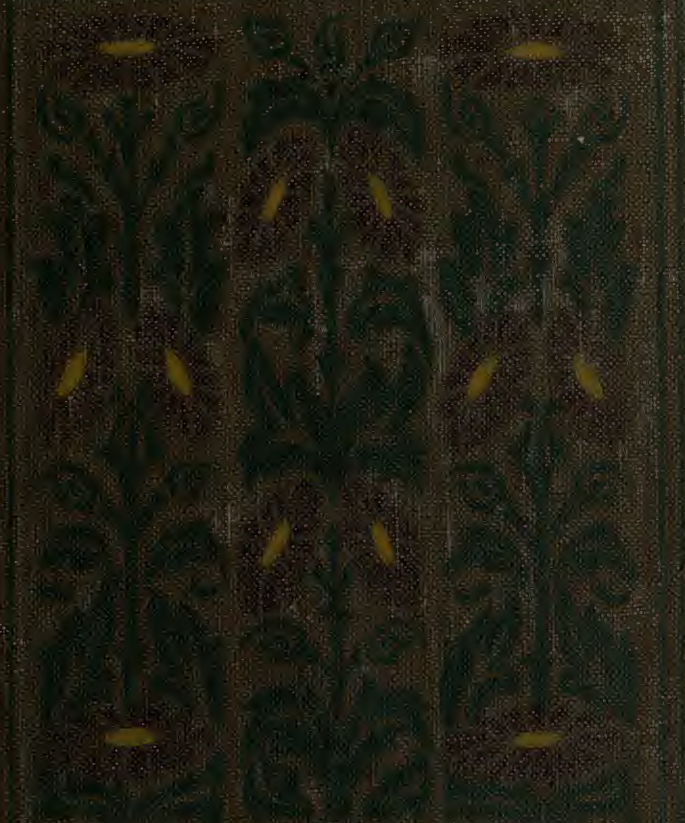
HOW·TO·STUDY



AMOS·R·WELLS

How to Study

The "How" Series

By Amos R. Wells

How to Play
How to Work
How to Study

How to Study

By AMOS R. WELLS

United Society of Christian Endeavor
Boston and Chicago

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HOW TO STUDY.

CHAPTER I.

FOLKS THAT HAVE GRADUATED.

DO you know what the word "graduate" has come to mean? Ask a fond father, whose son has just received a diploma from high school, academy, or college, what the word "graduate" signifies and he will say, "Why, he's through!" Through! As if education were a Great Dismal Swamp, and the lad had just scrambled out to firm land again!

A far different idea lies hidden in the noble word, "graduate,"—an idea of the vast hill of learning, broadly based on the common world of everyday things, and rising by fair terrace after fair terrace, until it reaches that golden cloud which hides from mortal eyes the throne of God! To "graduate," to receive a "degree," is to ascend only one step toward the summit. There are many grades up to which

we must graduate. It is a hill of many degrees, this hill of learning; and what are we to think of people who say of a graduate, "He's through"?

Of course I do not know how many novels you have read; but you are aware that before the last page of the novel the heroine is very likely to say, "Oh, Orlando! You can never have loved me at all, or else you would love me forever." The heroine may be right: she probably is; but, at any rate, this lover's sentiment is true for the student. It may be said safely that, with few exceptions, the man or the woman who has ceased studying has never really studied at all. O, I suppose there may be backsliders among students as well as among Christians; and yet, as I would suspect the genuineness of the original conversion of a backslider from Christianity, so I have my serious doubts whether a man who is not still a student ever was a student.

I hope you do not consider this comparison an irreverent one. I assure you that it is very far from that. To the true student, study has much of the sacredness of religion. He enters a library with as much awe as if it were a cathedral. He feels himself called to study just as really as ever a preacher was called to preach. He enters upon his work with as true

a consecration as any bishop's. A human mind that has once felt the rush of solemn pride at first sight of a new truth will always be hungry for more moments like that; and the reason why so many graduates are "through" is because they have never really begun to study and think for themselves.

Let me ask you a ridiculous question. How would you feel if with a magician's wand I should suddenly annihilate your body, and leave you, my reader, sitting before this book, an incorporeal mind? Would you be perfectly comfortable, or would your mind go feeling after your body as the soldier's mind gropes after his buried limb? Would you cry out for hands to sew with, and for pockets to put some money in, and for fingers to clutch the money? Such a transformation is coming some day, is it not, to all of us; but it hardly matters to the student. His mind is not afraid to be alone. Trained by earnest study, exercised in wide reading, strengthened by hard thinking, his mind, his spirit, has come to seem to him what it really is, the only enduring part of him.

But these poor people who have graduated, and got through with study, and out among the dollars and dimes, the stitches and ditches, the saws and the ledgers,—what will they,

what *will* they do on that great Commencement Day, that commencement of a life of spirit, of thought, of study, with dimes, stitches, and ledgers left out? Money can do vast good. Brawny arms and deft fingers are a nobleman's title. Skill with machinery, cleverness at carving, shrewdness in sowing wheat—these are well worth striving for. But on that Commencement Day when we must all graduate from the flesh, how pitiable will seem the shrewdest millionaire who got through studying long ago, beside his poorest neighbor whose mind has been taught to think, whose heart has been taught to feel!

CHAPTER II.

THE BOOKS ON THE SUBJECT.

A BIBLIOMANIAC is a man who, if he had to choose between getting the ideas in a book and getting the book itself, would say, "Give me the book." This is silly enough, but, on the contrary, many original minds have been spoiled because their owners have not, before beginning their studies, gathered the books on the subject.

Some people are so bent on being original that they hardly dare look into a book. Not being instructed in other men's work, they are continually cackling over ideas that other brains have hatched out long ago, and stumbling at obstructions that every one else knows how to get around. They think that originality consists in doing things themselves, whereas it really consists in doing things that no one else has done for us. The wise student, seeing the infinity of matters to be learned, is only too glad to study all he can by proxy. He reads greedily the books on the subject.

I well remember the boys of several arithmetics in the public schools—bright fellows who would come to me at recess or noonings with "sums" from Greenleaf or other old-time text-books fished out from the attic. I well remember the boys of several geologies at college, whose recitations showed them as familiar with Dana and Winchell and Geikie and Lyell as with Le Conte. I remember these young fellows because they are making their mark now in the world. They are well-read lawyers, doctors of more than one prescription, teachers who hold life-certificates, farmers who can raise more than one cereal.

Students forget that they are studying *text*-books only. They make their one text-book the whole sermon. To be sure, an old maxim bids us beware of the man of one book. He will be so thoroughly familiar with it, the idea is, that he will be an ugly customer to meet in an argument. But that maxim is false, like so many others. The truth is, that you never can know one book until you have become acquainted with many, on the same subject. The other books, with their new ways of putting things, will be sure to change your opinion of the first book.

Besides, reading the new book will add to your wisdom, even if it contains nothing new.

Indeed, you should read new books on an old subject more to gain the old facts and ideas, than new ones. Do you know how facts become friends? In the same way as people. Friendship with a man springs, not from one meeting, but from frequent contact, in streets, shops, churches, crowds, and alone. Facts and ideas also become our friends only as we meet them in different kinds of type, strange covers, new garbs of language, and at unexpected times.

Of course I do not mean that you are to read with equal thoroughness everything you can find on the subject, whether it be weighty or trivial. Part of the advantage of the habit I am advocating is the sense it will give you of proportionate values, and the drill it will give you in the sublime art of skimming. Often the knowledge of where certain facts are to be found is all you can carry away from the reading of a book on your subject; this knowledge, however, is no mean acquisition.

"But," some one may ask, "after all this parallel reading will not my mind be too sated for any original work?" No. Most minds are like those old-time pumps into which you must pour water to start them. To me a row of authorities with whom I have been hobnobbing on a matter is tremendous inspiration to

go to work and do something worthy of the company I have been in. It is a great blunder to suppose that any head can be too full for originality.

I hear, too, the wail of the lazy man: "Oh, the time, and oh, the trouble, to lift about these huge atlases, encyclopædias, dictionaries, and gazetteers!" I have nothing to say to you, Master Wilted, except that everything good is made of time and trouble. But indeed you will find, if you make the experiment, that after reading one book on any subject it is twice as easy to read the second, four times as easy to read the third, and sixty-four times as easy to read the seventh.

Still one more objector, and this time it is Master Economy. "What!" he cries, "buy three text-books instead of one, and whenever I travel anywhere, or go a-fishing, or buy a horse, or invest in a mortgage, I must purchase volumes on these subjects?" No, Master Economy, I did not say that; and do not need to, in these days of free libraries. A standard encyclopædia should be yours, and will give you riches of suggestion. So will dictionaries, those fascinating tomes. Besides, nowadays books are so cheap that we are almost hired to take them off the dealer's hands; and these cheap books are not cheap

in quality, but standard works in all departments of literature. And if you lack all these resources, then remember that it is no disgrace to borrow, provided you return uninjured what you borrow. The places are few in these United States where any one may not get full, overflowing information on almost any subject, if he will but reach out after it.

Have you ever made rock candy? You take the hot water and stir in sugar until the liquid is saturated. Then you hang a string in the middle, and let the liquid cool. Come back the next day, and you have a mass of most beautiful crystals clustered about the string. One of the most fruitful methods of studying is precisely this of saturating your mind with facts and thoughts, and then letting down a string and fishing for crystals.

CHAPTER III.

THE GOOD OF PENCIL-TABLETS.

WHATEVER books the student may have, there is one book which he must use in studying any subject: that is the pencil-tablet. It is not many years, I think, since some Yankee hero, who should be honored with a lofty monument, conceived the beneficent idea of fastening loose sheets of paper together with glue, giving them a pasteboard stiffening, and sending them forth to dwell at the right hand of every scholar. No arithmetician can calculate how much this little rough-and-ready contrivance has helped the student world. Pencil-tablets have taught brain-workers the close connection between lead-pencils and knowledge. They have shown us how easily and rapidly the littles grow to the "mickle" when there is a place for their ready reception and accumulation. In fact, pencil-tablets are the savings-banks of thought.

Do you know the easiest, swiftest, and most thorough way of studying almost any lesson?

It is this. Sit down with text-book and tablet, and proceed to *report* the lesson. You know what the reporter does,—all but the few who make verbatim reports; he gets the facts in the case. As bulldog to the throat of growling bulldog, so directly does he grip the vital points of a matter, jot them down, and let the others go. Your genuine reporter can sum up a page in a sentence, and a sentence in a word.

Now this reportorial knack is hard to acquire, but of the greatest value to the student. It is of value for four reasons. In the first place, for the student, as well as for the reporter, it is absolutely essential to get at any rate the gist of things. The gist of things is the skeleton on which they hang; it is what gives backbone, solidity, to facts and ideas. A student who does not know how to take notes will read an entire paragraph with anxious attention to its details, and miss utterly the one fact or thought to present which the paragraph was written, about which the paragraph hangs. The reportorial student will remember more details than the other will, but he will do it by consciously remembering only the nuclear notion, and letting that draw all its dependencies with it. Set an unskilled man to sketch a puppy, and he will painfully

insert every curl, every dark spot, every swelling of every muscle; and then he will not have the puppy, but only a splotch on the paper. Now comes the shrewd artist, and curves his pencil easily about, once or twice, making a few sharp strokes between, and a genuine, live puppy fairly barks from the paper and wags his tail. That is how this note-taking method of studying lessons helps the student: it enables him to draw a living outline of the lesson's truths.

Indeed, a set of well-taken notes on a subject ought to be very much like a picture. A picture differs from a written description, you know, in its power of flashing the scene upon you as a whole, not by a slow succession of touches. If you will make your notes very brief,—mere suggestive words and phrases,—and if you will write them almost in the fashion of a diagram, with underscorings showing to the eye the portions of leading importance; and if you will write in a small, compact, and exceedingly plain script, then your page of notes will be a half-picture of the lesson, and will dwell in your memory much as a picture does.

Besides, the mere act of writing is a marvelous assistant to the memory. It is a general principle that anything is better remembered

if you can associate some act with it. Possibly that is why in the Middle Ages they whipped boys to make them remember their lessons. A very little energy of the body often saves much labor of the mind, and even mechanical copying of the lesson would be of great assistance in learning it.

But this vividness of mental impression to which all writing contributes is vastly increased in value by judicious note-taking, because of the sense of proportion which this condensation cultivates. The blind man, with his vision half restored, saw "men as trees walking"; and many a student never passes this stage of mental vision. He sees molehills as mountains, and mountains as molehills; he sees fundamentals as incidentals, and mere by-the-ways as essentials. Brief notes, condensed upon a single sheet of paper, show us the subject spread out before us in its true relations and proportions, like a bird's-eye view from a balloon.

When you would master a lesson, then, take careful, wise notes upon it, as if you were reporting an address. This, at first, will be slower than the ordinary method, but a little practice will marvelously shorten the time; and, from the start, the time will really be shorter on the whole, because of the perma-

nence of your grasp of your knowledge. Most of our modern text-books facilitate and suggest this method of study, by printing in heavy type a brief statement of its subject-matter at the beginning of every paragraph.

Yet these notes will be nothing but a well-drawn sketch, after all, unless you think them over. A review will transform them into a completed picture. As you read over your page of notes for the first time, some words will fail to suggest thoughts, some figures will fail to suggest facts, and you must go back to the original again. Keep this up, doing it many times, if necessary, until every word and phrase of your skeleton outline has been clothed with the flesh of a vivid conception. Then your lesson is mastered.

A volume might be written on the relation between pencil-tablets and wisdom. Let me content myself with a few additional hints.

Pencil-tablets can make essay-writing a delight. My first step, when I wish to write an essay, is to arm myself with a tablet which fits the pocket. Then comes the campaign for notions. On the street, about my work, from conversations with friends, on solitary walks, in church, Sunday-school, or lecture-room,—everywhere, hints on my chosen topic are flying around, and my tablet is the net which

snares them. It is astonishing, as is often remarked, how full the world is of thoughts for any one who is prepared to think them. You know, do you not, what the wise men have learned about consumption? They have discovered that it is caused by an ugly little—wondrously little—plant, which floats about in the air, and is always ready to settle down and set up its poisonous growth in any body which by special weakness is made ready to contract the disease. In just that way men can contract ideas,—by getting ready for them. Therefore, carry a pencil-tablet. After the tablet has caught its load of ideas, the essay is virtually written. You have only to sort the ideas and dress them.

It is well to have many of these tablets; as, one for queries, such as words about whose meaning, spelling, or pronunciation we are uncertain; one for points to be incorporated in letters to friends, thus saving time on a second letter after the first is written; one for essay-themes and notions; one for facts in regard to your studies. And it is well, too, to have these many books in many places, especially if you have not a boy's proud plethora of pockets. Nothing is sadder than the condition of a man who revels in notes, when he gets an idea and has nothing whereon to set it down.

And, for a final point in regard to this matter, what shall we do with our old notes? In most cases, throw them away. Their mission was ended in the making. Though, of course, if they are notes of reading, of any matter not readily accessible in other form, they must either be written out in full or pasted in some book for reference. "When found, make a note on," said dear old Captain Cuttle. In all but especially valuable cases, good student philosophy would dictate: "When found, and made a note on, proceed to lose the note!"

CHAPTER IV.

HOW TO "TAKE" LECTURES.

THERE was once a young farmer who planted corn in stiff clay. He did not plough the soil before planting, nor did he hoe it when the few blades appeared, and yet he grumbled because he got no harvest. A foolish young farmer, wasn't he?

But if he was foolish, what are we to think of the silliness of those who complain that they never can remember lectures, or sermons, who in the same manner never prepare the mental soil for the listening nor go over it again for the remembering? Equally foolish, are they not?

Yet how many such we have all seen! They go out to hear the renowned Professor Bigbrain speak on Toussaint l' Ouverture. They bring to the lecture a mind which is absolutely virgin soil. Toussaint may have been a monk of the Middle Ages, or a Texas cowboy, or a French explorer, for all they know.

When the professor begins to recite that

most romantic story, they are at once plunged into a perplexing sea of uncertainties. "Just where is St. Domingo? Is it one of the East or the West Indies? And why does Professor Bigbrain talk about the French and Spanish and the British and the negroes, all in the same breath? But there! He mentioned Cape Town. It must all be in South Africa! And there comes in Napoleon Bonaparte. This can't be in the Middle Ages, then!"

Do you wonder that on the way home they draw a long breath and say, "Ah! That was fine! What a hero he was! But I'll not remember it a month"? Ten minutes' work with history, atlas and encyclopædia before they started would have put them in condition to receive the whole.

It wouldn't be so bad, however, if, with the impulse Professor Bigbrain has given them, they should go directly home and read over again Toussaint's marvelous career. That would be hoeing the corn when it has sprung up. But how many thus review and make permanent a public address?

Many wise preachers announce their themes beforehand, in pulpit or press. How many take advantage of this opportunity for a little preparatory plowing, and thus double the "fold" with which the good seed springs up?

And in how many homes is the capital old custom extant, which gathered the household after service, to rehearse, with the aid of their united memories, the entire sermon?

You all know the story of the poor washerwoman who, being forced by her pastor to acknowledge that she always forgot both text and sermon, caught up a cleaned cloth from the grass and showed the clerical gentleman how it had forgotten all the water which had passed through it, but yet was whiter and purer by the operation. The ingenious old lady forgot that every flood of true oratory bears gold dust with it, and the very cloth she snatched up had been so worn by the ceaseless passage of water, that every particle of gold passed through its pores!

Now most students go to college with none of this drill in the mastery of addresses, though wise parents and teachers might easily have given it to them, and they plunge unprepared into a system of education which more and more is based upon the lecture. Note-taking is an art not to be picked up in a moment; it needs a long apprenticeship; and it is amazing and pitiable to see how little a college student will often bring away from an hour's well digested and well presented discourse.

The value of shorthand to a student is in-

estimable. It will save him every month hours of time spent otherwise in laborious copying. It will enable him to make a full and increasingly valuable record of his reading. It will give his fingers power to keep pace with his mind when it is at its best, so that he will not lose one idea for his essay while setting down another. On his walks, and in the course of conversation, his shorthand notebook will receive many a fleeting impression that otherwise would escape him. The day is coming when every boy and girl will be taught shorthand just as now we teach longhand.

But it is in taking notes of lectures that stenography shines most glorious. Three or four times as much knowledge may be gained from a course of lectures by a student thus equipped as he would obtain by the use of the clumsy longhand, and he will get it with four times the ease and pleasure. If he has not learned the "art beautiful," as its devotees fondly call it, let him begin at the entrance of his college course, and work in the shorthand characters as fast as he learns them. As soon as he has taught himself to make a dot on the line to represent "and," he has saved himself twelve strokes for every "and" he uses. The gain is immediate and surprising, and constantly growing. Some scholars fashion for

themselves a system of short longhand, writing "wh" for "which," "t" for "the," and the like. This is advantageous, but what is the use of building a push-cart when you might as well have an automobile?

This may suffice as to the mechanics of note-taking, though I have found it not amiss in my classes to recommend the use of soft, easily working lead-pencils and paper with a rough surface, small notebooks readily slipped into the pocket, and more than one pencil, each with a point already made! So ignorant of note-taking is the average student that these little hints are never superfluous. Now a word upon the mental side of the operation.

In the first place, go to the lecture with an alert mind. A good listener is not a dull, empty bucket into which information is poured till it overflows. Such a mind will always leak and will never overflow. Proper listening is analogous, rather, to "fielding" in base-ball. There is your man at the bat ready to send a scorcher right down the centre, and there is the short-stop, and there are all the fielders with their backs bent forward, their hands extended, their legs tense, their eyes snapping, every nerve and every muscle just aching for that ball. And when the crack is heard, and the lovely leather sphere rises into

the air—"A fly! A *good* fly!"—higher, higher, and then swiftly curves down into two triumphant hands—ah, that is the way to "take" a lecture! How quickly a teacher responds to such baseball minds, and how quickly they respond to the teacher, how "hot" the game becomes some times, and what a score is made!

I have already said enough upon the second necessity for successful note-taking, namely, some previous knowledge of the subject, gained from reading. Read enough to put yourself in the questioning attitude. Get a few queries started in your mind. Excite your own curiosity. Read to the point of saying, "Well, this is interesting; I'd like to know more about it." Then you *will* know more about it, for food scarcely feeds until it is eaten with an appetite.

Do not be so intent on your note-taking that the process diverts your mind from the professor. The baseball player is not thinking about the position of his hands, he is thinking only of the ball he is catching. If he thought about his muscles and his attitude, he would not catch the ball. Note-taking must become automatic, instinctive.

To this end, your notes must be very brief, mere hints, a dash of paint here, a dash there,

much as an impressionist painter slashes his colors upon the canvas. It looks like a view of Pandemonium until you stand at a distance, when it flashes into a bewitching landscape. And that is what your notes are for—to read well at a distance.

The rule is, "Leave out all you can." The amateur laboriously sets down everything—or tries to. Obvious inferences, unimportant side-remarks, illustrations that could not be forgotten if one tried, elementary facts familiar to him from boyhood—all plod into their stupid place in his notebook. Moreover, he must get the exact wording, and while he is counting the buttons on the coat of the idea, the idea itself has slipped away, leaving an empty garment. To change the figure, these blundering note-takers obtain only the skeleton of the lecture. Every bone is there, properly articulated, it may be; but there is no life, there is nothing but dead bones. And to that valley of dry bones no Ezekiel's miracle is ever vouchsafed.

Much of the value of note-taking depends upon the prompt writing out of notes before they "grow cold." Some lazy wights have the abominable practice of transcribing their week's notes all on a day—the last possible day, of course, and get as much good from the

operation as they would if they applied the same plan to the eating of their week's dinners. Contrive your work, if possible—and it will be possible more often than you think—so that not an hour shall intervene between the hearing of the lecture and the writing out of your impressions. You will then have added to your mental retinue not a mummy but a live, vigorous servant.

It is an advantage also in writing out your notes to attempt to imitate your instructor's manner as well as record his matter, to catch his spirit as well as his facts. Become dramatic; infuse into your task, which so readily becomes monotonous, a little of the histrionic fire; imagine yourself, as you write out your notes, to be your professor teaching that lesson, and you *will* be that professor, more or less, and you will gradually add no small part of his personality to your own, which is as much finer than the mere collection of certain facts as a man is more than a date.

CHAPTER V.

CRAM.

THERE are two kinds of springs in the world. One is the everyday, humdrum affair you are all familiar with, —plodding along, day after day, winter and summer, at just so many gallons a minute. The other is that aqueous spasm known as the geyser. It is stagnant for hours; then come rumblings and gruntings as if the water was very loth to disturb itself; and then the geyser, with roar and brilliant play of jets, shoots high into the air a gorgeous column. For all its fuss, however, I fancy that the geyser is worth much less to the world than the most modest, humdrum spring.

And so there are plodding hillside-spring students, just the same day after day; and there are geyser students, chiefly stagnant, with an occasional explosion of fussy work. These latter students are said to "cram."

Now this word, "cram," is by a metaphor carried from the stomach to the head; and I wish it were considered as vulgar, as it cer-

tainly is as mischievous, to cram the head as the stomach. Consider what takes place at a railway station to which has just come an excursion with a cargo of trunks twice too large for the rooms and the force of men. There is impatient running here and there, loud shouts and bad language, jamming, stumbling, toppling over, trunks on top of valises or smashing into each other, everything in disorder, everybody anxious and angry and fussy. Just this thing occurs when we try to shovel into the brain a double quantity of facts or ideas. The blood runs frantically here and there, the ganglia shout and the convolutions use bad language, big facts are piled on top of little facts and ideas are jammed into each other, everything is in disorder, and the spirit is anxious and confused.

The chief reason—aside from laziness—why so many students think that they can atone for long periods of study-indolence by occasional spurts of abnormal mental activity is because they do not consider the time-factor in education. They cannot see why six hours' study on one day is not exactly equivalent to one hour's study on each of six days. I am sure that I should help the average scholar immensely if I could teach him the power of the pause. Let me attempt to give you the

reasons why we students must say, "Sufficient unto the day is the study thereof," and also, "Give us day by day our daily lessons."

In the first place, it is because green facts, like green wood, take time to season. You know what would happen if you should put unseasoned timber into a house. You can fancy the warped sides, the swayed beams, the doors that would not open and the windows that would not close. Why, even sandstone, when taken from the quarry, must lie a few months to season, before builders venture to use it.

Thinkers recognize a like peculiarity in facts and thoughts. Let them lie for a few days or weeks on the edge of the thought-quarry, turn them over on review day, and then on a second review day organize a grand building-bee, and send up your temple of knowledge a few inches higher with material that will not warp.

In the second place, cramming is a vicious method of study because of necessity it omits the incidentals. You know how full the heavens are of shooting stars,—so full that scarcely an hour passes during which some are not to be seen, and at certain times the sky is ablaze with them. The way to count them is to place four people back to back, facing the four quarters of the sky. Some one will then see every meteor.

But what if some impatient astronomer should seek a quicker method, arguing thus: "If four persons in one hour see sixteen meteors, then if I station one hundred people in my field, they will see in the same hour four hundred meteors." You would laugh at him. But you should laugh as heartily at the student who thinks he can in three weeks' continuous study get the same grasp on a subject which the same study would give him, scattered over three months. To a person who has his mind on the watch for thoughts on a subject the world is as full of ideas, hints, suggestions, as the sky is full of shooting stars to a man who looks for them; but these hints from books, newspapers, addresses, conversations, private thought, may be expected only so often, and any process of cramming will miss the larger part of them. The true student alone knows how great this loss is.

The third reason why cramming will not do the work of continuous study is because it destroys the sense of leisure. Mental digestion as well as physical is ruined by the "ten-minutes-for-refreshment" plan. Nothing that is permanent grows in a hurry. "Why, see that new building!" you cry. "It is to outlast the pyramids in its immense grandeur, and it has risen as if by magic under the skilled hands of

our Yankee mechanics." I know it. They put up the building in two years. But I fancy that if the stone they used, the iron and the timber, had been constructed by nature in only two years, that building would fall more promptly than it rose. Nature never crams. Let the student who thinks he can study by jerks take a dose of geology to purge his mind and another of astronomy to strengthen it. The quiet, slow reaches of God's studies—studies in world-making, in system-building—ought to teach us hysterical students a healthful lesson. No great poem was ever written to order, "while you wait." You cannot "cram" in essay-writing. When you do, it becomes "hack-writing," limping and forlorn as those melancholy vehicles after which it is named. Necessity may be the mother of invention, for invention works only with the materials at hand; but leisure is the mother of creation, and the work of the true scholar is always creative.

The fourth reason why cramming ruins the student is because it destroys individuality. Machines can be crammed. Your printing-press will turn off a few thousand copies more an hour without inconvenience; your telegraph is perfectly willing to clatter with double rapidity. And cramming is successful with

human beings precisely as they lower themselves to the character of machines. The process of cramming is for all alike. It consists in text-book gorging. No chance for the development of one's originality or inventiveness; no chance for the side excursions which are often worth more than the main trip. I know a wise lady who took her daughters out of school one year, partly for a rest, and partly to give them a chance to do especially thorough work in American history, so that they might be able to visit long and intelligently the Columbian Exposition. Who will say that that was not a capital plan? And yet those girls were not advanced by it one step nearer a diploma; and, looked at from the side of "cram," all such original ideas are needless absurdities.

Some, however, who would not at first sight seem to be advocating cramming, say that if one thing alone is studied, a short time spent in intense study on that is equal to a much longer time when the mind is distracted with other subjects. This is the argument used by many authors of "six-week methods" or "courses" in Latin, German, geology, and what not. The men who urge these short cuts, these royal roads, to knowledge, forget that people can study three things as easily as

one. You have observed how quickly you tire on the level city pavements, whereas you could walk miles without wearying on the ups and downs of a country road. Variety of studies, in like manner, brings in different sets of mental muscles, and rests the whole.

Let us not forget, students, that the times when the mind is doing nothing but digesting the things already learned are not periods of lazy inactivity, any more than the like digestive periods of the stomach, but times of the most intense and necessary activity. The old Jesuit teachers were right in spending six months of the year in reviewing what they had taught during the preceding six months. What is soon won is soon lost. You cannot force intellectual growth under the blue glass, after the fashion of the craze of a few years ago. Remember the principle of the pulley: what you lose in time you gain in power. Cram educates nothing—nothing, that is, but groundless conceit and short-lived effrontery. Study as the locomotive fireman puts in coal, —not half a ton at a time, not at long intervals, poking up the fire to make it burn fiercely and then letting it die away. Watch how he does it, flinging open the door every half-minute, carefully placing three shovelfuls where they will do the most good, spreading the fuel

over the whole surface, so that the same steam-pressure is evenly maintained. After that fashion do your studying.

And what if it is the teacher who wants you to cram? In that case, do what the locomotive would do if treated in such a foolish way: object; *explode!*

An incident from actual life that came under my notice tempts me to close this chapter with a change from the comparison I have just drawn.

In New York City once M. Cliquot, a French-Canadian sword-swallower, as a test, in the presence of a physician, swallowed fourteen swords, whose blades were about an inch wide. The physician was told to draw out the swords to satisfy himself of the reality of the exhibition, and instead of drawing them out one by one, through a mistake drew them all out together. He cut the man severely, and caused him to faint. The sword-swallower, at the time when the newspaper published the account, was not expected to live.

This is rather a grewsome story to draw a moral from, but you are likely to remember the moral all the better for that. How many scholars I have known, of whom this too ambitious sword-swallower is a type! They would swallow a whole book of geometry,

chapter after chapter of astronomy, an entire oration of Cicero, cramming them all down together with the greatest ease. But try in an examination to draw out this precious information, and there were white faces, and sometimes faintings, and always a terrible mass of incoherences. These scholars simply proved to have swallowed more swords than they could give forth.

And if this is true of school examinations, still more is it true of those casual conversations which constitute the examinations of post-graduate life. With how many all of their school-day learning sticks in their throats after their school-days! Their brains have been crammed full, but they are "too full for utterance," as after-dinner speakers are wont to say.

Don't be such fools, my students! In all your study look as carefully to the using of your facts as to the storing away of the facts themselves. Think as much about the outgiving of your lore as about the reception of it. In debating societies, in conversation, in the recitations of the class-room, in writing both for yourself and for others, practice drawing the sword of wisdom, even more assiduously than you practice the sheathing of it. Thus alone can it ever become, for you and for others, "the sword of the Lord and of Gideon."

CHAPTER VI.

PER CENTUM.

THE real schoolmaster of many a scholar is a big ogre called Per Centum. No matter who the nominal teacher may be, for these poor students, from beginning to end of the school life, Per Centum holds the rod and goads the scholar to whatever accomplishment is reached. The teacher, if he is worth anything, hates this ogre Per Centum from the bottom of his heart. He knows that Per Centum does some good, but he is sure he does more evil, and the teacher would gladly kick him out. Too often, however, the tyranny of Per Centum over that school and those scholars is too firmly established for successful revolution.

Per Centum is the demon of examinations; and before telling wherein he is vicious, let me frankly say wherein he is helpful. Examinations are valuable in two ways only. They serve as reviews and as revelations. The examination concisely sums up, if the questions are wisely chosen, the work of many days.

The examination reveals, very vividly, the student's weaknesses to himself. Very rarely does the examination, however, tell the teacher, provided again he is a good teacher, anything about his scholars' scholarship which he did not know before.

Now if scholars would only use examinations as they use other helps in their studies, —as they use pencils and text-books and reviews and regular recitations,—all would be well. But Per Centum, Per Centum meddles, and poisons the whole. Students soon get to studying *per centum*,—by the hundred, that is; and not *per amorem*,—by love. Examinations become the goal, and not a means to the goal. Scholars treat the standing taken on examination as if it were itself the knowledge, not the mere empty sign of the knowledge; and wrap themselves up conceitedly in it, much as if a man should throw his new coat into the fire, and put on the wrapping-paper which came around it. And with this view of the matter, it is no wonder that some folks will not study at all except with examinations in prospect, and some teachers can keep their classes at work only by entering into active partnership with the big ogre, Per Centum.

The first mischief this misuse of examinations does is this: One of the chief advan-

tages of genuine study is that it sets a man on his own feet; it makes him original and independent. But this craven slavery to per cents, this constant measuring up against others instead of against our best selves, is destructive of all sound independence. These "honors" and "prizes" and "honorable mentions" and "rewards of merit" inspire—not ambition to stand high, but ambition to stand higher than somebody else; not zeal to excel, to be excellent, but ambition to surpass, to pass some one. And the spirit these things cultivate in schools sends out those sad armies of graduates whose life consists not merely in eating and drinking,—that were bad enough,—but in eating and drinking more than their neighbors; in wearing finer clothes, owning bigger houses, and holding more important offices. And it is just as advantageous for the good scholar as for the poor one to be free from this bondage to per cents. On a certain set of questions a fine student, with a ninety per-cent brain, gets eighty per cent; another student, with a fifty per-cent brain, gets sixty per cent. Which of the two deserves the more credit? Which should be elated, and which depressed? Yet the eighty per cent, which is a disgrace to the ninety per-cent fellow, will make him exult when he learns of his comrade's sixty per cent;

and that comrade's sixty per cent, of which he should be proud, will fill him with sorrow when he thinks of his friend's eighty per cent. Thus it is that it equally behooves poor and good students to pay slight regard to these misleading decimals, and consider only whether they have each of them so worked as to win that beautiful commendation of the Saviour's: "She hath done what she could."

The second reason why per cents are dangerous for the scholar to regard earnestly is because they furnish a standard for the school life which disappears as soon as the student passes the portal of his active life. What do we hear of per cents after school-days? What does that business man care whether or not his bookkeeper was an "honor boy"? Some of the boys whom we remember as standing highest on the grade-roll of classes in the past, first-rate men as far as per cents could show them up, are now counted by the world fourth and fifth rate. Their teacher's per cents could not estimate kindness, tact, faith, cheerfulness, integrity, unselfishness, adaptability, "horse sense," and a dozen other qualities which make a very prominent figure in the world's great grade-book. A scholar runs a vast risk when his subservience to school per cents leaves these things out of account.

And in the third place, faith in per cents is dangerous because no student studies well while thinking how well he is studying, any more than a girl looks handsome when thinking how handsome she is looking, or an orator speaks well while thinking of his eloquence. Here comes in the inherent viciousness of measuring results rather than conduct. All true scholars study with a look ahead on the path to be followed, not with looks to this side and that and behind on their comrades in the pursuit. That is why the word "grade" is finer than the word "rank"; grade implies actual elevation in the world of truth; rank implies only advancement among one's fellows. For the sake, then, of that losing of one's self in one's work which is the secret of true success, let all students pay slight attention to per cents.

In the fourth place, examinations constitute a danger because they direct the student's mind away from some of the most important qualifications of noble study, and force him to seek chiefly the characteristics which can find expression on paper. The ogre Per Centum asks him to consider, "What will be my grade in quickness, in smartness, in ready memory, in glibness, in easy assurance?" but it throws very slight emphasis on a man's gain in pa-

tience, in conscientiousness, in plodding accuracy, in skilful research. The true student ever questions himself, "What is my per cent in *these?*"

Let it be said emphatically, students, that in urging you to dethrone this ogre Per Centum, if he has wielded his sceptre over your studying, I do not ask you to be any more easily satisfied with your attainments, any less stern critics of your efforts. I merely ask you not to be satisfied with false aims. I ask you to gain for yourselves that essential power of the scholar, the ability to recognize wherein he has succeeded and in what his true progress consists. A wrong incentive always injures more than it helps; and on the contrary, if you study for the best ends, you will find that this higher motive will with its own results bring also all the results of the lower, and you will still get just as large per cents as before.

CHAPTER VII.

CONQUERING THE EXAMINATION BUGBEAR.

BUT that is not enough to say about these important examinations. It is not sufficient to say, "Do not study for per cents." That is negative. The examination bugbear is not to be conquered so easily.

It is a bugbear, and a big one. I have seen many a student come into my recitation room, with his—or her—it generally was *her*—face as white as this paper on which I am writing, the eyes red from weeping, and dark circles under them, born of the midnight vigil of the night before. And I have watched the growing nervousness, and the despairing clutch after vanishing facts, and the agonizing breakdown in a burst of sobs as the poor student left the room. I have seen this, I say, more than once; and yet I was as wise and patient and sensible a teacher as I knew how to be.

But, you see, so much depends upon an examination, no matter how much weight is given to the recitations. It is the climax and

the test of so much work. It means the praise or the scorn of so many. It has so important a bearing on future welfare. No wonder that a feeble wit or a faint heart grows nervous at the very thought of one. It is a bugbear indeed, with horrible teeth and hairy arms and long claws at the end of them.

Nevertheless, I believe in examinations, kept within bounds and duly balanced by other considerations, such as recitations and general faithfulness and intelligence. I believe in them, because they are inevitable in after life, and the student should be trained to meet them. The world has a very abrupt way of bidding us "stand and deliver" whatever knowledge we possess. All its drafts upon us are sight drafts. If our scholarship is wanted after commencement day, ten to one it is wanted in conversation and when there is no opportunity to stop and consult the encyclopædia or the text-book. The world proceeds on the entirely reasonable assumption that no one really knows a thing till he can tell it, and its examinations are far more frequent and merciless than those of the harshest pedagogue that ever figured out a per cent.

And so we must in some way conquer the bugbear, since we cannot annihilate him.

There are three ways of disposing of bears.

One of them is by shooting. We can shoot the examination bugbear. "Shoot it!" is a slang phrase that signifies (so I am told) indifference, scorn, contempt. We may shoot the bugbear in that way, by learning to despise it, by schooling ourselves to be careless of it, by entering the examination hall with a swagger, and sitting down to the desk with a giggle, and writing down the wrong answer with a grin. I don't recommend this course. The gun is quite certain to kick.

Then there is the method of trap-setting. We may capture the bugbear by guile. We may say to ourselves, "In my room I knew all this perfectly, and there is no reason why I should not know it in this room. Yesterday, when nothing depended on it, I told the professor everything he wanted to know. To-day, when something does depend on it, I am not going to be so foolish as to lose my knowledge. I will play that I am writing a letter to my mother, telling her about these things. What is the use of getting 'rattled' over a matter I shall have forgotten all about come this time next year?"

You may set that sort of trap for the bugbear, baiting it with philosophy,—and very good philosophy, too. The only trouble is that bears are sharp, especially bugbears. The

chances are that he won't walk into your trap, but instead will walk into you.

No; the only course I can recommend to be taken with the examination bugbear is to tame him. It requires time. You must begin to make advances as soon as you begin the study. You must get a little better acquainted with him every day. You must examine yourself rigorously. You must ask yourself all the questions you can think of regarding the subject, as you proceed in your studies. You must get your fellow-students to cross-examine you. You must convert your room into a regular courtroom, and you must put yourself on the witness-stand every night and every morning. You must often write out your questions, and you must still more often write out your answers. When you are *sure* you know it, you must begin another review. Every review will clip the bear's claws shorter.

My word for it, long before the term has come to an end, your bugbear will be a very tame bear indeed, a dancing-bear that will prance into the examination room with you, and prance out again, clumsy, to be sure, as all bears are, and yet your most obedient servant to command.

CHAPTER VIII.

STUDYING ON BUSINESS PRINCIPLES.

NO student will ever be successful who does not make a business of study, and manage his studying on business principles. Suppose a store is to be built. What if the workmen should come strolling along, some at six, some at ten, some in the afternoon? What if some forget their tools and must go after them? What if some forget what they are to work on, and sit idly waiting new directions? What if a squad of them get tired of working in one place and begin to put up a store a square or two distant? What if half a dozen of their friends come along and chat for an hour? What if their tools are dull or broken, and they must suspend operations and put them in order?

But what is the use of "supposing"? These things do not happen, you say.

Yes they do, though! They happen very often when most of us set to work on our Temple of Knowledge, in which we are to dwell forever. We stroll easily along to-day,

and begin work at 10 A. M. or at 3 P. M. To-morrow we are up before daybreak, and not asleep until after midnight. We start to work, and find that we do not know what to work at, or that we have mislaid our tools. Or we dislike our surroundings, and uneasily shift our work to some other place, or our energies to some other task. Or a number of friends come along and call us from our labors.

Strange that we students, whose business is of the highest, will go about it in such unbusiness-like ways! that we will admit into our work-shops practices which would be scorned in the humblest blacksmith shop in the land! Let me name one or two points of business policy which most students need to watch.

In the first place, sit down to your work with your tools about you. There is much virtue in a well-arranged set of shelves and pigeon-holes. If people's brains are modelled after their work-rooms, as I verily believe they are, the convolutions of some good people I know must be patterned after a crazy-quilt. The dictionary is under the sofa. The atlas is propping up a rickety shelf. The ink-bottle has no stopper, and the pens are all frayed out. The encyclopædia begins with R and ends with F. The blotter is under the lamp to catch the drippings, and on the book-shelves

are stored the daily papers, the gloves, the mutton tallow, and the box of matches. How can any ordered thought spring from such surroundings? How can any but an Old Curiosity Shop of a brain live in such a den? Dickens could never work unless, together with its usual neatness, his desk was adorned with a few odd and familiar ornaments. Most able men are similarly methodical. It is no longer held a sign of genius to delight in disorder; and the first step in studying should be to arrange and keep, with scrupulous neatness and exactness, all the books, papers, and instruments that belong to the studying. I do not mean that you are to be fussy, or get yourself into such a state that you cannot work unless your dictionary holder is at an angle of thirty degrees and every volume of your encyclopædia just two inches from the front of the shelf; but I do want you to learn the immense saving of time, strength, and temper involved in obedience to the business principle, "A place for everything, and everything in its place."

My second business maxim would be, "One thing at a time." It's only in your little country stores, where much bustle must make amends for little business, that you will see a man showing goods to one customer, talking

gossip with another, scolding a clerk as a by-the-way, all the while scrawling an order to be sent with the next mail. In a large establishment, where time is really precious, the manager sees one man at a time, attends to one point at a time, and settles it forever.

Too much of our study is modeled, is it not? on the country store. We begin our geometry with our Latin in our mind, and all the time we think we are getting one lesson we are worrying over the next. "Do ye nexte thynge" is a useful and justly popular motto, take it at its meaning; but, as a friend of mine remarks, it is doing the "nexte thynge" in our anxious minds, when we ought to be doing the present thing, that spoils much of the work of this world. We can make of our minds, at our will, either concave lenses to scatter brain-power, or convex lenses to concentrate it. "One thing at a time," then, fellow-students.

And my next point is important enough to have a chapter to itself.

CHAPTER IX.

MIDNIGHT OIL.

"HE burns the midnight oil:" of whom is that customarily said? Of the student, to be sure; poor fools that students are! There is much ground for the charge; and indeed, the student is usually silly enough to consider it no indictment, but a compliment. A compliment! to be heralded as a transgressor of a law written afresh each day in golden characters on the sky; written by the mighty sun himself, who calls us to toil by his rising, and just as imperatively calls us to rest by his setting. A compliment! to have it said of us that we prefer the foul-smelling, flickering, yellow lamp or gas-jet to the quiet, strong, pure brilliance of the daylight. A compliment! to be proclaimed a study-drunkard, so intemperate with intellectual delights that to get them we pawn eyes and lungs, muscle and heart, good temper and good health,—pawn them for bits of printed paper.

Some students, to be sure, so deform their

lives by bad habits that they cannot study at all until the lamps are lighted and begin to smoke; just as some persons can train themselves to eat arsenic. The sensible student looks upon both as physiological monstrosities. Students, let me tell you what I have learned by many a foolish midnight lampwick. I have learned that sleep is the soil of thought. Night study is like ploughing, planting, and tending a thin and arid soil. The seed springs slowly, white and feeble. The fruit hangs listless, small and withered. But the morning hour is magical. Ideas push for room without the planting. Thought is eager, luxuriant, full-freighted.

On the whole, students, it isn't the quantity of your studying that will count, but its quality. More students fail from a misconception on this point than from any other cause except laziness. Jewelers advise us to wind our watches in the morning, that the spring may give its most eager tension to the working hours of the day. Teachers must give similar advice to students; for good Dame Nature winds up the mainspring of our lives for us by sleep. Do your chief studying while its tension is strong.

Not quantity of study, but quality. How many tons of coal-dust equal in value the dia-

mond of twenty carats? And how many hours of black midnight will buy a minute of the sparkling morning? Both the last are made of time, as both the first are made of carbon. Ten minutes under best conditions are worth in studying value ten hours under the worst.

But good conditions mean more than mere time of day. How many cubic feet of air go, do you think, to the solving of a problem in algebra? how many to the translation of a page of German? I suppose the wise men could find out for us, if they set about it. Most of us are unconscious that we are transforming fresh air into thought. The windows and the stove doors are tightly shut. Our thoughts grow stale as the air grows stale; our brain grows weak with the weakening of the oxygen. Making bricks without straw is child's play compared with the attempt to make ideas without oxygen. "O," you know, is the chemical symbol of this gas so indispensable to the student; and many a time as I have placed with my blue pencil a big, round cipher opposite some of my scholars' answers, or, perchance, inscribed the entire examination paper with that condemnation, I have felt moved to translate it for the unfortunates, "Oxygen! Oxygen! Take warning! More oxygen!"

But if sleep and fresh air go to make a student, exercise is no less necessary. It is all but impossible to get some people to see the relation between muscle and mind, between brain and blood, between lungs and learning. If a Greek sentence seems foggy, they think it needs more study; it probably needs more tennis. Fitly is the poet's verse said to be made up of feet! Many a time a walk has written an essay for me; yes, almost as literally as if I were the armless man at the circus, writing the essay with my feet! I can climb up the steepest slopes of the hill of science, provided I can mount my bicycle. O, if men and women who want to think only knew of what an army their brain might be general-in-chief, when they make it a mere private!—general-in-chief of two hundred bones, of four hundred muscles, of blood-vessels and nerves innumerable. What a pity to force this general to fight his battles alone, while his myriads of soldiers are either inactive or in rebellion!

CHAPTER X.

WASTING BRAINS.

WHAT if a general should march forth his army with no food supply, shelter tents, ambulances, no line of communication, no ammunition, no shovels to throw up intrenchments? What universal execration would assail him! Yet is it, really, a smaller folly to march forth our brain-troops in a hot, close room, with a dim and flickering light, with stomach in dyspeptic rebellion against unfit food, with neck choked by a tight collar, or lungs imprisoned in a straight-jacket? Can any knowledge or wisdom be the booty of such a campaign?

Why, the very rooms in which we study fairly determine the quality of our thought. If they are ill kept, our thoughts will be dowdy; if they are dirty, our thoughts will be impure; if they are gloomy, our brain will be far from brilliant.

And the position of our body has as much to do with our mental efficiency as the erect carriage of a soldier has to do with his prompt-

ness, vigor, and bravery. A slouching attitude at desk or table contributes to careless thinking; a position easy, alert, and self-contained helps greatly toward the same masterful qualities in our thought.

Does this seem materialistic? Have you an uneasy suspicion that mind should rise superior to body and physical surroundings? That is a pagan, a Stoical, idea. We are taught a higher doctrine. We are taught that our bodies are temples of the Holy Spirit; and how can we justly expect the right exercise of the minds He has given us, when we scorn and abuse His temple?

And so the very first thing a student is to attend to, before a page is scanned or a pencil touched to paper, is his physical surroundings; to get full and steady light, pure air, fit food and proper clothing, cool head, warm feet, the glow of exercise and the refreshment of sleep, desk and body well mated, a room clean and neat and cheery. And if these things are not so ordered, the wise student will postpone his studying and attend to them.

The writer once started on an excursion up beautiful Lake George. The little steamer moved gaily out from Fort William Henry, got a few hundred yards from land, ran more and more slowly, then stopped. There seemed

no accident; there was no breakage in the machinery; nevertheless, we ran in shore, and the passengers were told to leave the boat. There would be no excursion that day. Something was wrong with the machinery; just what, no one seemed to know; but all were satisfied with that information. No one wants to ride in a steamboat with even a nut loose anywhere. Every one knows what is meant by "racking machinery,"—that a screw loose soon loosens its neighbor; a rod snapping here clogs a wheel there; and in a very few minutes the contagion of ruin has brought about an utter collapse. Yet we think nothing of working brain and body with a dozen screws loose in the machinery.

Let us remember that our bodies are much more efficient engines than any locomotive ever made. The best steam-engine does work which represents only one-eighth of the energy developed by the burning of the coal; but our bodies manage to make use of fully one-fifth of the food-power we put into them, merely in such acts as running and handling; and a vastly larger per cent of it is utilized in other ways harder to measure. In fact, we have an almost perfect engine with which to do our thinking. All the more shame to us if we use its economies in a spendthrift way.

All the more shame to us if we fasten down the safety-valve, or clog the wheels, or allow the joints to become dry and rusty.

In the judgment day, we must believe, such questions as these will be asked: of the farmer, "How do you answer for the small yield of that rich field?" of the preacher, "How do you account for the pitiably few, come to heaven from your parish?" and of the student, "What did you do with such a wondrous outfit as I gave you, wherewith you might enrich the world with strong and helpful thought?"

CHAPTER XI.

WHAT IS UNDER YOUR HEAD?

AND so, wisely anticipating the judgment day, let this earnest question be asked of every student: "*What is under your head?*" You may imagine the stern query propounded by a Sphinx, sitting solemnly on the road named Success in Life, and with her great paw knocking off on the gloomy by-path of Disappointment every one of you that cannot pass her examination satisfactorily.

First (as the Sphinx will want to know). Is a good pair of lungs under your head? Brains are fine things, with their wise wrinkles and sage convolutions; but brains, after all, are dull things without lungs to blow the breath of life into them, and keep it there, fresh and vigorous. Why, your brain may be as big as Cuvier's or Butler's, but if your lungs are as shriveled as some must be, I would no more insure your intellectual fame than a life-insurance company would insure your poor, ill-treated body.

Secondly. Is a good stomach under your head? You may laugh, but just wait until you try to drive genius and dyspepsia in the same harness. Brains and bile are mortal foes. If your stomach won't digest food, it really doesn't matter how many tons of facts your brains will digest. A strong head on a weak stomach is about as useful as the Lick telescope would be, planted on a bobbing buoy.

Thirdly. Is a good pair of hands under your head? Not hands white and delicately formed, though I have no objection in the world to that; but—what is more to the point in connection with your head—hands that are shrewd to carry out what the brain is shrewd to contrive, busy hands, accurate hands, quick hands, ready hands, gentle hands, brave hands,—are those under your head? Hands that can write down your brain's wise fancies with a penmanship clear as print. Hands that can, if need be,—and need is likely to be,—help your fine brain eke out a livelihood. A brain without hands is like a general without staff officers.

Fourthly. Is a good pair of feet under your head? Not feet that are weak and clumsy and smarting with corns and—pretty because the tightly squeezed leather outside is pretty, but feet that retain nature's beautiful outlines, feet that are on good terms with the ground,

and can press it with loving, easy grace, for a happy twenty miles at a time. Errand-speeding feet. Dancing, springing, merry feet. Feet soft and light in sick-rooms. Feet sturdy and swift on the path of duty. Are these under your head?

O, I know, students, what a masterful thing a head is. I know what mountain-high difficulties it can overleap. I know what triumphs a Henry Martyn, for instance, can wring out of his frail, fever-tortured, cough-racked body, "burning out for God." I know that when God chooses to hold up a man's head with nothing under it,—or next to nothing, like Mahomet's coffin suspended in mid-air by invisible forces,—God can do it. But, just the same, He seldom does do it; and it is the most impudent presumption to abuse our bodies in the faith that He will do it.

Look upon your head, young people,—and old,—as the glorious climax of your bodies; but don't try to build a pyramid out of an apex, with no foundation. In one sense, the pedestal is as important as the statue that it supports. And if your pedestal is crumbling, and just ready to totter, stop your chiseling away at the statue long enough to build up a stout pedestal, else the statue itself, with all its growing beauty, will topple in ruin to the ground.

CHAPTER XII.

THE LESSON SIMPSON LEARNED.

ONE learns a great deal from one's doctor, whether one wants to or not. The bed is a school not so easy to run away from, and as the physician sits by the bedside he occupies a professor's chair of much prominence to at least one person in the world. I want to tell you of a lesson my young friend Simpson learned in this school not many months ago.

Simpson is a schoolteacher himself, and so should not have been obliged to go to the doctor's school; but there he was, flat on his back with the most distressing of nervous headaches,—a headache such as I hope half of you—it is too much to hope *none* of you—know nothing about; one that set every shred of the brain and every fibre of the body quivering with excruciating pain. And amid his throbs of agony Simpson was bemoaning to the doctor his worries over his school that he ought to be teaching, and his studies that he ought to be studying, and beseeching the doctor to give him some-

thing he could *take*, to put him to work again.

In answer to the doctor's question the whole story came out. Simpson was remaining out of college his junior year in order to get money enough for his senior year, and he was trying to teach school all day and keep up with his college class by studying a large part of the night. "I got along famously until lately," he moaned. "I have had a good many headaches all along, but a cup of strong coffee and five of my headache tablets have always cured me in the course of an hour or so, so that I could go on with my work again. But lately these have not seemed to do much good. And now, doctor, what shall I *take?*"

Then came the little lesson I mentioned at the beginning. The doctor rose from his chair so that he looked down at Simpson, very tall and solemn. "Young man," said he, "what you need to take is not medicine, but rest—rest and exercise and good food, with time to digest it well. Headaches are *symptoms*, and you are trying to cure the symptoms, without looking deeper to find the evil to which they would direct your attention. Your nerves are crying out for rest, and you give them headache tablets and higher mathematics. Your brain is begging for change, for fresh air, and

hearty sport, and long sound slumber; and you are answering its entreaties with coffee and astronomy.

"Young man, life is not to be lived in that way. There is room in a year for a year's work, and no more. If you strive to squeeze more in, something must go out, and that something is a priceless thing—your health. You are shortening your time on earth, young man, far more than you are shortening your time in college. A living dog is better than a dead lion. You expect, like so many thousands, to obtain health at the price of a box of pills, but it costs far more than that. Health costs time and thought and energy and patience and self-restraint, and perseverance in all these things.

"I will give you no dose, young man, except this mild opiate to relieve your present sufferings. If, when your headache has passed away, you will call at my office having in your pocket a letter of resignation from your junior class, and in your heart the determination to follow the laws of health God has so plainly written on the very nerves and fibres of your body, I will help you to lay down a daily regimen that will add many years to your life, as well as unmeasured happiness and usefulness. Good-day."

And what did young Simpson think about this frank prescription of the doctor's? All I know is that he is no longer a member of the class of '01 in Solvary College.

CHAPTER XIII.

THE ETHICS OF QUOTATION MARKS.

ONE of my pupils once ordered a translation of a Greek classic through a bookseller, telling him that I approved the use of translations in the preparation of lessons. Afterward the bookseller came to me in innocent astonishment, and asked if that thing were so! He should have known that a person mean enough to lie to me in the recitation room, would be mean enough to lie about me outside of it.

To all young people whose consciences are not delicate, the school and the college offer innumerable temptations to dishonesty. If virtue could be taught as we teach rhetoric, at the entrance to every course of study would soon be placed a term devoted to the Ethics of Quotation Marks. And that term's drill would be wisely spent in the impression of this one truth: "Every quotation that is not enclosed in quotation marks is a lie."

In literary societies amazed teachers sometimes hear their pupils reading, as their own,

essays which Emerson might have written, but would surely know how to pronounce, if he had written! I once listened to a very philosophical dissertation on Goethe's genius, whose author (?) constantly referred to the subject of his paper as "Gōth." In another instance I began seriously to doubt a pupil's authorship of a very excellent paper when he read, in starting, the title: "United States, Mineral Resources of!"

A scholar should be taught early that it requires more smartness to steal successfully —if it may be called success—any composition whatever, than to write the original article itself. If your ordinary talk is full of deep thought, expressed in classic phrase, replete with learned allusions, then you may borrow from great writers without giving credit, and defy detection. But, then, it would not be necessary! Your every common word betrays you, if you steal from any better writer than yourself.

You would not trade noses with some one and appear in public expecting that the change would not be noted by your friends; yet you present as the product of your own brains an essay out of harmony with your every habit of interest, thought, and expression. Why do you not bethink yourself that your friends are

far better acquainted with your brain than with your nose?

"Ah, but," it is often said, "every thought has been expressed already, and there is no chance for originality." Then there is a chance for honesty in the use of quotation marks. A young writer should begin with compilations, —historical, biographical, or scientific; only let them *be* compilations,—the fruit, that is, of wide reading,—and *call* them compilations, stating the sources of information. He will be ready for true original writing just as soon as he begins to see and think for himself, and learns that the honest expression of any individuality is always rare, valuable, and interesting.

One who is in the habit of examining the second-hand copies of Xenophon, Cæsar, Virgil and such authors found piled on the dusty corner-shelves of most book stores, will soon become familiar with a habit widely in vogue among college students,—at least among that portion of them who sell their old books. These thumb-marked, dog-eared volumes are almost invariably black with lead-pencil translations written between the Greek and Latin lines,—translations often ludicrously false, but showing, the most correct of them, the falseness of the one who wrote them.

Scholars who would probably consider it

dishonorable to use an interlinear, thus make their own interlinear at their rooms, and recite, forsooth, by the easy process of translating their own crabbed lead-pencil marks. Across every such deception-stained page there is written in invisible ink one very uncomplimentary word of three letters. The fire of an uneasy conscience will make the invisible ink very plain, sometimes, and the little word will glow angrily out through all the lead-pencil marks.

Probably the most disheartening, sickening experience of a teacher's life is the discovery of cheating at examinations. This discovery is perfectly easy, to a teacher of any experience. You may have a whole volume on your boot, easily read when your legs are crossed; your cuffs may epitomize the entire work of the term; your writing tablet may be interleaved with condensed information; you may get a chance to copy half the book in the teacher's absence from the room; your pocket may be full of crumpled but significant bits of paper; your neighbor's work may be in plain sight and you may appropriate half of it,—the teacher need be on the lookout for none of these or a thousand other tricks. If you have been reciting to him, he needs no examination to tell him what you know, and

your brilliant, false paper has only been a test of your honesty, wherein you have miserably failed.

It is often exceedingly difficult to know when it is best to deal openly with transgressors in this matter, and when a reform can be brought about by quieter methods. I once had a young girl in my class who persisted in the boldest cheating, again and again, until I sent her off into the college library to work out her papers by herself. Those papers were uniformly abominable, and never of passing grade! The same appeal, on the contrary, to a young man's honor, once brought a paper more audaciously and manifestly obtained by cheating than ever before. Many a scholar has chuckled over the thought that he has successfully deceived his teacher, while that teacher was praying earnestly for wisdom to make no false step but to do what might be best to bring him back to honesty and honor.

Yes, and what if no one ever finds it out? Teachers have far too little time, to waste it in seeking out faults that are not forced upon their attention. You may successfully cheat your teacher. Is there not One who cannot be cheated?

Your conscience can never be too delicate for manliness in this matter. I like to hear a

scholar, when he translates a sentence as the editor translates it, laugh and say "Notes!" in a half-apologetic way. I like to see a scholar, when at the blackboard, turn his back, impolitely but honestly, on his classmate and his classmate's work. I like to be asked for permission even to borrow a penknife, in the course of an examination. I like to see scholars leave their books at home on examination day, and come without voluminous wrappings of shawl and overcoat. I like to see papers turned face down, when written, not face up, ready for neighborly exchange of information. I like to have scholars come honestly to me, as one or two have come, and ask me if I approve the use of translations at home, and written original translations brought into the classroom, and promise to abide by my decision. One cannot be too sensitive in avoiding the very appearance of what is dishonorable.

Let us be ourselves. Any dishonest addition is a loss. Let us be willing to be held mediocre rather than be sinful. A "pony" will carry us straight to sorrow. A "key" will open the door to shame. Our interlineations here mean dark interlinings in the record above. Let us be ourselves, and when we use what is not our own, let us never forget the quotation marks.

CHAPTER XIV.

HOW SCHOLARS MAY IMPROVE THEIR TEACHERS.

THE genial Dr. Trumbull makes, somewhere, this neat point: Suppose, he says, that one man is thirsty. You have your scholar. Another man brings a bucket of water. You have your teacher. But that is not all. The thirsty man is not a whit better off until in some way the water is inside the man. The question is, as Dr. Trumbull says, how to get some of the bucket's brimfulness into the man's brim-emptiness.

Now I want to say, students, that for every scholar I have had who failed to be taught because he was not bright enough to understand, I have had ten who failed to be taught because they and I never got within reaching distance of each other. Their lips kept away from the bucket.

Sometimes it was my fault. Sometimes it was because they came with brains smothered by unventilated rooms, or dulled with the

stagnant blood of unexercised muscles, so that they were too stupid to put their lips to the bucket. Sometimes they really did not find out in what way I was trying to help them, so that they might respond, or their attention was called away entirely from the work in which alone, just then, I was trying to meet them.

Do you want to know what a teacher feels like when he discovers that all his attempts at helping his scholars are meeting with no response? He feels like an usher who walks the whole length of the church, and turns to find himself ushering nobody. He feels like the preacher who talked so eloquently to a congregation of deaf-mutes; like the near-sighted man who bowed to the dummy in the shop-window. It is like walking up that step after the last, which isn't there.

Every teacher ought to know this—that before he can teach he must become the scholar; enter, that is, into the scholar's needs, his powers and attainments. And just as truly, every scholar should know that before he can learn he must become the teacher; enter, that is, into the teacher's plans and desires, and endeavor to work with him.

Obviously, one of the most important factors in studying is the teacher; but students

are very likely to study with no reference to their instructor, taking it for granted either that he is all right or that he is mostly wrong, and not stopping to think about their relation to him. Much of the fruitfulness of this relation, however, depends upon the scholar; and though young America prides himself on being business-like, yet he usually commits the unpardonable business error of drawing from his schooling a dividend far lower than it is willing to pay.

Teachers accept the principle that the poor scholar is the opportunity of their art. In the same way, many and many a time, the poor teacher is the scholar's opportunity, and waits but a helpful touch from his pupil to flash into eager life. How may it be done?

First. If you do not want a machine-teacher, you must see to it that the mere machinery of teaching does not require all of his energy. Suppose a captain in battle should be obliged to stop and give instructions as to the meaning of "right wheel" and "charge bayonets" and "ground arms"! He could not do much fighting with that company. Many a time I have planned a charge along the whole line for the recitation hour, and have been compelled in chagrin to spend that hour in humdrum drill in the manual of arms, in the ele-

ments of the work, which should have been mastered in the study-room. To put it in brief, no preparation by the scholar, no inspiration from the teacher.

Second. Did you ever think that you can help your teacher by getting help from him? You are nonplussed by a problem. Do not get a classmate to aid you, or fail on it in recitation. Go to the teacher. While he shows you the solution, you will show him that you are in earnest in your studies, and that you do not consider him a taskmaster, but a friend. Oh, those chance conversations with one's scholars, wherein the bright young folk make it clear that their studies have entered the charmed circle of their unforced interest! How, forever after, they lift the classroom work with those scholars safely above the line of drudgery!

Third. You can readily imagine the feelings of a bride when the groom saunters in half an hour late to the wedding. By the same token the teacher can guess that you are not passionately in love with his study. Nor would a despondent bearing and funereal countenance on the part of the aforesaid bridegroom make the matter much better. Compliment your teacher with promptness and with cheerful alacrity of mien, and, my word

for it, your compliment will pay you a good interest.

Fourth. Preachers say that they often have this experience: They prepare a sermon with especial care to meet the needs of some one member of their congregation, and rise in pulpit on Sunday to find that person's pew vacant. Their disappointment and blank perplexity are no more than what many a teacher has felt, when, after he has planned a special exercise or a whole recitation to meet the needs of some especial scholar, he sees that scholar's place empty. That sort of thing soon takes the life out of a teacher.

Fifth. Every one knows that among all the incidents of social life nothing is quite so exasperating as to invite some one to a party, and never receive a reason for his absence. This is true of any social engagement. Now if scholars want to get the most out of their teachers, they must remember that those teachers have the same general set of feelings as other people.

Sixth. A teacher is in many ways as dependent for enthusiasm upon his class as an orator upon his audience. If an orator gets a poor audience, it's like trying to strike fire out of putty; but a responsive audience kindles the orator. In recitation, then, be

sympathetic; be full of interest. Put yourself in the receptive mood. In the Latin class become a Roman; in the geometry class, a triangle. Ask intelligent questions, and many of them. Looking back over my classes, I can recall, in each, one or two uplifted hands and snapping fingers which have pointed me to success in those classes, and I thank them for it. And listen, without whispering. You have joined hands, have you not, to receive a current from an electric battery? What happened when any one dropped hands? Why, just what happens when one whispers to his neighbor in the classroom. No more enthusiasm. No more electricity.

Seventh. Don't be discouraged if your teacher happens to be cross. Be patient with him. You are probably suffering for the sins of the class just before you, and upon your good behavior depends the comfort of the class to come after you. I once heard a member of one of my classes whisper to an incoming scholar, "He's cross to-day. Look out!" I am sure that next class was astonished at my good humor. But teachers are seldom thus warned, and often unconsciously make one class suffer for the poor lesson or bad behavior of its predecessor.

Eighth. You cannot dampen a teacher's

ardor more quickly than by telling him frankly, as some have kindly told me, that you don't like his study, and never will! Express appreciation of your teacher's work. Don't be afraid of making him conceited. There is an infinity of things by which a teacher is made humble, and kept so. But if he perceives in his scholars no more appreciation of his work than a stone-mason in the stone he carves, he will do stone-mason's work, no more.

And lastly, you will greatly invigorate your teacher by showing a willingness to do more work than is required—outside work. When one has an appetite for a thing, one has to guard against over-eating. I judge by this test the true student, always. Where are the scholars who study beyond the stint, who read all the books in the library on the subject they are studying, who require the bit and curb rather than the spur? I have known them, and more in number than you would think, and bless them every time I think of them, for their helpful enthusiasm, at which, more than once, my own has been rekindled.

And now I may sum it all up in this sentence from the great emperor, Marcus Aurelius Antoninus: "We are made for co-operation, like feet, like hands, like eyelids, like the rows

of the upper and lower teeth." A good teacher is in great part made by his scholars, simply because good teaching is a co-operative process.

CHAPTER XV.

PUT YOUR PLAY INTO YOUR WORK.

I WILL give you a short chapter on a long theme.

I am writing this at the end of vacation. The red cheeks, bright eyes, brown skins and hearty laughs of the scholars everywhere tell me that vacation play has done its appointed work. But how hard it is to leave the play, and go back to work again! My dear students, don't leave the play!

"No work?" you cry in astonishment. I didn't say that. Put your play into your work. Your schooling will be a failure otherwise.

Let me tell you something. *No work is well done until it is easily done.* The mightiest machine I ever saw, with all its ponderous beams and wheels, distributing water through hundreds of miles of pipe over the great city of Chicago, caused not so much jar and confusion in its working as my chain pump.

I made an engagement once to meet a cer-

tain student for recitation during recreation hours. I apologized when I thought, but he said it made no difference, as he never took any recreation. He spoke the truth, and I fear he was proud of the statement. But I wanted to say to him, "My dear boy, you may study ten hours a day. Let me assure you that you could do much better work with eight hours' study and two hours' play. You lack a certain alertness and vigor of intellect which a proper amount of sport gives. It is a sort of mental poise, an ease and balance of the mind, which renders all its operations pleasurable."

It's a serious thing to become incapable of sport! I should like to write on every school desk these words: "No work is mastered until it has become play!" Is the musician satisfied while eyes must follow fingers, while he must glance anxiously at every note, and tremble at every difficult passage? Not until the execution of the piece has become a second nature is the "performer" a musician.

When is a page of German learned? When it can be read as promptly as English. When is a lesson in grammar mastered? When you can talk as glibly about the parts of the sentence as about the pictures on the wall. When have you solved a problem in arithmetic?

When you can walk through it from step to step with as easy assurance as through a house you have lived in all your life. When are you ready for an examination? When you are prepared for an oral examination as rapid as your teacher can talk. The secret of scholarship is patient, persistent, dogged review, until the task becomes play.

One of the teacher's greatest joys is to make a scholar realize in his own experience the blessedness and freedom of thoroughness. The vast majority of scholars are constantly weighed nearly to earth with the burden of tasks half finished—tasks which the true scholar has so thoroughly done at the right time that the result has become part of his mental fibre, no greater clog than his brain itself.

Your long, happy vacations have taught you, I trust, how to play. Now let the play element go into your study. You have taken a long step toward the Christ-ideal when you not only carry His spirit of helpful earnestness into your play, but put His grand serenity and cheerful equipoise into your work.

CHAPTER XVI.

GET ONE DAY'S WORK AHEAD.

ONE of the very brightest little books ever written is a collection of anecdotes concerning Socrates, written by his friend Xenophon. In it Xenophon tells the following story of the good old Greek philosopher.

Socrates once heard a man groaning over the prospect of a walk from Athens to Olympia, to attend the great festival there. "Why," said Socrates to him, "you would walk about a great deal if you stayed at home. Put all those little walks together. They will easily carry you to Olympia. You will merely walk about a little, then dine; then walk about a little more, and go to bed and rest. You'll have no trouble, my friend, if you only start in time, so that you can make each day's journey of comfortable length. It's very wearisome to start one day late, and be compelled to lengthen out forced journeys; but, my dear sir, you'll be surprised to see what a sense of ease and leisure you will gain by starting one

day too early. It's better to hurry at the beginning than the end."

And now, are not all students going to Olympia? The contests there will be more difficult than they realize, the prizes more glorious than they can imagine; and the advice of wise old Socrates is not a whit spoiled by its age of twenty-two centuries.

It is a fact, I think, that most scholars are perpetually in a hurry. They get the lesson which is to be recited after dinner just before dinner; they take home their books at night to get the first morning lesson. They seem to live, mentally, from hand to mouth, like veritable intellectual tramps. They seem to parody the Bible sentence, and declare, "Sufficient unto the day is the study thereof."

If this is true of you, look out! For I tell you there are few things that harm more than worry. And there are few things so sure to cause worry as hurry. Watch, and see if I'm not right!

Take Socrates' advice. Put your hurry where it will do some good—at the beginning. *Get one day's work ahead, and keep there!* Do not reject the plan for fear of forgetting your lesson. If a lesson will not keep two days, how will it keep till examination time?

"But this plan does not make my work any

less!" Who said it did? But do you not see a difference between driving your work, and letting it drive you? between racked nerves and an even temper? between anxiety and peace? between fagged bodies and fresh ones?

The true scholar works quietly, serenely looking ahead, eager at the start, never flurried on the journey. And is not that the way God works? If I mistake not, the oak-tree studies ahead, or it would never make its acorns, and every summer, all over the world, reads a good way ahead in God's great year-book.

> "Are you in earnest? Seize this very minute!
> What you can do, or dream you can, begin it!
> Boldness has genius, power, and magic in it."

CHAPTER XVII.

ABSORBING INFORMATION.

I KNOW a man who could walk through the main street of a city perfectly strange to him, and at the end of the way you would take him for an old inhabitant. He would know the chief industries of the town, its moral and social and financial condition, the names of its prominent merchants and pastors, the prevailing politics, the sentiment in regard to the liquor question, the efficiency of the public schools, the names of the daily papers, the geological strata beneath, the chief products of the surrounding farms,—he could even direct a man who had lost his way. That is Richard Readywit.

Among my acquaintances is another gentleman who could walk along the same thoroughfare, and at the end of it be obliged to inquire his way back. He would not know the points of the compass if it was a cloudy day. He would not know where to find a single store in town, or any public building. He would

have no idea whatever of the kind of dwelling-houses or the character of the people or the nature of their occupations. As soon as, barely reaching the station in time, he hurried on board the train, he would be obliged to ask his neighbor what town they had just left. That is Simon Slowboy.

Now neither Richard Readywit nor Simon Slowboy made any exertion in the walk supposed. They simply abandoned themselves to the habits they had formed; and Simon could no more gather all this information than Richard could help gathering it. A barber was once eulogizing a young friend of mine whom the barber considered a prodigy of learning. "Why, sar," he explained, flourishing his razor, "his brain's jes' like a sponge. It soaks up eb'ryting it touches." That is true of some men. They seem to absorb information.

Lay that piece of blotting paper upon an ink-blot. It lies there quietly. It is doing nothing. It is not going after the ink; the ink is coming to it. Make another ink-blot and put this piece of calendered paper upon it. The ink is not absorbed at all, but only spread more widely. There is a wonderful power, called capillary attraction, which lifts liquids into small vessels without any force but the

liking of the liquid for the sides of the tubes. Put a glass tube into water, and I defy you to keep the water inside the tube down at the level of the water outside it. The tube did not seek the water, but the water rose in the tube. Of course, if you stop the mouth of the tube, or if the tube is exceedingly small, the experiment will fail.

And that is the trouble with the calendered paper. The porous blotter is filled with thousands of these little lifting tubes; but in the calendered paper their mouths are all glazed over. The calendered paper is very smooth, shiny, and elegant; but it won't absorb ink. That's why, my readers, a good many folks cannot absorb information: they are supercalendered with pride. They have an idea that it is vulgar to ask questions, and quite the proper thing to pretend to have been born into the world a complete encyclopædia brought down to date. Of course no man can absorb information who has all his question-pores glazed over with conceit.

And then many people that are really humble enough about it, lack this power of absorbing information because they have never trained themselves to it; because, however automatic it may become after a while, it is not so at the beginning. I suppose no man

can see so many little things at once, and see them so accurately, as a sleight-of-hand man. His eye photographs, at a mere glance, objects, persons, and acts, down to the finest details, where our dull vision sees only the outlines. Do you know how he does it? This, I am told, was a method of training adopted by the renowned prestidigitator, Hermann. He walked rapidly past a shop window, glancing in as he walked, and noting as many objects as he could. Then he verified his impressions. Then he took a census of another window. So he practised until, from the ability to grasp indistinctly only a few objects at a glance, he gained the power of instantly forming vivid mental pictures of large groups of objects most diverse.

In some such way these people who absorb information readily have trained themselves. The first time Richard Readywit passed through a strange town he probably noted only the names of the streets and the kinds of shops he was passing. But the noting of these things once, made him more sensitive to note them the next time; so that in the next town he visited he had some attention to spare for other matters. And thus his power of comprehension grew with use.

Of course there can be no absorbing of in-

formation about a thing, however, without a little knowledge of the thing to start with. Set a ready-witted drummer down in a strange hotel, and in half an hour he will know more about the affairs of the town than the average reporter; but if he is not a religious man, he will not know much about its church life; and if he is not somewhat versed in geology, he will not know anything about the geological strata beneath. Put the best blotting paper half an inch away from the edge of the biggest ink-spot, and there will be no absorbing of ink. There must come in a little fundamental knowledge to impel the most absorbent mind toward a subject; to furnish, as it were, the point of contact.

But, at the start, I forgot. You might do something to the glass tube which would prevent the water from rising in it. Grease it. However much capillary attraction there might be between the water and the sides of the tube, the water has no liking for the oil, and will not go near it. That furnishes the last point in my list. No man can absorb information if he hates information. If he has smeared his whole mind over with a slimy, lazy dislike for new ideas and fresh knowledge, you may soak him in notions and learning for a twelvemonth, and he'll absorb none

of it. But let him love to learn; let him reach out eagerly, hungrily, after mental food, and he'll swallow it as rapidly and digest it as thoroughly as healthy children absorb bread and butter.

To sum up. Absorbing information is a fine art, in which any one may become proficient who throws away his pride, gets a little knowledge, and trains himself patiently and lovingly.

CHAPTER XVIII.

PUTTING ONE'S MIND ON IT.

SUPPOSE that when you wanted to lift a dish of apples, one hand should fly to your pockets and the other make wild gestures in the air; or suppose that when you desired to look at a friend coming toward you, one eye should scan the heavens and the other peruse the ground; would you not think something seriously wrong with you? But if, when you sit down to study, one half of your mind flies off to the playground and the other falls to belaboring the poor teacher, you say that you cannot "concentrate your mind"; and that's the end of it. Why, my dear young man, my dear young woman, that's all that is the matter with the insane and idiotic,—they cannot control their minds by their wills.

Sitting before your books, you first estimate the length of the lesson—outrageously long! Then you compare it with yesterday's lesson —teacher is becoming more unreasonable every day! Then you count up the pages left to

study, and cipher out how long it will take at three pages a day. No need of going so fast. Then you wonder if George has his lesson, and ask him. He hasn't. Then you read the lesson over. You don't understand a word of it. You ask George if he understands a word of it. He doesn't. Then you count up the number of days left in the term. Thirty-one days and six hours and three-quarters. You read the lesson once more—a little clearer. You see by the clock that you have been studying half an hour. You ask George if he has to study his lesson half an hour. He does. You read the lesson once more. As dark as ever. Discouraged, you draw a picture of the teacher—an awful picture, with horns. By this time you have studied an hour, and that is all the time you can spend on this lesson. Lesson's too long, anyway.

Of course, that is an abominable caricature of the way you study, but you will all agree that it's a pretty fair picture of the way most of your schoolmates study. Do you want me to give you some hints on the cure of mind-wandering? I shall, whether you want me to or not.

Hint First.—It can't be cured quickly. You know how many months it takes a baby to control its swaying, wandering feet?

Hint Second.—You're not enough in earnest. If you ever, by and by, fall in love, you will come to know what concentration of mind means. You are not enough in love with your studies.

Hint Third.—The very next time you are troubled with mind-wandering, notice what that is to which your mind has strayed, and straightway reduce it, be it what it may, to a less degree of prominence in your lives. Does your mind show a tendency to wander into thoughts of the next game of ball, or that exciting serial story? Then choose some game and some story less exacting in its interest. Do thoughts of your mates, of those you dislike and of those you like very much indeed, divert your studious mind? Then you must be a hermit for a time, or you will never be a scholar.

Hint Fourth.—One who is master of his mind could do good studying in the midst of a nominating convention, but that would be a poor place to cure mind-wandering. You wouldn't try to break in a colt on Broadway. Study alone as much as possible. If nothing else can induce you to withdraw for study to a quiet nook, do as Demosthenes did; shave half your head, and thus force yourselves out of society. I have seen a great many students,

but no one of them all was successful who preferred to study with some one else to help look up words in the dictionary, add figures, hint at solutions, and suggest translations. Scholars do not grow in crowds. There is no such thing as co-operative studying any more than co-operative eating. Whenever two people study together, one is a student and the other a dummy. Yet, after the studying has been done, companionship is of the highest value. I have elsewhere urged you always to review your lessons with a friend. His mind has seen what you have missed. His questions will develop your strength. Your discussions will vivify the whole. The scholar grows in solitude, but he bears fruit in a crowd.

Hint Fifth.—Fix a time and place for the study of each lesson. A horse, set for a few days to doing certain tasks in certain places and times, soon learns to do them without the whip and rein. Tasks which, to the irregular student's bewildered brain, are a daily worry, are accomplished almost mechanically by a brain methodically used.

Hint Sixth.—Cultivate regularity in all the details of your life, as well as studying. Some people think that, because their business is not playing, or eating, or letter-writing, or reading, or talking with their friends, or running to the

post-office, therefore it makes no difference when they do these things. But it does. You will find that if you accustom yourselves to doing all things at all times, it will be next to impossible for you to do merely one thing at any time. You will want to study at one o'clock, but into your study will rush reminiscences of the walk you took yesterday at that hour, your novel of the day before, and your lunch of the day before that. Perfect system in even the smallest things,—that is one secret of the power of concentration.

Hint Seventh.—Exercise. Eat properly. Dress properly. Take fresh air, and plenty of it. Who could train his mental batteries accurately on a problem while painfully conscious that digestion is going on, while his head is throbbing, his eye smarting, his body languid and sick? Get your body to leave your mind alone, and then see whether you cannot assume command of your mental faculties.

Hint Eighth.—Don't worry. Keep a clear conscience. Undertake only what you can do thoroughly and on time. Leave nothing undone to haunt all your working hours. A general can hardly direct his troops with force against an enemy in front while he has several unconquered regiments of foes dodging about in his rear.

Hint Ninth.—You will be troubled with mind-wandering in connection with the studies you like the least. Have you ever thought that right here you must mass your powers, or be a defeated scholar? For the scholar, the thinker, is not one who can apply his mind to that only to which it naturally turns, but is distinguished from the common herd of brain-bearing animals chiefly by his power of deriving, by forceful application from unpromising, stubborn, and unattractive subjects, some new knowledge and blessing for mankind.

Hint Tenth, and last.—Persevere; stick to your task till it is done. Suppose that the moon stood over New York harbor at this instant, pulling its waters toward herself. How long would it be before the pull would be felt and the waters rise in high tide? Even if all the continents were out of the way, it would be six hours. Pull that table toward you. It does not stir instantly, but soon it does, though you pull no harder. What is happening during the moon's six hours or your instant of waiting? Power is overcoming inertia. Do you not know that there is inertia in mind as well as matter? Do you not find that the true start in studying comes some time after you commence? How foolish it would be for the moon, after six hours' pull, to let go and

say that she will try again some other day! Many a time we lose our grip just when the intellectual tide is ready to rise. Let us finish one thing at a time.

But a rule that is good for all occasions, you know, is good for nothing. Exceptions prove the rule, and there is an exception to this. There is just a grain of truth in that absurd old proverb, "A watched pot never boils." Sometimes the best way to set our brains a-simmering over any particular fire is to go off and forget all about the matter for a season. Too long thought on a problem dulls the mind, as a too prolonged gaze at any object dims the eyes. The wise student will learn the value of intervals. He will take lessons from the farmer in the rotation of crops. If his mind has become weary of raising a crop of figures, he will set it to raising a crop of history or of language. Unless the mind rebels in this way, however, mental economy tells us to keep right on with the same task until it is completed.

"And what are we to do with visitors," you ask, "and with chatterers who interrupt, and with other people's purposes that spoil the best-laid plans of mice and men?" Why, endure them without losing your temper. Nothing is a greater interruption to study

than the loss of temper. Better for your studying that you lose an hour than lose your temper; better that your entire schedule be put out of order than you out of spirits. Make your plans with spaces between, so that when the hindrances and interferences come, they will simply shove your plans closer together, and not crowd any of them out.

And yet we are ourselves responsible for most of our interruptions. There are some people who are, to coin a word, very "interruptible." They are like a gutter stream, whose flexible, meandering nature tempts every urchin to put in sticks to turn it out of its course. Other people are like floods of hot lava, and the fiery intensity of their purpose is felt and honored as soon as you draw near them. You do not feel any inclination to divert them from their course, or even to approach them, until they cool off.

CHAPTER XIX.

MEMORY-TRAINING.

I DO not at all regret a course in memory-training I once took. To be sure, I have forgotten all about the course, except that it was great fun; but I got this good from it: I found out how *not* to develop the memory. I sum up my discoveries as follows:

1. Do not rely on unnatural methods, or difficult methods, or artificial methods, of training the memory.

2. Do not get the idea that the only appropriate field for the exercise of the memory is in recalling dates, names, and figures.

3. Never fall into the error of supposing that you can learn to remember things mechanically, without a personal interest in them.

4. Do not treat the memory as a machine apart from yourself, that you can force to work quite regardless of your own general spiritual and mental and physical condition.

5. Do not believe that any two men should train their memories in just the same way, any

more than they should train their bodies in precisely the same manner.

6. Do not forget that even more necessary, often, than tenacious remembering is wise forgetting,—learning what trivialities to drop, in order that the essentials may be retained.

Those are some of the things I have found out about how *not* to train the memory. On the other hand, theory and experience together have taught me a few things about the memory that I have found useful, and you may like to have them set down before you in black and white. Here they are:

1. The secret of memory is personal interest. You can't really pay attention to any matter without a personal interest in it, and so I may say that you can remember anything if your attention is really fixed upon it.

2. *Do* something in connection with what you want to remember, and you have established a personal interest. That is why writing down facts helps us to remember them. That is why we remember the names of people who meet us in the course of business so much more readily than the names of those who meet us in the course of social chat.

3. You can best remember things that you like. One way, then, to cultivate a memory for anything is to cultivate a liking for it.

4. Anticipation is a great aid to memory. For instance, if you want to remember to take a book upstairs the next time you go, imagine yourself walking to the book, taking it, carrying it upstairs, and putting it in its place. When the time comes, you will be pretty sure to carry out your imaginations. It has become a sort of second nature to do it, because you have done it once already, in your mind.

5. Selection helps memory. Burden the memory as little as possible,—only with important things, central things, around which other things will naturally cluster. Group facts. In studying the Civil War, for instance, all the events can be hinged on half-a-dozen nuclear dates.

6. Combination aids the memory. Be shrewd in hitching things together; the dates 1776 A. D. and 776 B. C., for instance.

7. Review helps the memory, for the same reason that anticipation helps it; it puts us into closer personal relationship with the fact; it gets us acquainted with it.

8. You are almost certain to forget a thing if you think you are going to forget it. The orator who has confidence in himself and a good will-power remembers all his points, while the speaker who is distrustful of him-

self forgets his opening sentence and leading argument.

9. Another assistant to the memory is order. If you want facts to come readily to your hand, you must pack them away methodically. Discursive reading, such as our newspapers and popular magazines furnish, is ruinous to the memory, if indulged in overmuch.

Now,—to close with a practical illustration,—suppose you wanted to remember these nine points I have given; how would you go about it? You might summarize them thus: "intentness, action, liking, anticipation, selection, combination, review, distrust, order." Noticing that the first letters of these words, i, a, l, a, s, c, r, d, and o, may be twisted into "a cord sail," you might try to remember these principles of memory by remembering "a cord sail." That would be an example of how not to do it.

On the other hand, the sensible way would be to group your principles together thus: anticipation, review; intentness, liking; action, distrust; selection, combination, order. A little thought over the reason for this order will make it almost impossible for you to forget it.

CHAPTER XX.

COIN OF THE REALM.

I ONCE was unlucky enough to have a sum deposited in a bank that "went under." My deposits did not go under with it, however, for it was announced that all depositors would eventually be paid, though they must wait some time and take their money in tedious dividends. My funds were in the bank, safe and sound; but for all the good they did me and the rest of the world, they might as well have been in Demaraland.

That is the way it is with the knowledge of a great many scholars. "I know it, but I cannot tell it," is the familiar phrase with which every teacher is all-too-well acquainted.

"You never know what you cannot tell," I am always tempted to reply vigorously.

"Oh, but I know it to myself," I have heard them answer, with Socratic air.

"No," I assert in disgust, "if you knew it to yourself, you could tell it to yourself, and if you could tell it to yourself, you could tell

it to some one else. You doubtless have a vague feeling of ownership of the knowledge. You are sure you once knew the fact, and you put it away where you could lay your hands on it. It is yours, therefore, even though you have forgotten just where you put it. That is the way you reason, for all the world like my bank deposit. I had it—the promise of it, and I suppose they taxed me on it; but I could not pay my debts with it, and I could not buy anything with it; and when, by any test, I wanted to assure myself that I had it, I found I *didn't* have it. A fig for such ownership! And a fig for the things you know but cannot tell!"

Do you think that is too harsh? It is the way the world will talk after you leave school.

"Have you ever noticed the resemblance between Æschylus and Dante?"

"Æs—Æs—why, yes, to be sure; her—it—he—Latin poetry was always a—er, I mean Greek prose is—was—most delightful; and if you compare it to Dante—why—er, yes, I should think it would."

The world will not accept such a reply as evidence of scholarship any more than your old professor would, and though you may remember all about Æschylus when you wake up that night, and even recall some of the

scenes of the Prometheus, yet nothing will make your friend believe that you ever were a classical scholar. Non-producible knowledge is *no* knowledge, to all practical purposes of human intercourse, until it is put in the shape of coin of the realm. When your Latin and Greek, your astronomy, your political economy and history and English literature are legal tender, then, and not till then, will Cashier Common Sense, of the bank of Popular Regard, honor your draft upon that conservative institution. "I have the funds, but I cannot show them to you now"—just try *him* with your time-worn excuse, if you want to hear sarcasm.

And if—to bring the matter to a practical head—you want to *know* whether your knowledge is producible, produce it. Talk it out. A student is indeed fortunate if he has some one with whom he can talk over his lessons. The discussions I used to wage in the rooms of my fellow-students over all sorts of questions—granted that they were very crude and sophomoric discussions, yet they served better than a thousand examinations to fix the subjects in my mind. If I were to go back to college now, I think I should organize a Talking Club—a society where no papers would be read and no business would be conducted,

but the students would meet simply to converse about their lessons. It might be called a Socrates Club, in honor of the immortal old tonguester. And if I could not do this—as is most likely; and if I could not find a friend who would think he had time for this seemingly barren palaver, why, I should play every day a sort of intellectual solitaire, and I and Myself would debate our studies together. I would doubt this point, and Myself would define it; I would question that statement, and Myself would join me in attacking it; I would eulogize that truth, and Myself would proceed to illustrate it; and so I would chatter Myself and Myself would chatter me into the wealth of learning that alone can fairly be called wealth of learning,—that is, coin of the realm.

CHAPTER XXI.

MY "EVER-READY."

I AM enjoying a new contrivance of the electricians which is a genuine addition to the comfort of mankind. It is called the "ever-ready" electric light, and I shall always owe a debt of gratitude to wide-awake Dr. William E. Barton for introducing me to it.

The little instrument is a black, nickle-mounted tube, about eight inches long. At one end is a lens, and as you press down a ring at the other end, there flashes from this lens a light brilliant enough to illuminate objects across a large room. When you cease to press the ring, the light disappears instantly. It is a dry-plate electric battery, which, with ordinary usage, has to be charged about four times a year.

The uses to which we put this "ever-ready" are many,—for a "snatch-up" to go down cellar or explore some dark closet or remote corner of the attic; to see the watch or the clock at night; to note whether the baby

is covered up properly; as a dark lantern in campaigns against possible burglars; to jot down that idea for an essay which *will* come about 2:45 A. M.

But I am not writing an advertisement of the "ever-ready," though I think that many of my readers will be glad to know about the useful little contrivance. My purpose is to use this flashlight as a symbol of a certain mental process that is very often, and very wrongly, treated with disdain. We call it "jumping at conclusions," "surface knowledge," "cursory information,"—that is, information obtained on the run.

There is a use for this in the world, just as there is a use for my electric flashlight. It is not a student lamp, I know well. I would not think of sitting down with it to read McMaster's history of the United States, or even to write a letter; but for the purpose of the moment, it is just the thing, and having it at hand, it would be foolish to light my student lamp for the purpose of finding the toothache medicine.

Yet there are people who insist on doing just that. Under the specious plea of thoroughness, they will not write a literary society essay on Don Quixote until they have read up on all Spanish literature; they refuse to teach

that class of little boys whose teacher is unexpectedly absent, because, although they know ten times as much about the lesson as any of the little boys, they have not had time to read Edersheim and Farrar and the last number of *The Sunday-School Times;* they will not sing a simple song before an uncritical parlor company, because they have not yet practiced it before Professor Longhairsky. So it is in everything; they plead lack of preparation, lack of information, lack of time, and the world can get little out of them because they insist on a degree of thoroughness that is not often practicable.

I believe in thoroughness; of course I do. But there is thoroughness *and* thoroughness. It is purely a relative term. The question is only what degree of thoroughness is appropriate to a given task. One need prepare more carefully for a book than for a magazine article, and more carefully for a magazine article than for a newspaper interview. What would be unacceptable in an academy picture is even charming in a sketch. What would justly be criticised in an oration or a sermon as loose and undigested, may be admirable and admired in rapid conversation. The question is purely one of adequacy to the place and the time.

"But," it is argued by these over-thorough folks, "if we are thorough in everything, we shall cultivate the inestimable habit of thoroughness."

That is right; *be* thorough in everything. But a carpenter is not in serious danger of becoming careless if he refuses to put into the clapboarding of a house the same finish he would lavish on a rosewood cabinet, or if, after he has built the house, he chooses a more rough-and-ready mode of putting up the coal-bin.

CHAPTER XXII.

THE FINISHING TOUCH.

AND now, having said what I have said in the preceding chapter, namely, that one must exercise common sense in determining the degree of thoroughness appropriate to a given task, I may go on to a far more important plea.

There's a famous French maxim that tells us that it is the "first step that costs." It is a pity that the proverb does not finish the thought and add, "It is the last step that pays." The tedious and difficult first steps,—in how many things we take them, paying a big price in money, time and toil; and in how few of these many things do we have patience and constancy sufficient to finish the last and easier part of the course, and receive the pay! He was a thoughtful man as well as a great artist who made the remark that after the statue is finished the work is but begun. He understood the inestimable value of the careful finishing touch, which completes in reality what the careless observer thought already

perfect. In making castings the metal must remain in the furnace a certain due length of time before it runs out, or the entire operation is a failure, and the entire mass of metal lost. An impatient hand on the lever, a too careless haste to complete the job, would waste much money and time.

Now it is amazing to note how much time, energy and money are lost to this world just for the lack of the last step, the last few minutes, the last finishing touches.

Here is Master Takeiteasy, the student. The facts of his lessons are pressed into his mind just hard enough so that they stick till the recitation is over, or possibly till the morrow's review; and then they fall off like the leaves of autumn. He studies his lesson until he has gone over the required ground, and then turns directly to some other work. And Master Takeiteasy might have been playing leap-frog as profitably as studying, because his work cannot be permanent in its results without review. Study for an hour. Review that study for ten minutes. Review that review for five minutes, and you will have gained something. The luckless student who studies without immediate and persistent review, is like the man who made all the payments on his life insurance policy but the last, and so lost the whole.

It is passing strange that students will day after day spend their time taking these first steps, costly and tedious, without a moment's thought of the last steps which make the goal their own. I beseech you, the next time a lesson is on the coals, remember the man at the furnace, and do not press the lever for a casting—a casting of the book aside, you understand!—until you have carried the process beyond the possibility of loss.

Then how many books we read, straightway to forget, thus all but wasting the time we spent upon them! We have not given to our reading the last payment, the hour or two of thought, of review, possibly of extracts and note-taking, which would have transformed the work of many hours into permanent results. So it is with many studies. Suppose that you have gained, with pains, a smattering of Latin. The first steps have been difficult, the work tedious, and O, how many cry halt on Latin just as Latin scholarship is within their grasp, with all its inestimable advantages and pleasures! It is very much as if a small boy should see a fine apple on a distant limb. He climbs the tree painfully. The trunk is awkward. The limbs are roughly barked, and sway unsteadily; nevertheless, the apple is at last within reach of his hand. But the mem-

ory of the toilsome ascent is too much for him. No fruit can be worth anything that is so hard to get. So the small boy drops disgusted to the ground without the apple. You say you believe that this is a slander on the small boy? It is a slander. It is only an illustration of the way some big boys of my acquaintance—and girls too—have climbed the tree of science after the apple of knowledge.

Are not examples of this mistake to be found at every meeting of your literary societies? You know what is meant by a "finished" style, a "polished" style. How many of you, after you have written your essays, proceed to finish them, to polish them? A cultivated writer is known not merely by his thoughts, but by a certain elegance of diction and ease of literary manner. This grace is to be obtained only by the nicest revision, by scrupulous watch over adjectives and verbs, subjects and objects, metaphors and similes, by fastidious rearrangement of awkward sentences, and even by anxious attention to all details of punctuation, capitalization, spelling, and paragraphing. Be the thoughts equally good, before this process it was but a schoolboy composition. Now it is literature. Here as elsewhere it's the first step that costs, it's the last step that pays.

You can apply the principle in a hundred

directions. I must speak of one that has a more direct connection with your studying than you may think at first. Here is a young man who has an interest in religious matters. That is, he reads the controversial articles in *The Forum* or *North American Review*, he hears a sermon Sunday, possibly belongs to a Sunday-school class in a sort of feeble manner, and listens respectfully while others talk and pray at prayer meeting. He calls himself a Christian, and yet—and yet ——

Have you ever seen carpenters drive nails where a great strain is to come, and do you know how they sometimes put the matter beyond doubt? They clinch the nails. I think that it would be a tremendously good thing for almost everybody's religion, to clinch the hearing of preacher and Sunday-school teacher by earnest study of one's own Bible and earnest praying in one's own closet; to clinch the prayer meeting by adding one's own little mite of endeavor; to clinch the articles in *The Forum* or *North American Review* by a vast deal of vigorous, practical, all-alive Christianity,—Christianity not on paper, or daubed with printer's ink, but written in warm scarlet on the grateful heart-tablets of our brothers and sisters who need us.

Let us resolve in our school work to live

completer lives; to begin fewer things if need be, but to finish more and better things; to be more patient and determined; that the Master may say of our work, some happy day to come, "Well done, thou good and faithful servant!"

CHAPTER XXIII.

THE CLUE IN THE LABYRINTH.

I HAVE been indulging lately in the exhilarating sport of bowling, and though I cannot yet get much above one hundred by the end of the "string," yet I have learned a thing or two about the manly game which I am very glad to know.

One of these important discoveries of mine is this: that in rolling a ball at the pins, direction is of far more importance than velocity. Dr. X was bowling with me the other night. He had the rheumatism in his feet, and could scarcely hobble. He had to stand still and roll his balls. They ambled gently down the alley, sounding like a leisurely freight train, but they went straight for the middle pin, and generally the whole set of them went tumbling head over heels.

On the next alley, young Michael Muscle was bowling, and I watched him with envy. He would give a swift run, and with graceful delivery would fire a ball down the shining

boards as if from a nine-inch gun. But his balls were actually too swift. They were often "thin"; that is, they would flash their way clean through the pins, disturbing only a few of them, just as a bullet will make a smooth, round hole in a windowpane, while a stone thrown by an urchin will smash it to fragments.

It all set me to thinking about the slow, steady, easy-going boys I have known, who have made no fuss and won no particular applause; but they have known just what they wanted to accomplish, and just how it was to be done, and now quite without exception they are university professors, or heads of mercantile establishments, or Congressmen, or at the top of some other heap. In the meantime, in many a case the youngster who made a great stir in school and college, who sparkled and shone, who carried off all the prizes and beat all the games and held all the positions of honor, settled down into a very subordinate position, or slipped out of sight altogether. It was because these fellows lacked a clear, definite, steady aim. They plunged through their work for the moment, but they had no thought beyond the moment. They were rockets, brilliant and beautiful; they came down—sticks. I shall think of all this the next time I am

fortunate enough to have a touch of rheumatism, and I shall go to the bowling-alley, and I shall make the record of the evening.

I don't blame the students in our high schools and colleges for growing perplexed and confounded with the multitude of studies they must cram into their heads. The Latin clashes with the French, and the Greek with the German, trigonometry bumps up against American history, and geology smashes psychology. By the time they are through with it all, poor things, it is a wonder that they know whether the binomial theorem is in the major premise or the Silurian age. In the course of my pedagogical experience I have had to teach pretty much everything, from Greek to arithmetic, from astronomy to shorthand, from zoölogy and geology to French and algebra and modern history. That is why I speak so feelingly about the brain-packing required nowadays from teacher and scholar.

I want to tell you a little story.

Once I had in one of my classes—it chanced to be a class in higher astronomy—a young man who saw no sense in the study. He did not like it a bit. The strange secrets of the stars, the mysteries of the moon, the fascination of the spectrum, the tricks of the sun-spots, the beauty of the planets' ordered march,—all

these were lost upon him. He was a very practical young man, and it was too far away from earth for him. So he failed on examination, as I knew he would, and I had to give him extra work to do in the summer.

Well, the young man somehow took it into his head during that summer's study to hitch his astronomy on to his life work; he was intending to study law. With every chapter he asked himself, "How could I use this to illustrate a case? What turn could I make upon that fact before a jury?" As soon as this idea entered his head, his studies made prodigious strides, he speedily passed with credit, and he wrote on the back of his last examination-paper, "This is the most interesting study I ever took up." I have that paper yet.

You remember how Ariadne piloted Theseus through the Cretan labyrinth with her mystic thread. Well, this thought which my astronomical student hit upon is the clue that will bring you safely to the heart even of our modern educational maze, enable you to kill the minotaur and get safely out again, and laugh at Minos. I have slight sympathy with the views of those who advise young men to postpone as long as possible their choice of a life work. "Wait," they say, "till you have gone through college and viewed the world of

knowledge from all sides. You cannot wisely choose your calling before that, for you do not before that know either the world or yourself." Fortunate, indeed, would be the college senior that knew either the world or himself! If the sixteen years before college have not shown him something he would like to do, there is small chance that the four years of college will do that for him.

I am foolish enough to believe that God calls men and women to be farmers and musicians and doctors and editors and milliners as well as to be ministers and missionaries; that from the very start he began to fit them for their life work, and that it is possible for a wise parent and wise teacher, and above all for the wise youngster himself, to discover what God put him in the world for. To that centre all his interests should turn. Upon that he should hang all his studies. That will give his school life a significance it otherwise could not possibly gain. That will make his attention sharp, his memory tenacious, his perseverance virile. That will lead him to the bull, and take the bull by the horns, and win him the triumph.

I have seen young men not a few, who, misled by foolish theorists, postponed their life decisions as long as possible, dilly-dallied with

all their studies, guessed their way through college, adopted a new profession or business every month of their senior year, took up at last, in sheer inability to choose, some preposterous calling selected for them by their parents, and went straight to the limbo of the incompetent. The course I advise may lead to mistakes, but the other course is sure to, and the mistakes that result from a bold front and a prompt and manly choice are the most easily remedied of mistakes. Your experience may be like mine. With an innate longing for literary work, I spent my school and college days, so far as I could, in scribbling, and speared upon a steel pen everything I learned. Well, for nine years after I left college I had to teach. No editor's office seemed to be vacant. But behold, at the end of the ninth year I was popped right into the most delightful editorial chair in all the world, and everything I had crammed into my head while I was teaching was pulled out again by my printer's devil in three months, and I wished it was ten times as much. That is the way it will be with you. Choose your calling, prepare for it, take the first honest work that offers itself, and—bide your time.

CHAPTER XXIV.

WHY ARE YOU STUDYING?

IT is not enough to know how to study; that we have been trying to learn. Nor to know what to study—the subject treated in the last chapter. But we must also know why we study; and the purpose must be an adequate one, or the study will be poor study and finally no study at all.

The "why," too, must come before the "how." Unless you have the right impulsion toward study, you are certain not to study in the right way. Why, then, do I make this the last rather than the first chapter of this book? Because the truths I shall here express are so important that I want them to leave the final impression on your mind.

What is the good of a goal? Usually it is nothing that can be carried away. It is nothing to eat, or wear, or exhibit in the parlor. It is a rude stone pillar, or a wooden post, or sometimes only a hole in the ground. Yet the goal is the cynosure of every race, the

life of every contest, the inspiration of every game, and, taken broadly throughout life, it is the incentive to every achievement worthy the name. A man without a goal—that is, a man without a clearly seen, definite, single end toward which all his energies are directed and upon which his longings centre, may have all possible aids to success except that one aid, may have good birth, brains, influence, money, address, ambition; but he can never have success. You may have seen some unfortunate man whose nerves and muscles flew in all directions without his control, hands, arms, legs, head twitching and jerking around, each as if it belonged to a different man. It is because something is lacking or wrong with an inch or two of corrugations in the brain where lies the co-ordinating power, the power that unifies the nerves and muscles and focuses this wonderful body of ours upon single movements and deeds. A life without a goal is a life with the rickets.

So necessary is this aim to any success, even to the initial successes, that I should like to have it recognized in the entrance examinations at every college. The president himself should conduct this examination.

"Why are you going to study, you man with the bicycle face and the baseball fingers and the football hair?"

"I shall study, sir"—for in some way honesty is to be made compulsory in this examination—"in order to get an opportunity to play."

"Why will *you* study, you youngster with the Demosthenic brow, the Napoleonic nose, the Washingtonian chin, and the Paderewski hair?"

"Because, sir, I want to be great. I have in me, sir, the making of a distinguished poet, or inventor, or general, or musician. I have not yet decided which."

"And why are you studying, you pale-faced, blear-eyed, stoop-shouldered, bookworm fellow?"

"Because I have insatiable curiosity. I want to know things. I like to dig into mysteries. I am passionately fond of books, sir. Why, sir, I'd rather read a book than do anything."

"You look it. And why are you here, my jolly boy, you good-natured chap?"

"Oh, because it is the thing to do, you know. It is what is expected of me. My parents sent me, and my friends want me to study, and all the other fellows are in college, so here I am."

"And now you, my earnest-eyed, bright-faced lad? I can see that you have good

stuff in you. What is your purpose in the student life?"

But the answer of the true scholar must be deferred for a minute.

For, first, I want to say with regard to all the false motives I have indicated, and others that might have been named, that no purpose in study is the true one unless it can stand the test of eternity. This is the case with every act of our lives, so of course it is the case with an act so important as the undertaking of a college course, or a course in any school. And before the test of eternity how pitiful all these motives are! After a few brief years of physical vigor paralyzed by an empty head, the athlete sees his muscles themselves becoming flabby with age, and finally some day slipping off from him, together with the rest of his outgrown body. A mere flash of time, and the bookworm finds himself in the country where all earth's clumsy languages are quite forgotten, where the most abstruse science lies open to the eye of any child, where all the history of earth's sad wars and feeble dynasties is gladly lost in the history of heaven. Only an eddying whirl in the current of time, and the studies which served as stepping-stones to the attainment of some lofty ambition are quite forgotten, like all other stepping-stones, the ambition

being attained; and only another eddy, and the ambition itself is swallowed up in the black wave of death.

Young Pliable's case is the commonest, and the world is full of these fortuitous students who study because of a force from without—the force of their parents' desire, or the mere push of others' opinion—and not from a force within, and so graduate into lives that have no permanent mental interests or resources, utterly at the mercy, if it is a girl, of a luckless love-affair and a dull or selfish husband, or, if it is a boy, utterly at the mercy of business fortune. They have built up for themselves no bright refuge in books against the dark days, the days of sickness, of loneliness, of sorrow and loss. Such lives have "no root in themselves," and how speedily they wither away!

But there is one purpose in studying, and only one, which is adequate, powerful, eternal. *It is to get into harmony with God.*

Now you think that I am preaching. That may be, but it is very practical preaching, I assure you. Keeley, that scatter-brained, tricky inventor, with his motor that never would "mote," was nevertheless in the right with his main contention that in the little-understood laws of harmony lies the key to the

secrets of the universe, that all power is wrapped up in them, and all possibilities of progress. The magic of sympathetic vibrations upon which he based his alleged discoveries still remains a mystery so far as its practical application is concerned, but whether those laws shall yet lend us their mighty aid for the propulsion of this world's machinery, still they are the recognized source of efficiency in all things higher. The machine itself must be in harmony with the mind of the inventor, or it will not work. The instruments of the orchestra must be in tune with one another, and all must be obedient to the baton of the director, or there is no music. The army must move as a single man at the will of the general, or there is no victory. And in the same way and for the same reason the student's chief end is to get into harmony with his Creator.

All knowledge falls into line subordinate to this high purpose. To get in harmony with God, we must know about God,—that is theology, which every student should in some form study; and about his works, that is science; about ourselves, that is history and psychology and logic; and about the work God has set us to do in the world, that is technical training. This purpose meets the

test of eternity, because if we study to get in harmony with God, we shall discover beneath all the temporary elements of our studies a science that lasts forever. The stars may fade, but space endures; the earth may crumble, but geologic time runs on; plants and animals may pass away, but God has proved himself to be a lover of creation infinite in marvelous surprises, and whoever comes close to His mind in this beautiful specimen world will not be far from it in any world.

Nor does this overmastering purpose to get in harmony with God exclude the lower aims of the student whenever they are worthy, such as interest in science for the mere sake of knowing, or to prepare one for a business career. Not at all. Rather does it strengthen and deepen all such interests, adding to all that is legitimate in them the intensity of a heaven-descended momentum, while the sense of eternal proportion we gain keeps us from that one-sided view into which students so easily fall, and prevents us from "running anything into the ground," devoting our lives to the dative case, or being swallowed up by some tumble-bug. No one can live long in harmony with this purpose without coming to see that there is nothing ennobling in facts any more than in pig iron; that the one de-

cisive question is the use that is to be made of the facts.

To learn God's will, and then to do it! That ultimate aim of the student includes within it everything that has been said in this book about the methods of wise studying. It bars out all forms of cheating and insincerity. It keeps the student's body pure and strong and free from all hindering excesses. It frees one from crippling slavery to per cents. It promotes attention and enforces concentration of mind. Pallid ambition, with its boastful strut or its trembling fear of failure, is displaced by a serene confidence that walks hand in hand with the one great Teacher of men and angels, in whose presence comes that calm evenness of temper which is for the scholar at the same time a priceless delight and an achieving power.

Once there was a great painter who had three pupils. The first spent all the time in the studio at his easel. He copied incessantly the great master's pictures, studying deeply into their beauties, and trying to imitate them with his own brush. He was up early, and was the last to leave the workroom at night. He would have nothing to do with the master himself, attended none of his lectures, never went to him with any question, nor spent any

time in talking with him. He wanted to be his own director, and hit upon his own discoveries, and be self-made. This pupil lived and died without notice, and never expressed on canvas a single one of the noble characteristics of his master.

The second pupil, on the contrary, spent little time in the studio, scarcely soiled his palette, or wore out a brush. He attended every lecture on art, was constantly asking questions about the theories of perspective, of coloring, of light and shade, of grouping figures, and all that, and was a zealous student of books. But for all his study, he died without producing a single worthy picture to help and delight mankind and perpetuate his master's glory.

The third was as zealous in the practical work of the artist as the first, and as zealous in the theoretical as the second, but he did one thing which they never thought of doing: he came to know and love the master. They were much together, the young artist and the older one, and they had long talks about all phases of an artist's life and work. So close and continual, in fact, was their communion, that they grew to talk alike, and think alike, and even, some said, to look alike. And it was not long before they began to paint alike, and on the canvas of the younger glowed the

same beauty and the same majesty that shone from the canvas of his master.

And oh, my students, who have come with me to the last page of this little book, doubtless you have some purpose in your studying, or you would not care to be reading this book at all; but which of these three purposes is it? Do the practical ends of life absorb you? Are you engrossed in books, in the vague abstractions of theory? Or, without omitting from your lives whatever is noble in these, have you chosen the better part, the higher purpose which shall never be taken from you?

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