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THE
Youth's Instructor.

FEBRUARY,]

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“ Our most important are our earliest years.”



SAINT JOHN:

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TO CORRESPONDENTS.

THE Answers to Arithmetical Questions and Puzzles will be given in our next.

WE are obliged to M. G. for his Correspondence—he will find the first part of it in the present number—the other part will be inserted as we find it convenient.

QUESTIONS on Universal History, No. 2, will appear in our next.

ERRATA IN OUR FIRST NUMBER.

Page 11, line 15—for “Pigah,” read “Pisgah.”
→ 12, — 7—for “Jacob,” read “Joab.”

THE
YOUTH'S INSTRUCTOR.

No. 2.]

FEBRUARY, 1924.

[Vol. 1.

DIALOGUES ON GRAMMAR.

No. II.

BETWEEN *DISCIPULUS*, *STUDENS*, AND THEIR TUTOR.

DISCIPULUS. I just now recollect, *Studens*, that our Tutor appointed this hour for a lesson on Grammar.

Studens. I hasten home on that very account. I anticipate much pleasing conversation.

Discip. Pleasing conversation! astonishing that you should expect any thing pleasant in a conversation on Grammar! I assure you that I have no pleasant anticipations on the subject.

Studens. When I was at your age and only at that state of progress in my studies at which you are now, the study of Grammar was also very irksome to me. Indeed it cannot be more so to you than it was to me. I thought it was only fit for a cynick.

Discip. How is it, then, that you are so much changed? nothing appears to give you more pleasure than when our Tutor commences conversation on subjects of Study.

Studen. There is a Latin sentiment that may be brought forward to solve what appears to you strange

in my change of feeling and sentiment; which if I had previously understood in all its meaning when I commenced the pursuits of learning, my repugnance to study would have been in a great measure subdued. The sentiment is "*Radix doctrinae amara, fructus dulcis.*" The root of learning is bitter, the fruit is sweet. Endeavour to understand this, and endeavour to keep it always in remembrance. The prospect of enjoying the sweet fruit of learning will render you submissive to swallow every decoction of its bitter root. At the end of my Latin Grammar there is an emblematical representation of learning: a tree hanging luxuriantly with fruit, and some boys at the root eating the bitter, while others are upon the branches plucking the fruit. You are one of the boys at the root knowing nothing but the nausea and bitterness of learning, but I am on the branches of the tree, enjoying a sweet repast of delicious fruit. I experience now the great benefits of Grammatical knowledge. Its advantages are above all value. It frees us from many mortifications in our common intercourse with the world. It enables us to correspond with our distant friends in a manner creditable to ourselves and satisfactory to them. It opens up the sense of many passages in the works we read, which otherwise would very probably be misunderstood, or remain unintelligible mysteries. It elevates us in the estimation of all who know us. It is the gate through which we must pass to any of the learned professions—It is in short the gate through which we must pass to all other knowledge. Do you think that the immortal Newton would ever have scanned the celestial motions and reduced them all to a nice mathematical calculation, had he not first plodded through Grammar? Do you think that Dugald Stewart, of mo-

dest but famous character, would ever have given to the world his invaluable disquisitions on the philosophy of Mind, had he not first drunk freely of this bitter decoction? Is it to be thought that Chalmers, whose voice so charms, whose eloquence so overpowers, and whose argument so convinces, would ever have risen to the character of being a Pulpit Demosthenes, had he not drunk copiously of the bitter infusion? No, certainly. And you may go round the whole compass of Philosophy, Literature, and Science, and put the question whether they would have ever existed in systems had there been no initiating science of Grammar.

Discip. You really astonish me! You exalt Grammar to a very high degree of importance, and point out so many advantages attending its acquisition, that I am almost resolved to submit to every mortification of self, rather than want it. My plays and puerile enjoyments seem almost instantaneously to lose their fast hold of me, and set me at liberty to consign my hours to study. But have I not heard our Father say that you never studied the Grammar of our vernacular tongue in the regular way?

Studens. That is very true. I never indeed studied the Grammar of the English tongue; but I studied Latin Grammar, which I maintain is the best preliminary to the knowledge of any Grammar whatever.

Discip. You speak strangely. Do you pretend to say that the study of Latin Grammar, the Grammar of a language that is foreign and dead, will initiate one into the knowledge of every other Grammar?

Studens. Not that exactly: what I mean is, that there are general principles which enter into the construction and forms of all languages, and that Latin

better than any other Grammar, will bring you into acquaintance with these. It must be well known to you that many of our acquaintances are particularly distinguished for their correct knowledge of Grammar, who never studied any Grammar but that of the Latin tongue, and that they even excel their neighbours who have studied a system of English Grammar but have not studied Latin. But come let us go within; our Tutor waits for us.

Discip. This strange subject you must resume on the first opportunity. Go within, I will follow.

Tutor. I am glad, my dear Pupils, to see you so punctual. Punctuality is a quality that will be of the most essential use to you in the world, and will always secure you the favour and confidence of those with whom you may have any occasion to transact business; and therefore, I hope, that it will continue to be cherished by you as a jewel of great value. But to commence the purpose for which we have met—Can you tell me, Discipulus, what Grammar is?

Discip. It is that Science which develops the component parts and construction of language, and discovers rules for the art of correct writing and speaking.

Tutor. Can you tell, Studens, what is the origin of the term Grammar?

Studens. It is from the French word *Grammaire*, which evidently comes from the Greek *Gramma*, a word derived from the perfect passive of the verb *graphō* to write.

Tutor. It therefore signifies the art of writing, or expressing ourselves in correct language. Can you tell from this, Discipulus, what is implied in a knowledge of Grammar.

Discip. It implies a knowledge of the letters, their sounds and combinations—a knowledge of

words, their flexions and pronunciation—a knowledge of sentences and the manner of arranging words so as to form a complete sentence—and, we may add, a knowledge of punctuation.

Tutor. You have answered very correctly.—What are the technical names of the four parts of Grammar?

Discip. Orthography, Etymology, Syntax, and Prosody.

Tutor. Tell us, *Studens*, what is the origin of the word Orthography?

Studens. It is from two Greek words *orthos* right or correct, and *graphō* to write; and signifies correct writing or spelling.

Tutor. What is a letter, *Discipulus*?

Discip. It is the simplest component part of a word.

Tutor. How many letters are there in the English language?

Discip. Twenty-six—a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z.

Tutor. Into what two classes are the letters divided?

Discip. Into vowels and consonants.

Tutor. Mention the vowels separately?

Discip. A, e, i, o, u, y.

Tutor. Does not one of the vowels sometimes partake of the nature of a consonant?

Discip. Yes. The vowel y before another vowel has the nature of a consonant.

Tutor. What is the derivation, *Studens*, of these two words, Vowel and Consonant?

Studens. The word vowel is derived from the Latin *vocalis* signifying of or belonging to the voice, denoting that the letters called by this name have the nature of words in giving a complete sound

without the addition of any thing supplied—and the word *consonant*, is from *con* together and *sono* to sound, denoting that the letters so called require the addition of something understood to enunciate them.

Tutor. Into what classes, *Discipulus*, are consonants divided?

Discip. Into Mutes and Liquids.

Tutor. What are the Liquids, and why are they so called?

Discip. They are l, m, n, r, and receive the name, because they readily unite with other consonants.

Tutor. Why are the *Mutes* so called?

Discip. Because they cannot be sounded without a vowel.

Tutor. Which of the consonants is sometimes employed as a vowel?

Discip. The consonant w.

Tutor. You have answered your questions very distinctly, *Discipulus*, which gives me much pleasure. I shall expect at our next interview, that you will be able to take the letters individually and describe the different sounds that they have. Is it known, *Studens*, who was the inventor of alphabetical writing.

Studens. No, Sir, and it is a disputed point whether it is to be ascribed to the invention of man. It is supposed to be too noble an invention for the faculties of man, at least in the very early period when alphabetical writing was first employed. I have no hesitation in thinking that it is of divine origin—it is altogether worthy of the Godhead.

Tutor. I approve of your sentiments. We have many good arguments in support of it. The Mosaic writings are the earliest specimens of alphabetical writing—and it is evident that Moses wrote

with a perfect alphabet. And to suppose a perfect alphabet, without a previous gradual progress from rude attempts, is contrary to the genius of man; and we must therefore conclude that it is of divine origin. But, besides, it is conceded by almost all nations, that they derived their knowledge of the subject from others whose knowledge may be traced to the Hebrew as its primary source. And hence we may legitimately conclude that its origin is divine; that letters are the communication of God to man.

Studens. Yes, sir, I recollect this is the case.—The European alphabets are evidently derived from the Roman, except the Turkish which came from the Arabic. The Romans avow they received their knowledge from the Greeks, and the latter acknowledge they had it from the Phenicians, whose language is a dialect of the Hebrew, differing very little from the original. The Coptic has a similarity to the Greek and is to be referred to the same source. And it is said by learned philologists that the Ethiopic, Arabic and Persic have also evident traces of affinity with the Hebrew.

Tutor. We have also a striking demonstration of the incapacity of man for the invention of alphabetical writing in the Chinese, who are a people of great mechanical ingenuity and famous for their discoveries. It is a peculiarity of this people to foster nothing but what originates among themselves. Hence they retain their own original mode of writing, which consists in the delineation of their ideas by arbitrary signs. In this mode of writing they have made considerable progress, but never have fallen upon the alphabetical method, and it is just to conclude that their mode of writing, which at present requires a new sign to every new

idea and is consequently growing more extended every day, would never terminate in so luminous and so ample an expedient as that of alphabetical characters.

Students. That is a very striking argument indeed. The Mexicans are another example of the same kind.

Tutor. Yes—but they never arrived at the same degree of perfection as the Chinese in the use of arbitrary signs. We shall take up the subject in our next conversation.

Questions on Scripture Geography,

Continued from page 13.

ABELSHITTIM, A TOWN.

WHERE is Abelshittim?

In the plains of Moab to the north-east of the Dead Sea. Num. xxxiii, 49.

In relating what circumstance is this town mentioned by this name in Scripture?

The last or 42d station of the Israelites in their march through the wilderness before they entered the land of Canaan.

What signification is given to this name in the margin of the Bible?

The plain of Shittim.

Is it not inferrible from this that Abelshittim was the place adjoining the place distinguished by the name of Shittim?

Yes. See Numbers xxv, 1. JOSHUA II, 1, and III, 1. Micah vi, 5.

What is the true signification of the component, Abel?

Mourning.

Unders'tanding it in this acceptation, mention that event in Jewish History, from which they might with great propriety have called Shittim by the name of Abeshittim?

At Shittim a great many of the Israelites died; some having been by God's command hanged, others slain, and others having died of the plague to the amount of twenty-four thousand; and all this for their great wickedness in committing whoredom with the daughters of Moab and joining themselves unto Baal Peor, eating of the sacrifices offered to the idol Gods of their country, and bowing down to them: on account of which a sore and great lamentation was made. Num. xxv, 1—9.

ABILENE, A TETRARCHY.

Where is Abilene?

On the north-east of Galilee.

Whence did it derive its name?

Some think the word a corruption of Abelmam, (see our first number under this head) others say it derived its name from an ancient structure in that country supposed to be the tomb of Abel, and others from its chief town Abila.

When was it made a Tetrarchy?

At the death of Herod the Great, when his kingdom was divided into four parts and committed to the administration of Governors, who were called Tetrarchs.

Who was Tetrarch of Abilene when John the Baptist commenced his Ministry?

Lysanias. Luke, III, 1.

What is meant by the word Tetrarch?

A Governor of the fourth part of a Province.

ACCAD, A CITY.

Where is Accad?

On the left side of a small river that runs into the Hiddekel or Tigris, a few miles north of the latitude of Babylon, in the kingdom of Nimrod in the land of Shinar. Genesis x, 10.

How do the seventy interpreters, who translated the Hebrew Scriptures into Greek, call this city?

By the name Archad.

What is its modern name?

Sittace, which though placed in Assyria by modern Geographers, is referred to Babylonia by Strabo.

ACCHO, A CITY.

Where is Accho?

In Galilee, on the coast of the Mediterranean. In the division of Canaan among the twelve tribes of Israel, it lay within the tribe of Asher. Judges I, 31.

By what name is this city known in the New Testament?

Ptolemais, as it was called by Ptolemy Philadelphus, who enlarged it. Acts XXI, 7.

What is its modern name?

Acre* or Acra, given to it by the Turks its present possessors.

TO THE EDITOR OF THE YOUTH'S INSTRUCTOR,

SIR,

HAVING read in the first number of the monthly publication entitled the "Youth's Instructor," a scientific description of Water, I am in consequence induced to request you will introduce into

* As this city holds a distinguished place in Modern History, we shall in our next number give a history of it from the Encyclopædia Metropolitana.

your next convenient number, the following explanation of WIND, as mentioned in the sublime and metaphorical style of the Sacred Scriptures; extracted from the works of a most worthy author (late of Haddington) which I presume, will be instructive to many of your readers, viz. :—

WIND

I “Is a sensible tossing of the air, by means whereof a large quantity of it flows from one place to another. The trade-winds are such as blow constantly from east to west, and Monsoons are those which blow three or six months at once from one point, and as long from the opposite.”

Where the air by the heat of the Sun or otherwise is most rarified, thither the denser part of the distant air bends its course; and so a very rarified air bodes a storm. The trade-winds which are met with on the vast Ocean, chiefly on the Pacific, blow not directly from East to West, but incline towards the equator, where the air is most rarified. This rarefaction of the air under the equator, I suppose is also the reason why so much rain happens in the torrid zone in the summer season, the clouds from other places pouring themselves into that region, where the heat has so exceedingly rarified the air. Winds blow almost constantly from off the sea in places exceeding hot. Winds from the sea are warmest in winter, and coldest in summer, and all land-winds are coldest in winter and hottest in summer. Winds blowing over hills covered with Snow, or over cold countries, are hereby rendered colder. In different countries the wind is often in different, or opposite points at the same time; and the North and South winds, are wet or dry. Prov. XXV. 23. At Aleppo in Syria, the winds from the north, and especially the north-

east are exceedingly cold in winter, but excessively hot in summer; and yet then their water kept in jars is colder.

A Whirlwind, is a strong blast, which winds about in a manner somewhat circular. Multitudes of such blasts come from the deserts of Arabia; and out of one of them the Lord spake to Job, Isa. XXI. 1. Job XXXVII. 9, XXXVIII. 1. Whirlwinds sometimes sweep down trees, houses, and every thing in their way; and carry along with them such quantities of dust as blind, or even bury multitudes of travellers. They generally, though not always, come from the south; and those in Africa have often a poisonous influence.

2d. The Holy Ghost is likened to wind or winds; how incomprehensible is his nature! and how self-moved, powerful, convincing, quickening comforting and purifying are his influences! May not the north wind figure out his convincing, and the south wind his cherishing and comforting efficacy? John III. 8. Song IV. 16. Ezek. XXXVII.—

3d. The destructive or afflicting judgments of God are like wind or east wind, or whirlwind; how unsearchable in their nature and number; how violently they bear down men before them; and blow them and their property to ruin! Isa. XXVII. 8. Hos. IV. 19. Jer. XXIII. 19. XXV. 32. XXX. 23.—

4th. The Chaldeans are called a dry wind, and a full wind from the wilderness, not to fan or cleanse; or a whirlwind: from the side of the Arabian desert they came, and furiously marching against the Jews, they wasted their Country, and destroyed their lives and wealth, Jer. XIII. 24. IV. 12.—5th. The Turks are like to a whirlwind; how furious and destructive were their inroads! Dan. XI. 40. 6th. Temptations of any kind are called wind; they tend

to toss men from one principle and practice to another, and put them to the trial, whether they be rooted and grounded in Christ and his truth, or not, Matt. VII. 27.—7th. Any thing unprofitable and unsubstantial, is called wind. The Hebrews in the desert, and proud men in any age, are likened to wind; how unsubstantial! and how quickly driven away, and passed out of life! Psal. LXXVIII. 39. Prov. XXV. 14. Man's life is likened to Wind: it depends on breath, and how vain and unsettled, and how quickly passed away! Job VII. 7."

" God moves in a mysterious way,
His wonders to perform;
He plants his footsteps in the sea,
And rides upon the storm.

" Deep in unfathomable mines
Of never failing skill,
He treasures up his bright designs,
And works his sov'reign will."

" Ye fearful saints! fresh courage take;
The clouds ye so much dread
Are big with mercy, and shall break
In blessings on your head.

" Judge not the Lord by feeble sense,
But trust him for his grace
Behind a frowning providence
He hides a smiling face.

" His purposes will ripen fast,
Unfolding every hour;
The bud may have a bitter taste,
But sweet will be the flow'r."

Should you deem the above any way suitable to the purpose of your instructive publication; I shall have pleasure in furnishing you occasionally with variously selected subjects, keeping always in view (so far as my weak judgment will determine) Reli-

gion, or such subjects as may tend to inculcate a dread of the omniscience of the Most High, and the necessity of studying the Holy Scriptures above all things ; for in them are found the words of eternal life. Human life is short, how precarious, and how fit to be compared to the most fleeting and unsteady things in nature. Hence it is the wisdom of every one to work, while it is called to-day, so that he may be found watching when his Lord cometh.

“ To-MORROW I will better live,
Is not for man to say ;
The Morrow can no sureties give,
The wise make sure to day.”

Now Sir, I beg to express my sincere wish that every success may attend your endeavours in doing good, and may I expect you will pardon my intrusion and inaccuracy in this communication. And I am, your very obedient Servant. *M. G.

ON OBEDIENCE.

(A COMMUNICATED EXTRACT.)

OBEDIENCE is the daughter of tractableness : a tractable mind renders itself obedient to the will of those who have any authority over it ! It is a fundamental virtue necessary for Youth, without which one can never arrive at solid piety : which made the wise man say, that the mind of the just will meditate obedience ; because it is a most necessary and effectual means of acquiring virtue, to which it aspires. It is not only necessary for Youth, but also so suitable to that age, that it is appropriate, and as it were natural to it. A disobedient child is a kind of

monster; and an ancient author numbering up the disorders found in the world, puts in the third rank a disobedient child, which he says is a disorder bringing many others after it.

Love then, Theotime, this virtue so agreeable to your age and otherwise necessary and efficacious towards rendering you really virtuous all the rest of your life. Obey humbly and willingly your parents, your masters, and all those who have authority over you. I say, obey humbly and willingly; because it is not enough to obey, but you must obey willingly; a constrained obedience yielded unwillingly through fear or force, is a slavish obedience, which has no merit nor any shadow of virtue. True obedience proceeds from a sense of ones duty, and a desire of pleasing God in performing it. The first makes it humble, the second makes it voluntary, prompt, and easy. You must obey thus, if you desire your obedience should be virtuous and pleasing to God. And by obeying thus, you learn in good time not to do your own will, but that of others. Self-conceit is the usual cause of the destruction of men and chiefly of young persons; is an ill guide, which leads them into precipices, and makes them fall into many misfortunes. The wise man says, an obedient man shall speak of victory. If you are obedient in your age, you will recount one day the victory you have gained over your most dangerous enemy, your own will; you will know how useful this virtue was, and praise God for it all your life.

MEMORY.

DIALOGUE BETWEEN A LITTLE BOY AND HIS FATHER.

Boy. DEAR PAPA, I cannot learn the task my master set me; yet it is never out of my mind, night

nor day. You see I have had the book in my hand at all proper times, ever since my return from school, and yet I cannot repeat more than a few lines, perfectly.

Father. Never fear, but you will be able to accomplish it, if you set about it with a willing mind, and in a judicious manner.

Boy. Indeed I am very willing to oblige my master; his kindness to me deserves it: but I find it impossible to commit so many lines to memory. If you will tell me how I can do it, I will most readily follow your directions.

Father. I am happy to find you of this disposition. With pleasure I have observed your attention, and in due time should have assisted you, had you not of your own accord mentioned your difficulties.

Boy. Well, papa, how am I to overcome them?

Father. In one word, by perseverance, judiciously applied. You will recollect that when the letters of the alphabet were first pointed out to you, it was some time before you could distinguish them, and call them by their proper names. By degrees you mastered this. Next, when they were arranged in words, you found the same difficulty in reading; but by practice and my assistance, from short words you got on to long ones; and in due course you were able, instead of regarding it as a task you were to perform, to take up a book for the pleasure it gave you.

Boy. All this I remember, and I am indebted to you for taking so much pains to lead me on, step by step, till reading became one of the greatest delights I could enjoy. But is memory to be acquired by toil and perseverance?

Father. Most assuredly. Memory is extreme-

ly artificial. There are some, indeed, who naturally possess it in a greater degree than others; but by practice any one may improve it—by neglect, the best memory may be impaired.

Boy. You astonish me. I have heard my master say such a one had no memory—such a one had a good memory.

Father. This might be very true, comparatively speaking. Some have, as I have already told you, a much greater facility of learning any thing by heart than others; but no one is quite destitute of memory, who is not destitute of reason; and it is often seen that they who remember quickest, forget the soonest; whereas, what is slowly gained, is retained long.

Boy. Then, papa, I am sure I shall not speedily forget my task, if I could once acquire it; for I find I am not quick in learning to repeat it.

Father. Mind me. You say you can repeat a few lines perfectly. Let this convince you, that you will with diligence gradually learn the whole. Con- over, and repeat to yourself, four or six lines more. When you retain them, repeat the preceding, and as it were, add them to your stock. Then set about another select number; and when you have fixed them in your memory, go over the whole again that you have learned, in order to fix their connexion in your mind. Proceed thus, till you come to the end of your task, and I can answer for your success.

Boy. Thank you papa. I thought that reading the whole, over and over, was the best way to learn it.

Father. By no means. Whoever attempts too much at once will never execute any thing. But by attending to one object at a time, and by persevering industry, you see what wonders are accom-

plished. The author composes word by word; the printer letter by letter; the mason lays a stone at a time; but by degrees books are written and printed, houses and palaces rise.

Boy. I will carefully attend to your advice, and hope by degrees to find my memory improve.

Father. Be satisfied you will. By practice, united to industry, every thing is rendered easy. The next task that is set you, will be easier than the present; the third than the second; and thus you will go on, until what at present appears a difficulty, will be converted to an agreeable recreation. You will be pleased with your increasing powers of memory: and every new accession you make to its stores, will be a fund to draw upon, for the remainder of your life.

ON LIGHT.

WHAT a wonderful thing is light! It was the first thing which God created, and is one of the most astonishing productions of divine skill. Its nature, like that of its Creator, is not known to man, but to God alone.

Light is supposed to consist of exceedingly small particles of matter, which issue from a luminous body; as from the sun, or from a candle; and these particles of matter continually flow in all directions. The celebrated Dr. Nicventyt computes, that in one second of time there flows 418,660,000 nonillion particles of light out of a burning candle; which number contains at least six billion 337 thousand 242 million times the number of grains of sand in the whole earth, supposing 100 grains of sand to be equal in

length to an inch, and, consequently, every cubic inch of the earth to contain one million of such grains.

These amazingly small particles, by striking upon our eyes, produce the sensation of light: and if they were as large as the smallest particle of matter discerned by our best microscopes, instead of being serviceable to us, they would not only deprive us of sight, but in all probability crush both ourselves and all surrounding bodies into atoms.

The velocity of light is ascertained by means of the eclipses of Jupiter's satellites. When the earth is between the Sun and Jupiter, the satellites of Jupiter are eclipsed about eight minutes sooner than they should be according to the tables which are calculated for shewing the time of these eclipses; and when the Sun is between the earth and Jupiter, these eclipses happen about eight minutes later than the tables predict them. So that light takes about sixteen minutes of time to go through a space equal to the diameter of the earth's orbit, which is 190,000,000 of miles; and, consequently, the particles of light fly above 198,000 miles every second of time, which is above a million times swifter than the motion of a cannon ball. As light, therefore, is about sixteen minutes in travelling across the orbit of the earth, it must be about eight minutes in coming from the sun to us; therefore, if the sun were annihilated, we should see him for eight minutes after; and if he were again created, he would be eight minutes old, before we could see him.

When these small particles, flowing from the sun, or from a candle, fall upon bodies, and are thereby reflected to our eyes, they excite in us the idea of that body, by forming its picture on the retina.* - And since bodies are visible on all sides,

* A fine net-work membrane in the bottom of the eye.

light must be reflected from them in all directions.

A ray of light, is a continued stream of these particles, flowing from any visible body in a straight line. The rays move in straight and not in crooked lines, unless they be refracted; which is evident from the sun not being visible if we endeavour to look at it through the bore of a bended pipe, and from the fixed stars ceasing to be seen when the moon passes before them.

The rays of light do not interfere with, or jostle one another out of their directions, in flowing from different bodies all around; which is evident from the following experiment. Make a little hole in a board, and set it upright on a table, facing a row of lighted candles; then place a sheet of paper at a little distance from the other side of the board; and the rays of all the candles, flowing through the hole, will form as many specks of light on the paper, as there are candles before the board; which shews that the rays are no hindrance to each other in their motions, although they all cross in the hole.

When a ray of light passes out of one medium † into another, it is refracted, or turned out of its course, more or less, as it falls more or less obliquely on the refracting surface which divides the two mediums. This may be proved by the following experiment. Put a piece of money into a bason, and then retire from it till the edge of the bason, on the side next you, just hides the money from your sight; then, keeping your head steady, let another person fill the bason gently with water. As he fills it, you will see more and more of the piece, until the bason is full, and then the whole of the piece will

† A medium, in this sense, is any transparent body, or that through which the rays of light can pass; as water, glass, diamond, air, &c.

be in view. For the ray which was straight while the bason was empty, is now bent at the surface of the water, and turned out of its rectilineal course, and by entering the eye renders the object visible.

The denser any medium may be, the more will light be refracted in passing through it.

The more a telescope magnifies the disks of the moon and planets, so much the dimmer will they appear than they would do to the naked eye, for the telescope cannot magnify the quantity of light as it does the surface; and by spreading the same quantity of light over a surface so much larger than that simply beheld, just so much dimmer must it appear when viewed by a telescope than by the naked eye.

ANECDOTE.

Claude Bernard.

CLAUDE BERNARD, or “the Poor Priest,” as he was called, after a youth of great gaiety, grew disgusted with the world, and devoted himself wholly to religion, and to the comforting of the poor and unfortunate. With incredible pains he assisted them by his charities and exhortations, stooping and humbling himself to do the meanest services on their account. He also presented himself as their advocate to the rich and those who were in power, and his patient solicitations on their behalf were such as no circumstances, however offensive, could subdue.

One day he presented a petition in favour of an unfortunate person to a nobleman in place; who, being of a hasty temper, flew into a violent passion, and said many injurious things of the person for

whom the priest interested himself. Bernard, however, still persisted in his request; and the nobleman was at last so irritated, that he gave him a box on the ear. Bernard immediately fell at his feet and presented the other, said, "Give me a blow on this also, my lord, but grant me my petition." The nobleman was so affected by his humility, that he granted his request.

POETRY.

To a professed Infidel.

YOU slight religion—and "on solid ground," you say;
 And *while on solid ground you stand*, you may:
 But when your limbs beneath Death's withering hand
 Shall find the *solid ground* as sinking sand,
 No *solid ground* will then for mirth appear,
 Thy smiling confidence transform'd to fear;
 While dread conviction starting into birth,
 Proves *all thy boasted solid ground was Earth!*

To my Native Home.

My Home! I feel within my trembling heart
 There is a chord which vibrates to thy name;
 Producing there a kind of thrilling pain;
 Fond recollection's sadly pleasing smart.
 What dear delights the scenes of home impart,
 How fair the charms that deck my native plain;
 There nature, wild, but lovely, holds her reign,
 Conscious alone of the rude peasant's art.
 My home no more: I left thee.—Since that day
 Which saw me with reluctant steps, and slow,
 From thy dear bower far wandering, far away,
 My heart has own'd no other home below;
 No! then I *felt* my portion is not here,
 Look'd up to heaven, and said I'll seek it there.