly explain the function of a relative pronoun.

(b) Classify, with an example of the use of each, the words used as relatives.

(c) Give rules for the concord of the relative.

6. Is it an invariable rule that a noun in the singular number should always be followed by a verb in the same number? If not, give instances, and explain them.

7. Justify or explain the following expressions: (a) "It am I." (b) "It is me."

(c) "It liketh thee." (d) "Twice two is four." (e) "They left off beating of Paul."

(f) "The violet smells sweet." (g) "I never was, nor never will be, false."

8. Explain the following constructions:

(a) "It cost half-a-dollar." (b) "He walked a mile Saturday." (c) "He sat up all night." (d) "He lay a-dying." (e) "He ran a race."

9. Give examples of the different ways in which each of the following may be used in

reference to the "Parts of Speech": *as, so, that, since, but.*

10. Parse fully: "A fault which needs it most grows two thereby."

COMPOSITION.

1. Account for the spelling of the termination of:—

"Deferred" as compared with "differed."

"The Henrys" " " "miserics."

"Employed" " " "defied."

"Infallible" " " "incurable."

"Saddest" " " "longest."

2. Distinguish between the meanings of the following: Only and alone; beside and besides; round and around; decrease and diminish; bring and fetch; stay and stop; I alone can do it and I can do it alone; the Lord's Day and the Day of the Lord.

3. Give the Saxon words in common use which most nearly answer to the following in meaning: multitude, attitude, altitude, pervade, penetrate, spiritual, expand, invasion, elevation, incursion.

4. Point out the difference of meaning in the following pairs of sentences:

I was disappointed of the letter which I have so long wished for.

I was disappointed in the letter which I have so long wished for.

I had a taste of that thing.

I had a taste for that thing.

If you go at once you may be in time.

If you went at once you might be in time.

He has died. | He is dead.

5. Justify or correct the following, with reasons:

He is a better politician than a statesman.

Death has come to all, greater, better, wiser than I.

The words are as follows.

This is one of the most successful works that ever was executed.

The town consists of three distinct quarters, of which the western one is by far the smaller.

Every sort of council resolve themselves into this.

If this be him we mean, let him beware.

Every one of us talks worse English every hour of our lives.

6. Express briefly in prose :

"It is not growing like a tree
In bulk, doth make men better be ;
Or standing long an oak, three hundred year,
To fall a log at last, dry, bald and sere ;
A lily of a day
Is fairer far in May,
Although it fall and die that night ;
It was the plant and flower of light,
In small proportions we just beauties see ;
And in short measures life may perfect be."
—Johnson.

7. Expand the following, showing clearly the meaning :

"Honour and shame from no condition rise ;
Act well your part—there all the honour lies."
—Pope.

FOURTH CLASS ARITHMETIC.

1. Find the value of $231 \cdot 8 + 21 \cdot 897 - 17 \cdot 0235 + 95732 - 100 \cdot 01$. *Ans.* 13762082.

2. 4 men or 6 boys can do a piece of work in 40 days. In what time will 12 men and 2 boys do a piece half as large ?

Ans. 6 days.

3. With \$500 a tradesman gains \$60 in 7 months. How much will he gain in a year with a capital of \$420. *Ans.* \$86 $\frac{2}{3}$.

4. If 3 steps of a soldier measure $2\frac{1}{2}$ yards, how many steps will he take in 3 miles ?

Ans. 7,040.

5. Add together $\frac{5}{8} - \frac{1}{3}$, $10\frac{2}{3}$ of $1\frac{1}{8}$, and $\frac{67}{8}$
 $6\frac{1}{2} + 4\frac{3}{8}$

Ans. $11\frac{65}{8}$.

6. How many yards of carpet will cover

the floor of a square room whose side is 20 feet ?

Ans. 40.

7. What is the interest on \$3,375 for 2 $\frac{1}{2}$ years at 6 per cent. per annum ?

Ans. \$540.

8. Subtract the sum of $3\frac{1}{2}$ of $2\frac{1}{2}$, $5\frac{3}{4}$ of $\frac{1}{2}$, and $4\frac{1}{2}$ from 47.

Ans. $\frac{3}{4}$.

9. A vessel is 40 ft. long, 9 ft. wide, and 6 ft. deep. Find how many cases it would contain, each being 2 ft. long, 18 in. wide, and 8 in. deep.

Ans. 1,080.

10. If 3 men or 5 women can do a piece of work in 20 days, in what time will it be done by 8 men and 20 women together ?

Ans. 3 days.

11. 2 men or 5 women can do a piece of work in 12 hours, how long will 5 men and 2 women take to do it ?

Ans. $4\frac{4}{9}$ hours.

12. How many days of 12 hours each would 28 men require to perform a piece of work which would employ 35 men for 60 days of 8 hours each ?

Ans. 50.

13. If $\frac{2}{3}$ of $\frac{1}{4}$ of 99 yards of calico are worth \$12.12 $\frac{1}{2}$, what are $\frac{1}{4}$ of $\frac{1}{4}$ of 84 yards worth ?

Ans. \$1.34 $\frac{1}{2}$.

14. What sum of money will amount to \$756 in 5 years at 8 per cent ?

Ans. \$540.

15. What is the amount of \$840 for 5 $\frac{1}{2}$ years at 6 per cent.

Ans. \$1,117.20.

16. At what rate will \$480 give \$135 interest in 3 years ?

Ans. 9 $\frac{3}{8}$.

17. In what time will the interest of \$750 at 7 per cent. be \$945.

Ans. 18 years.

18. The interest on a sum of money for 5 $\frac{1}{2}$ years at 5 per cent. is \$137 $\frac{1}{2}$. What is the sum ?

Ans. \$500.

19. What will it cost to fence the four sides of a field 60 rods long and containing 12 $\frac{1}{2}$ acres at 2 $\frac{1}{2}$ cents per yard ?

Ans. \$25 $\frac{3}{8}$.

CONTEMPORARY LITERATURE.

OUR California contemporary, the *Overland Monthly*, issues an excellent October number.

Science, Lafayette Place, N. Y., continues to prosper. A recent issue contained a map of the proposed Nicaragua Ship Canal. Hygienic reports and news occupy a prominent place in this journal.

THE *Quiver* for November is an inspiring number. It contains the usual good and general reading, and in addition, sketches of the work of two philanthropists of whom Canada knows—Miss Macpherson and Dr. Barnardo. We regret that space will not allow us to make extracts from both these sketches, and

hope that many of our readers will see them at length in the *Quiver* for themselves.

STUDENTS will find the October *Shakespeareana* a good number. Charles H. Higgins, M.D., discusses "Was it Bacon?" showing, by comparing quotations on friendship, love, etc., taken from Bacon's works, with quotations from Shakespeare on the same subjects, how unlike these two great minds were.

The Presbyterian Review, of this city, improves with every issue, and is doing good service for the church to which it specially belongs, and for the community at large. It is one of our few independent papers, and its fearless, energetic articles on public dangers, particularly from Papal aggression, should be read by every patriot in the land.

THE American edition of the *Illustrated London News*, published at Potter Building, N. Y., for October 15th, furnishes pictures on a variety of subjects, including a double-page picture—"Deer-stalking in the Highlands"; three pages devoted to the British Mission to Morocco; Sketches of Life on Board a Man-of-War; The Home of Florence Nightingale; A Sad Dog's Day, etc. The supply of reading matter is abundant and interesting. Price 10 cents per copy.

THE November *Atlantic* contains large instalments of the current serials and a very readable article on "Girl Novelists of the Time," a paper on the "History, Uses, and Fashions of 'The Wedding Ring,'" another of the admirable series of articles on "Astronomy with an Opera Glass," and the fifth paper by the Hon. D. A. Wells on "Economic Disturbances," are some of the features of the November *Popular Science Monthly*. Another article by Prof. Joseph Le Conte, on "Agassiz and Evolution," claims for Agassiz the discoveries upon which have been built the modern theory of evolution.

A CONVERSATIONAL GERMAN GRAMMAR OF THE GERMAN LANGUAGE. By Otto Christian Näf, B.A., London University. Rivingtons: London.

The author has chosen a somewhat misleading title, since the conversational exer-

cises do not form a very large part of the book. The whole grammar is supposed to afford work for six school terms, and is divided into six parts, each tolerably distinct from the others. The distinctive feature is the method of arrangement. The matter is that of ordinary German grammars. Grammatical principles are stated, and paradigms are given upon what the author calls "reference pages." Opposite these pages stand examples and exercises on the "reference-page." The work for each term ends in the memorizing of conversational sentences and a short poem. The fifth term's work is devoted to idiomatic differences between English and German, and that of the sixth to etymology, word-formation, and a short historical outline of the language.

THE RIVERSIDE LITERATURE SERIES. No. 29. Little Daffydowndilly and other stories, by Nathaniel Hawthorne. Boston: Houghton, Mifflin & Co.

THE NATURAL HISTORY READERS. Third Reader. By the Rev. J. G. Wood, M.A. Boston: The School Supply Co.

We have already commented on Nos. 1 and 2 of this series. The present number is fully up to the high standard of excellence which characterized the others.

EARLY EDUCATION. By James Currie, A.M. New York and Chicago: E. L. Kellogg & Co. 16mo. 300 pp. \$1.25.

Mr. Currie's esteemed work is too well known to need introduction by us. It has been republished by Messrs. Kellogg in a convenient and tasteful form.

INDUSTRIAL EDUCATION. A Guide to Manual Training. By S. G. Love. 320 pp. 400 Illustrations. \$1.75. *Ibid.*

A History of the Origin and Progress of Manual Training in the Schools of Jamestown, N. Y., is here given by the superintendent of these schools. It is interesting reading. Manual Training is finding its way into the Public Schools. In some important points the schools of to-day are lamentable failures, and one can see in the Manual

Training an attempt to remedy this. We think teachers should read this book.

HOMER'S ILLIAD, BOOKS I., II. and III.
Edited by Prof. Seymour, of Yale College.
230 pp. Boston: Ginn & Co. \$1.35.

The present edition is based on that of Ameis-Hentze, and adapted to the work of American classes. With appendix, index, etc.

THE ENGLISH LANGUAGE. By Prof. Meiklejohn, of the University of St. Andrew's. Boston: D. C. Heath & Co.

Prof. Meiklejohn's work will be cordially received. It is a book which is worthy of a place in every educational library, and teachers of English will find it valuable in class work.

BRIEF INSTITUTES OF GENERAL HISTORY.
By Dr. Andrews, Brown University. 452 pp. \$2.00. Boston: Silver, Rogers & Co.

The work is arranged in eleven chapters on such topics as "The Study of History," "The Old East," "Renaissance and the Reformation," "Prussia and the New Empire," etc. The material is carefully selected, and the result is a valuable manual for classroom use, or for general historical reading.

THE LEADING FACTS OF ENGLISH HISTORY. D. H. Montgomery. Pp. 415. \$1.25. Boston: Ginn & Co.

A revised and enlarged edition of a useful and interesting book on English History.

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II. THE PUBLIC SCHOOL EXERCISE BOOKS. 5 cts each. Toronto: The Copp, Clark Co.

These books are prepared by experienced teachers of high reputation, belonging to our own Province, and we have pleasure in recommending them to the favourable consideration of our readers.

ARITHMETIC FOR SCHOOLS. By Rev. J. B. Lock, M.A., formerly Master at Eton. London and New York: Macmillan & Co.

This new text-book on arithmetic is the work of an able and careful teacher. It contains a very large number of excellent examples. We strongly commend it to the attention of mathematical teachers and students.

The article "The Possibilities in Intermediate Work," by Edith E. Ingalls, in our last number, should have been credited to *Common School Education*.

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